

Critical Explorations

Research Anthology on Usage, Identity, and Impact of Social Media on Society and Culture



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Information Resources Management Association

Volume I

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Preface

Over the years, social media has blossomed from a leisure tool used by a select pool of younger individuals to an essential form of communication for everyone. It has connected individuals globally and has become an essential practice in marketing, advertising, broadcasting news stories, conducting research, and more. The internet has quickly become a new hub for communication and community development. In most communities, people develop new cultural norms and identity through social media usage. However, while these new lines of communication are helpful to many, challenges such as social media addiction, cyberbullying, and misinformation lurk on the internet and threaten forces both within and beyond the internet.

Staying informed of the most up-to-date research trends and findings is of the utmost importance. That is why IGI Global is pleased to offer this three-volume reference collection of reprinted IGI Global book chapters and journal articles that have been handpicked by senior editorial staff. This collection will shed light on critical issues related to the trends, techniques, and uses of various applications by providing both broad and detailed perspectives on cutting-edge theories and developments. This collection is designed to act as a single reference source on conceptual, methodological, technical, and managerial issues, as well as to provide insight into emerging trends and future opportunities within the field.

The *Research Anthology on Usage, Identity, and Impact of Social Media on Society and Culture* is organized into six distinct sections that provide comprehensive coverage of important topics. The sections are:

1. Fundamental Concepts and Theories;
2. Development and Design Methodologies;
3. Tools and Technologies;
4. Utilization and Applications;
5. Organizational and Social Implications; and
6. Critical Issues and Challenges.

The following paragraphs provide a summary of what to expect from this invaluable reference tool.

Section 1, “Fundamental Concepts and Theories,” serves as a foundation for this extensive reference tool by addressing crucial theories essential to understanding the usage, identity, and impact of social media. The first chapter of this section, “The Dark Side of Engaging With Social Networking Sites (SNS),” by Profs. Eileen O’Donnell and Liam O’Donnell of Technological University Dublin, Ireland, explores the dark side of social networking sites. The final chapter of this section, “The Facebook Me: Gender, Self-Esteem, and Personality on Social Media,” by Profs. Robert Andrew Dunn and Heng Zhang of East Tennessee State University, USA, examines the influence of gender, personality, and self-esteem on social media presentation.

Preface

Section 2, “Development and Design Methodologies,” presents in-depth coverage of the design and development of social media assessment and research. The first chapter of this section, “Psychological Impact and Assessment of Youth for the Use of Social Network,” by Profs. Sapna Jain and M. Afshar Alam of Jamia Hamdard, India and Prof. Niloufer Adil Kazmi of Independent Researcher, India, dissects the effect of online life on each youngster in both the negative and positive bearing of their development utilizing the social impact hypothesis. The final chapter of this section, “At the Mercy of Facebook: A Meta-Analysis on Impact of Social Networking Sites, Teen Brain on Teenage Pregnancies,” by Prof. Nirupama R. Akella of Wichita State University, USA, is a meta-analysis of teen brain research and social media technology such as Facebook that could result in spiraling rates of teenage pregnancy. The author discusses contemporary theories of brain circuitry including teen brain structure and function as one of the plausible reasons for rising teenage pregnancy rates.

Section 3, “Tools and Technologies,” explores the various tools and technologies used in communications and research on social media. The first chapter of this section, “Collaborative Social Networks: Effect of User Motivation, Cognition, and Behavior on User Participation,” by Prof. Yulin Chen of Tamkang University, New Taipei City, Taiwan, investigates the relationships between the motivation, cognition, and behavior of knowledge management. It analyzes university students preparing to share content on the Tamshui Humanities Knowledge Collaboration System to determine whether different participation motivation dimensions (community motivation and personal motivation) affected their knowledge management cognition and behavior. The final chapter of this section, “The Important Role of the Blogosphere as a Communication Tool in Social Media Among Polish Young Millennials: A Fact or a Myth?” by Profs. Sylwia Kuczamer-Kłopotowska and Anna Kalinowska-Żeleźnik of University of Gdańsk, Poland, proposes and discusses the hypothesis that the blogosphere is a relatively well-developed and independent social media communication tool used by millennials.

Section 4, “Utilization and Applications,” describes the interactions between users on social media. The first chapter of this section, “Adolescents, Third-Person Perception, and Facebook,” by Prof. John Chapin of Pennsylvania State University, USA, documents the extent of Facebook use and cyberbullying among adolescents. It is based on a study theoretically grounded in third-person perception (TPP), the belief that media messages affect other people more than oneself. The final chapter of this section, “Facebook Communities of African Diasporas and Their U.S. Embassies: A Content Analysis Study,” by Prof. Hesham Mesbah of Rollins College, USA and Prof. Lauren Cooper of Florida House of Representatives, USA, explores how the Nigerian, Ethiopian, and Egyptian diasporas in the United States use their Facebook groups to create their imagined communities. It also draws a parallel between their use of Facebook and how the embassies of their countries of origin use the same platform in performing their official duties.

Section 5, “Organizational and Social Implications,” includes chapters discussing the impact of social media usage and interpersonal interaction on society. The first chapter of this section, “Understanding Social Media Addiction Through Personal, Social, and Situational Factors,” by Prof. Asli Elif Aydin of Istanbul Bilgi University, Turkey and Prof. Ozge Kirezli of Yeditepe University, Turkey, gains an in-depth understanding of the social media addiction construct. The final chapter of this section, “Transformation of China’s Most Popular Dating App, Momo, and Its Impact on Young Adult Sexuality: A Critical Social Construction of Technology Analysis,” by Prof. Weishan Miao of Chinese Academy of Social Sciences, China and Prof. Jian Xu of Deakin University, Australia, explores China’s most popular dating app ‘Momo’ and its impact on young adult sexuality.

Section 6, “Critical Issues and Challenges,” presents coverage of academic and research perspectives on the critical issues imposed by social media on its users, communities, and society. The first chapter of this section, “Positive vs. Negative Emotions and Network Size: An Exploratory Study of Twitter Users,” by Prof. Yeslam Al-Saggaf of Charles Sturt University, Australia, examines the relationship between the expression of positive and negative emotions in Twitter and users’ network size. The final chapter of this section, “The Tipping Point: A Comparative Study of U.S. and Korean Users on Decisions to Switch Social Media Platforms,” by Prof. Soo Kwang Oh of Pepperdine University, USA; Prof. Seoyeon Hong of Rowan University, USA; and Prof. Hee Sun Park of Korea University, South Korea, focuses on why users quit certain social media and change their favorite platforms, such as the current shift from Facebook to Twitter to Instagram and Snapchat. Furthermore, this exploratory study builds an understanding of social media usage and motivations for switching from a cross-cultural perspective by comparing findings from Korean and U.S. users.

Although the primary organization of the contents in this multi-volume work is based on its six sections, offering a progression of coverage of the important concepts, methodologies, technologies, applications, social issues, and emerging trends, the reader can also identify specific contents by utilizing the extensive indexing system listed at the end of each volume. As a comprehensive collection of research on the latest findings related to social media, the *Research Anthology on Usage, Identity, and Impact of Social Media on Society and Culture* provides social media analysts, communications specialists, computer scientists, online community moderators, sociologists, psychologists, business leaders and managers, marketers, advertising agencies, government officials, libraries, students and faculty of higher education, researchers, and academicians with a complete understanding of the applications and impacts of social media. Given the vast number of issues concerning usage, failure, success, strategies, and applications of social media, the *Research Anthology on Usage, Identity, and Impact of Social Media on Society and Culture* encompasses the most pertinent research on the applications, impacts, uses, and research strategies of social media.

Section 1

Fundamental Concepts and Theories

Chapter 1

The Dark Side of Engaging With Social Networking Sites (SNS)

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ABSTRACT

Although social networking sites (SNS) may have some positive aspects, for example, connecting family members and friends who no longer live close enough to each other to meet in person, or for connecting people with similar health conditions who may need the support of others who understand and can manage the condition, or for groups of people with similar interests to engage and plan events and activities, there are also some possible negative aspects of engaging with SNS, for example, addiction or addictive behaviour, child pornography, cyberbullying, fake news, fear of missing out (FOMO), social comparisons, stalking, amongst many others, which can all lead to neglect of other duties, sleep deprivation, loneliness, isolation, depression, and so forth. The possible negative effects of engaging with SNS on the surface web will perhaps be also relevant to users of the deep and dark web. This article explores the dark side of social networking sites.

INTRODUCTION

Although engagement with the deep or dark web may seem to some to be intimidating or possibly threatening, the surface web similarly presents users with challenges which may also be detrimental to one's peace of mind or health. This paper reviews the dark side of engaging with the surface web through the use of Social Networking Sites (SNS), the issues discussed in this paper will also be relevant to users' engagement with the deep and dark web. While SNS have the potential to impact positively on adolescent's health and well-being, the use of SNS has the potential for exposure to possible risks (Guinta & John, 2018). SNS include: Facebook (2018), QZone (2018), YouTube (2018), Twitter (2018), Reddit (2018), Pinterest (2018), Tumblr (2018), Flickr (2018), Whatsapp (2018), Snapchat (2018), Viber

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(2018), Google+ (2018), Instagram (2018), LinkedIn (2018), Skype (2018), Tinder (2018), Grindr (2018), amongst many others used around the world. Computer algorithms are used to draw people in to frequent use of SNS. Once someone is online and engaging with SNS, more computer algorithms are used to keep the persons attention and hence increase the amount of time spent online. Recommender systems are used to enhance collaborative filtering algorithms which encourage users engagement with Social Networking Sites (Eirinaki, Gao, Varlamis, & Tserpes, 2018; Liu & Lee, 2010). The dark side of engaging with SNS includes: addiction or addictive behavior, child pornography, cyberbullying, fake news, Fear Of Missing Out (FOMO), social comparisons, stalking, amongst many others, which can all lead to neglect of other duties, sleep deprivation, loneliness, isolation, depression, and so forth. The aim of this chapter is to review the negative effects of engaging with SNS and consider what solutions can be proposed to alleviate the damage caused by engagement with SNS.

BACKGROUND

“It is increasingly observable that social media present enormous risks for individuals, communities, firms, and even for society as a whole” (Baccarella, Wagner, Kietzmann, & McCarthy, 2018, p. 431). Now that we as a society are aware of the possible dangers posed by social media, it is time to address all of these potential risks with individuals, communities, organisations, and so forth. By identifying and highlighting these risks and through ensuring that individuals, communities, and organisations are made aware of these risks, only then will it be possible to successfully deal with such risks. “Even with social media executives admitting that their platforms have deleterious impacts, users tend not to question the short- and long-term implications and potential risks of their choices” (Baccarella et al., 2018, p. 432). Users should be encouraged to question the short and long term risks of engaging with SNS. This is a discussion in which all members of society should engage, not just parents and school teachers. Many adults are experiencing problems as a result of excessive engagement with SNS. This paper reviews some of the negative effects of engaging with SNS on the habits (addiction and addictive behaviour, exposure to child pornography, cyberbullying) and mental health (fake news, fear of missing out, social comparisons, stalking) of users. In addition, users are encouraged to consider how their use of SNS may be impacting the lives of others (family members, work colleagues, and other online users).

The Dark Web

The dark web represents a number of anonymously created websites which are hosted on the deep web. The dark web is intentionally hidden (Paul, 2018), the content is not indexed for search engines to find, unlike the surface web where the content is indexed and accessible to standard web browsers, for example, Google Chrome (Google, 2019), Mozilla Firefox (Firefox, 2019), or Microsoft Internet Explorer (Microsoft, 2019). The surface web is the opposite of the deep web (also known as the invisible web and the hidden web). The surface web is easily accessible to all using standard web browsers on the internet. The deep web and the dark web are not accessible through standard web search engines and web crawlers.

In a research study conducted by Dalins, Wilson & Carman (2018) the findings suggest that “criminality on this ‘dark web’ is based more upon greed and desire, rather than any particular political motivations” (Dalins et al., 2018, p. 62). The dark web refers to a number of anonymously hosted websites on the deep web which are accessible by using specialized software to hide the Internet Protocol (IP)

address. IP addresses are assigned to every device that connects to the internet. A Public IP address can be accessed over the internet, a Private IP address cannot be accessed over the internet but are used in internal networks. A Global IP address is specific to a particular network and all devices using that network. Internet Service Providers (ISP) assign Global IP addresses.

The dark web is part of the World Wide Web (WWW) that is only accessible through the use of specialized software (Monk, Mitchell, Frank, & Davies, 2018). The dark web is an encrypted network (to enforce anonymity) that exists predominantly between The Onion Routing (TOR) encryption tools, servers, and their users (Monk et al., 2018). Users of the dark web have the option to remain anonymous and untraceable. Methods employed to access the dark web are quite involved therefore the dark web is not used by the average user. "The globalization of technology and rise of popularity in cryptocurrencies has changed the face of black-market trade and the actors that carry out these crimes" (Paul, 2018, p. 1). Law enforcement agencies and Government Departments are continuously playing catch up in trying to deal with innovations adopted by black market traders to conceal the money trail. "The internet provides an ever-growing number of ways to hide, launder money and pursue a vast range of criminal activities in ways that are difficult to detect or deter" (Slaughter, 2018, p. 118). The handling of criminal activities conducted online is challenging, expensive and requires sufficient quantities of technical resources. The dark web can be used for illegal activities, such as: the sale of drugs (Mackey, 2018; Norbutas, 2018; Porter, 2018), firearms (Porter, 2018), untraceable cryptocurrencies such as Bitcoin (Paul, 2018), child pornography (Dalins et al., 2018), trade in exotic animals (Paul, 2018), sale and purchase of credit card details (Hayes, Cappa, & Cardon, 2018), identify theft (Hayes et al., 2018), money laundering (Dalins et al., 2018; Wegberg, Oerlemans, & Deventer, 2018), amongst others. The monetary cost alone of trying to monitor criminal activities that are conducted online puts a burden on law enforcement agencies and Governments. The Silk Road is a dark net market or an online black market known for the sale of illegal drugs (Dalins et al., 2018; Hayes et al., 2018). It is illegal to use websites that engage with illegal activities. Due to the ubiquitous nature of the WWW and the anonymity provided, the dark web poses serious challenges to law enforcement agencies around the world. Law enforcement agencies can only achieve so much, members of society must be vigilant and mindful of the legality of the interactions and transactions that they conduct online. It is not only on the deep dark web that illegal activities take place, they are also conducted on the surface web, for example, sale of contraband goods, sale of replicas of branded products, sale of government services with an additional administration charge included, and so forth.

Traditional search engines or web browsers cannot access content available on the dark web. This paper reviews SNS that are accessible through the use of traditional search engines on the surface web where the content is indexed and accessible to standard web browsers. The negative effects of engaging with SNS on the surface web also relate to users engagement with the deep and dark web.

Virtual Private Network (VPN)

VPNs can be used covertly to obscure a users' browsing and online activities from prying eyes. Therefore, illegal activities and transactions can be hidden by using VPN transactions. A Virtual Private Network (VPN) enables the user to send and receive data across a public network, as if it were a private network. A Virtual Private Network (VPN) provides a means of connection to a network within an organisation (as if you were inside the organisation) even though you are not physically present. During the online session the connection is made to the remote network (within the organisation) through the VPN therefore

none of the devices (printers, shared disks, and so forth) connected to the local network are available for use to the user as long as the user is remotely connected to the network within the organisation.

Figure 1 illustrates a standard connection to a network within an organisation where there is no need for a Virtual Private Network. The users' remote connection to the network of the business or organisation can be diagrammatically represented as a bubble linked to the target network working within the organization as illustrated in Figure 2.

VPNs' are used legitimately by business users to connect remotely and securely to the companies/ organisations network.

Figure 1. Connection to a network within an organization

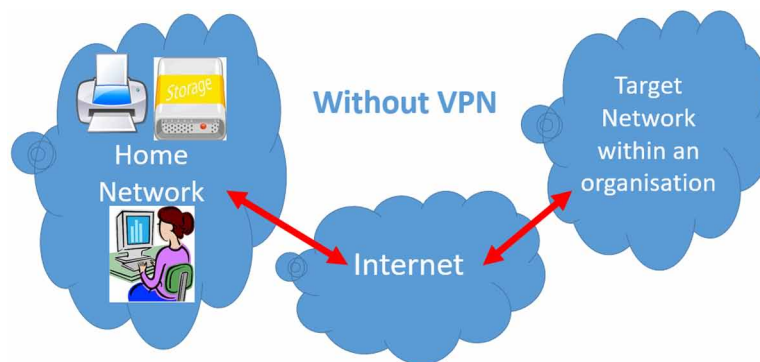
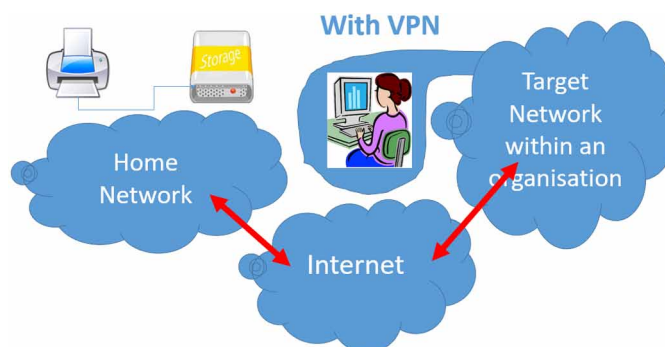


Figure 2. Connection to a network within an organisation using a VPN



THE DARK SIDE OF ENGAGING WITH SOCIAL NETWORKING SITES (SNS)

The massive diffusion of SNS has led to some adverse and undesirable societal consequences (Salo, Mantymaki, & Islam, 2018). SNS both on the surface web and the deep web can have a dark negative side. This chapter focuses on the dark side of engaging with SNS on the surface web. Some of the negative effects include: addiction or addictive behaviour, child pornography, cyberbullying, fake news, Fear Of Missing Out (FOMO), social comparisons, stalking, amongst many others.

Addiction or Addictive Behaviour

“The powerful and addictive sharing functionality of social media presents risks to those who share content and those who consume the content that is shared” (Baccarella et al., 2018, p. 433). Once content is shared through the use of social media, there is no knowing how many people around the world will see, download, or save the content. Shared information, pictures and videos can go viral very quickly, once this content is made publically available there is no way that anyone can delete every instance or trace of the content. In a study conducted by Wang et al. (2018) the findings suggest that addiction to SNS could potentially be a risk factor for the onset of depression in teenagers. The suggestion that addiction to social networking sites could trigger depression in teenagers is a serious issue that deserves further research. Addiction to SNS could also be a risk factor for the onset of depression in adults.

Kanat-Maymon, Almog, Cohen, & Amichai-Hamburger (2018) suggest that the roles of self-esteem and contingent self-worth (CSW) may possibly be associated with excessive and inappropriate use of SNS. It is impossible to know the extent to which users are involved with or subjected to inappropriate use of SNS. In a study conducted by (Atroszko et al., 2018) the findings suggest that “When suggested tentative personality risk factors model were investigated, addictive Facebook use was related to being female, being older, extraverted, narcissistic, having low self-efficacy as well as feeling loneliness and social anxiety” (Atroszko et al., 2018, p. 335). Unfortunately, some users do not realise the negative effects that addictive use of SNS can have on their lives and the lives of others. The findings of Casale & Fioravanti (2018) suggest that there is “a positive association between grandiose narcissism and problematic SNS use” (p. 317). SNS are a recent phenomenon in the history of mankind, further research is needed to ascertain the influence of addictive use of SNS on personal relationships and general well-being.

Excessive use of modern technological devices for social networking can have negative consequences on the following: quality time spent engaging with friends and family (Osatuyi & Turel, 2018), work environment and performance (Moqbel & Kock, 2018; Osatuyi & Turel, 2018), exercising, involvement with many other activities that are good for both physical and mental welfare, and a reduction in positive emotions (Moqbel & Kock, 2018). “Facebook addiction is related to higher stress, lower general health and lower sleep quality” (Atroszko et al., 2018, p. 335). These negative effects need to be taken seriously and appropriately addressed.

Internet addiction is a recent and changing phenomenon (Mubarak & Quinn, 2017), which has not previously affected society as other addictions have done, therefore, further research is required to promote official recognition of this problem and possibly identify suitable treatments to resolve this problem before social engagement is negatively affected by obsessive use of the internet and SNS. Mubarak & Quinn (2017) suggest that “it is likely that individuals experiencing internet addiction may engage in problem behaviours in cyberspace and create social and psychological problems to other internet users” (p. 9).

Child Pornography

Dalins, Wilson & Carman (2018) suggest that law enforcement agencies show more concern for sites hosting Child Exploitation Materials (CEM) than sites hosting child pornography in the form of cartoons. The sharing of content depicting the exploitation of children for the gratification of others poses a serious challenge to law enforcement agencies. Child pornography and exploitation occurs almost 25% more often than adult pornography (Dalins et al., 2018).

“One site advertised itself as a ‘support’ forum, though in terms of supporting and normalizing paedophilia rather than aiding persons avoid such behavior and actions” (Dalins et al., 2018, p. 71), whilst other sites offered education and training on grooming vulnerable children (Dalins et al., 2018). SNS within the deep and dark web require policing by government supported agencies to infiltrate such sites and monitor the activities of people engaging with these sites.

Cyberbullying

In a study conducted by Mc Hugh, Wisniewski, Rosson, & Carroll (2018) the findings were that “cyberbullying, sexual solicitations, and exposure to explicit content (but not information breaches) can cause symptoms of PTSD” (p. 1182). Post-Traumatic Stress Disorder (PTSD) is a mental health disorder that affects some people who have been exposed to or have personally experienced some horrifying event, or others who have witnessed such events. Experiencing PTSD as a result of engaging with SNS indicates that there is a dark side to SNS. The Health Service Executive (HSE) have provided on their website some helpful advice and who to contact regarding online bullying (HSE, 2018a). “Cyberbullying may be a way to intentionally harm individuals, while oversharing photos of positive experiences unintentionally causes anxiety among those who live lives less glamorous” (Baccarella et al., 2018, p. 432). Some users may not intentionally aim to harm other users by oversharing, not all users will be harmed by the positive posts of others, but some users may through social comparison feel that their lot in life is not as glamorous or successful as others.

Fake News

Fake news is the spreading of untrue facts online or through SNS that may influence readers’ opinions, voting choices, or even, election outcomes. SNS can be used to spread fake news (Baccarella et al., 2018). Users need to be discerning about what they read and what they believe. “Although the actual effect of fake news online on voters’ decisions is still unknown, concerns over the perceived effect of fake news online have prevailed in the US and other countries” (Jang & Kim, 2018, p. 295). Throughout history there has always been concerns with fake news, alternatively known as propaganda. “The unprecedented popularity of social media for gathering news raises a number of critical questions regarding who trusts news in social media and what sites we trust” (Warner-Soderholm et al., 2018, p. 309). Fake news could have the potential to influence political appointments and could possibly even destroy lives. Some people may not know what or who to believe anymore which may lead to mental stress.

Fear of Missing Out (FOMO)

Fear of Missing Out (FOMO) has the greatest impact on the level of fatigue experienced by users of social media (Bright & Logan, 2018). Lack of sleep can lead to various different mental health disorders. FOMO can have an adverse effect on people’s lives, as an obsession with wanting to keep up with what everyone else is doing, can lead to user fatigue and other adverse consequences. Nicholar Carr (2010) argued the point that people’s attention span has diminished as a result of engaging with the internet and all it offers. “The Shallows: what the internet is doing to our brains” by Nicholar Carr (2010) is an insightful, inspirational, and influential book. After reading this book, one reader selected to “unsubscribe” from numerous e-mail lists, while others deactivated a number of SNS accounts. “The Circle” by Dave

The Dark Side of Engaging With Social Networking Sites (SNS)

Eggers (2013) is another book that would really make the reader consider the amount of information that is shared online, and how all the data mining conducted by organisations is affecting our privacy.

The data mining conducted by some SNS can also affect the privacy of owners and employees of these organisations. Hackers over the years have gained access to information from many organisations around the world proving that there is no way to safely protect one's privacy. Should an organization which runs a SNS be fined by the European Union for breach of privacy rights, this fine will not bring back the privacy that has been lost to all the users.

Even if an individual is extremely cautious about their own personal information and mindful of every piece of data they share online, others, can upload personal information and images of that person without their explicit permission. This happens all the time and the effort it takes for an individual to get this content taken back down from SNSs is extensive.

In life, it is so easy to go with the flow, without even considering what effects our actions are having on our daily lives and the daily lives of loved ones. It is so easy to get drawn into engaging with online activities, that hours can pass and be lost to the user, which could have been spent engaging with friends, doing productive work, getting exercise, or focusing on things that really matter in life. Some people are so busy recording every meal and experience to post pictures online, that they are not really focusing on the moment, relaxing, and enjoying the time spent with friends. Man has inhabited this earth for years without the need for all this connectivity and lack of privacy. Perhaps one of the reasons obesity and diabetes are on the increase is because mankind now devotes so much time online due to FOMO. If only people would consider what they are missing out by spending so much time online they might then start to relax and enjoy their own life instead of trying to imitate the lives of others as portrayed online.

Social Comparisons

As a result of using SNS some people may get the impression that others posting to the same SNS are leading better lives in comparison to their own. A survey among Korean females found that social comparison was positively associated with the use of blogs, Instagram, and LinkedIn (Chae, 2018). Engagement with SNS can produce social comparison with others (Wang et al., 2018) which may result in feelings of loneliness in others (Sutcliffe, Binder, & Dunbar, 2018), isolation, anxiety and possibly depression. Online users tend to share the highlights of their lives which may not be representative of the real lives that they are living on a day to day basis. "Those with a high social comparison orientation should limit their use of social media to avoid emotional stress" (Chae, 2018, p. 1663). One's self esteem can be adversely affected through social comparison with others. As long as people do not realise the potential damage of engaging with SNS they may continue to suffer from social comparisons with others which could lead to mental health issues.

Stalking

Some SNS have the ability to capture a person's current location through Internet Protocol (IP) address information, this functionality can be used to track or monitor the whereabouts of others (Baccarella et al., 2018). The fact that the location of a person can be tracked may possibly be reassuring to some, for example, parents who have given a mobile phone to a child may then be able to obtain knowledge of their whereabouts at all times. Alternatively, a person's location may be tracked without their knowledge or permission through the use of technology, by someone who is interested in their whereabouts or someone

who holds a grudge, therefore, it is an invasion of personal privacy, ethically unacceptable, and potentially a safety threat. “Studies indicate a strong correlation between high Facebook usage and jealousy in relationships; in other words, as Facebook usage increases, so does jealousy” (Warner-Soderholm et al., 2018, p. 306). Some users may get unrealistic expectations of what life should be like, based on how others portray their lives to be online, this can lead to feelings of jealousy. Some may suffer from negative body image if they compare their body to those of others as they are depicted online. Some images available online may have been photo shopped to make them appear more appealing. Jealously in relationships can lead to serious mental problems which can only get worse if one continues to stalk others and compare themselves to others as portrayed online.

SOLUTIONS AND RECOMMENDATIONS

The dark side of engaging with SNS will continue to pose problems to society in general as long as people allow SNS to take up too much of their valuable time and influence how they feel about themselves and others. To avoid undue emotional stress, users who are susceptible to a high social comparison orientation should reduce the time spent engaging with SNS (Chae, 2018), or cease to engage with SNS altogether.

Cyberbullying has the potential for serious consequences, for example, someone may feel so bad from being a victim of cyberbullying that they may consider taking their own life by committing suicide (Cohen-Almagor, 2018), or doing something else extreme. “Suicide is a major public health problem and is the second leading cause of death in young people worldwide. Indicating a lack of adequate treatment approaches, recent data suggest a rising suicide rate” (Bailey, Rice, Robinson, Nedeljkovic, & Alvarez-Jimenez, 2018, p. 499). Government funded supports are available, for example a helpline to listen to victims and help them to deal effectively with the problem (HSE, 2018a, 2018b). Unfortunately, not all victims of online bullying are aware of these services. People of all ages can be victims of cyberbullying and government provided supports should be available to help and guide all victims about the best ways to deal with the online persecution.

SNS can be used to advertise and sell all sorts of goods, including drugs and other illegal products. Concerted efforts by law enforcement agencies, the public, public health authorities, government administrators, and technology companies will be required to successfully combat the sale of illegal drugs online (Mackey, 2018). Due to the complexities involved in dealing with cybercrimes “too few appear currently willing or able to grapple with the issues, let alone provide satisfying answers” (Slaughter, 2018, p. 118). Further research is required to determine the most productive and cost effective methods to combat cybercrimes.

Organisations’ should leverage their information security policies based on the perceived threats and benefits of employees engaging with SNS (Silic & Back, 2016). Should an employee be addicted to engaging with SNS and possibly engage during working hours, then the work that they are supposed to be doing may be neglected. Organisations’ should be aware of the perceived threats and benefits of SNS, so that they can effectively deal with these by taking appropriate action. “Fake news is a critical major issue that social networking websites can ameliorate with vigilance and skillful use of technology” (Morales, Sosa-Fey, & Farias, 2017, p. 87). Fake news poses a real challenge to society and requires further investigation.

FUTURE RESEARCH DIRECTIONS

Further research is required to determine the most productive and cost effective methods to combat cybercrimes. Law enforcement agencies and Governments have numerous challenges ahead in dealing with the dark side of SNS and cybercrime on the surface web. This is only scratching the surface as the deep and dark web are more embedded in areas where users want to hide their identity, therefore, it is much more difficult to trace the online actions of users.

Fake news has the potential to influence politics and also to destroy lives. Fake news poses a real challenge to society and requires further investigation. Members of society deserve to know the truth so that they can make informed decisions based on honest facts.

The suggestion that addiction to SNS could trigger depression in teenagers is a serious issue that deserves further research. Internet addiction is a recent and changing phenomenon (Mubarak & Quinn, 2017), which has not previously impacted on society as other addictions have done, therefore, further research is required to promote official recognition of this problem. SNS are a recent phenomenon in the history of mankind, further research is needed to ascertain the influence of addictive use of SNS on personal relationships and general well-being.

CONCLUSION

Although SNS are used by many people all around the world to connect with loved ones and friends in a positive context, alas, SNS are also used by many people in a negative context, including some of the topics discussed in this chapter. There are some dark sides or negative aspects to human engagement with SNS which may include the following: exposure to possible risks, spending too much time online, deleterious impacts, access to black market traders, untraceable cryptocurrencies, sale of drugs and firearms, child pornography, trade in exotic animals, identity theft, and money laundering.

Some concerns with users' engagement with SNS are as follows: images going viral, internet addiction, depression in teenagers, lack of quality time to spend with friends and family, impact on work performance, physical and mental welfare, higher stress levels, lack of sleep, loneliness, isolation, anxiety, and jealousy, amongst many others.

These negative effects need to be taken seriously and appropriately addressed. Users should be encouraged to question the short and long term risks of engaging with SNS. Users of Social Networking Sites within the surface web and the deep and dark web require the support of government agencies in dealing with the inappropriate activities of other people engaging with these sites. The monetary cost of dealing with cybercrime puts a burden on Law Enforcement Agencies and Governments.

Society as a whole needs to consciously consider all of the negative effects of engagement with SNS, discuss these with friends, family, and work colleagues then try to reach a consensus on how best to address all of these issues.

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KEY TERMS AND DEFINITIONS

Addiction or Addictive Behaviour: Actions which a person can no longer control. Someone may go online to send an e-mail, get distracted and remain online for several hours, and possibly forget to send the e-mail.

Child Pornography: Online sharing of content which shows the sexual exploitation of children.

Cyberbullying: A form of bullying that occurs online.

Dark Web: The dark web refers to a number of anonymously hosted websites on the deep web which are accessible by using specialized software to hide the internet protocol (IP) address.

Fear of Missing Out (FOMO): Some people are afraid to go offline in case they miss out on some exciting piece of news.

Fake News: The spreading of untrue facts online or through Social Networking Sites that may influence readers' opinions, voting choices, and election outcomes.

IP Address: IP addresses are assigned to every device that connects to the internet.

Social Comparisons: As a result of using social networking sites some people may get the impression that other users are leading better lives in comparison to their own.

Social Networking Sites: Social networking sites (SNS) enable users to interact with other people online; similar to how people may socially interact offline by sharing personal experiences, images, making plans, and so forth.

Stalking: A person's location may be tracked without their knowledge or permission through the use of technology, by someone who is interested in their whereabouts or someone who holds a grudge; therefore, it is an invasion of personal privacy, ethically unacceptable, and potentially a safety threat.

Virtual Private Network (VPN): A virtual private network (VPN) provides a means of connecting to a network within an organisation (as if you were inside the organisation) even though you are not physically present.

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Chapter 2

The Impact of Social Media on Children

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ABSTRACT

This chapter examines the impacts of social media on children. Advantages and disadvantages of social media are always available. Positive aspects of social media include allowing children to be brought up as multicultural individuals, enabling education and training environments to design for purposes, using as the main or supplementary source of education, a great power in creating and sharing information. Its negative aspects include leading to a reduction of their academic, social, and cognitive skills in the early periods when children were exposed to the social media, causing the children to develop obesity, mostly bringing up as consumption-centered individuals, perceive the world as a screenshot, and have low critical, creative, and reflective thinking skills. Therefore, one of the most important tasks undertaken to reduce or eliminate the negative effects is to raise and educate media-literate individuals.

INTRODUCTION

Social media undoubtedly ranks first when considered how people spend their time today. People always carry small-sized technological devices, especially smart phones, that provide practical use for and solution to them. These tools have today become his organ like human being's arm, leg, feet. Human being did not know any of these tools fifteen to twenty years ago, but now these increasingly globalized tools have become an indispensable part of our lives. Some commonly used social applications are blog blogging, gaming, video and picture-sharing, iPods, iPhones, iPads, YouTube, Twitter, Facebook, LinkedIn, etc. Many of us have known the name of few or all of these off by heart. So to say, their names were imprinted on our memories. Well, are these applications that have come into our life changing our life too? In other words, what kind of changes are they causing in our lives? The answer of this questions

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undoubtedly yes. We should allow them to use these applications in a controlled manner when considered that they would mostly influence our children. This research focuses mainly on impacts of social media applications on the children and addresses how the likely consequences of these impacts will interpret.

Media

Media is a communication channel that provides news and information for the public. In other words, they are technical tools that provide verbal or written communication for the society (TDK, 2017). As its definition also implies, the media can be thought of as a channel of communication. Any disruption which would occur in this channel or unreasonably reporting the news during the communication process may lead to lack of communication or misuse of the news, which also brings about undesirable results on a large or small scale.

The social media plays an educational and didactical role, as well as a communication tool. When performing this role, it is very important to be known that it includes what kind of data, originates from which source, and is presented for what purpose. Biased presentations out of objective situations are highly influential in leading the individuals biasedly or in the fact that the society holds a biased opinion or belief. It can be said that this impact is strong and prominent on especially children. Cartoons, virtual games and their derivatives, to which children are exposed, have a profound impact on the development of children's world of thought. In a study by Funk, Brouwer, Curtiss, and McBroom (2009), when asked parents their beliefs about the influence of the social media exposure on their children, 99% of them expressed that popular media could have either a short-term impact of 43% or a long-term impact of 56%. Electronic media, especially television, have been criticized for their possible effect on children for a long time (Kirkorian, Wartella & Anderson, 2008). They emphasized that their cognitive development and academic success negatively affected in the early periods when children were uncontrollably exposed to the social media. Therefore, it is extremely important for us to question the contents of the social media tools where they spend time if one wants the children to have a healthy world of thought.

The social network, blog blogging, gaming, video and picture-sharing, iPods, iPhones, iPads, YouTube, Twitter, Facebook, LinkedIn, so on and so forth have become a part of today's common words. It would be hard to believe that many of these devices and networks were unavailable ten years ago (Graber & Mendoza, 2012). Social media, a type of digital media, is a system that is based on the content production and consumption of the participants and has different digital contents via links and content (Andersson, 2016). Although such a definition offers for social media, it is a growing phenomenon with various definitions since it gains popularity in the academic community as well. Its well-known definition refers to the social media used to provide social interaction since social media technology means web-based content in the digital environment through multi-way communications (Alzouebi & Isakovic, 2014). Social media is a key channel of communication in the society today and enables people worldwide to interact with each other with just the click of a mouse (Lofgren, 2014). Furthermore, smartphones and computers have so dramatically altered the manner in which people communicate around the world with ease of use that increases the amount of online interaction. Kahveci (2015) indicated that this change has also been penetrating into the educational environments.

Research on groups using social media applications and having mobile devices revealed that roughly one out of ten children by 5 age get a mobile device, such as a smartphone. Therefore, youths define as the new digital natives in the modern age (Dotterer, Hedges & Parker, 2016). Social media networks such as Facebook and Twitter have the considerable potential to teach and learn in Higher Education

through their main functions based on encouraging people to generate and share information and connecting groups of people worldwide (Graham, 2014; Kumi-Yeboah & Smith, 2016). Other social media applications like YouTube, Pinterest, and Glogster make it possible to upload and share various media such as video, animation, and photo. They are also usually used in education as a supplementary rather than the main source (Kilis, Gülbahar & Rapp, 2016). Kothari and Hickerson (2016) found that 70% of students and 65% of faculty members used some social media tools including Facebook, Twitter, and LinkedIn in their courses as the primary or supplementary source for educational purposes.

Smart phones and social media are used as the main popular sources of entertainment and communication for many of students both inside and outside of school (Palekahelu, Hunt, Thrupp & Relmasira, 2016). Many people from all age groups, especially teenagers, take part in online sites to make friends, make themselves known, and express their opinion in a large international audience (Georgakainas & Zaharias, 2016). It is very important for educational practitioners and researchers, and they should successfully use it for their own social practices (Albert, 2015; Pavlik, 2015; Greenhow & Askari, 2017; Georgakainas & Zaharias, 2016; Burbules, 2016; El Bialy & Ayoub, 2017). Teaching and learning processes are not only performed in classrooms but they are combined with the use of electronic environments called e-learning as well (Oktavia, Warnars & Adi, 2017). In addition, social media helps deep learning both directly and indirectly, facilitates learning, promotes long-term retention of content, and fosters a more pleasant, attractive and enjoyable learning environment (Samuels-Peretz, Dvorkin Camiel, Teeley & Banerjee, 2017). All of these stresses the place and importance of social media in the education. Social media applications whose content and use had determined properly could be highly beneficial to both educators and learners. Palvik (2015) reported that technology has at least four key impacts on education. Firstly, technology has almost revolutionized the methods of teaching and learning over time. Secondly, it has reshaped the content of what is taught and learned. Thirdly, it has significantly changed educational institutions, structures, and costs. Lastly, it has redefined the relationships between educational institutions, teachers, and students. Furthermore, the use of social media also varies according to the level of education and training environment. Entertaining and didactical practices should be more preferred for children at primary school level. As the level of the classroom progresses, classroom use of social media tools also varies according to the way students will use them for what purpose. Smith (2017) has recently reported that undergraduates are generally used social media for the purpose of collaborating to create documents online, sharing information online, managing and following academics schedules, forging closer relationships with peers, posting information found online, creating social media to share online and making comment about social media or information found online.

Burbules (2016) describes the social media as a powerful tool, which is not just a valuable tool in reading and writing, but it also changes our reading and writing activities. In other words, the incorporation of social media into the education and training process has also caused the educational environments to evolve. This evolution continues mutually. Social media education enables itself to shape in education.

In sum, it is not possible that we deny the existence of social media and its effects on our lives. These effects of social media can consider to be either positive or negative. We need to decide the direction of change as a part of this process rather than track how social media is changing people, especially children. In other words *“if we cannot govern events/things, they will manage us”*. This uncontrolled management may not be in favorable of us. Better detecting the impacts of social media and keeping them under control are extremely important for both adults and children.

Positive and Negative Impacts of Social Media on Children

There are the pros and cons of social media. Greenhow and Askari (2017) have recently reported that social network sites are both advantage and disadvantage to teaching and learning. When its positive aspects are examined, Rosenberg, Terry, Bell, Hiltz and Russo (2016) reached three general conclusions regarding the likely advantageous role of social media. Social media can facilitate the development of community, support curriculum advancement and promote networking and collaboration. In parallel with factors, social media may contribute to the knowledge sharing process from e-learning to social learning within the organization (Oktavia, Warnars, & Adi, 2017). Moreover, social media components may help students learn to critically think about the media they use (Dotterer, Hedges & Parker, 2016), and may positively affect the relationship between teachers and students. Thought-out integration of social media through tasks that require involvement in higher-level cognitive activities, such as synthesis and evaluation, can improve a child's educational experience using technology with which he/she may already get acquainted (Albert, 2015).

Social media offers the advantage to students to increase collaboration and interaction with their peers and provides immediate responses to individual's inquiries with the richness of resources (El Bialy & Ayoub, 2017). Additionally, it helps to strengthen collaboration, critical thinking, and reflection, which are among the activities related to deep learning (Samuels-Peretz, Dvorkin Camiel, Teeley & Banerjee, 2017) and builds a bridge between formal and informal learning through participatory digital cultures (Greenhow & Lewin, 2016). Efficient and proper use of technology and social media also serves participants to heighten the awareness and knowledge of multicultural citizenship education (Kumi-Yeboah & Smith, 2016). Students recognize that they do not need to rely on teachers and schools to be independent and control their communication and for learning (Palekahelu, Hunt, Thrupp & Relmasira, 2016).

When looked at positive aspects of social media according to age groups, Khan, Kend and Robertson (2016) pointed out that the use of social media such as Facebook and Twitter has become more widespread among university students. Authors also added that many universities provide students with resources in formats appropriate for iPad, laptop, and mobile phone and that there has been a marked increase in the amount of social media they use while performing university academic activities. Krikorian, Wartella and Anderson (2008) found there is strong evidence that children older than two years learn from educational media and there is moderate evidence that this is positively associated with various measures of academic achievement even ten years later. However their moderate evidence has emphasized that early exposure to the social media containing merely entertainment and violence is negatively linked with cognitive skills and academic success. All of these situations may lead us to the conclusion that social media would be useful or useless for the intended use. Children are not at the level where they can determine the contents that will be useful to them in the social media. Thus, it has also fallen to teachers, especially to parents, to follow this situation closely. Otherwise, unconsciously used social media may result in the deterioration of children's frame of mind and moral fiber. Negative consequences that may arise are the following:

1. Inactive children tend to face the multitude of health problems like obesity,
2. They are brought up as consumption-centered individuals,
3. They isolate themselves from the nature and people/society since they frequently spend more time in indoor environments,
4. The manner in which they perceive the world is just a screenshot,

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5. They demand and use the offering advertising products unconsciously.
6. They have low ability to manage their environment, especially themselves.
7. They cannot develop their thinking skills enough.

Resultant negative consequences can also be considered as factors that trigger each other. A negative consequence we have foreseen may also be the cause of another negative outcome we have not foreseen. Positive consequences may emerge as a result of this process, but which should not be left to a chance application.

Studies carried out to prevent or lessen the harmful effects of social media showed that early exposure to television may result in the poor cognitive development (Kirkorian, Wartella & Anderson, 2008). Measures should be taken to reduce the harmful use of social media in a classroom environment. It should be well clarified how and for what purpose social media will be used in the schools. Instructors and educators should be ready to reap more benefits by effectively combining technologies such as social media that prepares the way for long-life learning (Chawinga, 2017). Greenhow and Askari (2017) have indicated more recently that online social networks may impede teaching practices when teachers and students do not see their instructional value or cannot use some social networks to improve learning and teaching goals.

Teachers may want to dissuade pupils from using social media in class. However, they can use social media and technology to teach self-regulation by inviting children to recognize themselves when children experience attention deficit (Dotterer, Hedges & Parker, 2016). Although there is a general negative opinion about the didactic quality of social media, teachers believe that learning and teaching environments combined with social media will enhance both the communication of the students and the whole educational process (Georgakainas & Zaharias, 2016). To put it another way, awareness of the values reflected in virtual settings and utilizing social media consciously would be remarkable with a view to respecting outstanding contributions of social media to social life (Karaduman, Köse & Eryılmaz, 2017). All these results demonstrate the importance of being an excellent media user, in other words, of being a media literate.

Media literacy education teaches to critically examine media messages (Draper, Appregilio, Kramer, Ketcherside, Campbell, Stewart & Cox, 2015). The researchers emphasized that media literacy can be crucial in modifying learners' behavior and that media literacy education should be improved so as to build a conscious society (Nupairoj, 2016). To that end, it should assist individuals from all ages to gain the necessary competences through the media literacy education movement that will be continued (Schmidt, 2012). When the importance of being media literate is examined, it is seen that media literacy is the keystone of academic discipline learning and effective teaching, and that instructional and assessment practices are crucial in thoroughly grasping the subject matter (Fedorov, Levitskaya & Camarero, 2016). Media literacy education and media criticism make a significant contribution to the development of analytical thinking. Indeed, one of the most important tasks of media literacy education is not only to understand the mechanisms that function and create in the society, but also to fully analyze media texts of any kinds and types (Levitskaya, 2015). Recently, media literacy of young children has started to be noticed because of the expanding media environment, particularly the increased use of the internet among preschoolers in most Western countries. Additionally, it has been stressed that it is necessary to strengthen them as media literate actors for it seems impossible to guard only children in today's social media environment (Rantala, 2011). It is important that they are raised as media literacy as it is not pos-

sible to become aware of everything that children encounter. Media literate children themselves should possess the ability to identify harmful contents and to keep away from them.

Suggestions for Social Media Users and Politicians

There is a need for individual awareness and government policies so that the use of social media can develop for both children and adults. However Rantala (2011) expressed that practices should also be performed without underestimating the effects of raising awareness of and inspiration for media education. When also examined the tasks that the teachers should undertake, the entire incoming media should be approved by the teacher before being released to the designated audience. In other words, all these media should be screened by the teacher (Exley, Willis & McCosker, 2017). School districts should be reviewed, and it should be understood the policies that govern each digital platform whereby educators use in the classroom (Shear, 2016).

It seems that today students are addicted heavily to technology. Therefore, educators need to bring these technologies to their classroom (Chawinga, 2017). Moreover, educators encourage their students to practice as a part of their teaching. They have to find the ways to increase their students' attendance to lesson. They must provide them with the materials that will meet their expectations and contribute to their learning (El Bialy & Ayoub, 2017). In other words, educators should always pay regard to the areas of interest of their students in different settings, and, when necessary, change their methods depending on the learning style, prior knowledge, and a total number of students taking a class (Tucker, 2016).

Experiences should be shared, which improve both formal and informal media education at the schools and during lifelong learning, and further research is urgently needed to identify the possible ways of international collaboration (Mikhaleva, 2015). By using the social media portion in the classrooms which are well equipped with the technology, social media can use more effectively so as to allow students and instructors to create the more useful connections between the course material and classroom experience (Lofgren, 2014). Social media tools have the potential to foster and support out-of-class participation through carefully planned tasks via social media platforms (Graham, 2014). Social media applications can use as a means to bolster support for the education of disabled students by circulating within the undergraduate culture (Hartley, Mapes, Taylor & Bourgeois, 2016). Information, communication, and technologies may play a key role in boosting rural development and in relieving the poverty by presenting equal access opportunities to knowledge and market information, basic public (health, education) and financial services (Rad, Kurt & Polatöz, 2013). Additionally, social media serves an important function in order that each group is able to develop its own objectives (Smedescu, 2014).

As a result, the social media and the applications which are its extensions are nowadays snowballing. When the expanding social media cannot be prevented, we may face the unpredictable negative consequences. It is necessary to create a media-literate society in order not to be negatively affected by this situation. It would undoubtedly be more beneficial to children just as the media-literate society would benefit many areas. In addition, social media are shaping the education, which is one of the important means of raising a society. It is absolutely clear that this shaping that is willingly performed by the media-literate educators will contribute to the students in every stage of education and, in particular, to children.

FUTURE RESEARCH DIRECTIONS

Future social media research can be carried out to examine the effects of social media on age groups. The social media applications whereby each age group is interested in and the effects of these applications may vary. Furthermore, one should be focused on the studies that predict the likely consequences of these effects by being thoroughly analyzed the social media contents. Studies to be conducted within the scope of education and training can be diversified according to the socio-economic levels of the students and their family education level. When considered that the time spent using the social media is a very intensive period of time and is too precious, it is also all important that we should pertinaciously and meticulously conduct this research without loss of time.

CONCLUSION

This study discusses the effects of social media on children. In this context, firstly, it is dealt with what media and social media concepts are meant. Thus, it has been concluded that the social media has not only a communication tool but it undertakes a didactical and educational task as well. Within the educational and didactical context of the media, entertaining and didactical practices should be more preferred for children at primary school level. As students move up to upper levels, classroom use of social media tools also varies according to the way students will use them for what purpose. Educators should be able to control this variability. Therefore, it is important to raise and educate the media-literate educators. Otherwise, students may be confronted with the undesirable consequences of the media. These undesirable consequences may cause children to develop obesity, mostly bring up as consumption-centered individuals, perceive the world as just a screenshot and have low critical, creative and reflective thinking skills.

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KEY TERMS AND DEFINITIONS

Impact of Social Media on Children: The impact of communication, information, and entertainment sharing and e-learning environment on children.

Media: Communication, information, and entertainment sharing and e-learning environment.

Power of Social Media in Education: Use of communication, information, and entertainment sharing and e-learning environment for educational purposes.

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Chapter 3

Social Media and Children

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ABSTRACT

As a result of high-tech developments and the increase in the importance of the global communication, social media websites and applications have occurred as a new way of communication and self-expression in the contemporary world. Globalization has forced people to obtain and spread the necessary information quickly, and due to this requirement, people of all ages have had to acquire digital skills which they utilize to meet their need of learning and being informed about the issues happening around the world. Social media tools and applications are being highly and commonly used all round the world by all kinds of people from all ages in order to express themselves, get to know other people, share their opinions and learn others' opinions on the world issues, socialize, and have fun. Regarding its effects on children, social media has both advantages and disadvantages.

INTRODUCTION

Social media refers to the environments that change the way people communicate, interact and socialize and, in the meantime, allow people to express themselves as they want, using internet infrastructure.

Social Media is a platform that enables its users to participate in activities and events identified as its content as a way of communicating with their social circles including other users in the system and society, to share their own opinions by bringing them together to create their own content (Cohen, 2011). Although interaction and communication between social media users are emphasized in this definition, Fredman (2013) divides social media platforms into two different groups as interactive and non-interactive social media environments.

According to the way Fredman (2013) distinguishes social media platforms, interactive social media environments provide a way for users to communicate. Outputs of the software programs that make this communication among users possible depend on input from registered users in these environments to the system. In other words, all kinds of information and interpretation that users share in the system directly affect the output of the programs. Digital and electronic devices, software, touch tablets, applications, video games, interactive screen-based media such as Facebook, MySpace, game play sites, club penguins,

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blogs and YouTube are directly influenced by the output of virtual site programs and they are designed according to these outputs. Non-interactive social media platforms, on the other hand, do not provide an interactive experience. These environments consist of content that electronic devices cannot change, such as songs, movies, photographs, news articles, online images, and ads that appear on sites. These include digital copies of television programs, DVDs and CDs that have been shipped to the market. In summary, interactive social media environments are social media sites where users interact with each other and create their own content through their sharings and comments, while non-interactive social media platforms are the social media sites where users listen to music files and watch the video files that are added to the content without communicating with each other and sharing their own content.

Whether it is interactive or noninteractive social media environment, it is an undeniable fact that social media tools exist and occupy a huge part of modern life. Therefore, it is important that their uses and effects be searched in detail and people, especially parents, be aware of their both positive and negative effects on children and behave accordingly.

BACKGROUND

Increasing Trends About Social Media and Its Uses

In the 21st century, the breathtaking pace of the developments and innovations occurred in the field of high-tech and the increased networking and communication means as a result of these advancements have made people develop digital skills in order to keep track of this rapidly changing information era. Especially, the Z generation have found themselves in a highly digital world in which they have to acquire the digital skills. In today's world, there are children who actively use all the social media websites through the applications in their mobile phones. The fact that communication technologies and the internet are getting more and more accessible from every other day has made it possible to spread the so-called social media tools, applications and services (Boyd, 2008: 92). The fact that people can perform activities such as introducing yourself, getting to know others, sharing and spreading their own opinions and ideas, learning others' ideas and information, having fun, playing games, advertising and organizing events quickly and economically makes social media highly widespread all around the world. When compared to the real life, the cost of doing all the aforementioned activities in the virtual world seems to be quite economical in terms of business, time and other costs. It is also seen that the conditions of competition and business union in the real world change in virtual environment.

It can be said that the increasing trend of the internet which started to be used in the 1990s is continuing and social media is one of the important driving forces in this trend. The fact that naturally, human beings are in the effort of socialization and the decrease of the resources that he has to spend for this effort contributes to the continuation of this upward tendency in internet use. Nearly all Internet sites, such as shopping sites, training and research sites, news sites, forum sites, etc., have social media links in the Internet.

According to the 2017 We Are Social data (We Are Social, 2017), 3.77 billion people, which is equal to almost 50% of the world's whole population, use the internet while 2.8 billion people, which corresponds to 37% of all the people living in the world, use social media. 4.92 billion mobile users make up 66% of the world's population and 2.56 billion are social media users.

If these data are compared with that of the year 2016, it can be seen that the number of internet users increased by 10%, social media users by 21%, mobile social media users by 30% and mobile phone users by 5%. (We Are Social, 2017)

The most noticeable increase is seen in mobile social media users. This shows that social media users are willing to make their interactions faster, share instantly, and make comments.

The number of social media users and the attention-grabbing increase in their numbers have made social media sites an invaluable space for advertisers, especially since ads can be shown based on the user's profile, internet searches, age, and gender.

The readers, who can share their own opinions and discuss about the newspaper columns they read in the real world only with their friends around, can interact with many people who write their opinions under the related texts, read others' opinions, suggestions and comments and share their own thoughts with these other people thanks to social media tools.

Through social media, it is possible to reach a lot of information such as culture, art, entertainment, sports, news, weather, etc. in a very fast manner. Moreover, this situation is not only limited to reaching the information, but it also enables to follow the opinions, thoughts and shares of the other social media users regarding these issues and to have an influence on the decisions made upon these issues. In other words, the interaction among people can happen at an unprecedented pace and easiness. This quick interaction can produce many good or bad results for people, depending on what ideas are shared and disseminated. Communication has become faster and easier thanks to the benefits and opportunities offered by social media, but the negative effects and harms of social media are also increasing day by day. In other words, it is obvious that social media, which has high impact and thus can bring positive and negative effects when used, needs to be controlled. Every place where communication and interaction occur among people causes them to experience social, cultural, emotional and cognitive changes. This will inevitably have an impact on social, cultural and political transformations of societies. Trying to ensure that these transformations occur in a positive and intended way should be one of the priority tasks of the governments.

In addition to these aforementioned issues, many families are wondering who their children are interacting with, how their children interact with these other people and what content their children see and share in social media websites and want to control their interactions to protect their children. However, the nature of the social media it seems to be very difficult to control what their children do in these websites owing to the nature of these social media websites. Assuming that parents are one step ahead of their children in using technology, it is the first step towards protecting them. For this reason, professional supervision may be required to ensure that the inspection and control are healthy and safe. However, it is clear that the healthy communication and interaction between the family, in order to ensure that their children do not undergo any dangerous or harmful interactions and content in these social media websites, are a must and cannot be replaced with any technological tools or professional support.

The natural learning style for children is learning through observation; therefore, the forms, amount and purpose of the social media use of the significant others in the children's family and environment will serve as a model for children. In cases where the way parents, grandparents, and others benefit from social media is a positive example, the time spent by children in the virtual environment can be withdrawn at normal levels, and the unwanted content and the children's interaction with dangerous people can be avoided. If the family is a conscious user, the child may also be positively affected. Especially when used for entertainment, games and friendship, it is important to take into consideration that risks may increase; thus, children should be directed to real, physical environments instead of social media

or internet which is difficult to control. However, it may be efficient to ensure that this is done through being a good model for children in this issue rather than limiting or forbidding social media use of the children. Otherwise, the children's secretly using a false profile on social media or having a secret social media account with fake identities may make the problem even more intractable.

In the contemporary world, individuals should be raised and educated according to the modern requirements and in today's world, the structure and the content of the information, skills, values, competencies and all the other proficiencies that individuals are asked to possess are changing rapidly. Therefore, in such an environment where the requirements are changing at a high speed, it is necessary to be able to benefit from the social media platforms as a learning tool in order to help individuals obtain intended qualifications. At this point, the fact that there is a natural motivation for students to use social media websites can make these social media platforms a valuable educational tool. Through social media facilities, it can be quite easy to provide feedback, discuss ideas in a variety of dimensions, suggest solutions for problems individually or in groups, work part-time and track tasks. The use of this structure, which offers communication between individuals and groups in a bidirectional way, can be used by the educators, and the communication and interaction between the educators and the students can be rescued from the walls of the class and spread throughout the life.

Chau (2010) expressed that there are five main aspects of the use of social media. The first aspect is that people can express themselves creatively on social networking websites or applications since there are not many restrictions. Almost all the audiovisual elements can be used to express whatever it is in people's minds freely. The second aspect is that social media provides an easy way to share information. It is extremely easy to share ideas, opinions, thoughts, criticism, emotions and so to the world at an instant with only several clicks of the buttons on computers, tablets or smartphones no matter where people are. Social media provides quick and easy way to share anything people want with other users on the social networking applications and websites. The third aspect is that social media provides informal support of other's work because people can learn about what is going on in the world through others' sharings on the social media facilities. Another aspect of the use of social media is that people acquire general understanding and respect of other people's forms of expressions and the last aspect is that social media provides an alternative way of socializing. From these aspects, it can be understood that social media is used in three main ways by its users, which are for communication, entertainment and learning.

Social Media as a Means of Communication

The fact that access to internet via mobile devices has become a popular habit has required the development of web pages designed for big screen devices such as computers to be compatible with small screen devices. Many social networking sites have developed applications for use on mobile devices and have benefited from the location and time advantages of interacting with mobile devices. However, this also necessitated ways for people to write their messages shorter. It is seen as a habit in social media to be able to express oneself by sharing pictures or videos using shorter sentences, few words, abbreviated sentences and words.

People who use social media to make new friendships and to communicate more with their existing friends are also following the frequent brands and the celebrities they like. Their shares usually include their families, friends, places they go on holidays, their excursions, even what they eat and drink, others' shares they like and activities that they do.

At present, it is observed that the vast majority of young and middle-aged populations are connected to social networks via mobile devices. It is not surprising that these people, who have discovered the existence of a large virtual world with the increased ease of access to the internet, go online and use the online websites as their initial and primary resources to find the necessary information no matter what the problems they face. Taking recommendations using social media even for shopping can be given as an example of the increased communication purpose among users.

Social Media as a Portal for Entertainment

Social media is used by children as a gaming tool. This can also cause unique problems, apart from internet and computer-based problems in general. Children find the games including no human interaction boring after a certain period of time. However, the online games played with other children are played a lot and for hours in a non-stop way with the same enthusiasm at the very beginning due to the social characteristics such as competition, business association, cooperation, and the desire to prove themselves these online games have. In addition to being just a way to have fun, these games have become a new way of making new friends and killing time. Considering the fact that a lot of advertisements are being displayed during these games, it is possible for children to encounter inappropriate contents, sexuality, violence, abusive speech and other undesirable situations. The worse is the fact that some games spread rapidly because people earn money through these games and the fact that many of these games include violence, killing, crime, torture and even rape and thus they pose serious threats for children.

It is important to use the games played on social media for educational purposes, besides as a way to find entertainment and friends. In other words, helping children acquire the desired knowledge, skills, attitudes and values through these online games children play should be accepted as an important objective. This objective cannot be reached by increasing the control and developing new control mechanisms. Families should be a part of the games designed for educational purposes and allowing for social interactions in order to achieve this desired objective.

Social Media as a Learning Tool

In today's world, children are required to have the ability to use modern technology and they are expected to be able to conduct research, possess problem solving skills and own creative and critical thinking skills and therefore, it is imperative that children be conscious in the issue of social media use. In this regard, parent and teachers have great responsibilities. In order to fulfill these responsibilities, parents and teachers must have the skills to use social media and internet. Families should be informed about the risks caused by social media and internet use.

As a general view, face-to-face education can be considered to be more effective than virtual environments in terms of developing healthy human relationships. As one of the important reasons causing this situation, it is observed that due to the fact that more than one sensory organ is active during face-to-face communication and the communication is made more versatile, learning is much easier. However, education technologies can also be effective in increasing academic success, where they can attract students' attention and influence their motivation. One of the natural characteristics of technologies such as computers and the internet is that users can achieve attention without any extra effort. This natural state of involvement can be used by teachers to increase students' use of educational technologies.

It can be said that smart board, computer, projection, internet and social media technologies have the desired educational benefits such as hosting and presenting educational content, increasing interactions between students and content, enabling cooperation among students, providing collective or independent research and discussion opportunities.

Many video sharing sites, especially YouTube, offer a rich archive of content. These contents, which are used for fun, learning and communication with other people, bring with it a lot of problems due to being prepared for income generation. Content rating appropriate to the age of the users is inadequate, especially when it is necessary to verify the age of videos that contain violence and sexuality.

Factors That Affect the Use of Social Media

The main reasons for the widespread use of social media are the development of technologies for the computer, internet and mobile devices and their pricing at the affordable level. However, social media has become that much widespread because the infrastructure variables mentioned can be used to meet some of the basic human needs. Social media, through which people can quickly meet their needs like researching, recognizing, discussing and sharing the values of the society they live in, continue to increase their influence because these humanly needs are far from being met by the family and the environment that the city life shapes. The fact that both parents work, the number of siblings' people have is small or the increased number of only children, and the disconnected relations among family members reduce and inactivate communication in the family. If the children in the family are a bit lucky, one of the parents may spend time with them at least in the evening, chatting with them, observing their mysterious worlds, their curiosity, and their development. Otherwise, they may be drawn to their worlds, which they built for themselves with their tablet computers in their hands after dinner. It would have been unnecessary to worry anyhow if they could build that world in the direction of their own beautiful thoughts. However, internet and social media interactions, messages given through games, images and messages engraved with advertisements into tiny minds are very effective in shaping them. Along with their own worlds, their minds will grow unhealthy, full of the ideas and emotions imposed by the internet world broken from the family and society they live in.

For children who have difficulty expressing themselves and feeling constantly alone, the internet creates an escape environment and detaches them from the living reality. In addition, the need to surf and find friends in the social media makes the children addicted to the internet environment. Their exposure to unwanted content and interaction by hiding their age and identity can pose great danger for them (Kırık, 2014). As the social media begins to fill the large gap created by the parents, the amount of time parents spend with their children has begun to decrease more. This can result in a loss of communication in the family and thus a weakening of family ties. Individuals with low self-confidence, poor communications in their surroundings, and no suitable social environments can try to make themselves more visible on social media. Poor communication and interaction among family members together with loneliness, which is mostly felt during adolescence, can leave children unguarded and thus they can be affected more easily by the people or groups they interact with on the social media websites.

Risks and Benefits of Social Media

Risks of Social Media

It is seen that the use of the internet is increasing day by day and social media is used not only by adults and young people but also by children. Thanks to the devices that have a touch screen, even children who are illiterate have become internet users. What children can encounter on the Internet, where they are left alone for playing games and watching videos, should be regarded as an important problem by adults.

Children discovering the virtual world via game applications and video sites also become active social media users after learning to read and write. It is quite easy to get the attention of the children by evoking their senses of curiosity. Especially if the advertisements can be watched by the content providers without considering the age of the users, it should be seen as a serious problem. In addition to this, the fact that some ill-minded adults can show themselves as children by giving misinformation about their real age and try to interact with real children users in social media sites should be considered as a danger, as well.

One of the major threats on the internet was pornography via text, pictures, audio and video, but it seems difficult to prevent the spread of these contents through social media, while the sources of these contents can be identified and closed down. Moreover, the work of those who want to attract children to themselves by creating false profiles through social media seems fairly easy.

In addition to these harmful and unwanted contents, due to the social media contents highlighting the promotion of the substances and drugs potentially hazardous to human health, and attempts of the seemingly friendly terrorists organizations to deceive people and increase their popularity among young people and the similar troublesome sharings directly related to human factors that can be encountered on social media platforms can influence children negatively, cause the problems of sexual exploitation of children, expose children to the recognition of deviant thoughts and heresies that can lead them to commit suicide and even cause them to confront unwanted situations like obscenity and prostitution which may derange their mental health. It is a well-known phenomenon that unsafe and unconscious use of the internet may cause long-term negative effects on children and adolescents and result in social and psychological problems (Bayzan & Özbilen, 2011).

Owing to their inherent desire to share, people can share a lot of things such as their writings, photos, videos and links of commercial goods on their social media accounts. However, in these sharings, people are expected to behave as carefully and meticulously as they do in their daily life while choosing their clothes, eating, talking to others around, and even walking. Responsible people need to think about how people can see what they share, how they can be seen, and how the shared message is meant to be understood. Benefits like expressing yourself easily, sharing information quickly, helping others to share their own experiences and ideas, and discussing a variety of topics are expected to result in unintended consequences when the expected social media is not used carefully and consciously. Among these negative consequences are the uncontrolled display of private life in front of many other users' eyes, exposure to violence and sexuality, dissemination of information that may be dangerous to humans and nature, confrontation with targeted content disregarding social order and rules, misleading product advertising, and exposure to advertisements.

In short, it can be said that if parents and educators are not aware of the potential risks and threats that social media pose for children, it may be dangerous for children more than it is realized. Undiy-aundeye (2014), in her study in which she discussed the benefits and risks of the use of social media

by children and adolescents, put the aforementioned negative aspects of social media on children into following categories:

- **Cyberbullying and Online Harassment:** It can be said that this is the most dangerous risk that social media pose for children and it is the most common one. Through social media, cyberbullying or online harassment can be realized as “from an adult to children” or “from peers to peers/ from children to children”. Social media is an easy and potential platform to spread fake, artificial, embarrassing and hostile information about others, which may affect children profoundly and cause depression, anxiety, isolation and suicide as a result.
- **Sexting:** Social media provides an easy platform to share any kinds of content for its users and some people can use the social media facilities to spread their own sexual messages, videos, photos or information and children users may see these sexually explicit sharings of others or even children may make such sharings and become targets of child pornography. Sexting can be used as a way of cyberbullying as well.
- **Facebook Depression:** Hankings and Jia (1999) expressed a new phenomenon called Facebook depression, which can be defined as the negative emotional mood or situation that occur when children spend too much time on social media websites. Especially, adolescents who feel lonely and have trouble making friends and becoming a part of social peer groups in their environment can use social media websites to avoid this loneliness and may start to use these websites more than enough and thus suffer from a more severe social isolation that may cause them to develop addiction.
- **Defective Social Relationship:** Directly related to the aforementioned item “Facebook depression”, children who spend too much time on social media platforms may lose wonderful opportunities of real conversations and face-to-face sharings in their real lives because they spend little time with their families and actual friends, which weakens the family bond and limit interaction with actual people. Real conversations and face-to-face communication make people happier and help them avoid depression, loneliness and any kind of negative emotional mood.
- **Distorted Senescence of Reality:** In today’s world, children are extremely active in social networking websites and they may get a different kind of sense of reality in these virtual environments. Children may think that every relationship they make on these websites and every contact they have through these websites are real and totally harmless. They may not be aware of the others that try to contact with them and give harm to them through these websites. Making virtual friends are not always safe. Children may make online friends and start to share their privacy with these friends without noticing that these sharings may be harmful in the future. In addition to these, due to the harmful content of the advertisements seen on social media websites may affect children negatively and change their understanding of what is normal and abnormal.

Benefits of Social Media

According to Chau (2010), social media applications and social networking websites can also be effectively used for the benefits of children, as well. Chau (2010) states that social media is a great platform for children to socialize, increase their creativity, interact and learn. Rosen (2011) put forwards that social media websites can be utilized as an alternative way to increase student motivation and participation in

educational activities. Clark-Pearson and O’Keeffe (2011) suggest that social media facilities can help students with their assignments and group projects.

In addition to these educational benefits of the use of social media, it also provides a good platform for children to stay connected with their peers and ease their communication with all the people around who they get to know in their social environments such as family circle, school and gyms (Ito, 2008). Rosen (2011) stresses the importance of social networking websites in that these websites help shy children interact with others in a safe and virtual environment so that their shyness does not occur as a problem that blocks their communication. Ito (2008) suggests that social media websites and applications can be used as a platform for children to find new friends who share the same tastes in different walks of life and these websites are also great avenues where children share their interests in everything and everybody with other users (Clark-Pearson & O’Keeffe, 2011). Social media facilities can be used as social platforms to find self-help suggestions from experts in different problem areas when needed, especially when children go through hard times (Nielsen Online, 2009).

In addition to these social benefits, another advantage of social media is that children can make friends from diverse backgrounds and different cultures from all over the world so that they can develop a cultural awareness (Clark-Pearson & O’Keeffe, 2011), which may lead them to organize social events highlighting cultural awareness in order to make good impacts on policymakers while making decisions on important issues about the services provided to the youth all around the world.

In short, social media websites and their applications on smart devices can serve as great platforms for children to increase their learning experiences by participating in different and effective educational activities; to look for social, medical, and professional advice from the experts who have their accounts on these websites especially when children experience difficult times; to socialize and interact without feeling the stress of face-to-face interactions with new people and to increase their cultural competence by making new friends from different backgrounds and countries. Through social media, children can play an active role in policymaking process.

Undiyaundeye (2014) discusses the benefits of the use of social media by children and adolescents in her study and categories these benefits as follows:

- **Literacy Skills:** Children can be provided with excellent social media applications to help them learn to read and write and improve their skills in digital reading and writing.
- **Numeracy Skills:** Children can learn how to count through the games presented in the social media websites and applications on smartphones and tablet Pcs.
- **Social Skills:** Social media means a great amount of easiness in communicating and interacting with different people from all around world, which directly improve their social skills in the most positive ways. In social media, children are observed to show cooperative and helping behaviours. Furthermore, children may follow their role models through social media and if these role models are chosen correctly, this may affect their development positively. Children can also increase their awareness about what is happening in the world and this may enable them to become more responsible human beings who always try to act upon human rights and protection of the nature. In addition to these social benefits, children may relax as they use social media just for fun, which help them relieve boredom. Furthermore, with their increased motivation and skills, as they grow older and become more mature, they may start use social media to create global contacts to get career information and contact with important figures in the business, political and art world.

- **Intellectual Skills:** Children can improve their problem solving and critical thinking skills through their sharings and comments on others' sharing and they can learn to respect others' points of view and start paying more attention to universal morals and values as they interact with people from all over the world.
- **Creative Skills:** Children try to show themselves in an interesting and different way to attract others' attention and obtain social acceptance. They can cut and design their photos and videos into the applications included in the social media websites so that they may develop new digital skills to promote themselves as true friends and good people who care others.

Table 1. The positive and negative effects of social media on children

The Positive and Negative Effects of Social Media on Children	
Positive Effects	Negative Effects
<p><i>Social Media as a platform to communicate:</i></p> <ul style="list-style-type: none"> • To make new friends and expand social circles • To get to know people from different backgrounds and countries and thus improve cultural awareness • To seek for educational, relational, vocational and medical advice • To become a part of the global world in different walks of life • To come together with the related people to organize social events and try to persuade policymakers 	<p><i>Cyberbullying or Online Harassment:</i></p> <ul style="list-style-type: none"> • To suffer from the release of private/secret personal information by ill-willed users • To suffer from the spread of fake and offending gossips about oneself • To feel humiliated and embarrassed by other users in an unfair way <p><i>Sexting:</i></p> <p>To share audiovisual files including sexual content and suffer from negative reputations and not being able to avoid being contacted with other users on this issue</p>
<p><i>Social Media as a platform to have fun:</i></p> <ul style="list-style-type: none"> • To spend fun time and relax • To overcome loneliness and boredom • To play games and increase digital skills • To increase their rivalry skills 	<p><i>Facebook Depression:</i></p> <ul style="list-style-type: none"> • To spend too much time on social networking websites and lose track of the relationships among family members and friends • To be afraid of not having enough likes and losing the perceived online support
<p><i>Social Media as a platform to learn:</i></p> <ul style="list-style-type: none"> • To develop literacy and numeracy skills with the help of related and intended applications • To increase motivation in educational activities • To increase creative thinking and critical thinking skills • To ease assignments and group projects • To make educational activities more interesting and accessible 	<p><i>Defective social relationship:</i></p> <ul style="list-style-type: none"> • To get stressed while making face to face contacts with the people around and be addicted to social media to communicate with others <p><i>Distorted Senescence of reality:</i></p> <ul style="list-style-type: none"> • To fail in distinguishing what is normal and what is not normal or what friendships are real and what friendships are fake

FUTURE RESEARCH DIRECTIONS

In the presence of the qualifications that the 21st century information age forces people to obtain, no one can deny the importance of the digital literacy. Children of this age should acquire the digital skills that they are going to need in the rest of their life to be able to meet the needs of the information age they live in. Therefore, parents cannot prevent their children from using social media tools. However, children of this age should be led to obtain digital literacy and in addition to these high-tech requirements, they should be taught to possess media literacy. Social media tools are excellent platforms for the children of this age to obtain the 21st century skills and practice them to deal with the requirements of the information age. Considering the risks of social media tools that can be detrimental to children's

psychological, mental and physical health, one of the most important 21st century skills gain increasing importance. This skill is the media literacy.

Today, people reach information through an interwoven system of media technologies. Media literacy is an essential skill which means the ability to access, analyze, evaluate and create media. With the help of this skill, children get the necessary competence to understand what information they share or reach on their social media accounts is safe and what information is hazardous. Therefore, prospective educational research on social media and children should focus on how media literacy skills can be taught to children effectively.

Another important point that should be given importance in future research on this issue is about the preventive guidance studies. Preventive guidance services should be provided to children, teachers and parents at school so that they can become informed about the risks of social media. Therefore, future research should focus on how schools, families, police and related authorities can work together to create psychoeducational programmes through which children can be taught to protect themselves against any kind of threats on social media.

CONCLUSION

In the 21st century, the era people live in are called “information era” and this era is marked with high-tech developments that change the way people live in every part of their daily lives. Among these high-tech developments, social media tools seem to be an indispensable occurrence in people’s daily routines owing to the increase in access to the Internet and smart phones. Although most adults use social media at high amounts, the real users of these social media tools are the children of this age and thus the benefits and risks of these tools are hold under the microscope meticulously by educators and parents. At this point, what educators and parents should do become significant. Table 2 shows some suggestions for them.

Table 2. What should be done by parents and educators

WHAT SHOULD BE DONE?	
<i>Suggestions for Parents (Ehmke, 2017):</i>	<i>Suggestions for Educators (Clarke-Pearson & O’Keeffe, 2011):</i>
<ol style="list-style-type: none"> 1. Parents should curtail their consumption of social media use first and set a good model for their children. 2. Technology-free zones inside the houses where family members are not allowed to use any kinds of technological devices or gadgets and technology free hours during the day when family members stop using their electronic and technological devices and share these moments by talking and doing activities together instead should be established as a strict family rule. 3. Children should be ensured that their parents are always willing and ready to help them with their problems; spend time together with them and talk to them about their days, schools, hobbies and interests. 4. Parents should ensure that they trust their children no matter what happens by letting them know they are good kids. Children should know that they can consult their parents about anything doubtful on their social media accounts. 5. Parents should establish direct communication with their children rather than distant monitoring in terms of checking and controlling their children’s social media sharings. They should never act like spies. Instead, they should talk to their children if they doubt that something is wrong. 	<ol style="list-style-type: none"> 1. Educators should advise parents to talk to their children about their online use and be in an open conversation with their children on important issues related to the risks of social media. 2. Educators should recommend parents to be more technologically competent than their children, especially on social media websites. 3. Educators should inform parents about the correct use of social media for learning, communicating and entertaining purposes and train them about how to set a good example for their children in these beneficial uses. 4. Educators should train parents on the risks that social media can pose to their children.

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KEY TERMS AND DEFINITIONS

Cyberbullying: The act of spreading fake, artificial, embarrassing, and hostile information about others, which may affect children profoundly and cause depression, anxiety, isolation and suicide as a result.

Digital Literacy: The ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills.

Facebook Depression: The negative emotional mood or situation that occur when children spend too much time on social media websites

Media Literacy: The ability to access, analyze, evaluate, and create media.

Sexting: The act of spreading one's own sexual messages, videos, photos, or information through social media.

Social Media: Websites and internet-based applications which enable users to create and share content or participate in social networking.

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Chapter 4

Psychological Benefits and Detrimental Effects of Online Social Networking

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ABSTRACT

With the growing prevalence of wireless communication technologies, social networking sites (SNSs) such as Facebook, Twitter, etc. have become an important venues for interpersonal communication. This chapter provides a detailed overview of the current literature on online social networking with respect to its beneficial and detrimental effects on psychological wellbeing. In particular, it provides empirical evidence for the associations of SNS use with depression, self-esteem, loneliness, subjective wellbeing, social anxiety, attachment, personality traits, and addiction. Furthermore, it identifies the characteristics of individuals who are more prone to social networking, and presents possible mediators and moderators playing a role in the relationship between social networking and mental health. The chapter overall provides a comprehensive guideline to parents, researchers, educators, healthcare, and communication professionals to the issue of online social networking from a psychological perspective.

INTRODUCTION

Online social networking plays an important role in the way people communicate and interact. It has benefits for children and adolescents such as socialization, communication, increased learning opportunities, and assessing health information, however it has also some detrimental effects such as cyberbullying, online harassment, and sexting (O’Keefe & Clark-Pearson, 2011). The statistics show that there were 2.34 billion social network users worldwide in 2016 and the number is expected to reach to 2.95 billion by 2020 (Statista Facts on Social Networks, 2017). The average social media user spent 1.7 h per day

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on social media in the USA and 1.5 h in the UK, with social media users in the Philippines having the highest daily use at 3.7 h. (Statista, 2017).

The growing popularity of online social network sites such as Facebook, MySpace, Twitter has attracted the attention of many scholars, and they have shown particular interest in understanding the psychological correlates of SNS use. Accordingly, this chapter aims to provide a detailed overview of the current literature with respect to the benefits and detrimental effects of online social networking on psychological well-being. To do so, it reviews current empirical evidence for the associations of SNS use with various mental health outcomes including depression, self-esteem, loneliness, subjective well-being, social anxiety, attachment, personality traits and addiction. Furthermore, it identifies the intrapersonal characteristics of individuals who show more tendency to use SNSs. Thus, this chapter would contribute to parents, researchers, educators, healthcare and communication professionals in providing theoretical information and practical implications of online social networking.

Throughout this chapter, several issues are addressed. First, a general introduction to the definition and history of online social networking is given and the emergent interest in this concept is discussed. Second, the empirical research focusing on the relationship between online social networking and psychological variables are systematically reviewed. A comprehensive search is conducted to gain understanding of the existing literature about the benefits and detrimental consequences of online social networking. For this purpose, SSCI, EBSCOhost, Psych ARTICLES, Scopus, and ProQuest electronic databases are consulted for the literature search using several keywords such as *social networking, psychological well-being, mental health, self-esteem, depression, anxiety, loneliness, personality, addiction, attachment etc.* The priority is given to the articles published in the last decade. Finally, practical implications and suggestions for future research are proposed through addressing plausible moderators and mediators in relation to social networking.

BACKGROUND

Social networking websites (SNSs) have become important venues for interpersonal communication and relationships. SNSs are virtual groups where personal information via profiles are shared, meet with other people based on common interests, and contact with people by writing messages or adding them as friends (Krämer & Winter, 2008; Kuss & Griffiths, 2011). The history of social networking sites dates back to 1997, when individuals are linked via six degrees of separation (Boyd & Ellison, 2007), then, the society is viewed as becoming increasingly inter-connected. Without considering time and space, individuals connect with one another online and SNSs have become an important leisure activity for many people (Kuss & Griffiths, 2017).

The sites may have different orientations related with work (i.e. LinkedIn), romantic relationship (i.e. Friendster), sharing interests (i. e. Myspace) or social connection (i.e. Facebook) (Ellison, Steinfield, & Lampe, 2007). The most popular networking sites are respectively Facebook, Whatsapp, Youtube, Facebook Messenger, WeChat, QQ, Instagram, Qzone, Tumble, Twitter, etc (Statista Facts on Social Networks, 2017). In 2004, Facebook was launched as an online community for students at Harvard University (Boyd & Ellison, 2007) and has since become the world's most popular SNS. Currently, Facebook is the most dominant SNS in the U.S with 1.97 billion registered users (Statista Facts on Social Networks, 2017). One reason Facebook is the most popular social networking site is the convenience it

provides for users (Kuss & Griffiths, 2017). Social information is easily shared and can be stored among members, therefore comments and feedbacks are given.

Social networking is considered as a way of being and relating with others (Kuss & Griffiths, 2017). Especially for young adults, technology is an essential part of their lives. It is such a lifestyle that necessitates them to connect everytime. This has two important consequences. First one is the maintenance of the status quo and second one is the need not to miss out and to stay up to date (Kuss & Griffiths, 2017). Given the substantial importance and prevalence of SNSs in the lives of young people today, it is of crucial importance to understand the psychological correlates of SNS use. Thus, the following section of the chapter reviews the empirical research focusing on the psychological benefits and detrimental effects of online social networking.

MAIN FOCUS OF THE CHAPTER

The popularity of SNSs has raised questions among scholars about their potential impact on mental health (O’Keefe & Clark-Pearson, 2011). Research on social media typically focuses on its benefits; considerably less is known about the dark side of social networking sites. Social networking and online communication in general is linked to psychological well-being such as increase in self-esteem, sense of belongingness, self-disclosure, and emotional support as well as decreases in social anxiety and social isolation (see Best, Manktelow, & Taylor, 2014 for a review). On the other side, the frequent use of social media is linked to unmet need for mental health support, poor mental health, higher levels of psychological distress and suicidal ideation (Sampasa-Kanyinga & Lewis, 2015; Kim, 2016).

Accordingly, there is an increased interest in the well-being of students at school and potential problems related with students’ use of socio-digital technologies (i.e., the mobile devices, computers, social media, and the internet). In addition to the contribution of social activities to the creativity of individuals, there is a threat of being addicted to or having compulsive behavior which may result in general and school-related mental health problems. To illustrate, researchers have revealed that there is a reciprocal relationship between excessive use of digital technologies and school burnout among adolescent groups (Salmela-Aro, Upadaya, Hakkarainen, Lonka & Alho, 2016). That is, school burnout is associated with later excessive online social activities, which in turn is related with later school burnout.

Social Networking and Depression

The majority of empirical studies have linked the prolonged use of SNS with higher levels of depression (see Pantic, 2014 for a review). As defined by American Academy of Pediatrics (2011), “Facebook depression” is a phenomena in which teens spend frequent time on SNSs and exhibit symptoms of depression (Jelenchick, Eickhoff, & Moreno, 2013; O’Keefe & Clarke-Pearson, 2011). Thus, the existing research provide promoting evidence for Facebook depression. For instance, research has shown that the time spent on social networking is positively correlated with depressive symptoms among high school students (Pantic, Damjanovic, Todorovic, Topalovic, Bojovic-Jovic, Ristic, & Pantic, 2012) and young adults (Rosen, Whaling, Rab, Carrier, & Cheever, 2013). Several mechanisms might underlie the relationship between social networking and depression.

First, individual’s less social engagement and less interaction with others as a result of internet use might explain this relationship (Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay, & Scherlis, 1998).

As stated previously, the time spent on internet has considerably increased with the technological advances, which in turn influences the quality of interpersonal communication and interaction within the family and social environment (Pantic, 2014). A longitudinal study by Kraut and his colleagues (1998) has shown that as the time spent online increases, the communication with family members and the size of local social circle decreases. This situation further leads to feelings of depression and loneliness. Indeed, the online communication is shallower than everyday face-to-face communications (Pantic, 2014) and internet use replaces stronger ties with weaker ties in social relationships (Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay, & Scherlis, 1998). This might explain the negative impact of internet use, in particular, social networking on psychological well-being.

Second, increased levels of screen viewing and decreased levels of outdoor physical activities might explain the link between online social networking and depression (Pantic, Damjanovic, Todorovic, Topalovic, Bojovic-Jovic, Ristic, & Pantic, 2012). For instance, a longitudinal study with a 10-year follow up (Lucas, Mekary, Pan, Mirzaei, O'Reilly, Willett, ... & Ascherio, 2011) has shown that older adults who are most physically active (more than 90 min/a day) and spend less time on TV (0-5 hours/a week) report lowest level of depression than those who are less physically active (less than 10 min/ a day) and spend more time on TV (more than 21 hours/ a week). From this finding, it can be argued that as the time spent on physical activity decreases and/or the time spent on watching TV increases, the risk of developing depression increases (Lucas, Mekary, Pan, Mirzaei, O'Reilly, Willett, ... & Ascherio, 2011).

Third, individuals' incorrect perceptions regarding the lives of online friends might account for the relationship between online social networking and depressive symptoms. For instance, Chou and Edge (2012) have shown that people who spend more time on Facebook are more likely to perceive others as happier and having better lives than themselves. In contrast, people who spend more time on going out with friends are less likely to have these perceptions. Furthermore, people who have more friends on Facebook tend to more perceive the life as fair and less perceive others as happier; however, people who have personally unknown Facebook friends tend to have more perceptions of others having better lives than themselves. It is argued that with a greater extent of social networks, Facebook users tend to employ heuristics (i.e. availability heuristic) when they make judgments or form impressions about others (Chou & Edge, 2012). In addition, they tend to attribute others' actions more to stable personal disposition than situational factors (i.e. correspondence bias) especially when they do not know the person well. These distorted perceptions, in turn, might increase people's vulnerability for developing depression (Pantic, Damjanovic, Todorovic, Topalovic, Bojovic-Jovic, Ristic, & Pantic, 2012).

The existing research also point that the type of use and the quality of social interactions are important determinants for developing depression. For instance, Davila and his colleagues (2012) have shown that depression is not associated with the quantity (frequency) but the quality of online social interactions (how positive or negative it is). In particular, people with less positive and more negative interactions in social networking report more depressive symptoms over time. Furthermore, greater use of Facebook activities for impression management and less online friends are linked to more depressive symptoms (Rosen, Whaling, Rab, Carrier, & Cheever, 2013).

Some of the studies however reveal no significant relationship between SNS use and depression among older adolescents and young adults (Jelenchick, Eickhoff, & Moreno, 2013; Kross, Verduyn, Demiralp, Park, & Lee, 2013; Simoncic, Kuhlman, Vargas, Houchins, & Lopez-Duran, 2014). Interestingly, in one study, the relationship becomes significant when it is moderated by sex and personality trait (Simoncic, Kuhlman, Vargas, Houchins, & Lopez-Duran, 2014). That is, increased Facebook activity is linked to lower levels of depressive symptoms only among young female adults with high neuroticism scores. It

is argued that SNS use may be beneficial for vulnerable individuals, in particular, for females high in neuroticism in terms of promoting adaptive social interactions (Simonic, Kuhlman, Vargas, Houchins, & Lopez-Duran, 2014). The negative association between online communication and depression is also supported by a study conducted by Bessiere, Pressman, Kiesler and Kraut (2010). In their study, researchers reveal that people who use the internet for health-related purposes show small increase in depression whereas those who use the internet for the purpose of communication with family and friends show declines in depression. It is argued that the use of SNSs not extensively may strengthen social ties with family members and close friends, and thus contributes to individual's mental health (Bessiere, Pressman, Kiesler, & Kraut, 2010).

Besides, SNSs, specifically Facebook, can be used for early detection and assessment of depression (Park, Lee, Kwak, Cha & Jeong, 2013). Since depressive prone individuals are more likely to use depression related Facebook activities, the identification of early symptoms may predict future depression. In a study, researchers have examined the social network determinants of depressive symptoms which distinguish depressed individuals from those who are not depressed (Park, Lee, Kwak, Cha, & Jeong, 2013). As a result, depressive symptoms are positively correlated with individuals' Facebook activities such as accumulated app points and number of viewed tips, and negatively correlated with the number of friends and location tags. Supporting findings of other studies (Chou & Edge, 2012; Rosen, Whaling, Rab, Carrier, & Cheever, 2013), having more online friends might protect individuals from developing depression.

In addition to Facebook, depression is found to be common among users of Tumblr, which is also a widely used SNS (Cavazos-Rehg, Krauss, Sowles, Connolly, Rosas, Bharadwaj, ... & Bierut, 2017). Popular depression-related Tumblr accounts are monitored in order to gain a better understanding of the depression, self-harm, and suicidal content that is being shared on Tumblr. Posts are randomly selected by the research team and coded based on predetermined topics. Common themes are found as self-loathing, loneliness/feeling unloved, self-harm and suicide. Cavazos-Rehg's study (2017) is an important first step at better understanding the displayed depression-related references on Tumblr. Considering the depression and suicidal content observed on Tumblr, the findings suggest a need for suicide prevention efforts to intervene on Tumblr and this platform can be used in a strategic way (Cavazos-Rehg, Krauss, Sowles, Connolly, Rosas, Bharadwaj, ... & Bierut, 2017).

Social Networking and Self-Esteem

The relationship between online social networking and signs and symptoms of depression might also be explained by changes in self-esteem (Pantic, Damjanovic, Todorovic, Topalovic, Bojovic-Jovic, Ristic, & Pantic, 2012). Self-esteem, the evaluative aspect of the self, is a belief in one's capacity, worth and significance (Coopersmith, 1981). The systematic review of recent research shows mixed findings about the relationship between SNS use and self-esteem (see Pantic, 2014 for a review). In particular, Gonzales and Hancock (2011) propose two different theoretical explanations for the possible impact of social networking on individual's self-esteem. First, based on *objective self-awareness theory* (Duval & Wicklund, 1972), researchers suggest that conscious awareness of one's self (i.e. through mirror, photo or autobiographical information) influences impressions of the self negatively. Extending this rationale to SNSs, viewing one's personal profile containing self-descriptions and pictures may increase self-awareness, thus diminish one's self-esteem.

Second, based on the *hyperpersonal model* (Walther, 1996), researchers state that online communication enables individuals present one's positive (or preferred) aspects of personality which in turn may enhance one's self-esteem (Gonzales & Hancock, 2011). Supporting the process of *selective self-presentation*, researchers have shown that attention to one's own profile (i.e. viewing and updating information) influences impressions of the self positively (Gonzales & Hancock, 2011). As Krämer and Winter (2008) state, SNSs are ideal venues for managing self-presentation, and accordingly, the modifiable nature of self-presentation in computer-mediated communication enhances one's self-esteem (Gonzales & Hancock, 2011).

In a related vein, a group of researchers has shown that positive feedback on the profiles of networking sites enhances adolescents' social self-esteem (Valkenburg, Peter, & Schouten, 2006). That is, adolescents who receive positive feedback on their profiles report more positive evaluations for their physical appearance, romantic attractiveness and for their ability to form close relationships. However, adolescents who receive negative feedback on their profiles report more negative self-evaluations on these dimensions. These findings can be explained by adolescents engagement of *imaginative audience behavior* (Elkind & Bowen, 1979). In general, adolescents think that they are watched and evaluated by others, thus they are overly concerned with their self-presentations. Accordingly, as shown by researchers (Valkenburg, Peter, & Schouten, 2006), the feedback received on profiles in SNSs may affect individual's level of self-esteem either positively or negatively.

Even though a few studies have revealed no relationship between self-esteem and SNS use (Krämer & Winter, 2008; Wilson, Fornasier, & White, 2010), other studies have demonstrated that people with low self-esteem tend to spend more time online (Joinson, 2004; Mehdizadeh, 2010). For instance, those individuals prefer online communication more than face-to-face communication (Joinson, 2004). In addition, people's level of self-esteem is negatively correlated with time spent on online ('Facebook') activities and their narcissism scores are positively correlated with self-promotion content of these activities (Mehdizadeh, 2010). From these findings, it can be argued that lower levels of self-esteem predicts more social networking since it provides benefits to individuals in terms of enhancing their psychological well-being (Ellison, Steinfield, & Lampe, 2007).

Besides, a study conducted by Fioravanti, Dettore, and Casale (2012) show that female adolescents' preferences for an online social interaction (POSI) partially mediates the relationship between self-esteem and internet addiction. That is, low levels of esteem predicts internet addiction directly and indirectly through higher levels of POSI. More interestingly, *the opportunity to escape from the real world* appears as an important characteristics of computer-mediated communication in the relation between self-esteem and POSI. Even though the findings of aforementioned studies link low self-esteem to higher frequency of SNS use, given the cross-sectional nature of the studies, no causal inferences can be drawn with regard to these relationships.

Social Networking and Subjective Well-Being

Subjective well-being (SWB) in general is comprised of affective (i.e. positive and negative affect) and cognitive components (i.e. satisfaction with life) (Pavot & Diener, 2004). The existing literature has yielded mixed results for the relationship between social networking and subjective well-being. For instance, a study has shown that as the use of Facebook increases, people report more negative feelings and less satisfaction with their lives over time even when the level of loneliness is controlled (Kross, Verduyn, Demiralp, Park, & Lee, 2013). Similarly, Bevan, Gomez, and Sparks (2014) also reveal that

the time spent on SNSs is negatively correlated with the quality of life. In contrast, direct interaction with others (face-to-face or phone) is associated with increases in affective well-being (Kross, Verduyn, Demiralp, Park, & Lee, 2013).

On the other side, researchers have shown that the intensity of Facebook use among young adults is correlated with increased life satisfaction scores (Valenzuela, Park, & Kee, 2009), and positive feedback on the profiles of friend networking sites enhances adolescents' life satisfaction via social self-esteem (Valkenburg, Peter, & Schouten, 2006). From these finding, it can be argued that positive evaluations received on a SNS profile enhances individual's self-esteem, which in turn reflects upon on subjective well-being. Supporting this notion, researchers has shown that the Facebook use provides benefits especially for individuals with lower levels of self-esteem and life satisfaction (Ellison, Steinfield, & Lampe, 2007).

In another study, Fox and Moreland (2015) have formed a focus group from Facebook users to understand individuals' negative psychological and relational experiences tied to the SNSs and their utilization (e.g., connectivity, visibility, accessibility, persistence, and social feedback). As a result, five themes related to Facebook stressors have emerged as managing inappropriate or annoying content, being attached, lack of privacy and control, social comparison and jealousy, and relationship tension and conflict. Results also demonstrate that despite having experiences of negative emotions, Facebook users still feel pressured to connect the site frequently due to the fear of missing out and to keep up with relationships. Even though users state that Facebook is unimportant, they later report significant unpleasant events associated with Facebook (Fox & Moreland, 2015).

Considering psychological well-being, scholars have introduced new concepts in relation to social networking. For instance, recent research (Oberst, Wegmann, Stodt, Brand & Chamarro, 2017; Buglass, Binder, Betts & Underwood, 2017) suggests that high engagement in social networking is partially due to what has been named the *fear of missing out* (FOMO). FOMO is a pervasive apprehension that others might be having rewarding experiences from which one is absent (Przybylski, Murayama, DeHaan & Gladwell, 2013). Researchers have shown that higher levels of FOMO is related with greater engagement with Facebook and decreases in mood, well-being, and life satisfaction as well as inappropriate social networking (Przybylski, Murayama, DeHaan, & Gladwell, 2013).

Furthermore, '*nomophobia*' has been defined as no mobile phone phobia, i.e., *the fear of being without one's mobile phone* (Bragazzi & Del Puente, 2014). Researchers have called for nomophobia to be included in the DSM-5, and the following criteria have been outlined to contribute to this problem constellation:

... regular and time-consuming use, feelings of anxiety when the phone is not available, 'ringxiety' (repeatedly checking one's phone for messages, sometimes leading to phantom ring tones), constant availability, preference for mobile communication over face to face communication, and financial problems as a consequence of use (Bragazzi & Del Puente, 2014).

Another presentation of ringxiety is '*phantom vibration syndrome*', defined as *perceived vibration from a cellphone that is not vibrating (Drouin, Kaiser, & Miller, 2012).*

Social Networking, Loneliness, Social Anxiety, and Attachment

Researchers have proposed that feelings of loneliness increases people's tendency to use Facebook (Clayton, Osborne, Miller, & Oberle, 2013; Kross Verduyn, Demiralp, Park, & Lee, 2013). In particular, individuals who perceive themselves lonely tend to use SNSs to connect with others. In a study by Bonetti, Campbell and Gilmore (2010), researchers examined how much time children and adolescents with and without feelings of loneliness and/or social anxiety spend communicating online, the topics they choose, the purpose of communication and the partners they engage with. The results show that as the feelings of loneliness increases, the frequency of online communication about personal and intimate topics increases. In addition, the most common motives for online communication reported by lonely and socially anxious people appears to be social compensation, meeting new people, belonging to a group and relaxing. Supporting the previous findings (i.e. Caplan, 2003; 2007), lonely and socially anxious people prefer online communication more since it provides them an opportunity to compensate for their poorer social skills to meet new people (Bonetti, Campbell, & Gilmore, 2010). In particular, they state that they do not feel as shy, feel more relaxed and venture more in online communication.

Accordingly, direct interaction with others using Facebook is associated with lower levels of loneliness and greater feelings of social capital (Burke, Marlow & Lento, 2010; Lou, Yan, Nickerson, & McMorris, 2012). In contrast, spending time passively in SNS such as viewing friends' content is correlated with higher levels of loneliness and lower feelings of social capital. Nevertheless, there are mixed findings regarding the causality of the relationships in the related literature. Kraut and his colleagues (1998) suggest that initial levels of loneliness may not predict changes in internet use and the direction of causality may be from the use of internet to declines in psychological well-being. Thus, the directionality of the relationship between loneliness and social networking remains unclear.

Research suggests that online communication may be beneficial for those who have high social anxiety. Accordingly, a number of scholars have shown that social anxiety predicts individual's emotional attachment to Facebook and their connections with others using Facebook (Clayton, Osborne, Miller, & Oberle, 2013). It indicates that socially anxious people prefer to use Facebook for social interaction, and integrate the social network site into their daily lives. Based on past findings (Caplan, 2007; Ebeling-Witte, Frank & Lester, 2007; Kim, LaRose & Peng, 2009), it can be argued that individuals with social anxiety and perceived loneliness have deficient social skills, and since they perceive greater control over self-presentation online, they feel more comfortable in online communication than face-to-face communication. Accordingly, it is shown that a person's preference for online social interaction (POSI) mediates the relationship between level of loneliness or social anxiety and negative outcomes resulting from internet use (Caplan, 2003; 2007).

In a related vein, for individuals high in attachment anxiety and/or avoidance, Facebook offers advantages over face-to-face interactions. By managing their self-presentation, anxious individuals may feel more confident in maintaining interpersonal relationships. For people who desire closeness but anticipate and fear rejection, being able to carefully manage self-presentation could be a particularly attractive feature of Facebook (Buote, Wood, & Pratt, 2009). The relationships between attachment anxiety and avoidance and Facebook use are examined by researchers (Oldmeadow, Quinn & Kowert, 2013). When adults feel negative emotions and have high attachment anxiety, it is found that they use Facebook more frequently, as they are more worried about how others see them on Facebook. In contrast, high attachment avoidance is related to less Facebook use, less openness and less positive attitudes towards Facebook. When social skills are controlled, the relationships remain the same. Findings make

the scholars consider that Facebook may serve attachment functions and provide a basis for understanding how online communication be related to attachment styles (Oldmeadow, Quinn, & Kowert, 2013). Another way in which Facebook may appeal to individuals with attachment issues is by providing a sense of belonging to a social network. SNSa are also found to increase belongingness among adults (Oldmeadow, Quinn, & Kowert, 2013).

In a study by Gentzler, Oberhauser, Westerman and Nadorff (2011), college students are asked to report on their use of electronic communication with a parent whom they stated as their closest family member. Results indicate that students who report more frequent phone conversations with parents also report more satisfying, intimate, and supportive parental relationships, but those students who use a SNS to communicate with parents report higher levels of loneliness, anxious attachment, as well as conflict within the parental relationship. The findings offer new evidence on how electronic communication technology with parents is related to adjustment in college students. To better understand the young adults' use of technology to communicate in today's society, further research with longitudinal designs is needed (Gentzler Oberhauser, Westerman, & Nadorff, 2011).

Social Networking and Cyberbullying

Another dark side of SNS is that, it can have harmful consequences for users such as cyberbullying, stalking, and online harassment. Cyberbullying refers to:

... the transmission by electronic means of demeaning, distressing, threatening and abusive messages and images which target a particular individual or a group of individuals (Kyriacou, 2017).

Messages, images, recordings which can be sent directly or indirectly to the victim and to the cyberbully's peer group, are forms of cyberbullying. It is an electronic or internet bullying in which individuals intentionally harm a victim via electronic means (Bonanno & Hymel, 2013). A range of other terms has been used to describe the phenomenon including: cyberharassment, cybervictimisation, online harassment and electronic bullying (Beran, Rinaldi, Bickham & Rich, 2012; Brown, Demaray & Secord, 2014).

Unlike traditional or face-to-face forms of bullying, anonymity and invisibility of the perpetrators are important characteristics of cyberbullying (Bonanno & Hymel, 2013). According to Dempsey, Sulkowski, Nichols and Storch (2009), cyberbullying may be particularly harmful to victims for several reasons. First, cyberbullying is hard to escape, as it can occur across settings. Second, the aggressors remain anonymous. As the aggressors do not have direct contact with the victim, feeling empathy or remorse is rare among them. Third, in a short time frame due to the use of technology, the aggressor reaches large audiences. Finally, chances of intervention is reduced due to less adult supervision.

Cyberbullying is related to various mental health outcomes. For instance, Bonanno and Hymel (2013) have shown cyber victimization to be related to depression and suicidal ideation in a sample of 8th to 10th grade students. Similarly, Olenik-Shemesh, Heiman and Eden(2012) have found that cyber victimization is related to both loneliness and depressive mood among young adults. These studies indicate that cyberbullying puts young individuals at risk for internalizing problems. Weight-based cyberbullying is also prevalent among youth and adolescents, and may have lasting negative psychological effects on the victims (Anderson, Bresnahan, & Musatics, 2014). Furthermore, cyberbullying may have physical effects on victims such as weight loss or gain, substance abuse, headache, abdominal pain and sleeping problems. In the related literature, there is not a clear understanding considering gender and developmental

differences in experiences of cyber victimization. Inconsistent findings related with gender may result from a number of factors, including researchers examining different age groups, in different countries, and at different reference time periods in the assessments (Brown, Demaray, & Secord, 2014).

Social Networking and Addiction

People engage in a variety of activities in SNS, some of which may potentially be addictive. Rather than becoming addicted to a substance, some users may develop an addiction to some specific online activities. There are five different types of internet addiction, namely computer addiction (i.e., computer game addiction), information overload (i.e., web surfing addiction), net compulsions (i.e., online gambling or online shopping addiction), cybersexual addiction (i.e., online pornography or online sex addiction), and cyber-relationship addiction (i.e., an addiction to online relationships)(Kuss & Griffiths, 2011). SNS addiction falls in the last category since the individuals are motivated to use SNSs to establish and maintain online relationships. Even though some scholars (i.e. Griffiths, 2012) argue that they are not synonymous, the term SNS addiction is sometimes used interchangeably with “Facebook addiction”.

Research into social networking addiction fall into one of four types:

1. Self-perception studies of social networking addiction,
2. Studies of social networking addiction utilizing a social networking addiction scale,
3. Studies examining the relationship between social networking and other online addictions, and
4. Studies examining social networking addiction and interpersonal relationships (Griffiths, Kuss & Demetrovics, 2014).

Although the concept of social networking addiction is controversial, some people may experience addiction-like symptoms as a result of excessive use.

Besides, social media supported gambling activities has been found to increase recently. The particular concern is with respect to the possible potential of early age gambling involvement, and development of positive attitudes and/or behavioral intentions toward gambling. In their study, King, Delfabbro, Kaptsis and Zwaans (2014) have examined adolescents’ involvement in gambling activities on social media, and tried to find out the indicators of pathological gambling risk. Results have shown that a significant proportion of young people engage in a range of gambling activities in social media. Having a history of engagement in gambling activities, adolescents seem to be at greater risk of pathological gambling. Need for regulation and monitoring of gambling activity are highlighted with the findings. There is also a need for further research on the potential risks of early exposure to gambling activities (King, Delfabbro, Kaptsis, & Zwaans, 2014).

Social Networking, Personality, and Gender Differences

As studies are conducted for understanding the benefits and negative consequences of SNS usage, personality types, traits or disorders have also become the center of attention. Rosen and his colleagues (2013) have examined the impact of the use of specific technologies and media on clinical symptoms of mood disorders and personality disorders. Among these disorders, greater facebook use and using it for impression management motivation and larger number of online friends are found to be related with narcissism and histrionic disorder. Furthermore, Weisskirch and Delevi (2011) have introduced the

term sexting, sending text messages with sexual content, as one of the diagnostic criterion for histrionic personality disorder.

Carpenter (2012) has investigated the effect of Facebook activity on antisocial personality behaviors and identified certain antisocial behaviors including taking revenge on negative remarks around one-self, carefully reading others' announcements to check whether they are discussing them, and looking for more social bolster than one gives to others. In the increasing use of SNSs, users' personality traits may be important factors leading them to engage in social media. The related literature in particular suggests that BigFive factors such as extraversion, emotional stability and openness to experience are related to SNS use. In a study done by Correa, Hinsley and De Zuniga (2010) when socio-demographics and life satisfaction variables are controlled, extraversion and openness to experiences are positively whereas emotional stability is negatively related to social media use. These findings differ by gender and age. Extraverted men and women are both likely to be more frequent users of social media tools, while only men with greater degrees of emotional instability are more regular users. The relationship between extraversion and social media use is particularly important among young adults. Conversely, openness to new experiences emerges as an important personality factor in relation with social media use for older adults (Correa, Hinsley, & De Zuniga, 2010).

Another personality trait, conscientiousness, refers to a person's work ethic, orderliness and thoroughness (Costa & McCrae, 1992), and scholars has suggested that conscientious individuals are inclined to avoid SNS as they promote procrastination and serve as a distraction from more important tasks (Butt & Phillips, 2008). In contrast, people who are high in sociability have positive attitudes towards SNS and show willingness to join SNS (Hughes, Rowe, Batey & Lee, 2012). Agreeableness has been included in several studies relating to internet and social media usage, and has generally been found to be unrelated (Correa, Hinsley, & De Zuniga, 2010; Amichai-Hamburger, & Vinitzky, 2010)

Researchers have also investigated gender differences with regard to the frequency of and motivations for SNS use. Despite a study showing more positive attitudes toward and more use of SNSs at workplace among males (Andreassen, Torsheim, & Pallesen, 2014), considerable research has shown greater social networking among females (Barker, 2009; Bonetti, Campbell, & Gilmore, 2010; Simoncic, Kuhlman, Vargas, Houchins, & Lopez-Duran, 2014; Fioravanti, Dettore, & Casale, 2012; Hargittai, 2008). For instance, Barker (2009) reports that teenage girls show higher overall use of SNSs than boys, and mostly use SNSs for relational purposes (i.e. communication with peers). However, teenage boys mostly use SNSs for social compensation and learning purposes as well as for social identity gratifications. It is argued that social networking may provide social support and peer group belongingness that teenage boys especially need in periods of life transition (Barker, 2009).

In accordance with gender role expectations, researchers have shown that men are more likely to use SNSs for networking, making new friends and finding potential dates, whereas women use them for relationship maintenance (Muscanell & Guadagno, 2012). Similarly, Bonetti and his colleagues (2010) reveal that girls are more involved in online communication for relational purposes than boys. Besides, researchers report more risk taking attitudes among men as compared to women in social networking (Fogel & Nehmad, 2008). That is, men display more private information (telephone number, home address, etc.), and women show greater concern for privacy and less identity information disclosure than men in social networking websites.

CONCLUSION

General Practical Implications

This chapter explains the benefits and detrimental consequences of online social networking from a psychological perspective. To do so, it reviews a growing body of research about online social networking and various indicators of psychological well-being. Overall, the findings show mixed evidence of the links between SNS use and mental health outcomes. While some studies have revealed the beneficial impact of SNS use on mental health including enhanced self-esteem, life satisfaction, sense of belongingness, and reduced social anxiety and loneliness, considerable research has shown its detrimental impact including increased depression, addiction, cyberbullying as well as reduced self-esteem and subjective well-being. Besides, higher engagement in social networking is linked to various types of phobias including FOMO and nomophobia.

Even though this chapter focuses on only certain areas of mental health, the findings presented above provide several implications for research and practice on the impact of SNS use. Taken together, existing findings support that online social networking undermines psychological well-being of adolescents and young adults. Given the prevalence of social media use among this population, it is imperative for scholars to take necessary steps to prevent possible negative consequences of social networking. One way to reduce the potential risk of developing addiction especially among lonely and socially anxious teenagers is monitoring and educating them on appropriate use of online communication tools (O’Keeffe, & Clarke-Pearson, 2011; Subrahmanyam & Lin, 2007). Future studies may wish to include preventive efforts for adolescents and young adults. Scholars may also focus in their future research on identifying signs of possible psychopathological behaviors related of abuse of SNSs (Barbera, Paglia & Valsavoia, 2009).

Limitations and Avenues for Future Research

This chapter concentrates on the psychological correlates of the use of different online SNSs which has *a different patterns of use, user characteristics and social functions* (Wilson, Gosling, & Graham, 2012). To illustrate, Facebook is based on creating and updating personal profiles, while Twitter is based on posting and reading short-messages (Pantic, 2014). Given the variability of SNSs, it is important for scholars to question the generalizability of their findings (Kross Verduyn, Demiralp, Park, & Lee, 2013). Since the research field is relatively young, studies investigating social networking unsurprisingly suffer from a number of methodological problems (Kuss & Griffiths, 2011; Pantic, 2014). For instance, most studies comprise small and unrepresentative samples. For future studies, researchers should select larger samples which represent broader populations across cultures and especially in SNS research, scholars should focus on populations at risk for developing SNS addiction. In current literature, studies use several different psychometric scales (Pantic, 2014). By using more reliable and valid measures in future research, it would be more possible to make generalizations (Griffiths, Kuss, & Demetrovics, 2014).

The vast majority of previous research on social networking and mental health outcomes are cross-sectional in nature, which does not allow for causal inferences. Therefore, it remains unclear whether social networking or mental health outcome is the cause or the effect (Pantic, 2014). To illustrate, it is possible that individuals using SNSs show poor psychological well-being or those individuals with poor psychological well-being show more tendency to use SNSs. Given the cross-sectional nature of past

research, it is imperative for scholars to continue with longitudinal studies to identify the temporality and causality of these relationships (Pantic, 2014). Besides, there are limited studies that examine the possible mediators or moderators that play role in the relationship between online social networking and mental health (i.e. Kim, 2016; Simoncic, Kuhlman, Vargas, Houchins, & Lopez-Duran, 2014). Future studies would therefore do well to investigate the differential role of certain factors such as family or school atmosphere or social support on various mental health issues.

In summary, this chapter basically is just a starting point for future studies on social networking by reviewing the current literature with respect to the benefits and detrimental effects of online social networking. Taken all together, the findings suggest that the associations among social networking and psychological well-being are complex and warrant in-depth consideration by scholars and practitioners.

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KEY TERMS AND DEFINITIONS

Addiction: A chronic disorder with biological, psychological, social, and environmental factors influencing its development and maintenance.

Attachment: Emotional bond or connectedness between two people, especially child and the caregiver.

Cyberbullying: A kind of harassment that occurs on the internet or either by cell phones or other devices.

Depression: A mood disorder marked by emotional, mental, and physical symptoms such as feelings of sadness, hopelessness, or pessimism, lowered self-esteem, reduced energy and vitality, slowness of thought.

Loneliness: An unpleasant emotional response to isolation.

Personality: Individual differences in characteristic patterns of thinking, feeling, and behaving.

Self-Esteem: A person’s overall sense of self-worth or personal value.

Social Anxiety: Nervousness in social situations.

Social Networking Site: An online platform that allows users to create a public profile and interact with other users on the website.

Subjective Well-Being: A term used for people’s own judgements over the quality of their lives and includes both emotional and cognitive aspects.

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Chapter 5

Reappraising Social Media: The Rise of the Global Digital Family

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ABSTRACT

This chapter reappraises social media. The corporate perspective promises a growth market based on user data exploitation. On the other hand, users expect emotional contagion and authenticity from their social media experience. They want to connect to friends and family. As a consequence, users accept corporate exploitation of their data. Users see social media as a human right. To users, the technology is key to global knowledge dissemination, with the potential to challenge traditional power structures resisting change. Building on Obar and Wildman, the chapter concludes with an improved definition of social media suggesting that user data tagged to user accounts, user generated content (UGC), and user behavior in the multi-device universe is the lifeblood of social media. Research suggests that social media has propelled mankind beyond McLuhan's global village into the global digital family.

INTRODUCTION

Without a doubt, social media has penetrated our daily lives deeply, influencing the way people connect to friends and family. Research shows that user data tagged to user accounts, UGC and user behaviour is the life blood of social media, making it possible for SNS-owners to generate profits and for users to connect to social media at home, at work and while travelling.

User data makes it possible for Elisabeth Beck-Gernsheim's 'post-familial-family' (Beck-Gernsheim, 1998, p. 68), which is no longer limited by class and ethnic origin, to be extended into the virtual domain, giving rise to the metaphorical Global Digital Family beyond McLuhan's 'Global Village' (McLuhan, 1962, p. 31).

Early during the evolution of the Internet critics argued that "social systems do not work with machine-like precision; human beings have the capacity to interpret and respond to ambiguity" (Daft & Lengel, 1986, p. 569). Back then, the emerging Internet was considered a medium low in richness unlike face-to-face communication. Yet, by 2015, Dunaetz et al find that:

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Building relationships through lean media has become common and many people find it more effective than face-to-face communication for developing relationships. (Dunaetz, Lisk, & Shin, 2015, p. 3)

Considering definitions proposed by Professor Nicole Ellison, Professor Andreas Kaplan and Assistant Professor Jonathan Obar even communication software Skype can be considered social media, just as crowdfunding platforms Indiegogo and Kickstarter would qualify. All of those feature Web 2.0 technology, user accounts, UGC can be disseminated, and interaction is possible on blogs and threads.

According to scholar Jose van Dijk Wikipedia too can be considered social media (Dijk, 2013a), yet is this perception shared by users? This research highlights the important role of emotional contagion for social media. Kramer et al (2014) investigated emotional contagion in social networks, reaffirming the importance of emotional contagion. Emotional contagion is crucial, just as the extension of a credible and authentic personality. Kaplan understands the need for authenticity and advises marketing experts to be “unprofessional” (Kaplan & Haenlein, 2010, p. 61). But pretending to be unprofessional merely creates the illusion of a real personality with all its faults and weaknesses: it is more likely to be perceived as fake.

What makes the online experience authentic is explored in more detail by Robert Kozinet (Kozinets, 2015), quoting Toennie’s idea of *Gesellschafts-* versus a *Gemeinschafts* type interaction (Tönnies, 1887). This model explains why for example crowdfunding can be considered a *Gesellschafts*-type transaction, whereas social media, as understood by users, is a *Gemeinschafts*-type transaction, shedding light on why users do not perceive crowdfunding sites themselves as social media.

Social media is not just a technology platform that makes it possible for users to connect and companies to exploit user data. Social media is a platform facilitating emotional contagion and the extension of a credible and authentic personality into the virtual social media world, which helps to explain the social media explosion during the last decade. Today, algorithms interpret user data and social media has become ubiquitous, for example:

- By the end of 2016 Facebook exceeded 1.75 billion members (Statista, 2017): a quarter of the world’s population has joined Facebook to interact with other humans;
- 310 million users are active on Twitter (Statista, 2017a) and Tweets by President Donald Trump “stoke anxiety” and “move markets” according to the Washington Post (Rucker & Paquette, 2017), evidence how emotionally engaging social media is;
- 467 million people are subscribed to LinkedIn (Statista, 2017b) using the platform to promote their work and career profile;
- Mobile devices have reached 6.9 billion subscriptions worldwide and Ericson predicts that 9.5 billion users will have a mobile device by 2020 with access to social media networking sites (Ericson Mobility Report, 2014). In other words: by 2020 there will be more mobile devices online than there are humans currently living on Earth (Geohive, 2015);
- Google’s Loon project aims to provide Internet access anywhere in the world via balloons positioned in the earth’s stratosphere (Google, 2013);
- YouTube was acquired by Google in 2006 (Monica, 2006), and streamed its first video on April 23, 2005 (Karim, 2005) featuring over one billion users worldwide in 2015 (Youtube, 2017e).

Social media and networking monoliths Facebook, Twitter, WhatsApp and LinkedIn offer the opportunity to tap into or create communities to and connect to like-minded people, not only changing

the way people learn and work (Cuevas & Author, 2012), but also how people choose elective family relationships.

In doing so users establish new transnational boundaries with the potential to discuss issues of global concern. From the environment to human rights issues, social media offers the potential to challenge traditional structures establishing new norms in the form of a global collective consciousness¹.

BACKGROUND

In 2007 Professor Nicole Ellison of the University of Michigan determined social network criteria in the Journal of Computer Mediated Communication as follows:

We define social network sites as web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site. (Ellison, 2007, p. 211)

Ellison continues to provide an overview of the history of social media beginning with sites such as sixdegrees.com, she also addresses crucial matters regarding privacy, but the actual user experience on social media is not discussed in detail. Three years later marketing experts Professors Kaplan and Haenlein of the ESCP-business school realise that:

Firms can make profitable use of applications such as Wikipedia, Youtube, Facebook, Second Life and Twitter. Yet despite this interest, there seems to be very limited understanding of what the term 'Social Media' exactly means. (Kaplan & Haenlein, 2010, p. 59)

As a result, Kaplan and Haenlein emerge from their research proposing the following definition of social media:

Social Media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content. (Kaplan & Haenlein, 2010, p. 61)

Their article, published in the journal Business Horizons, advises companies wishing to use social media, to “be active”, “be interesting”, “be humble”, “be unprofessional” and “to be honest” (2010, pp. 66-67). Kaplan and Haenlein’s marketing approach is based on reviewed literature and observation of professional practices but we learn little how users experience the same. The definition also does not make any provisions for a time when Web 2.0 technologies will have evolved into the next generation.

More recently Assistant Professor Obar of York University and Professor Wildman at Michigan State University offered another social media definition, this time in the introduction article for the Journal of Telecommunications Policy:

1) Social media services are (currently) Web 2.0 Internet based applications, 2) User generated content is the lifeblood of social media, 3) Individuals and groups create user-specific profiles for a site or app

designed and maintained by a social media service, 4) Social media services facilitate the development of social networks online by connecting a profile with those of other individuals and/or groups. (Obar & Wildman, 2015, p. 2)

Obar and Wildman acknowledge the evolving nature of web technologies, recognise Haenlein and Kaplan's work by further highlighting the importance of User Generated Content (UGC) and discuss the criteria for user profiles.

All definitions are based on an exploration of the phenomenon from an observational perspective: users are identified, studied and observed, literature is reviewed, theories are discussed but the qualities of social media from the perspective of the user and how the user experience differs from the corporate perspective are not examined. For that reason, this research examines the corporate perspective and the user position on social media.

METHODOLOGY

To understand the different perceptions of social media, I begin by reviewing contemporary definitions. This is followed by contrasting industry data from sources such as Nielsen (2014), Ooyala (2015)³, the UK Office for National Statistics (2015), the US Census Bureau (1999), with the user perspective sourced from Pew Research (2015), the Internet Society (ISOC) and surveys⁴ as well as focus groups⁵ conducted by the author, revealing stark differences not reflected in social media definitions to date.

Participants were able to answer multiple-choice questions which provided a qualitative response to their social media experience. Results gave an indication on research direction. Considering the small sample size of the survey, focus groups provided an opportunity to explore the research topic in more detail. McNaghten and Myers make a strong argument for focus groups. Researchers are able to explore a proposed topic's "ambivalences instead of concealing them under yes and no answers" (Macnaghten & Myers, 2015, p. 66). Each group was divided into sub-groups of four to five participants. Each sub-group was then asked to debate the topic and deliver a summary via a Google form.

After completion, results of the debate were retrieved from Google Drive and displayed to the entire group using a projector. Each sub-group was given the opportunity to discuss their findings in more detail in class and, if necessary amend their summary. Planning for digital immigrants followed the same pattern. Findings were analysed by coding and identifying common themes. This made it possible to reveal qualitative aspects of social media like: "a platform to connect you with the rest of the world" (F. Kohle, 2015).

Rosaline Barbour's ideas regarding social media as a research tool itself also proved useful. Instead of following the typical transcription method, data was gathered using Web 2.0 technologies, i.e. Google Forms, which is considered a "new approach" by Barbour (2013, p. 324). Barbour goes on to describe how computerised data analysis "offers the possibility of counting word frequency" (p.324). Data was collected in this way over period of two years.

For the purpose of this study, I considered the advantages of action and cooperative research. Reason and Torbert allow participants to be "co-researchers" in order to make "sense of their experience" (Reason & Torbert, 2001, p. 22) together. Allowing focus group participants to discuss their experience and formulate their own definition elevates them to co-discoverers, rather than being observed and studied

focus group participants. It is a form of inquiry embracing “multiple ways of understanding” as Donna Ladkin proposes (2004, p. 480).

LIMITATIONS

The majority of survey participants are residents of the Netherlands, though residents in other countries also participated. Nevertheless, the survey can be considered indicative and appropriate regarding gender and age representation.

USER DATA MANAGEMENT AND EXPLOITATION

The Life Blood of Social Media

Obar & Wildman (Obar & Wildman, 2015, p. 2) consider User Generated Content (UGC) as the life blood of social media. In this article I am going to demonstrate that user data and not UGC is the life blood that makes social media possible. For example, capturing data from stakeholders and audiences makes it possible to:

- Identify strong network partners in the real- and virtual world;
- Build communities;
- Assess the projects viability based on social media activity.

To begin capturing data a database is needed. Without a database, valuable user data is not captured but lost. A good way to begin this activity is to set up a database capable of storing data extracted from the real- and the virtual world.

Customer Relationship Management (CRM) software solutions make it possible to stay on top of that task. The CRM database captures all the details of all the projects stakeholders. This includes but is not limited to, all the players in the value chain. CRM software allows users and companies to:

- Capture stakeholder details on- and offline. This includes contact details, a history of contact points with the stakeholder, a record of promotional materials sent out, even personal preferences that can be relevant to a project;
- Automate communication and marketing activities for a project. A CRM consolidates data and allows makes it possible to target all stakeholders, a specific group or an individual based on preference and background. Automation saves time and still address stakeholders personally. This is important: no one wants to be addressed as just another ‘Dear Stakeholder’. CRM tools target stakeholders individually;
- CRM systems ensure that all team-members dealing with external stakeholders are up to date. A complete stakeholder history helps avoids confusion. CRM database makes internal and external communication transparent to the campaign management team;
- Geolocation features are important. Geotagging stakeholders gives an overview of where they are. This helps in a number of ways. Is the company looking for partners in a particular region?

Is the outreach team targeting an area that is underrepresented? Is the team providing an online-overview to the stakeholders of all community screenings to date and where they take place?

There are a number of CRM tools, some of them free, others will charge a fee. Consider the following when planning to set up a CRM database:

- Does the company actually own the data? Some CRM software providers entice users to sign up for their services for free, but migrating to another CRM-system later is impossible if captured data cannot be exported.
- Does the CRM system allow integration with other data management tools? For example, can the CRM access and retrieve data from Mailchimp?
- Is the CRM system cloud-based? If so then the risk of a data breach is higher. Take appropriate steps to keep all data safe. Nothing is more damaging to the stakeholder relationship than their personal data and preferences being leaked into the public domain.
- Let stakeholders know that their data is stored in a database and get their consent.
- Make the way user data is exploited transparent. Stakeholders want to know what happens to their data. Clear Terms of Services (ToS) are a legal requirement in Europe.

Data entry is tedious. It is not an exciting task – but essential to a social media strategy. It needs to be accurate and comprehensive. This can make the difference between finding the needed funds or falling short of that goal.

User Data Application in Practice

Social media from an SNS owner perspective requires access to sensitive user data for appropriation and exploitation. This data can be obtained in a number of ways and users become the target for automated Web 3.0 technology, or the semantic web⁶.

At IBC 2017, Web 3.0 technologies revealed new ways of engaging audiences (Kohle F. H., 2017). I reported for Moving Docs on the 2017 IBC panel on audiences as follows:

Owen Geddes of Devicescape (2018)⁷ was excited about the potential to track audiences, made possible by software embedded in mobile phones. (He) revealed to the audience that we now know cinemagoers drinking in a pub after the film are 64% more likely to have seen an action movie, for instance. To Ben Johnson of Gruvi (2018)⁸, user data is key to understanding audiences. He discussed how capturing user data can identify a digitally-active family on the move simply by cross-referencing the screening times of a movie against location of devices. The family is tracked shopping for food and clothes in town after a screening – with kids getting to buy their fashion items and games as a reward for good behaviour. This way, audiences can be specifically targeted in certain locations and certain times, and this knowledge provides valuable Intel on potential social media partners exhibitors may want to partner with. Geddes claims that making use of this information results in staggering click-through rates (CTR) of 14-20% instead of the more typical CTR rate of 0.1% for media rich ads (Chaffey, 2018). It is not surprising that proposed data protection laws by the EU General Data Protection Regulation (2018) are seen as a threat to user data exploitation. Making money this way is a threat to privacy.

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Producers can have apps developed and distributed to their communities that not only track personal user details. The app will also track geographic movement of the consumer. This makes it possible to draw conclusions on the behaviour of the mobile audience, which can be exploited to form new strategic partnerships as Owen Geddes explained. This raises ethical issues. Who owns the data? What is the documentary producer allowed to do with this data?

The user needs to give permission to make these kinds of connections. Having clear Terms of Services (ToS) delineating how user data will be exploited by the company are crucial. The EU General Data Protection Regulation came into effect on May 25, 2018 and seeks to protect user data exploitation:

The conditions for consent have been strengthened, and companies will no longer be able to use long illegible terms and conditions full of legalese, as the request for consent must be given in an intelligible and easily accessible form, with the purpose for data processing to that consent. Consent must be clear and distinguishable from other matters and provided in an intelligible and easily accessible form, using clear and plain language. It must be as easy to withdraw consent as it is to give it. (The EU General Data Protection Regulation, 2018)⁹

Consent must include giving the user the possibility to opt-out of any user-data sharing in an *easy fashion*. Opt-out options should not be hidden in the small print of your email blast. Critics might argue that this way too many users are tempted to unsubscribe. I argue that exciting online content makes it less likely for users to opt-out. If a site needs to make opting-out difficult to retain users, then the company needs to look at the quality of the offered content instead.

The regulation also makes it a legal requirement for companies to delete user data upon request. The right to be forgotten, privacy for the individual and family outweigh commercial concerns. Clear ToS matter if the company wants to establish a relationship with stakeholders that is based on mutual trust.

Maintaining User Data Value Through Open and Transparent Dialogue

Protecting and maintaining user data integrity is the key priority to establishing and maintaining user trust¹⁰. To the user, online sociality outweighs user data exploitation. To commerce, exploitation of user data is key to building communities and creating new value.

The Center for Social Media and Impact (CMSI) offers insight into how social media technology offers new ways of obtaining user data during the development and design stage (Clark & Abrash, 2011):

- Design the project collaborating with users via surveys, interviews and observations on social media;
- Strategically connect to stakeholders, researchers and developers to “build the production team”;
- Road test story boards, short videos and campaigns with users;
- Continuously evaluate audience and stakeholder feedback.

This shows how real- and virtual world activities support each other. Intelligence gathered in each world creates value that can be captured. Based on the analysis of user data, expected outputs during development and pre-production are likely to include:

- Beta/soft/hard launch of the project’s website;

- Identification of strong network partnerships;
- Maintenance of ongoing network partnerships;
- Set-up of social media sites strategically built around the project's identity, stakeholders and audiences;
- Publication of SNS and website content: articles, blogs, video clips;
- Ensure effective partnerships are established to strategically position the project in the real and virtual world.

CMSI recognises the importance of social media evaluation based on user data and social media metrics. This includes websites and SNS record visits per week, number of unique visitors and visits from new versus returning visitors. Penetration provides the context of the audience reached¹¹.

Engagement is a key indicator highlighting how often and how intense visitors' interaction with project websites and SNS is¹². Website and SNS metrics are part of the user data a documentary production is expected to manage. Surveys provide an excellent source of pre- and post-event qualitative data influencing:

- The design of a transmedia narrative;
- Supervision of a social media production team gathering audio-visual content throughout the entire production;
- Timing the release of any social media content to maximize impact.

Apart from gathering data via site metrics and surveys, evaluation of the project's or companies network performance within its eco-system is crucial.

THE CORPORATE PERSPECTIVE ON SOCIAL MEDIA

This section illustrates the importance to user data exploitation to industry and how and on which social media platforms users are participating in. Drawing from a number of sources such as Nielsen (2014), Ooyala (2015) the Pew Research Centre (2015), the UK Office for National Statistics (2015) and the US Census Bureau (1999) this section illustrates the image of social media and users from a business viewpoint¹³. Drawing from all these sources an overview is established on how users access social media and which platform and SNS they use.

In a 2014 report, Nielsen describes the digital consumer as follows:

Today's consumer is more connected than ever, with more access to and deeper engagement with content and brands, thanks to the proliferation of digital devices and platforms. (Nielsen, 2014, p. 2)

Studying consumer behaviour, the perspective taken by Nielsen is one suitable for companies and organizations with an interest in selling and marketing their products on the Internet. Accordingly, Nielsen claims that the growing number of mobile device owners revolutionizes the shopping experience of the digital consumer. Furthermore, Nielsen states that the ability to deliver content via multiple devices and across platforms is the driving force for the on-going media revolution. (Nielsen, 2014).

Who Is Online?

Pew research reveals relevant demographic consumer details in the US (Duggan, Ellison, Lampe, Lenhart, & Madden, 2015). Though the US differs regarding the demographic composition in Europe, Pew offers relevant insight how people connect via social media:

- Facebook:
 - 71% of adult internet users or 58% of the entire US population uses Facebook;
 - 93% say they are FB-friends with family other than parents and children;
 - 91% are FB friends with current real-world friends;
 - 87% state that they are connected to friends from the past;
 - 58% say they are FB friends with colleagues;
 - 39% are friends with people they have never met;
 - 36% are FB friends with their neighbours.
- Twitter:
 - 23% of all online users are on Twitter;
 - Twitter is more popular with those under 50 years old.
- Instagram:
 - 26% of online adults are on Instagram;
 - 53% of adults aged 18-29 use Instagram;
 - Women are more likely to use Instagram.
- LinkedIn:
 - 28% of online adults have a LinkedIn account;
 - LinkedIn is popular among college graduates, higher income households and users currently employed;
 - College graduates continue to dominate LinkedIn: LinkedIn is the only SNS dominated by users aged 30-64.
- Pinterest (owned by Google):
 - 28% of online adults use Pinterest;
 - 42% of online women use Pinterest;
 - Only 13% of online (who) use Pinterest.

According to Pew more people in 2014 used more than one SNS compared to 2013. For example:

- 24% of all online adults made use of two sites in 2014, an increase of 1% from 2013;
- 16% used three SNS, an increase of 4% from 2013 and 8% used four sites, 3% more than 2013;
- 52% of all online adults use two or more social media sites.

Pew research sheds light on who is online and on which platform, while Nielsen provides more detail on the consumer.

The Multi-Device and Mobile Consumer

Data provided by Nielsen reveals that users increasingly access social media while on the move:

- A second screen is already a norm in 2013;
- Multiple devices ensure that 64% of social media users access SNS at least once a day from their computer; and
- 47% via their smart phone.

All population segments see mobile devices as the most important gadget to be upgraded: mobility is a key factor to the digital consumer. In addition to accessing video content and social media via multiple and mobile devices, digital consumers access the Internet while watching TV:

- 60% surf the web on a tablet, 49% on a smartphone;
- 41% look up info on actors and plotlines on a tablet, 29% on a smart phone;
- 23% interact with friends about the TV programme on a tablet, 29% on a smart phone;
- 18% discuss the programme on SNS on a tablet, 12% on a smart phone;
- 17% watch a programme because they read about it on social media on their tablet, 10% because they read about it on their smart phone;
- 64% of all users claim that they visit a SNS at least once a day and again mobility plays a significant role;
- 39% of all adults and 56% of adults aged between 25-34 in the US access social media at work;
- 21% of all adults and 40% of adults aged 25-34 log into social media in the bathroom - an indication that digital natives and 1st degree digital immigrants continue the trend for more connectivity anywhere and anytime.

The multi-device consumer has become the target for advertising via SNS: the next section highlights the most popular SNS according to Nielsen.

Popular SNS From a Corporate Perspective

An overview of the most popular SNS per device, as researched by Nielsen, reveals that more users access SNS on a desktop computer, though smartphones are fast catching up and users already spend more time viewing Facebook and Instagram on a Smartphone when compared to a desktop computer. Mobile apps provided the largest growth for SNS and social media access via smartphone browsers saw significant growth reaffirming the rise of the mobile user. The Pew Research Centre corroborates these findings. According to their 2015 Social Media Update (Duggan, Ellison, Lampe, Lenhart, & Madden, 2015), Facebook remains the most popular site, though other SNS have seen higher growth rates. The above data reveals that mobile devices have become the most important access point for digital consumers in the US for social media sites.

The Mobile Consumer

But is this all we need to know? A question to consider is when these sites are being accessed. Exactly when are users accessing social media? And from where? Streaming provider Ooyala sheds light on these questions¹⁴. Ooyala is the strongest example of how user data is extrapolated and interpreted to improve OTT-services¹⁵ and target consumers. Without user data, SNS-owners and OTT-service providers have

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no viable business model. For example, user data makes it possible for Ooyala to track and examine consumer movement: (Q2 2013 Video Index):

- During the workweek, PC video views rise during office hours, peaking at noon. This coincides with a dip in mobile and tablet video plays during working hours;
- Between 5-7pm, PC video views decline during the workweek while mobile and tablet video plays increase;
- On weekends users view more media on phones and tablets when compared to PC views;
- Mobile video views increased a staggering 161% since 2012 representing 45% of all video views globally;
- 88% of views were on smartphones and only 12% on tablets;
- 71% of viewing takes place on connected TVs (CTV) if programmes are longer than 10 minutes: users prefer larger screens for longer content;
- 20% of viewing takes place on tablets for content between 10-30 minutes;
- The UK and Ireland lead in the mobile curve: mobile and tablet viewing make up two-thirds (67%) of all online video plays when compared to a global average of 45%;
- 46% of video adverts are delivered to mobile platforms;
- Smartphone and tablet video plays rose from just under 20% in July 2013 to almost 50% in July 2015;
- Expanding 4G networks worldwide facilitate continued growth for SNS and mobile streaming.

There is a clear pattern emerging:

- Users view video on mobile devices to and from work during commuting hours during the week; this is the time of the weekday when they view a trailer, short-form video content, and share their viewing experience with others on social media networks;
- At work users continue to view video content via their work PC and continue to do so at night on their home PC;
- As described by Ooyala, mobile devices such as smartphones and tablets are more in use in the hours before and after work, while PCs are used at work and again later in the evening at home;
- Mobile devices record a higher peak after work on a Friday, with mobile device use continuing over the weekend, whereas PC use is at its lowest on the weekend.

It is evident that users access social media and the global network anywhere and anytime. These above figures demonstrate that social media continues to grow in the US. The UK's Office for National Statistics reports equally strong growth (2015):

- 86% of adults use the Internet; and
- 99% of 16-24 year olds are online.

At face value these figures are impressive, promising a Golden Age for SNS – and user data exploitation. User data, tagged to UGC, PGC (Professionally Generated Content), user devices and accounts, is crucial to SNS-owners and without the exploitation of the same, SNS owners can not generate needed revenues. But is the Internet really just another platform on which to run a SNS and sell products to the

digital consumer? Is growth really driven by content, as stated by Nielsen, Pew and Ooyala? How are users perceiving and experiencing social media?

THE USER PERSPECTIVE ON SOCIAL MEDIA

User data is essential to SNS owners, but what role does user data play for social media users? Previous scholars such as Ellison, Kaplan, Haenlein, Obar and Wildman offered various social media definition, but the user perspective was not included. How do users experience the Internet? What are their expectations?

Representative data can be obtained from the Internet Society (ISOC), which surveyed 10,000 Internet users in 20 countries to reveal how users perceive social media¹⁶. According to the Internet Society 2012 survey (ISOC, 2012):

- 90% of internet users use social media;
- 98% of users consider the internet essential for their knowledge and education;
- 80% see the internet playing a positive role for their individual lives and society as a whole;
- 75% see the internet as an important source of information;
- Two-thirds think the internet plays a significant role in solving global problems, e.g. child-mortality, improving mental health, eliminating extreme poverty and hunger, prevention of trafficking of women and children;
- 83% consider access to the internet a Human Right;
- 83% strongly agree that freedom of expression should be guaranteed on the internet;
- 70% do not want more government involvement;
- 84% of respondents state that they restrict access to websites and apps regarding their location data, indicating that users are aware of privacy issues on the Internet.

Human Rights, Tackling Poverty and Education

ISOC findings reveal that users do not perceive the Internet as a marketplace to be exploited by companies and organizations. Instead non-commercial values take priority: users clearly see social media as an opportunity to contribute to a global collective consciousness. To users, social media means:

- Access to the Internet is considered a Human Right;
- Social Media is an essential tool to tackle pressing global issues from poverty to improving mental health;
- 98% perceive the Internet as critical to knowledge development and education;
- More importantly, 84% of respondents are concerned that owners of SNS appropriate and exploit user data thus risking a breach of user privacy: another indication of the fragile and uneasy balance between open user sociality and clandestine corporate exploitation.

Users clearly care about social issues, a perspective corporate surveys, such as that of Nielsen and Ooyala, neglect to provide. Without user data, tagged to UGC, PGC and user accounts, users would not be able to find old and new friends and family sharing these values.

Social Media Is More About Free Sharing and Less About Commerce

In addition, I designed surveys (Survey User Experience, 2015)¹⁷ and focus groups (Focus group Social Media, 2015) to further explore what users expect of social media and to gain primary source insight into user expectations. Participants were able to answer multiple-choice questions and provide a qualitative response regarding their social media experience:

- 65% of participants perceive the Internet as more about free sharing and less about buying and selling;
- 26% consider free sharing and commerce to be equally important; and
- Only 4% think of commerce as more important.

Taking into account the growth that online commerce enjoys, it is interesting to note that users do not perceive social media as mainly commercial, reaffirming ISOC findings: free sharing clearly dominates user perception.

User Concerns About Social Media

Qualitative analysis of the survey data also highlights that users are aware of social media weaknesses. Key themes frequently recurring are:

- Privacy and abuse of user data;
- Social Media is too superficial;
- Too much commerce, i.e. adverts;
- Inability of user to deal with the amount of information available online;
- Copyright issues;
- Addiction to being online;
- Extension of exaggerated and fake persona.

Half of Users Are Three Hours or More Online

Participants of this survey were recruited via social media such as Facebook groups and blogs - 65% are considered digital immigrants, 35% are digital natives. Survey results suggest that both groups spent a significant amount of time online, highlighting once again how much social media has penetrated our daily lives:

- 54% of users surveyed claim to be online between 1-3 hours per day;
- 11% state that they were online an average of 4-5 hours;
- 14% claim that they are online 6-8 hours per day;
- 17% say that they are online 9-10 hours per day; and
- 2.8% state that they are online more than 10 online hours every day.

Overall, users claim to spend a great deal more time online when compared with Nielsen's survey participants. Because requests for survey participants were published and promoted via Facebook and

the Breda University of Applied Sciences, Netherlands, most participants were Dutch residents; but other nationalities also became aware of the survey and participated.

Qualitative Survey Insight

Participants were also given the opportunity to answer open-ended questions, such as this 21-year-old female German student survey participant:

I think social media is a place where you can communicate with everyone you know or don't know. It is a place where you can choose who you want to be. You can show what you like and dislike and thus you can find people who like the same things or more things that you could probably like. It is also something that takes more time of our private lives than we think. Plus, I think social media makes us less social and sometimes you could get an overload of social media; it becomes very exhausting to always be present and nice. (Survey User Experience, 2015)

This student's experience underscores how difficult it can be to navigate social media, for example in relation to the projection of a 'nice' social media image and social media overload. The comment also raises concerns about the representation of identity and personality online ("choose who you want to be") and the time-consuming nature of social media.

Fake news is a concern, for example this 31-year-old male German working professional survey participant had the following comment: "There is too much bullshit and not a lot of people take time to verify the information." (Survey User Experience, 2015).

The importance of sharing, interacting and communicating with 'friends, family' and 'people with common interests' is underscored by this comment, reaffirming the extension of the 'post-familial family' (Beck-Gernsheim, 1998, p. 68) into the virtual domain: "Social media is a communication medium where friends, family or strangers share information or opinion", according to this 21-year-old male Dutch student survey participant. (Survey User Experience, 2015).

Users also had clear expectations on how social media will develop over the next five years, though not every one was as positive about business opportunities on social media like this 20-year-old male Dutch undergraduate survey participant:

Social media will continue to dominate the market even more. Everything will go through it. Without having social media, you wouldn't probably know what's going on in the world (concerning friends, news). I expect social media to get some kind of a monopoly over everybody's life. (Survey User Experience, 2015)

This survey participant anticipated more government control over social media: "Social media may soon be controlled at some point as many governments see this as a way to be against them." (Survey User Experience, 2015). These comments show that users are very well aware of the threat social media poses to governments.

Privacy, and exploitation of user data for business and political reasons are reflected in this statement by a 35-year-old female Dutch working professional survey participant: "Privacy, hard to control, uncurated. Can be exploited for marketing purposes or political purposes" (Survey User Experience, 2015).

Digging Deeper

Understanding what users expect and when users are accessing social media are important pieces of the puzzle, but what can we learn from those users who are online? How do users value the Internet? We have learned that user priorities are to connect with friends and family. Focus group participants were given the opportunity to express their experiences qualitatively as well. While a survey is limited in the expression of qualitative data, a focus group provides an opportunity for participants to express and discuss their views.

I had the opportunity to discuss the nature of social media in three different group settings over a period of two years. The February 2015 focus group consisted of a communication undergraduate student class at Northern Arizona University (NAU, 2016), Flagstaff, USA and at NHTV, University of Applied Sciences in Breda, Netherlands¹⁸. This presented an opportunity to compare findings and reveal any differences between surveys and focus groups.

Undergraduate groups can be considered digital natives, whereas the third focus group consisted of 1st and 2nd degree digital immigrants. Undergraduate media management students at NHTV, University of Applied sciences, Breda, Netherlands and mass communication students NAU, Flagstaff Arizona were asked to form teams, discuss the topic and then upload their conclusions to Google docs (F. Kohle, 2015)¹⁹.

Comments of digital natives and immigrants were themed as shown in Table 1.

Table 1.

Sample Comment	Theme/Category
"A platform to connect with the rest of the world and share your thoughts."	Global
"Social media is a collective term for online platforms where users, without or with minimal intervention from a professional editor, take care of the content."	Creative
"The means of sharing information and connecting with others around the world using the Internet."	Sharing
"It's a way of sharing information in a fast pace and is also a means of promotion"	Promotion
"It connects you to people on the Internet, but it disconnects you to people in real-life."	Escape
"Yesterday, we just lost the Internet for 6 hrs., which makes me so anxious and can find nothing to do without Internet."	Addictive*
"Social media is destroying our country, kids so young seeing stuff a lot more easily and it is making it easier to get into bad stuff"	Destructive*

*Addictive and destructive were not considered a single category, as a distinction was made between the compulsion of being online as being addictive versus anonymous online bullying as being destructive. Sample comments have been edited for length and/or clarity.

The focus group sessions opened with an explanation as to the purpose of the study. Participants were free to pick one or more partners to form smaller groups to discuss how social media should be defined.

Next, participants logged into Google docs and entered their summary. The session continued and results were revealed to all teams, providing the opportunity to further discuss and revise findings as co-discovers.

Finally, I categorized and coded answers then grouped the emerging pattern into themes (Barbour, 2013). When asked how users experience social media, a dominant view was to connect with friends, family, peers and colleagues.

Themes contain both positive and negative experiences, as shown in Table 2.

Table 2.

<u>Examples of:</u>	<u>Positive Experience</u>	<u>Negative Experience</u>
<i>Interaction (I)</i>	Catching up with friends	Online bullying
<i>News (N)</i>	Staying up to date	Too much fake news
<i>Entertainment (E)</i>	Funny Videos	Too many choices
<i>Marketing (M)</i>	Company promotion	Clickbait
<i>Persona (P)</i>	Self-expression	Misrepresentation of Identity
<i>Security (S)</i>	Feeling safe	Invasion of privacy
<i>Health (H)</i>	Real life/social media balance	Addiction

One participant stated “social media is a great way to keep in touch with friends, but also for school related matters.” (Focus group Social Media, 2015). Participants interacting in this way with friends, family, colleagues, peers or strangers online were added to the Interaction category.

Participants who stated that social media are “a great way of remaining up to date” were added to the News category. Avoiding “boredom” and watching “funny” videos are views that were classified in the Entertainment category.

Views describing social media as a platform for “click bait” were added to the Marketing category. Participants who experience social media as a platform to “showcase the best version of them” and for “self-expression” were classified under the Persona category.

Users describing more than one theme were added to more than one category. For example, not everyone perceives social media as entertaining alone, but rather as both entertaining and useful for news updates.

Unsurprisingly Focus group results revealed that 68% consider interaction a top priority, reaffirming survey results regarding interactivity of 73%. Yet, qualitative feedback from focus groups was more critical compared to surveys:

Social media is taken over as the main mode of communication. It can connect or isolate, be funny or sad, present justice or shame. It's the way that the world communicates their ideas be it good or bad. (Focus group Social Media, 2015)

The interactive qualities of social media, being able to share information with people, friends and family, express one's self, clearly take priority over entertainment or health concerns. Nevertheless, one focus group saw social media as a danger to their children:

Social media is destroying our country, kids so young, seeing stuff a lot easier and easier and get into bad stuff because it easier to find it. (Focus group Social Media, 2015)

What Users Think Is Wrong With Social Media

Interacting with friends, family, peers and colleagues dominates the social media experience for all participants, closely followed by presenting an online-persona and self-expression. This matches the outcome of the surveys. It explains why Facebook with its befriending tools has become the most popular SNS to date. Entertainment and Marketing were considered the least important.

But how are social media users experiencing the weaknesses of social media? The above comment shows that not everyone experiences social media as positive²⁰. Interaction clearly dominates the positive experience in social media.

Negative comments reflecting the weakness of social media included fake identities. This was a concern to this 22-year-old Dutch student: “Cat video’s, wrong information can be perceived as real information, and everyone can create a false identity.” (Survey User Experience, 2015).

This 25-year-old male Dutch working professional feared to miss out on something important online: “Feel the need to always check what is going on and afraid to miss something” (Survey User Experience, 2015), (Form responses, line 23).

The effort needed to stay online and user data exploitation were a concern to this 21-year-old female German student:

It is hard and nice to be online 24/7. In addition to that it could be kind of dangerous that a company knows so much about us by looking at our contacts or profiles. (Survey User Experience, 2015)

Compared to the overall experience or strength of social media, social media weaknesses are perceived markedly different:

- 37.8% of survey participants are concerned about negative interaction experiences, followed closely by security concerns;
- 35.1% considers privacy and data abuse a social media weakness. News manipulation ranks in third position, a dishonest online persona fourth, and health in the form of online addiction last.

Participants are aware of the benefits of social media. But they also understand the negative influence social media can have on user data integrity and privacy, as well as the forms of online abuse such as online bullying. According to this 26-year-old male Dutch working professional “the weakness is that it’s hard to get things off of social media. Once it’s out there it is out there.” (Survey User Experience, 2015), (Form responses, line 37).

It is interesting to note that despite this awareness, the overall experience is not diminished. When asked how participants see social media in 5 years, positive predictions included:

- More growth worldwide for social media platforms;
- 24/7 online social media access;
- Highly integrated apps;
- Better-streamlined social media platforms such as Facebook and Twitter.

Negative predictions included:

- Too much advertising;
- Corporations taking over;
- More abuse of privacy.

Users think that more government regulations are needed to protect user data because: “I think that social media content will get even more advertisements.” (Survey User Experience, 2015).

Despite differences regarding the perception of social media in news, persona or health, all surveys (74%) and focus groups (76%) feature a majority that considers social media a platform for interactivity, regardless of whether or not users have positive or negative experiences in that category.

User Data Exploitation From a User Perspective

Data suggests that social media is the interactive platform on which to connect to the Global Digital Family, which I explore in more detail below. Just as in real life, friends and family take priority in the virtual world. This is strongly valued by users.

Findings also indicate that survey and focus group participants are aware of the disadvantages of user data appropriation via social media and accept it as a necessity in order to maintain their online sociality experience. To an SNS user data means revenues. To users, data makes it possible to engage with friends and family.

The Global Digital Family and User Data Exploitation From a User Perspective

Research shows that users are well aware of SNS user data exploitation, informing themselves about world issues and connecting to friends and family who share these values. Survey and focus group participants are aware of the disadvantages of user data appropriation and exploitation via social media, but accept it as a necessity in order to maintain their online sociality experience.

To an SNS user data means revenues, and to users data makes it possible to engage with friends and family. It is user data tagged to UGC, PGC, user devices and accounts, data extrapolated from user behaviour, i.e. the mobile consumer, which is the life blood of the social media ecology.

Who Is Not Online?

Students and professionals dominate the statistics, begging the question of how equal the Internet and social media is to other demographic groups, which do not have the average education or professional history recorded in the above statistics. Who is not part of the new Global Digital Family and cannot be reached via social media was explored by Kathryn Zickuhr of Pew Research in detail (Zickuhr, 2013). Her findings reveal that:

- 15% of all Americans are not online;
- 41% of those did not obtain a high school diploma;
- 44% were above the age of 65;
- 24% earned 30,000 USD or less.

Campaigners and businesses intending to reach this target group need to consider a strategy not based on social media. Instead they should engage this target audience via traditional media, press- and outdoor media campaigns. Data suggests a correlation between the level of education, age and income, and interest in accessing the Internet.

SOLUTIONS AND RECOMMENDATIONS

The New ‘Global Digital Family’

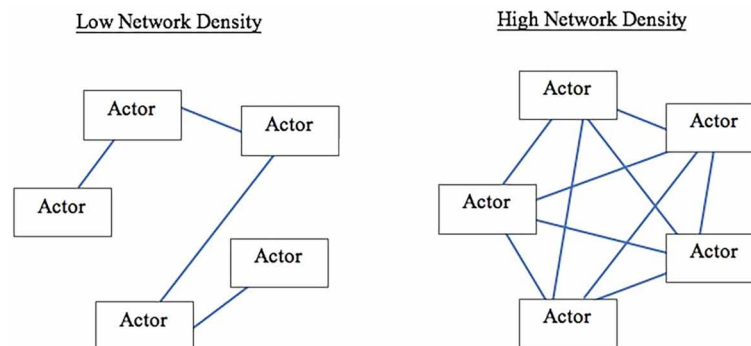
Connecting Directly to Friends and Family

Research so far suggests that connecting to friends and family is a key priority to users. It is reasonable to argue that McLuhan’s Global Village has evolved into the Global Digital Family. Social media and the way user data is exploited makes it possible for SNS to generate revenues and for users to connect to new and old friends and family across the world.

39% of users claim that they are connecting to virtual friends they have never met (Duggan, Ellison, Lampe, Lenhart, & Madden, 2015), reaffirming how users extend their ‘post-familial family’ into the virtual domain (Beck-Gernsheim, 1998, p. 68).

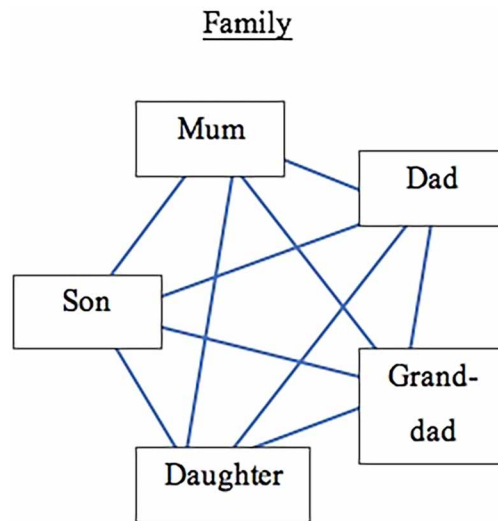
But what does this new-found family connectedness look like in the social media ecology? Drawing from Westaby et al (2014) Dynamic Network Theory (DNT), we learn that high density networks are more likely to have a higher flow of information: “density represents the number of observed linkages divided by the number of total possible linkages” (Westaby, Pfaff, & Redding, 2014, p. 270). Based on the observations of Westaby et al., a low-density network compares to a high-density network as shown in Figure 1.

Figure 1.



In a high-density network, every network actor is connected directly to every other network actor, making it possible to share information with strong cross-connection influences. A high-density network, however, is not a new phenomenon; one of, if not the oldest, high-density and dynamic network is the family (see Figure 2).

Figure 2.



DEFINING THE GLOBAL DIGITAL FAMILY

Any member of a family or tribal network can connect directly to any member of their family and tribal network, though it is important to make a clear distinction between the small network of a family and that of a tribe.

In her article “A Normal Family” (2016) Lisa Belkin discusses the results of a survey by the Pew Centre of Research (Taylor, Morin, & Wang, 2011), highlighting the changing demographics in the contemporary post-familial-family, i.e. emergence of elective family relationships such as the ‘patch-work’ or ‘blended’ families not connected by blood relations²¹.

Extending our blended post-familial family into the virtual domain is a natural next step. Critics might argue that we are dealing with the digital tribe, rather than the digital family. For example, Paul James, Professor of Globalization and Cultural Diversity at Western Sydney University, explains that the concept of ‘tribe’, is:

Derived from the traditional Latin term tribus, names real, self-reproducing and changing communities framed by the social dominance of face-to-face integration and living in the world today. (James, 2006, p. 26)

Just as the family, tribal structures facilitate direct face-to-face interaction, which is important in order to maintain a high-density network structure within the tribe.

During the evolution of our species, we connected to each other in this way in families and tribes during the Palaeolithic period, which spanned 3.5 million years (Darvill, 2009). However, for Homo Habilis and Homo Erectus (Gibbons, 2011) emerging in the Lower Palaeolithic period, the number of network actors that could effectively communicated with in a direct fashion was limited to an estimated 300 tribal members (Dunbar, 2003).

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Direct connections in a network of 300 tribal network actors or more required the establishment of hierarchies, making it less likely for all tribe members to maintain a highly dense network when compared to a family: the family unit continued to facilitate a highly dense network the Lower Palaeolithic, connecting all family members directly.

For that reason, it is appropriate to use the term Global Digital Family, rather than global digital tribe. Indirect hierarchical connections removed the size limitation of 300 tribe members, enabling mankind to establish larger communities during the Neolithic period. With the arrival of social media, connectedness has reached full circle.

By removing the limitations of indirect hierarchical connections, social media is connecting individuals again directly but on a global scale, as anticipated in McLuhan's metaphorical 'Global Village'. Social media enables users worldwide to reach out directly to any other user participating in the global, digital family network of Humankind. According to a survey conducted by the Pew Research Center (Duggan, Ellison, Lampe, Lenhart, & Madden, 2015):

- 93% of participants stated that they are connected via social media to friends and family, other than parents and children; and
- 91% are connected with current friends reaffirming survey and focus group findings.

Connecting to the post-familial family is key to social media users: therefore it is reasonable to say that social media and user data also facilitates the return of family values, changing the outlook digital natives. This is reflected in the way university graduates carry these expectations into their future workplace.

Social Media, Family and the Workplace

Examining the influence of the Baby Boomers, Generation X²² and the millennial generation, Anick Tolbize at the University of Minnesota identifies four generational types influencing the work environment (Tolbize, 2016):

- 46% of Traditionals²³ and 45% of Baby Boomers consider family a top priority;
- 67% of Generation X and 73% of Generation Y view family as a top priority²⁴.

This reaffirms findings from surveys and focus groups, underscoring how direct connectedness via social media facilitates the return of the family. Tolbize's study confirms the importance of family to digital immigrants, who are members of Generation X and Generation Y.

Millenials expect transparent production processes and equal treatment in a work environment connecting everyone and in this section we learn that along with the rise of social media, family and associated values have become more important to digital natives.

FUTURE RESEARCH DIRECTIONS

Without an authentic online experience, it is unlikely that social media can fulfill its potential as a facilitator of a global collective consciousness and research underscored that users expect a real and credible

social media experience. Social media makes emotional contagion possible, which plays a strong part in an authentic social media experience.

In addition to emotional contagion research suggested that social media facilitates the projection of personality: i.e. the persona and the shadow as discussed by C.G. Jung (1958/1975). Findings indicate that emotional contagion and an authentic personality are critical social media elements, but what exactly an authentic online personality is, remains unclear and further research into this is warranted.

Synthesizing Jung's ideas on personality with Kozinet and Toennie shed additional light on the problem of authenticity, but exactly when something is perceived authentic on social media is still not entirely clear.

CONCLUSION

Reappraising Social Media and the Rise of The Global Digital Family

Scholars Kapp (1877)²⁵, McLuhan (1962)²⁶ and Kittler (1986/1999)²⁷ theorised on a global network originating from our collective unconscious²⁸ and contributing towards a global collective consciousness²⁹. Critics suggested that media technology such as the internet lacked the richness needed for real human interaction (Daft & Lengel, 1986), yet we have seen how emotionally contagious tweets by Donald Trump "stoke anxiety" (Rucker & Paquette, 2017) among his followers.

The role of emotional contagion is not included in previous social media definitions. In addition, industry data, surveys and focus groups as part of this study suggest that user expectations significantly differ from the corporate perspective. These fundamental characteristics are not reflected in previous definitions of social media. We recall Nicole Ellison's definition:

We define social network sites as web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site. (Ellison, 2007, p. 211)

While Ellison considers user profiles and sharing of crucial importance, her definition does not provide details on the importance of a qualitative authentic and emotional user experience. Nor does it address how the user perspective differs from corporate expectations. Kaplan and Haenlein on the other hand approach their definition from a marketing position:

Social Media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content. (Kaplan & Haenlein, 2010, p. 61)

Kaplan and Haenlein introduced the topic of UGC into their definition and their article raises the topic of authenticity: being 'unprofessional' is recognised as a social media hallmark, but Kaplan and Haenlein do not explore this at a deeper level.

Reappraising Social Media

Considering surveys and focus groups, the act of sharing and interacting in an authentic fashion is more relevant than UGC on its own. Users not only share UGC, they also share PGC³⁰, with friends and family. Obar and Wildman's perspective represents communication theory:

1) Social media services are (currently) Web 2.0 Internet based applications, 2) User generated content is the lifeblood of social media, 3) Individuals and groups create user-specific profiles for a site or app designed and maintained by a social media service, 4) Social media services facilitate the development of social networks online by connecting a profile with those of other individuals and/or groups. (Obar & Wildman, 2015, p. 2)

While Obar and Wildman acknowledge the evolving nature of social media, they also claim that UGC is the lifeblood of social media. Considering what we have learned from the industry and user perspective, it is reasonable to argue that UGC is an important user contribution to social media, but it is not the lifeblood, as users are also sharing PGC.

User data on the other hand can be considered the lifeblood of social media: it allows users to connect with others online according to shared and common interests and it enables SNS to generate revenues by exploiting user data openly – or in a clandestine fashion. However, without user data, SNS have no business model or revenues and users are unable to connect the way they do online.

Additionally, none of the definitions above take into account the potential of social media to contribute towards a global collective consciousness. Kapp and McLuhan as well as Kittler discussed the idea of a global collective consciousness and as we have seen, users are interested in global topics transforming the way we live together on this planet.

From climate change to animal welfare, political activism to human rights: social media offers the potential to users to discuss and even force change to redefine conventions and guidelines governing our global conduct. It is this collective consciousness which will establish global norms of conduct enabling the Global Digital Family to take the necessary steps needed to deal with climate change and inequality.

Findings in this paper suggest that Social Media is more accurately defined as follows:

- Social media makes it possible for users to create specific SNS-profiles and project an authentic online personality as members of the Global Digital Family;
- Social media facilitates emotional contagion;
- On social media users contribute to the digital global collective consciousness;
- The lifeblood for Social Network Sites is user data: it allows users to connect and share content with others and makes it possible for SNS to generate revenues;
- As long as SNS meet user needs, users accept corporate exploitation of their data.

Facebook was launched on February 4, 2004 (Phillips, 2007) and since then social media has disrupted power structures (Kohle F., 2012) forcing industry and governments to adapt.

Considering the global challenges our planet is facing this research suggests that social media is now evolving into a global network facilitating the rise of the Global Digital Family and the establishment of a global collective consciousness needed to face and resolve these challenges.

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ENDNOTES

- ¹ French sociologist Emile Durkheim developed the idea that societies have a set of shared beliefs, ideas and moral attitudes in the form of a collective consciousness (Durkheim, *The Divisions of Labour in Society*, 1893). Social media makes it possible for users to contribute towards a global collective consciousness.
- ² 'Unprofessional' is an interesting criterion and I will return to this in more detail chapter 5 when discussing authenticity and personality online.
- ³ Ooyala's data analysis features data from than 200 million users in 130 different countries.
- ⁴ Survey participants were recruited via the NHTV, University of Applied Sciences University Breda, NL, network but also included participants from other countries who became aware of the survey via NHTV students. The sample size of 35 participants for a survey is not considered representative but indicative.

- 5 The February Flagstaff 2015 focus group at NAU consisted of 12 males and 14 female undergraduate students, aged between 19-25. The June 2015 focus group at NHTV, University of Applied Sciences, Breda, in the Netherlands consisted of 10 males and 12 female undergraduate students aged 19-25, and the November 2015 focus group consisted of 6 male and 8 female NHTV lecturers aged 28-50.
- 6 In the past Humans discuss media, for example a book they read, a film they have seen, with other Humans. In the semantic web, it is the Human who has become object of that conversation: algorithm observe user behaviour, collect user data and then decide which content should be presented. This can be perceived as Kittler's autonomous technology (2000).
- 7 Devicescape crowd-sources 300 million Wi-Fi access points to build apps for companies reaching out to the mobile consumer.
- 8 Gruvi offers a specialised marketing service to production companies wishing to reach out to the mobile audience.
- 9 The EU GDPR is not likely to be in effect in the UK after the UK leaves the European Union.
- 10 In the section investigating the user perspective I demonstrated that users accept exploitation, provided the balance is maintained between their online experiences versus corporate needs. But without exploitable user data SNS have no business model and no revenues, nor can users connect with other users or explore relevant content.
- 11 For example, if a documentary about refugee children is aimed at an audience consisting of 10,000 local school children and teachers and 1,000 school children and teachers are reached, then the project's penetration is 10%.
- 12 For example, metrics include page views per visit and the percentage of visits that complete viewing a video clip and total time spent on the site.
- 13 Nielsen studies consumer behaviour and provides valuable statistical information about user behaviour in social media. Ooyala is a private and venture capital backed video technology and streaming service provider claiming to have more than 220 million unique viewers, serving over 1.2 billion video ads per month. The US Pew Research Centre provides information on demographic trends in the US and worldwide, the UK Office for National Statistics maintains records and statistics on Internet users and so does the US Census Bureau.
- 14 With 220 million users as a base, Ooyala data can certainly be interpreted as representative, providing excellent insight into the behaviour of digital consumers accessing video content (Ooyala, 2015). Social media is not part of their statistics, but as we have seen with Nielsen, video content and social media are closely linked.
- 15 OTT stands for Over-The-Top operators such as Netflix, Spotify or Google Play.
- 16 ISOC does not investigate from a corporate perspective: its mission is to strive to "promote the open development, evolution, and use of the Internet for the benefit of all people throughout the world".
- 17 The sample size of 35 participants should be not considered representative but indicative.
- 18 The February Flagstaff 2015 focus group at NAU consisted of 12 males and 14 female undergraduate students, aged between 19-25. The June 2015 focus group at NHTV, University of Applied Sciences, Breda, in the Netherlands consisted of 10 males and 12 female undergraduate students aged 19-25, and the November 2015 focus group consisted of 6 male and 8 female NHTV lecturers aged 28-50.

- ¹⁹ Within the context of this qualitative research, the results are not considered representative regarding the general population, but indicative of students and future media professionals, professional practitioners and faculty.
- ²⁰ To determine this I coded positive experiences with a “+” and negative ones with a “-” for example a positive interaction such as interaction with friends is marked I+, whereas a negative interaction experience such as online-bullying is marked I-. The positive survey group experiences, or strengths, are represented in the below figures.
- ²¹ How functional ‘blended’ families are was highlighted in a 2010 court case in the US when Michael Lamb, head of the Cambridge Department of Social and Development Psychology testified that “children do not require both a male and female parent” (Dolan, 2010).
- ²² Digital natives that are undergraduates are considered Generation Z and Y, also known as Millennials.
- ²³ Traditionals are also referred to as the Greatest Generation and describes people born between 1922 and 1943 (Value Options, 2017).
- ²⁴ Pew research further illustrates how generations differ from one another.
- ²⁵ In the chapter entitled ‘Der Elektromagnetische Telegraph’ of ‘Die Grundlinien einer Philosophie der Technik’ Kapp refers to the telegraph as an extension of the human central nervous system (Kapp, 1877). Preceding McLuhan by almost a century, Kapp remained relatively unknown for his ideas, while McLuhan is largely credited with popularising the idea that technology is an extension of man.
- ²⁶ McLuhan’s ‘Global Village’ (1962, p. 209).
- ²⁷ Kittler realizes that digital media technologies conflate all previous forms of media realities into Leibnitz’ single binary system, encompassing all content and information in a global network (Kittler, 1986/1999).
- ²⁸ The idea of the collective unconsciousness is C.G. Jung’s unique contribution to Psychology (Jung C. G, 1995/2011).
- ²⁹ French sociologist Emile Durkheim developed the idea that societies have a set of shared beliefs, ideas and moral attitudes in the form of a collective consciousness (Durkheim, *De la division du travail social: étude sur l’organisation des sociétés supérieures*, 1893). Social media makes it possible for users to contribute towards a global collective consciousness.
- ³⁰ PGC stands for Professionally Generated Content (ComScore, Inc., 2012).

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Chapter 6

Facebook and Google as Regrettable Necessities

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ABSTRACT

The following article considers the results from two different studies, a European one involving over 20,000 respondents and an American one closing on 1,000, to illustrate how online platforms such as Facebook and Google can be defined as regrettable necessities. We define regrettable necessities as those whose consumption provides a direct disutility to consumers. That is, other than the standard utility derived from the access to a given service, a direct disutility in terms of privacy losses and preference manipulation results from their use. In addition, users acknowledge this fact and are aware of the disutility suffered, though not necessarily of its intensity, highlighting the fundamental strategic role played by these platforms in current voting environments.

1. Introduction

The capacity of online information providers to manipulate the preferences and decisions of Internet users has recently become a trendy topic given the social emphasis placed on fake news and the increasing interest in big data analysis (Schneier, 2018). This has been the case despite the fact that the Internet was initially considered by its most radical supporters as a free and frictionless information allocation mechanism matching perfectly suppliers with demanders (Golumbia, 2016). Its capacity to process enormous amounts of information and freely distribute it across users led the most optimistic of them to expect a virtually perfect exchange of information. However, it was the extraction of information from the users what became one of the main pillars of the resulting online market in such a way that “by the mid-2010s

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the average reader on news sites like Boston Globe's bostom.com would be subjected to extraordinary surveillance methods, with only the barest degree of consent" Wu (2016, p. 321).

The online interactions taking place between information providers and Internet users has generated a substantial amount of empirical literature illustrating that "the rankings of search results provided by search engine companies have a dramatic impact on consumer attitudes, preferences, and behavior" (Epstein and Robertson 2015, p. E4512). These biases are seemingly due to the trust with which users endow the companies in charge of the search engines to rank the results according to their subjective preferences. This is the case despite the fact that "users generally have no idea how results get ranked" (Epstein and Robertson 2015, p. E4512). The trust placed on an abstract algorithm – designed and updated by human engineers – applies also to Facebook, despite the decrease in satisfaction levels experienced by its users (Kourouthanassis et al., 2015).

One of the main consequences derived from the strategic process of information collection (and transmission) has been the emergence of the Facebook-Google duopoly of information providers, whose dominance over the market is expected to continue increasing

Google and Facebook are set to attract 84 per cent of global spending on digital advertising, excluding China, in 2017, underscoring concerns that the two technology companies have become a digital duopoly (Garrahan, 2017).

The use of Facebook and Google is so widespread and routinized that the data retrieved from their users is being used to generate increasingly accurate profiles of the population (Schneier, 2014). This fact is generally acknowledged by the users – particularly when dealing with privacy concerns (De Wolf et al., 2017) –, who nevertheless continue to use social network sites and search engines on a regular basis. In evolutionary theory, a routine arises whenever a given behavioral pattern is socially accepted among the population.¹ In the current context, such a definition implies that whenever the use of an online platform becomes widespread and accepted as part of the standard behavior to follow, the costs arising in terms of privacy losses and potential manipulability are accepted and assimilated by the population. That is, users are willing to provide online platforms with the information required on a daily basis despite knowing that it can be exploited in a nontransparent way.

Among the theories proposed to justify such a behavior, the scopophilia approach of David Lyon (2006) has gained considerable momentum. The willingness to compete by displaying private information could be considered one of the main incentives driving users to share preference-related data in exchange for free access to the different products of online platforms. This feature links the behavior of users to the positional competition concept developed by Fred Hirsch (1977), where individuals compete within the social spectrum for increased, though marginal, recognition. Within such a framework, "potential customers are choosing to enter into these quasi-feudal user relationships because of the enormous value they receive from them" (Schneier 2014, p. 60), since the services provided by online platforms constitute "the tools of modern life"

they're necessary to a career and a social life. Opting out isn't a viable choice for most of us, most of the time; (...) and choosing among providers is not a choice between surveillance or no surveillance, but only a choice of which feudal lords get to spy on you. (Schneier 2014, pp. 60-61).

A similar conceptual path is followed by Ward (2014), who describes how online interactions can lead to situations of social tyranny where the beliefs and interests of a group of virtual community members are imposed on the other members of the community. In this regard, it has also been empirically illustrated that online platforms, namely, search engines (Epstein and Robertson, 2015) and social network sites (Liberini et al., 2018), are able to manipulate the preferences and, therefore, the subsequent behavior of

users. Kosinski et al. (2013) utilized the information available online to predict with considerable precision the main psychological attributes of users. Cambridge Analytica applied their findings to generate psychograms of the whole adult population of U.S. citizens, as its CEO boasted

We're able to identify clusters of people who care about a particular issue, pro-life or gun rights, and to then create an advert on that issue, and we can nuance the messaging of that advert according to how people see the world, according to their personalities. (Burleigh, 2017)

The direct consequences derived from the strategic use of online platforms have been analyzed by Liberini et al. (2018), who estimated that the political advertising of Facebook increased Trump turn-out by almost ten per cent in the elections of 2016. Moreover, Epstein and Robertson (2015) illustrated empirically the capacity of online information providers to manipulate the preferences of users in voting environments. A fundamental implication that follows from the ability of suppliers to manipulate information is the fact that users do not generally acknowledge the severity of the effects that may arise from any potential manipulation of their preferences and choices

Psychological manipulation – based both on personal information and control of the underlying systems – will get better and better. Even worse, it will become so good that we won't know we're being manipulated (Schneier 2014, p. 85)

Such a drastic consequence is the result of “living in the golden age of (...) electronic surveillance”, which is “efficient beyond Bentham's wildest dreams” (Schneier 2014, pp. 4, 32). The resulting information extraction network has evolved into a complex web of relations that remain for the most part undefined and unquantified

There is no definitive map of network spying services. The allegiances and roles are multifarious and complex. No one really knows the score, though a common opinion is that Google has historically been at the top of the heap for collecting spy data about you on the open Internet, while Facebook has mastered a way to corral people under an exclusive microscope (Lanier 2014, p. 109).

We will argue – based on the intuition following from the literature – that the free services provided by online platforms such as Facebook and Google have been transformed into regrettable necessities. Our definition of this latter concept will be stricter than the one generally considered by economists and political scientists. Intuitively, users employ their time (which could be applied to perform alternative productive activities) to disclose private information in exchange for a service deemed to be necessary. They do so while being aware of the fact that the information provided can be used to manipulate their preferences and decisions, decreasing their respective utilities and generating regret. These services are therefore regrettable necessities.

2. DEFINING REGRETTABLE NECESSITIES

The definition of regrettable necessities constitutes a cornerstone of the current paper. As stated in the previous section, we will consider a stricter definition than the one generally applied by economists and political scientists. The former refers to the use of resources to finance an activity or part of a production process that does not provide a direct utility to the decision maker but either reverts some positive social utility or is required for the consumption or availability of a product. Taxes and transportation costs constitute standard examples.

Taxes are always a regrettable necessity, but some are less regrettable than others (Financial times, 2013).

In other words, economic agents give an unwanted use to their money knowing that a positive outcome will result from it and that such outcome would somehow (indirectly or maybe even directly) revert to them. The same intuition applies to the intermediate sections of the production process that are necessary to generate the final product but do not provide any utility to consumers. A couple of examples are given by congestion and screening processes that “absorb real resources and involve a lengthening in the production chain, an increase in intermediate output” (Hirsch 1977, p. 31).

Political scientists follow a similar though stricter approach. The opportunity cost paid by decision makers (DMs) – in terms of the resources allocated to the necessity – has a direct negative effect on a third party. The army and preemptive attacks provide examples of this stricter definition according to which a negative outcome, regrettable but necessary, is delivered to a third party. On the other hand, similarly to taxes, a positive outcome is obtained by the DMs in the form of increased security. Political scientists are therefore stricter than economists, since resources are allocated to deliver morally regrettable outcomes that have a negative effect on others. In the words of Perkins (2009).

The language of regrettable necessities emerges frequently when groups vie against one another. It appears on the home front around such practices as rationing goods and drafting people into the military. It applies to invaded territories in such forms as travel restrictions, curfews and internment camps. And it figures in the conduct of war itself, in such forms as preemptive armament and pre-emptive attack. Again, no one views any of these moves as healthy steps in themselves but simply regrettable necessities (Perkins 2009, p. 179).

Our definition of regrettable necessities will be stricter than the previous ones, with negative outcomes affecting directly the DMs facing the opportunity costs. More importantly, a fundamental characteristic of a regrettable necessity is the fact that DMs acknowledge the negative consequences derived from their actions. Note that this type of regret differs from the one identified by Schwartz (2004) in his paradox of choice, where a substantial amount of information and the limited capacity of DMs to assimilate it lead to purchases that are lately regretted. In the current setting, DMs regret exposing private information online that can be potentially used to manipulate their preferences and, eventually, their behavior. DMs are aware of the drawbacks following from their decisions, but lack knowledge regarding their intensity.

The regrettable quality of the necessities considered in the current paper follows from the bargain inherent to the free access enjoyed by DMs, where privacy violations are traded in exchange for software applications or uses. This type of market transaction implies that “Internet companies can improve their product offerings to their actual customers by reducing user privacy” (Schneier 2014, p. 50). Users are allowed to access free “surveillance-based services” that “are useful and valuable” at the cost of largely accepted data extortions (Schneier 2014, p. 51).

We analyze data retrieved from different surveys performed in Europe and the United States so as to validate the characterization of Facebook and Google as regrettable necessities. The European case corresponds to a study presented by the European Commission while the American one is taken from a Statista report (<https://www.statista.com/>). Without being explicitly asked about regrettable necessities or stating that they regret the use of online platforms, DMs declare that despite the continuous use they make of both platforms, they do not consider them to be transparent or respectful with their privacy. Explicit concerns are raised regarding the use of their private information and, in the European case, the possibility of public regulation is openly advocated.

3. THE EUROPEAN CASE

The European Commission is sufficiently concerned regarding the attitudes of the European population towards Internet interactions so as to have performed several studies on the subject when designing its Digital Single Market strategy (<https://ec.europa.eu/digital-single-market/>). The most useful one for the current analysis relates to the attitudes of users towards online platforms (European Commission, 2016). As will be highlighted in the next section, what emerges from the answers provided is strikingly similar to the American case. Users of search engines and social media utilize their services almost on a daily basis while being aware of the lack of transparency exhibited by the corresponding companies regarding the use of the personal information provided. This awareness concerns the European users to the point of agreeing to the supervision of these companies by a public agency. This latter statement is complemented by their lack of interest on the terms and conditions of use, being already aware – to some extent – of the implicit costs faced in terms of information disclosure.

The data described throughout this section correspond to a study that took place from April 9 to April 18, 2016, encompassing more than 21,000 respondents who were 15 years and older.² It should be emphasized that the study aimed at illustrating the attitude of the users towards Internet platforms not to describe them as regrettable necessities, though this is indeed one of the main results that arises from the answers received. For instance, Figure 1(a) illustrates how the use of online platforms to retrieve information has become routinized among the European population. The scopophilia inherent to the display of information at the (online) social level (Lyon, 2006) can be observed in Figure 1(b).

Base: Internet and online platforms users (n = 21,776)

Moreover, as the answer to the first question of Figure 2 illustrates, users are aware of the existence of the filter bubble, namely, the fact that online interactions are customized to fit their opinions and preferences (Pariser, 2012). More interesting, however, is the concern raised regarding the use of their personal data and the subsequent agreement on the public regulation of online platforms described in Figure 2. The generality of such statements is then focused on search engines and social networks in Figure 3, where users express specific discomfort regarding the collection and use of personal data by both types of online platforms.

Base: Internet and online platforms users (n=21,550)

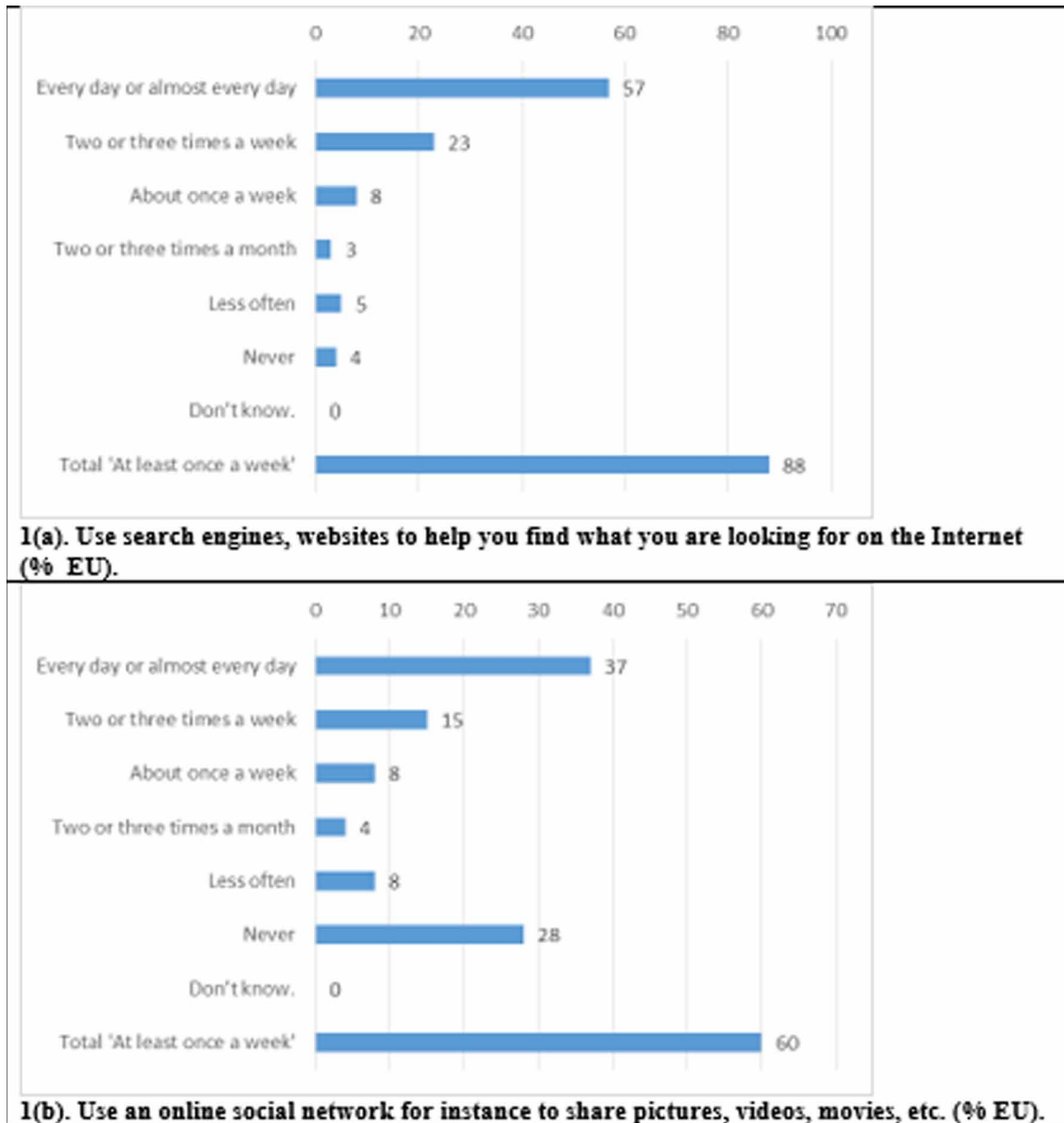
Base: Internet and online platforms users (n=21,550)

Finally, Figure 4 confirms the fact that the retrieval and nontransparent use of private information by these platforms is generally accepted and its consequences ignored or omitted by their users. The consumption of both services is routinized and the resulting regrettable consequences assimilated as part of their features, with most DMs ignoring the terms and conditions of use defined by the corresponding companies. All in all, DMs acknowledge the use of their personal information for purposes that may lead to the manipulation of their preferences but fail to recognize the actual capacity of private businesses to do so without them realizing (Lanier, 2014; Schneider, 2014).

Base: Internet and online platforms users (n=21,550)

Facebook and Google as Regrettable Necessities

Figure 1. For each of the following activities, please tell me if it is an activity that you do, or not, on the Internet



4. THE AMERICAN CASE

The data described throughout this section correspond to an online study published by Statista (2017) on the use and impact of online platforms in the United States. The survey was conducted from March 22 to March 27, 2017, and consisted of about 1,000 respondents who were 18 years and older. We should note that the American case is almost identical to the European one, the only notable difference being the question about the supervision of online platforms by a public agency.

Figure 2. Please tell me to what extent you agree or disagree with the following statements on the collection and use of these personal data by online platforms (% EU)

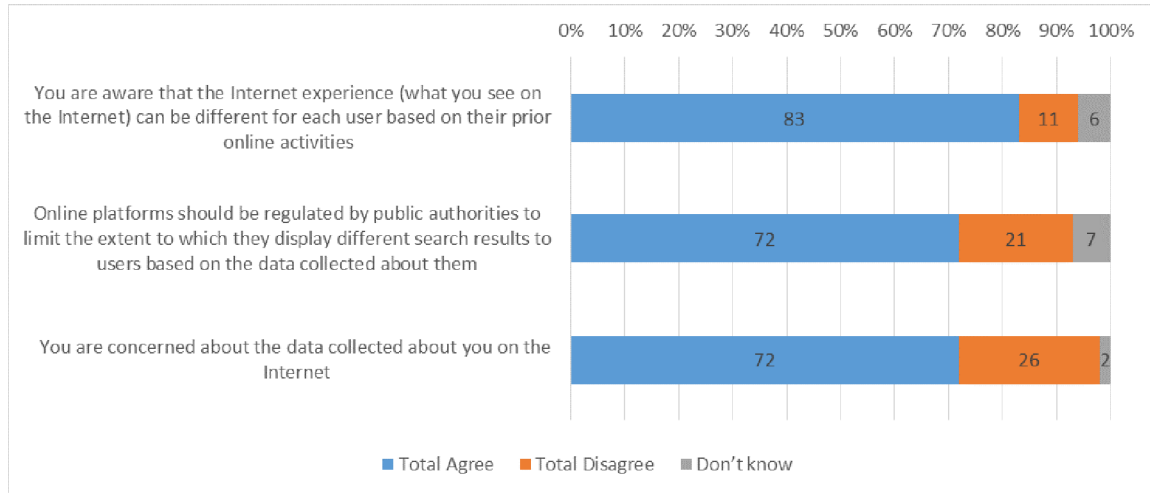
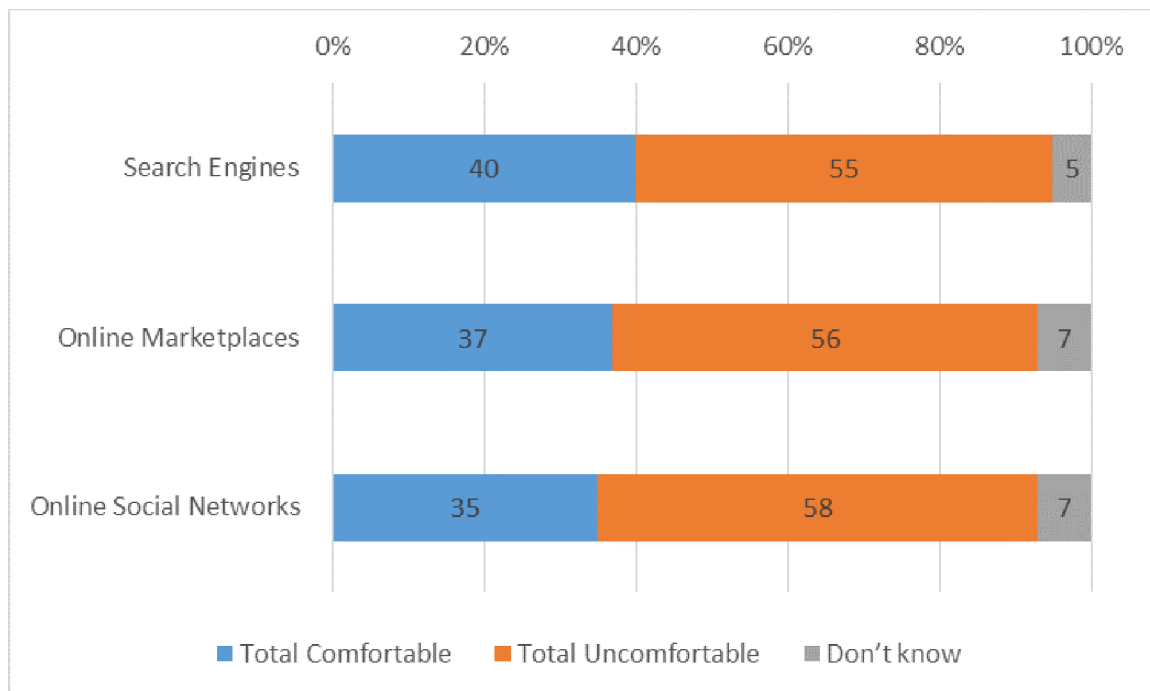
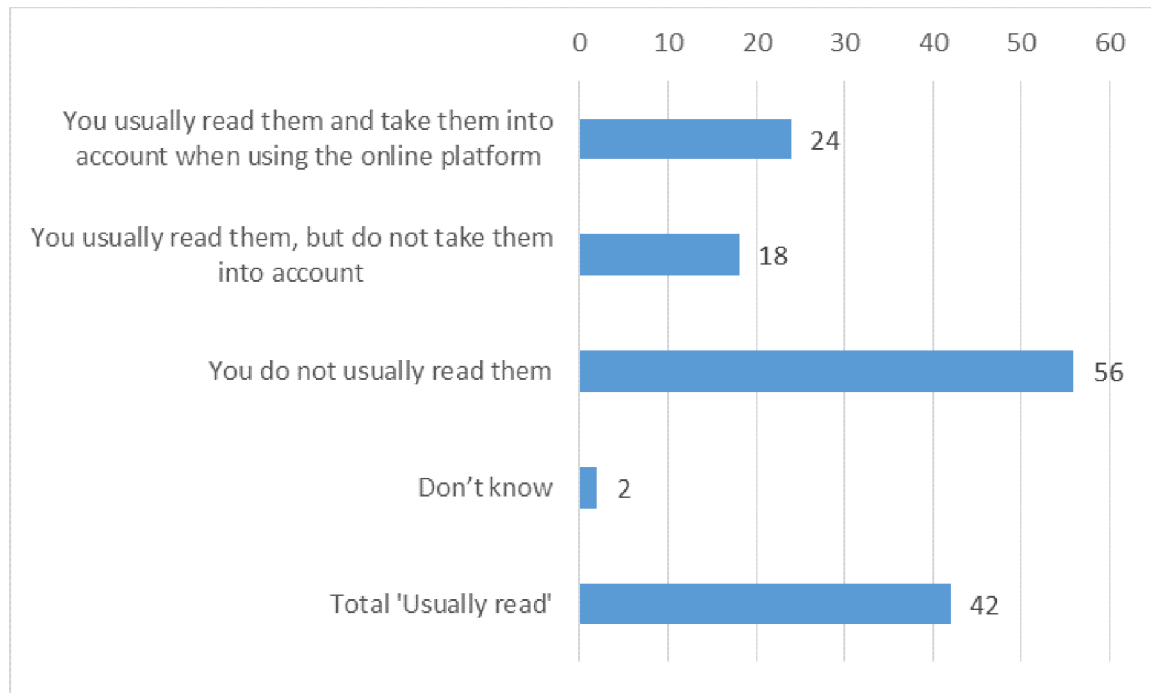


Figure 3. To what extent are you comfortable or not with the fact that (insert item) use information about your online activity and personal data to tailor advertisements or content to what interests you? (% EU)



Facebook and Google as Regrettable Necessities

Figure 4. Most online platforms have terms and conditions which explain how you may use the website as well as the various legal requirements that websites must comply with. These include: privacy policy, cookie policy, and intellectual property rights such as copyright terms. Thinking about the terms and conditions on online platforms, which of the following best describes your situation? (% EU).

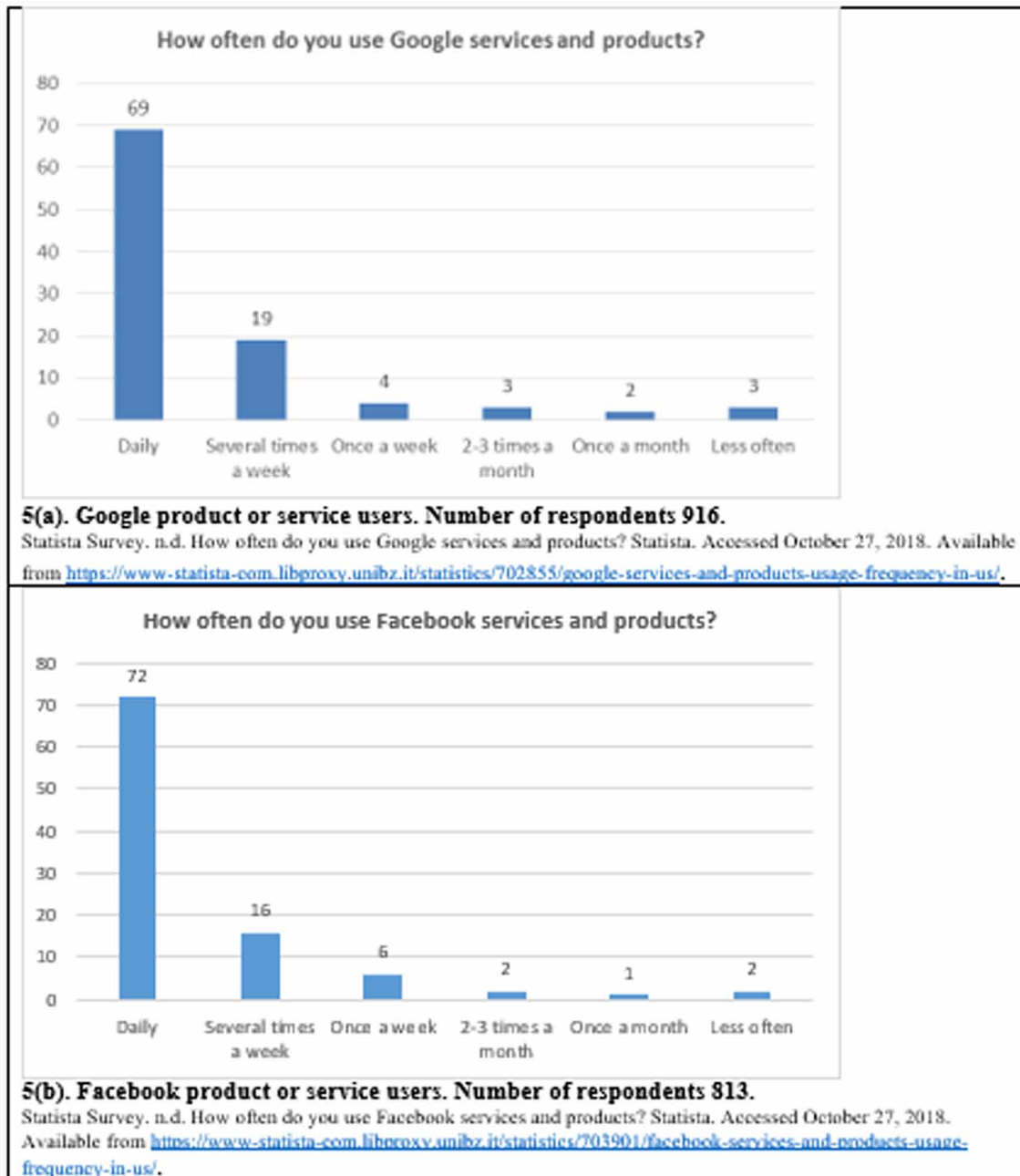


In sum, the results obtained regarding Google and Facebook are quite similar and validate the routinized use of their services while acknowledging their lack of transparency and the existence of trust concerns among their users. The scores attained by Facebook in this latter fields are lower than those of Google, a result that does not follow from the Cambridge Analytica scandal, which was reported in March 2018.

The routinized use of both platforms is illustrated in Figure 5, with a substantial proportion of respondents recognizing their daily use. At the same time, Figure 6 describes the concern of users regarding their personal information and the care they take to disclose just some basic details when registering data in their platform accounts. That is, the main services provided by both companies are consumed daily, with users trying to limit their exposure and the amount of information revealed. However, users do not seem to consider the substantial amount of information generated through the intensive use of both platforms. Thus, even though users recognize the privacy and trust drawbacks inherent to the use of these platforms, their substantial and widespread magnitude remains unaddressed.

The absence of transparency is emphasized in Figure 7, while privacy concerns arise in Figure 8. Interestingly enough, as Figure 8 illustrates, users acknowledge the existence of alternatives to Facebook and Google. Despite this fact, both platforms continue to be widely used on a daily basis. As can be inferred from the texts of Lanier (2014) and Schneier (2018), this behavior represents the acknowledgement of the fact that the information extraction (and preference manipulation) problem is widespread through the online platforms market, an expected consequence according to the theory of social costs developed by Kapp (1950) and extended by Frigato and Santos Arteaga (2019).

Figure 5. U.S. usage frequency of Google and Facebook services and products 2017



Facebook and Google as Regrettable Necessities

Figure 6. U.S. consumer personal data sharing within a Google or Facebook user account 2017

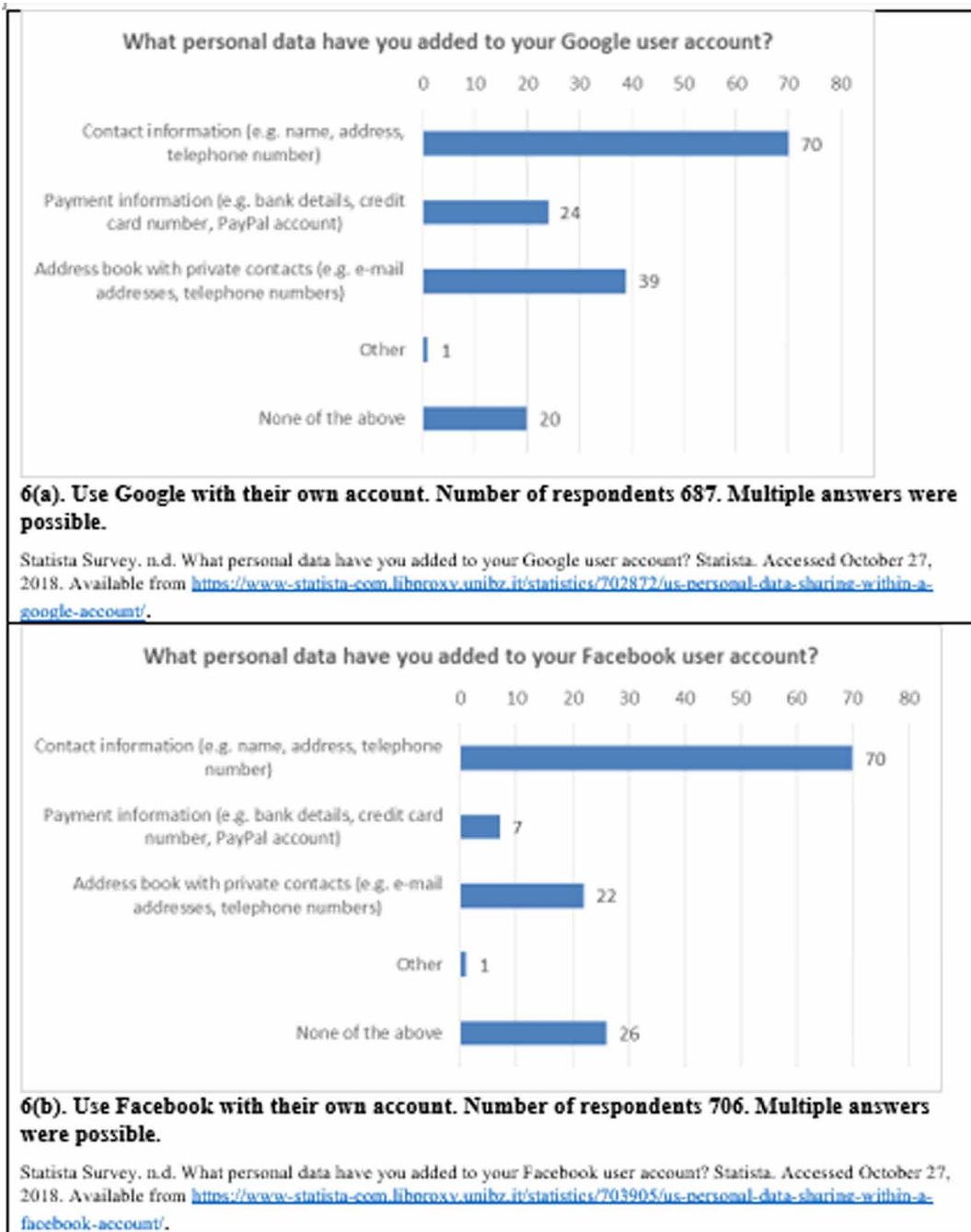


Figure 7. U.S. consumer opinion on Google and Facebook as a company 2017

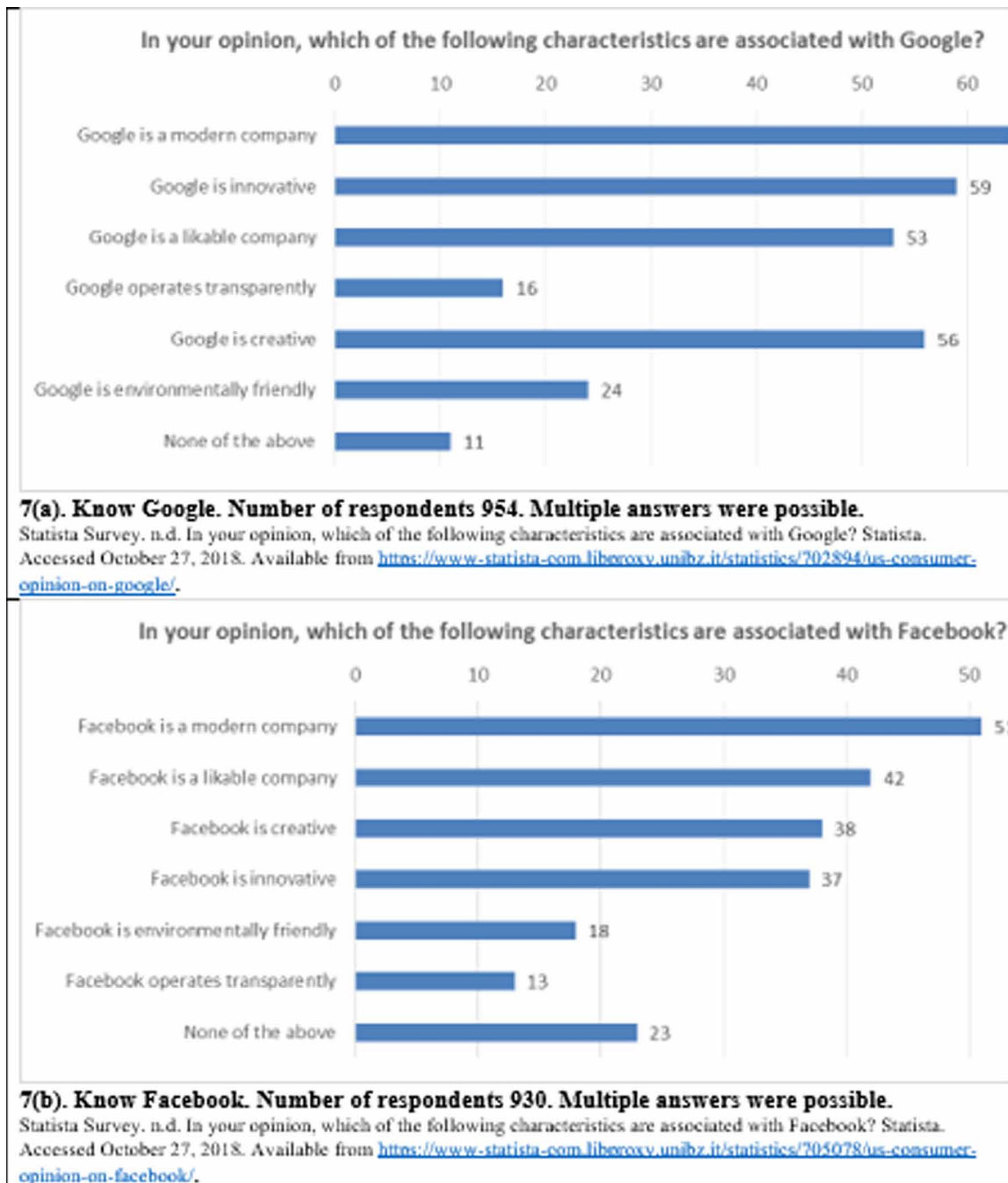
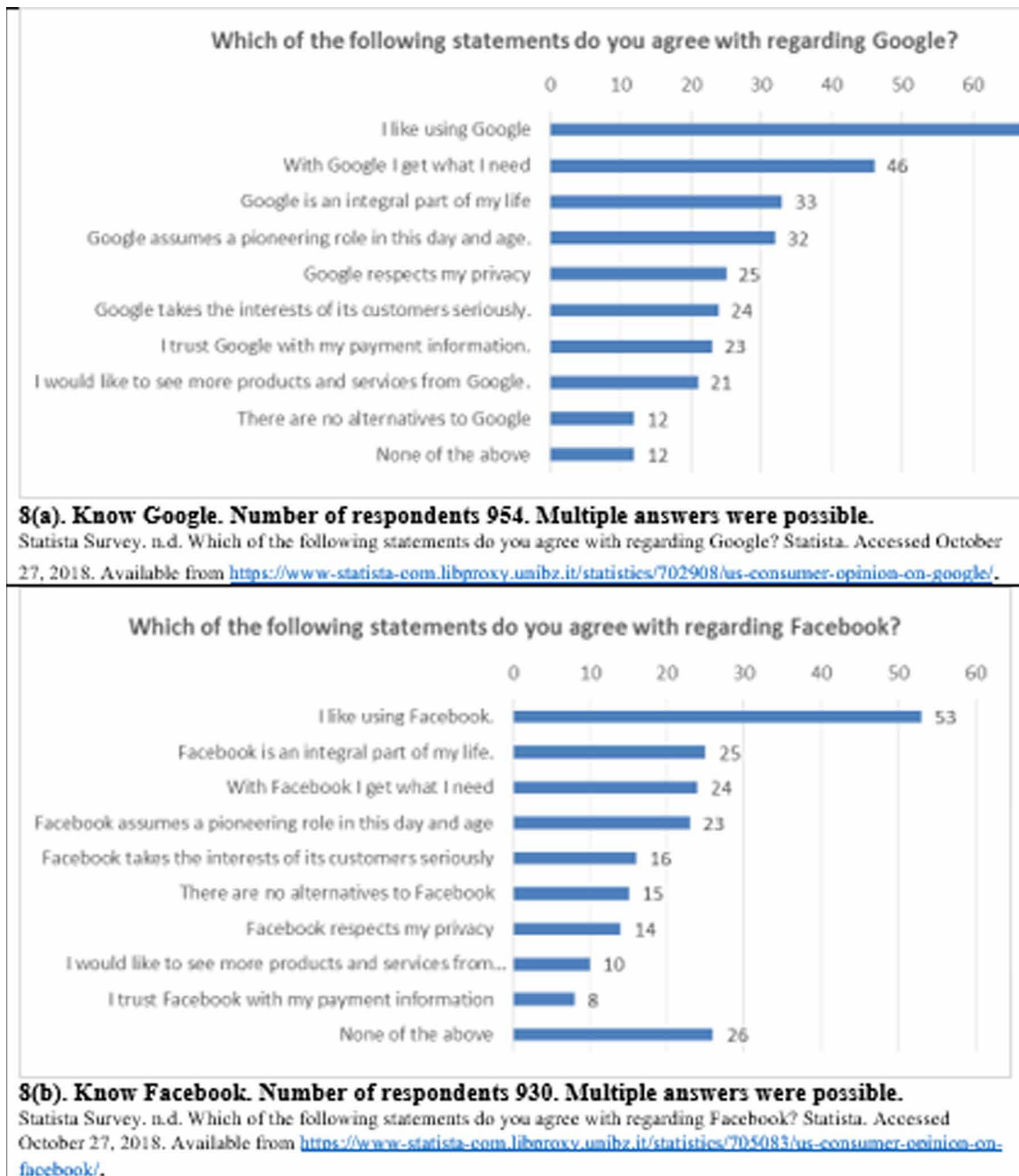


Figure 8. U.S. consumer perception of Google and Facebook as a company 2017



5. CONCLUSION: REGRETTABLE NECESSITIES AND PREFERENCE MANIPULATION

The main purpose of the current paper has been to illustrate how the capacity of two of the main online platforms (and information trading businesses) to retrieve and process information has been acknowledged and routinized across the European and U.S. populations. In this regard, the use of personal data to manipulate the preferences and decisions of DMs according to the interests of private businesses delivers a negative outcome to the users of these platforms, identifying them as regrettable necessities. One of the most problematic consequences arising from these facts is that once users understand the information extraction process and routinize it, they could agree to willingly provide the information required by online platforms, as is for example the case of Amazon highlighted by Bauman and Lyon

Amazon.com, however, also cheerfully makes consumers aware of how they are surveilled by others, through their Wish List feature (...) The Wish List also reminds us of how much people like to be watched; there is a kind of shoppers' scopophilia working here (Bauman and Lyon, 2013, 104).

It therefore follows that, while constituting an information processing and trading duopoly, Facebook and Google are far from being the only companies aiming at controlling information flows and the decisions of users

Surveillance is the business model of the Internet. It's not just the big companies like Facebook and Google watching everything we do online and selling advertising based on our behaviors; there's also a large and largely unregulated industry of data brokers that collect, correlate and then sell intimate personal data about our behaviors (Schneier 2018).

The influence of political technologies on voting environments – such as the 2008 U.S. presidential election – highlights their strategic relevance as information and motivation tools (Khansa et al., 2010). The academic literature has already warned about the capacity of online platforms to modify the preferences and attitudes of users within these settings (Epstein and Robertson, 2015; Liberini et al., 2018). In this regard, Marchal et al. (2018) analyzed 2.5 million tweets and 6,986 Facebook pages over a 30-day period leading up to the 2018 U.S. midterms. They found that the amount of junk news circulating in social media was actually greater than during the 2016 U.S. presidential election and that these news were being consumed by more mainstream conservative users. That is, while being fully aware of the capacity of online platforms to trade the personal information retrieved so as to modify their preferences and behavior, users continued to consume these regrettable necessities and share an increasing amount of information online.

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ENDNOTES

¹ The relationship between routines, rules and habits is not straightforward and differs depending on the formal approach considered (Lazarcic, 2000). We focus here on Veblen's evolutionary approach to routines and their relationship with habits. In particular, "'habits' are individual bents based on larger institutions that partly determine the individual cognitive schemes and routines at a given moment. These habits are transformed and evolve through a range of historic events that change them. Consequently, for Veblen, routines are defined between instinct and tradition and are a certain way of doing things at a given time. For Veblen, both the cognitive aspect and the dynamic nature of 'habits' are important. This enables habits to be distinguished from a purely sociological approach, describing the social structures of society" (Lazarcic 2000, pp. 159-160).

² The list of countries included in the study follows: Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, France, Finland, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

Chapter 7

The Effects of Virtual Likes on Self-Esteem: A Discussion of Receiving and Viewing Likes on Social Media

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ABSTRACT

Social networking sites offer opportunities for users to express themselves and receive immediate feedback in the form of virtual likes. Adolescents place a great deal of value on the number of likes, regarding them as indicators of peer acceptance and support. Since peer feedback and social comparison are integral to adolescents' self-evaluations, the aim of the current chapter is to determine whether self-esteem is sensitive to the number of likes associated with their own (peer feedback) and others' posts (social comparison). The synthesis of literature indicates that self-esteem is responsive to indicators of one's value to others as well as the value of others, supporting the sociometer and social comparison theories. Indications of liking online serve to enhance self-esteem, whereas rejection deflates it. In addition, seeing others get many likes negatively impacts viewers' self-esteem. The gaps in the literature are discussed and future research is suggested.

INTRODUCTION

Social media has become ubiquitous in the daily life of adolescents and young adults, providing a forum for youths to interact and make connections with peers, practice social skills, observe others, and to provide and receive feedback (Boyd & Ellison, 2007). Facebook, Instagram, and Snapchat are consistently among the top social networking sites in North America (Greenwood, Perrin, & Duggan, 2016; McKinnon, 2015; Smith, & Anderson, 2018). Users create online profiles containing personal information about the self, in the form of images and/or textual content, that are broadcasted to other social networking members. Not only do users share information with a much larger audience compared to interactions in real life,

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but they also are open to immediate feedback from the larger audience in the form of quantitative (virtual likes which are represented as a thumbs up symbol or heart) and qualitative (comments) remarks. Overall, social networking sites have the potential to influence psychosocial functioning.

As adolescence is characterized as a developmental period of increased focus on the self, peer feedback and social comparison become integral to adolescents' self-evaluations (Harter, 1999). In effect, adolescents' self-esteem may be sensitive to the number of likes they get in response to their social media posts as well as the number of likes that their peers may acquire. Therefore, the primary objective of the current chapter is to outline research regarding the potential enhancing and adverse effects one's own virtual likes as well as other posters' virtual likes may have on users' self-esteem. First, the chapter will describe theoretical perspectives of self-esteem to support the potential influence of liking indicators on self-esteem. Second, a description of the virtual like is provided, including what likes may stand for, and the types of images that are most likely to elicit a greater number of likes. Third, the author will synthesize the literature that examines (i) the relationship between self-esteem and the number of likes users receive for their information shared on social networking sites, and then (ii) the relationship between self-esteem and seeing how many responses others have received for their posts. Finally, the gaps in the literature will be discussed and future research suggested. Overall, this chapter may aid in the advancement of research, increase public awareness, facilitate policy development, and expand clinical applications related to protecting or enhancing self-esteem among social media users.

SELF-ESTEEM BACKGROUND

Self-esteem can be conceptualized as the extent to which individuals accept, approve of, or value themselves. While state self-esteem represents the momentary fluctuations in one's feelings about him/herself, trait self-esteem captures one's global appraisal of his/her value (Leary, 1999). Researchers agree that low self-esteem is associated with a variety of psychological challenges, including depression, loneliness, substance abuse, and academic failure (Henriksen, Ranøyen, Indredavik & Stenseng, 2017; Leary, 1999; Rosenberg, Schooler, & Schoenbach, 1989; Silverstone & Salsali, 2003). According to Argyle (2008), the following four major factors influence self-esteem: the reactions of others, comparison with others, one's social roles, and one's identification with social roles. The current chapter focuses on the first two factors, which are most relevant for the effect of virtual likes on self-esteem.

One theoretical perspective that highlights the importance of others' evaluations for self-esteem is the sociometer theory (Leary & Baumeister, 2000). According to the sociometer theory, humans have a natural drive to maintain significant interpersonal relationships, which stems from the species survival being dependent on individuals belonging to groups. To facilitate knowledge of group belongingness, humans may have evolved to develop a psychological mechanism that would continuously monitor the social environment for cues regarding the degree to which they were valued and accepted by others. Thus, self-esteem is a psychological meter that monitors the quality of one's relationships with others. Individuals tend to feel good about themselves when experiencing acceptance and conversely feel negative about themselves when experiencing rejection. The sociometer is particularly sensitive to changes in the social environment so that individuals can react to improve situations in their favor. While state self-esteem captures the momentary fluctuations in perceived social inclusion based on others' evaluations, trait self-esteem is an overall appraisal of value, or the degree to which the individual views oneself as a sort of person who is accepted by others (Leary, 1999; Leary & Baumeister, 2000).

In addition to others' evaluations, individuals base judgements about themselves on how they compare to those deemed similar to themselves (Festinger, 1954). When there is no objective measure available, social comparison helps to establish one's standing, and reduce ambiguity about what is considered successful, acceptable, beautiful, and so on (Brown, Ferris, Heller, & Keeping, 2007; Verduyn, Ybarra, Résibois, Jonides, & Kross, 2017). Social comparison provides individuals with the ability to gather information to evaluate their own capacities and characteristics, so they can develop stable and accurate evaluations about the self. Self-evaluation depends on how an individual compares oneself with other people, with a distinction made between upward and downward comparisons (Suls, Martin, & Wheeler, 2002). Upward social comparison refers to instances where the target(s) of social comparison is perceived as doing better than oneself on some dimension. Upward comparisons may serve to enhance the self by eliciting behaviours to improve oneself, such that people are motivated to change the self to be more like the comparison standard (Higgins, 1987; Lockwood & Kunda, 1997). However, upward comparisons more often lead to feelings of inadequacy, jealousy, or negative affect, the development of a negative self-image, and decreases in well-being (Michalos, 1985; Pyszczynski, Greenberg, & LaPrelle, 1985). On the other hand, downward social comparison refers to the situation where the individual perceives the self as more fortunate than the target(s) of social comparison, which is typically associated with a more positive self-image, as well as enhanced well-being and feelings of self-worth (Suls et al., 2002).

Within the following sections, a discussion of the link between self-esteem and both social networking members' responses and social comparison in the context of virtual likes is presented.

AN INTRODUCTION TO VIRTUAL LIKES

Social networking sites offer opportunities for users to express to viewers who one is, including their likes and dislikes, values and opinions, and receive immediate feedback from friends, acquaintances, and strangers (Niera & Barber 2014; Spies Shapiro & Margolin, 2014). When viewing others' shared information on social media, such as images, status updates, or tweets, users can respond to the post through comments or can provide, with the push of a single button, a virtual like (symbolized by the thumbs up emoticon on Facebook or a heart on Instagram). As studies show, liking is popular on social networking sites with adolescents on average clicking the like button several times a week (Utz, 2015) or an average of 2.3 likes per day, a function used more than leaving comments (Wenninger, Krasnova, & Buxmann, 2014). Users are even more likely to receive than give likes (Hampton, Goulet, Marlow, & Rainie, 2012).

What does a virtual like convey? Virtual likes represent a "mixture of active participation and passive following" (Wenninger et al., 2014, p. 6). On the one hand, likes may simply provide the poster with an acknowledgement that someone has read or seen the post (Bosch, 2013 as cited in Wenninger et al., 2014). Users click the like button for entertaining posts just as often as they do for boring posts (Barash, Ducheneaut, Isaacs, & Bellotti, 2010). On the other hand, adolescents appear to place much value on likes (Sarita & Suleeman, 2017), and thus despite their effortless nature to give and get, likes can mean something to users (Wohn, Carr, & Hayes, 2016). Across 24 in-depth interviews with adolescent girls in Singapore, all participants counted their number of likes and believed that the number of likes acquired provided informative feedback from peers, regarding them as more important than the comments they received (Chua & Chang, 2016). Youth seem to actively seek this type of feedback (Valkenburg, Schouten, & Peter, 2005).

Researchers also argue that likes are a method of showcasing one's affirmation and support for one another (Metzler & Scheithauer, 2017; Scissors, Burke, & Wengrovitz, 2016; Zhang, 2017). Through likes, users acquire an understanding of the type of posts that are accepted by their social network (Jong & Drummond, 2013). There is strong evidence that the number of likes is perceived as an indicator of a person's popularity (Fox & Moreland, 2015; Marshall, Lefringhausen, & Ferenczi, 2015; Tajuddin, Hassan, Ahmad, 2013). For example, in a qualitative study of 28 middle school aged girls, there was consensus that likes represent an expression of personal approval for the shared information, and that the number of likes was a direct indicator of popularity (Jong & Drummond, 2016). One participant even claimed that over a hundred likes signifies that the poster is popular among his/her peers. In addition, getting likes or comments from social networking members can translate into perceived social support (Zhang, 2017). Cotten (2008) claimed that the positive feelings associated with receiving likes reinforce a positive relationship between the giver and receiver of the likes. In support of this claim, the earning of likes has been positively linked to building social capital and bonding (Lee, Kim, & Ahn, 2014).

Which social media posts elicit more virtual likes? Some of the factors that influence the number of likes received include image type, number of likes already received and valence of the post. First, images with faces are more attention-grabbing. A recent study demonstrated that individuals were more likely to like a post containing photos, whereas they were more likely to comment on posts containing text (Kim & Yang, 2017). Among photos, ones that contain faces were more popular. After controlling for amount of activity on social networking sites and number of followers, images with faces were 38% more likely to receive likes and 32% more likely to receive comments than photos depicting other types of content (Bakhshi, Shamma, & Gilbert, 2014). Second, people in general conform to their peers, and this is no different on social media. Adolescents were more likely to endorse a photo they believed was posted on a social media site if that photo already received a high number of likes in comparison to posts with a lower number of likes (Sherman, Payton, Hernandez, Greenfield, & Dapretto, 2016).

Finally, most social networking users share positive rather than negative information about themselves (Bazarova, Choi, Sosik, Cosley, & Whitlock, 2015; Utz, 2015). Positive information has been found to elicit likes rather than comments or getting shared on Facebook (Kim & Yang, 2017). While there is evidence that positive posts receive more likes than negative posts (Burke & Develin, 2016; Forest & Wood, 2012), the relationship between valence of posts and likes depends on one's level of self-esteem. Specifically, for users with low self-esteem, greater positivity of status updates was associated with greater social reward (i.e., combined number of likes and comments from friends); however, users with high self-esteem received greater social reward for their more negative status updates than for their less negative posts (Forest & Wood, 2012). The researchers suggested that friends of participants with low self-esteem rewarded positive posts with more validation and attention to encourage this atypical behavior (Forest & Wood, 2012).

In sum, virtual likes may be associated with a variety of meanings, some more significant than the next. However, adolescents tend to agree that likes provide valuable information regarding social status and social support. Therefore, it is conceivable that a simple click could have important implications for self-esteem.

VIRTUAL LIKES AND SELF-ESTEEM

Taking into account the rate at which individuals are exposed to feedback online from friends and strangers, and that adolescents (who are the heaviest users of social media) are most susceptible to positive and negative feedback, the effect of adolescents' interactions on social networking sites on their self-esteem demands attention. The following synthesizes relevant literature pertaining to the effects on self-esteem as a function of (1) the number of likes received, and then (2) the number of likes others have received. The aforementioned theoretical perspectives regarding self-esteem will be applied in each context.

The Number of Likes Users Themselves Receive

As discussed earlier, sociometer theory indicates that one of the primary determinants of self-esteem involves the perceived reactions of other people. On social networking sites, the perceived reactions can be captured through the number of likes received on one's posts. As an indicator of peer attention and one's position in their peer group, there are standards regarding the number of likes adolescents should receive to demonstrate their above-average status (Chua & Chang, 2016). Therefore, the sociometer theory predicts that a large number likes (a situation involving positive feedback) would increase self-esteem, whereas little or no likes (considered as negative feedback) would decrease self-esteem.

A few studies have reported findings counter to the predictions based on sociometer theory. Null and negative relationships between the number of likes acquired and psychological outcomes were found (Burke & Kraut, 2016; Coulthard & Ogden, 2018; Metzler & Scheithauer, 2017). For example, in order to examine the effects of social media activity, number of likes received in relation to activity and the combination of these factors for changes in loneliness, Deters and Mehl (2013) asked some participants to post more status updates than they usually do for one week. Compared to the control group (who did not adjust their status update frequency), participants who increased posting behaviour reported significantly lower loneliness regardless of the number of likes and comments received. These findings suggest a lack of effect for the number of likes received for psychosocial outcomes over and above active participation online.

However, the majority of research does support the number of likes as having esteem-enhancing effects. Both correlational studies (Burrow & Rainone, 2017; Gallagher, 2017; Lup, Trub, & Rosenthal, 2015) and experimental studies (Burrow & Rainone, 2017) support a positive association between the number likes received and increases in self-esteem. People with high self-esteem get a momentary boost in esteem every time they receive likes for their posts (Rutledge, 2013). Narcissists also get self-verified from the likes and positive comments they receive when posting selfies to social media (Barry, Doucette, Loflin, Rivera-Hudson, & Herrington, 2017). Receiving likes for social networking site posts results in increases in feelings of social acceptance (e.g., having opinions respected by others, feeling understood, and feeling accepted), which in turn is related to increased levels of self-esteem (Wang, Nie, Li, & Zhou, 2018).

The esteem-enhancing effects are also recognized by users themselves. Radovic, Gmelin, Stein, and Miller (2017) interviewed 23 adolescents regarding their social media use and how this may influence psychological distress. One particularly evident theme was the use of social media for social approval and social comparison. Adolescents expressed how the number of likes provided information regarding level of popularity, such that getting more likes increases self-esteem and conversely not getting likes decreases self-esteem. This resulted in some adolescents posting images they were not comfortable

with, but that typically get likes, in order to obtain recognition. Similar themes were evident in Jong and Drummond's (2016) interviews with middle school aged girls, with likes also regarded as an indicator of popularity and having esteem-enhancing potential.

Similar conclusions regarding the link between feedback and self-esteem have been formed among researchers who examined qualitative instead of quantitative feedback. Similar to likes, positive comments have an esteem-enhancing effect (Frison & Eggermont, 2015; Greitemeyer, Mügge, & Bollermann 2014; Thomaes et al., 2010; Valkenburg, Peter, & Schouten, 2006; Yang & Brown 2016). These effects stand for comments from both friends and acquaintances (Valkenburg, Koutamanis, & Vossen, 2017). Negative comments, in contrast, result in decreases in self-esteem (Thomaes et al., 2010; Valkenburg et al., 2006). According to Valkenburg and colleagues (2006), valence of comments was more important for self-esteem than the simple frequency of comments. Although about three-quarters of adolescent participants reported always or predominantly receiving positive feedback on their profiles, a small percentage (7%) did predominately or always receive negative feedback (Valkenburg et al., 2006). Therefore, while most users may fair well from social media use, there appears to be a small group of users who may experience aversive effects on their self-esteem from posting on social networking sites.

Overall, the aforementioned literature indicates that feedback from peers on social media is influential to self-evaluations. However, receiving likes from peers may not be equally important across users. Findings from both a correlational and an experimental study indicated that the impact of the number of likes received for a post on self-esteem was dependent on one's sense of purpose (Burrow & Rainone, 2017). In their experiment, undergraduate students took a photograph of themselves and were told that the experimenter uploaded their image to a social networking site for other users to view and have a chance to like their image. Participants were given randomized feedback. They were told that compared to pilot testing, they received an average number of likes, above the average number or below the average number. For those low in purpose, receiving a greater number of likes was associated with enhanced self-esteem, but had no effect on self-esteem for those high in purpose. Results were identical for their correlational study, where participants self-reported the average number of likes received on their profile pictures. Burrow and Rainone (2017) suggested that having a high sense of purpose inhibits activation of neural regions involved in reward processing, and thus, sense of purpose lessens responsiveness to likes as social rewards.

While getting many likes may enhance self-esteem, conversely, failing to acquire likes may have aversive effects on self-esteem. Correlational research has supported the negative effects of not receiving any feedback. Failing to get responses such as likes and comments from Facebook friends increased feelings of stress among adolescents (Park et al., 2015), and slightly decreased feelings of connectedness (Utz, 2015). Self-esteem was also adversely affected when participants were bothered if they did not receive as many likes as they thought they were going to on their posts (Gallagher, 2017) and when they did not receive replies in a timely fashion (Taylor & Harper, 2003). Users themselves also acknowledge the negative effects of not accruing likes. It was evident among interviews with middle school aged girls that the lack of feedback from other social networking site users could have a negative impact on self-esteem (Jong & Drummond, 2016). Specifically, likes served as an indicator of popularity, and girls had a tendency to feel disheartened if they received no feedback at all. Some mentioned feeling, or potentially feeling, that they were not liked, upset, depressed, or insecure. Girls also expressed how the need for responses to their posts and validation through likes was relatively immediate, and that they would take down posts that did not receive any likes after a short period of time, as this was perceived as negative feedback. These results resemble findings regarding offline interactions, where the ostracism

The Effects of Virtual Likes on Self-Esteem

people experienced after not receiving any feedback led to a decrease in one's sense of belonging and self-esteem (Smith & Williams, 2004).

In sum, there is much empirical support for the esteem-enhancing and esteem-reducing effects of virtual likes on social media. While a high number of likes received on one's social media posts increases feelings of acceptance and self-esteem, esteem-decreasing effects result from a lack of peer feedback.

The Number of Likes Peers Receive

According to social comparison theory, comparing oneself with others provides individuals with information to evaluate their own capacities and characteristics in order to evaluate oneself. The outcomes of self-evaluation depend on whether individuals compare themselves with others who fair better (upward social comparison) or fair worse (downward social comparison). Social networking users share information with one another via pictures and text-based posts, which can make them an upward or downward comparison target to other users (Vogel, Rose, Roberts, & Eckles, 2014). This information is also paired with information about their social network, including comments, replies, likes, and approval of their shared content. Feedback on others' posts can provide viewers with information about what is accepted by the social group and act as a point of reference to evaluate oneself. In line with social comparison theory, seeing others obtain a large number of likes would likely result in upward social comparison and thus decreases in self-esteem. Whereas, others' posts that receive a small number of likes may result in downward social comparison and thus increases in self-esteem.

Within the literature, much attention has been devoted to examining the relationship between two broad categories of activities on social networking sites (passive and active usage) and subjective well-being (see Verduyn et al., 2017 for a critical review). Associated with enhanced self-esteem (Schimmack & Diener, 2003), subjective well-being involves an evaluation of one's life and is partially contingent on life circumstances and activities (Diener, 2009; Lyubomirsky, Sheldon, & Schkade, 2005). Passive usage refers to the browsing of social networking members' posts without direct engagement with the posters (Verduyn et al., 2017). During passive usage, individuals are exposed to both personal attributes conveyed within profiles, pictures, and status updates as well as the corresponding comments and virtual likes. Although research involving the broad category of passive usage does not tease apart the differential effects of social comparison for personal and social content, it does shed light on the prevalence of upward social comparison taking place in the virtual world and its effects. Several studies, including cross-sectional, longitudinal and experimental, have linked passive usage of social networking sites with decreases in subjective well-being (Fardouly, Diedrichs, Vartanian, & Halliwell, 2015; Tandoc, Ferrucci, & Duffy, 2015), regardless of level of self-esteem (Verduyn et al., 2015). This relationship is explained by upward comparisons and increases in envy (Muisse, Christofides, & Desmarais, 2009; Tandoc et al., 2015; Verduyn et al., 2015; Vogel et al., 2014). Surprisingly, downward comparisons on social media are not associated with any changes to self-esteem (Vogel et al., 2014).

Focusing on virtual likes, a person who has an active social network (receiving numerous likes and comments) may be an upward comparison target in terms of popularity (Kim & Lee, 2011; Vitak & Ellison, 2013). Peer competition regarding who has the most likes can ensue, which has the potential for important implications on self-esteem. In support of these claims, adolescents admit to feeling worse about themselves when seeing others getting many likes on their post or picture (Radovic et al., 2017). Furthermore, participants report lower self-esteem after viewing a target's profile that contains a larger number of likes, regardless of the content of the profiles (Vogel et al., 2014). Specifically, whether the

target's profile showcased engagement in healthy behaviors (a potential upward comparison) or unhealthy behaviours (a potential downward comparison), a large number of likes on the profile was associated with lower self-esteem ratings among participants compared to those who saw the same profiles but with a small number of likes. Moreover, participants also reported a greater discrepancy between the target person and themselves on a variety of positive attributes when the target received a high number of likes for the posted content. In contrast, when the target person had few likes, participants viewed themselves and the target person relatively similar.

Not only does social endorsement lead to behavioral responses, but the number of likes also influences neural responses. Adolescents underwent fMRI while viewing photographs ostensibly submitted to Instagram, which depicted few or many likes. When high likes were presented with a photo, there was greater brain activity in areas that implicated attention, social cognition and social memories. Increased activation suggests that adolescents may have scanned images more attentively, with popular photos resulting in qualitatively different responses compared to less popular images (Sherman et al., 2016).

Collectively, empirical findings indicate that when people receive greater response from social media members, viewers perceive them as doing better on some domain, such as social acceptance, which typically leads to feelings of inferiority. The upward comparisons when attending to others' virtual likes on social media result in decreases in self-esteem, supporting the predictions based on social comparison theory. On the other hand, when others receive few likes, the viewers perceive the target as similar to themselves rather than inferior, and thus self-esteem is not affected.

FUTURE RESEARCH DIRECTIONS

Social media has altered the way in which peers interact with one another. Although offline interactions provided opportunities for social comparison and feedback, social networking sites have increased these opportunities enormously. While attention has been devoted to understanding the link between social media and psychosocial outcomes, the research is still in its infancy. Some of the next steps required to advance knowledge include a consideration of more complex relationships between social media activity and self-esteem, as well as an exploration of the longitudinal implications of posting optimized or false information in order to receive likes.

First, when examining the link between number of likes and self-esteem, most researchers have explored whether the number of likes people receive in response to their social media posts influences self-esteem. All of research in this area has examined momentary fluctuations in state self-esteem, and thus is unknown whether these changes have more long-term effects. Furthermore, it is conceivable that the relationship between feedback and self-esteem is cyclical. Forest and Wood (2012) found that young adults with lower levels of self-esteem express less positivity and more negativity in their social media posts compared to peers with higher levels of self-esteem. These negative posts received less social reward (number of likes and comments from social networks) compared to their positive posts. Furthermore, individuals with lower levels of self-esteem are more likely to think that likes are meaningful and consequently feel upset with they do not receive an appropriate number (Scissors et al., 2016). Taking these findings together, it is plausible that the posts from individuals with low levels of self-esteem may elicit fewer likes due to their negativity, which in turn may further decrease (or at least not improve) their self-esteem. As such, they may continue to post more negativity, and continue to receive a small number

of likes. Additional research is necessary to examine the validity of this proposed cyclical relationship between self-esteem and the number of likes received.

Second, the anonymity of social media makes it particularly attractive for selective self-presentation (Valkenburg & Peter, 2011). On the Internet, adolescents have control over the information they wish to present - controlling what they want others to know about them and creating opportunities to present themselves in the best light possible. In order to elicit esteem-enhancing reactions, social networking users may attempt to manage the impressions others form and their evaluations by presenting oneself to others in a positive and socially desirable way online (Hart, 2017). Some users do engage in like-seeking behaviours, including using filters or hashtags, buying likes, changing one's appearance completely (Duman, Maxwell-Smith, Davis, & Giulietti, 2017), or posting semi-naked selfies (Mascheroni, Vincent, & Jimenez, 2015). In a qualitative study of social media use, adolescent girls indicated that editing photographs and making oneself look good on social media has become a necessity (Chua & Chang, 2016). All girls admitted to using filters and editing photos with software to, for example, brighten the skin, conceal facial imperfections, and enhance colours. One-third of the girls went so far as to change their facial features, including modifying their face line, and altering the size of their eyes and noses. According to one teen, the purpose of putting so much effort into perfecting their image is so posters can share pictures that meet the standard and to impress their friends (Chua & Chang, 2016). On the one hand, researchers have argued that frequent likes may affirm the ideal self that one presented online and make an individual feel good about him/herself, thereby increasing self-esteem (Bazarova & Choi, 2014; Shin, Kim, Im, & Chong, 2017). In contrast, others have reported that it is the honest self-presentation that enhances perceived social support and thereby has positive implications for subjective well-being (Kim & Lee, 2011). Moreover, high levels of self-discrepancy have been linked to low self-esteem (Moretti & Higgins, 1990). The question that arises then is, how do the likes received for optimized or deceptive information and uncomfortable images impact self-esteem and identity development for adolescents? While receiving many likes signals popularity and social acceptance, the person who is deemed popular in the photo may not be an accurate depiction of the poster in real life. When the online self may not be attainable in real life the receipt of many likes may have detrimental rather than enhancing effects on self-esteem. Moreover, greater discrepancies between the real self and the well-liked virtual self may be especially detrimental to adolescents, who are amid exploring their identities and forming a self-concept - a hypothesis that warrants testing.

RECOMMENDATIONS

As social media users become younger and younger, it is important to provide youth with education about the potential consequences of social media. Policy makers, parents, educators, clinicians and social media providers themselves should educate the public on how to use social media to protect self-esteem. According to Bos, Muris, Mulken, and Schaalma (2006), "self-esteem enhancement requires the formation and acceptance of realistic goals in domains that are personally relevant, and a supportive social environment" (p. 11). Based on this view and the literature discussed in the current chapter, the following should be considered in educational communication on adaptive social media usage:

1. A virtual like is not always a message about likeability. Although often interpreted as a sign of affirmation for the poster, a virtual like can stand for an acknowledgement of viewed content and

can be easily manipulated by valence or type of post, for instance. With the like button being pressed as often for boring as interesting posts, the credibility of a like should be questioned. Even if virtual likes provide some information regarding popularity, self-worth should never be defined by a single factor. Instead, users should consider more important domains, including their positive interpersonal relationships, and emphasize domains in which they are competent and skillful. It should be noted, however, that enhancing perceptions of one's competence comes with challenges, as those with low self-worth tend to focus on failures and attribute them to internal factors, and they tend to be resistant to feedback that goes against their self-concept (Harter, 1999).

2. A vast majority of American youths (88% of 18- to 29-years-old) surveyed in 2018 indicated that they use some form of social media (Smith & Anderson, 2018). Although taking a break from social media, even for just a week, is associated with enhanced well-being (Tromholt, 2016), given its prevalent use, it is impractical to suggest that adolescents quit social media entirely. Instead, a more practical solution would be to have children and adolescents filter particular content that make them feel particularly upset or threatened. Facebook currently offers users the option to "snooze posts for 30 days", which provides opportunities for youth to temporarily hide content without breaking ties with social networking members completely. In addition, adolescents should monitor their social media usage in order to avoid excessive passive usage in general.
3. Social support is a key factor for improving self-esteem (Harter, 1999). If adolescents do interpret a low number likes for their social media content as an indication of low social support, loved ones can help the youth focus on contexts where social support is strong.

CONCLUSION

Despite being an effortless gesture from social networking members, likes are perceived as being meaningful, especially for adolescents. It is clear across the current social media literature that individuals' self-esteem is responsive to indicators of one's value to others as well as the value of others, supporting the sociometer and social comparison theories in virtual environments. With few exceptions, indications of liking online serve to enhance self-esteem, whereas rejection deflates it. In addition, seeing others get a large number of likes negatively impacts viewers' self-esteem, while little likes have no effect. Taking into account the potential rate at which adolescents receive (or do not receive) such feedback from peers and the importance of high self-esteem to psychosocial outcomes, researchers, clinicians, educators, and parents should not regard likes as just a number.

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KEY TERMS AND DEFINITIONS

Downward Social Comparison: Instances where the target of social comparison is perceived as doing worse than oneself on some dimension.

Passive Social Networking Usage: consumption of social networking content without direct engagement with the information owner (e.g., browsing news feeds or looking at profiles, pictures, and status updates posted by other social network users).

Qualitative Feedback: Responses on social media from friends and followers consisting of written text (i.e., comments).

Quantitative Feedback: Responses on social media from friends and followers consisting of numbers (i.e., number of likes).

Self-Esteem: The extent to which individuals accept, approve of, or value themselves.

Social Media: Online platforms that permit users to create a profile, as well as connect and exchange information about oneself with other members. Examples include social networking sites, instant messaging services, blogging sites, and multiplayer online games.

Status Update: A feature on social networking sites which allows users to share their thoughts, feelings, experiences, whereabouts, and so on. A status is often short and posted on the user's profile page, as well as in the new feeds of friends and followers.

Upward Social Comparison: Instances where the target of social comparison is perceived as doing better than oneself on some dimension.

Virtual Like: Also referred to as a like, this is a symbol, such as thumbs up or heart, viewers on social media can select to provide feedback or acknowledgement to posts on social media.

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Chapter 8

Clinical Topics in Social Media: The Role of Self-Disclosing on Social Media for Friendship and Identity in Specialized Populations

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ABSTRACT

The overall objective of the proposed chapter is to increase the reader's understanding of the role that social media plays in self-disclosing information about ourselves in the development of friendships and identity, as well as explore these themes in a clinical context. As such, readers will gain knowledge regarding the relations between self-disclosing on social media sites and the ensuing friendship and identity development that occurs, the extension of the research findings to clinical populations, and the questions that still remain unanswered. This information may be useful for the advancement of research, policy development, mental health programs, parenting, and education.

INTRODUCTION

Social media is a rapidly growing enterprise that has become pervasive in society today. In fact, internationally, billions of people log onto social media sites such as Facebook, Instagram, SnapChat, and YouTube every single day (Gramlich, 2018). In order to understand the outcomes associated with this modern, innovative, and evolving form of communicating with friends, researchers have examined the role that social media plays in social development. More specifically, this research has led investigators to suggest that when users log on to social media sites they are effectively using the media site as a vehicle to disclose information about the self (Verdyun et al., 2017), gain information about others (Feinstein

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et al., 2013; Vogel et al., 2014), and ultimately develop closer friendships (Desjarlais & Joseph, 2017) as a result. In addition, investigators have found that disclosing on social media sites also plays a role in our identity formation (Valkenburg, Schouten, & Peter, 2005). As such, the first purpose of the current chapter is to present and discuss the literature pertaining to self-disclosing online and its relationship to friendship and identity development in general. The second objective of the current chapter is to uncover how these processes work in populations where self-disclosing, social engagements, and identity development are hindered as part of a clinical diagnoses such as autism, psychosis, schizophrenia, depression, and anxiety; or due to social marginalization as present in the LGBT+ community.

Therefore, the overall objective of this chapter is to increase understanding of the role that social media plays in self-disclosing information in the development of friendships and identity, as well as explore these themes in a clinical context. This information may be useful for the advancement of research, policy development, mental health programs, parenting, and education.

WHAT IS SOCIAL MEDIA

Social media is a term that can be extended to any form of technology that aids in our communication with others. This includes text messaging, instant (or direct) messaging, online gaming, social networking sites, video sharing sites, and e-mail. All of these have one major theme in common: They are intended to be social environments that allow for quick and easy connections to be made among existing and new friends (Smith & Anderson, 2018). While there are a number of different types of social media, social networking sites, video sharing sites, gaming and direct messaging will be the focus of the current chapter.

Social media has become ubiquitous with daily life. Internationally, billions of people log onto social media sites every single day (Stats, 2018). In fact, the Pew Research Centre estimates that roughly 70% of the American public uses some form of social media, with the majority of logins occurring daily (Factsheet, 2018). According to Smith and Anderson (2018), the most popular social media sites include the video sharing site YouTube (73% of American adults), and social networking sites such as Facebook (68% of American adults), Instagram (35% of American adults), or SnapChat (27% of American Adults). On average, social media users are comprised of young adults between the ages of 18 and 29 years, with female users being slightly more common than male users (Factsheet, 2018; Greenwood et al., 2016). It should also be noted that there is a growing number of adolescent social media users, roughly 85% of American adolescents (Anderson & Jiang, 2018). Adolescents generally follow the same social media use patterns as young adults, where the video sharing site YouTube (85% of American adolescents) was among the most popular, followed by the social networking sites Instagram (72%), SnapChat (69%), and Facebook (51%).

Generally speaking, social media websites are set up so that the user is able to create a personal profile where they are able to share an amalgamation of text, picture, and video content about themselves (Ellison, Steinfield, & Lampe, 2007). This often includes some combination of personal information, photographs, videos, memes, and/or ideas that the user identifies with. In addition, users are typically given the ability to 'follow' or 'friend' other users, becoming, in a sense, enrolled to see the information these users have posted about themselves online (Ellison et al., 2007). These websites then allow for instantaneous connections to be made, and provide a plethora of information about other users--all at the click of a mouse. Users typically turn to social media sites to aid in the maintenance of their relationships

(e.g., to post or send messages, stay in touch with friends), to pass time, or for entertainment purposes (e.g., to see other people's pictures and read their profiles; Davis, 2012; Sheldon 2008; Smith, 2011).

The types of social features offered on social media sites are somewhat dependent on the specific site. For instance, the video-sharing site YouTube allows users, both professional and amateur, to create a profile where they can upload and share videos (Xu, Park, Kim, & Park, 2016). This includes either personal videos, videos the profile owner finds entertaining, or some combination thereof. Once a video is shared on YouTube, it is typically broadcasted to a combination of friends and strangers.

Similarly, social networking sites such as Facebook, Instagram, and SnapChat enable users to create personal profiles and broadcast information online. These sites differ from YouTube in the sense that (1) the audience of the information shared on social networking sites is typically comprised of friends made previously offline (Ellison, et al., 2007); and (2) social networking sites offer opportunities more geared toward text and photo based interactions. For example, Facebook allows users to create a personal 'timeline' where the user is able to share information about themselves in the form of directly messaging friends, posting status updates, sharing memories, posting on timelines, or reacting to others' posts. Similarly, Instagram is a photo based social networking site, where users share photos of themselves, or things they find cute, attractive, or inspirational (Hu, Manikonda, & Kambhampati, 2014). These photos are often filtered, or manipulated, to present the most attractive version of the users' photos (Hu et al., 2014). SnapChat shares the same features as Instagram, although users are able to directly select the people who view their posts, and the photos that are shared are only temporarily broadcasted (within 10 seconds of being opened by the recipient) before automatically being deleted (Kotfila, 2014). Although these sites may differ among specific features, a common theme among them is being able to instantaneously share, or self-disclose, information about oneself to others.

SELF-DISCLOSURE AND SOCIAL MEDIA

Self-disclosure is defined as the act of purposefully sharing intimate or personal information about oneself to others (Collins & Miller, 1994). Self-disclosure is integral to several aspects of psychosocial development, including building friendships and navigating one's identity. Altman and Taylor (1973) proposed the social penetration theory, which postulates that the development of interpersonal relationships follows a systematic and stable course from shallow and superficial connections to increasingly deeper and more intimate connections. Further, the mechanism by which these relationships evolve from superficial to intimate is through self-disclosure. According to Altman and Taylor (1973), self-disclosure follows a similar trajectory to that of the developing relationship, starting with the sharing of relatively impersonal information, which becomes increasingly intimate as the relationship grows (see also Davis, 2013; Greene, Derlega, & Mathews, 2006).

Considering the types of activities associated with social media use (e.g., sharing photos, videos, memories, personal information), a common theme among them is self-disclosure. Active engagement while on social media has been conceptualized as actively disclosing personal information in the form on photos, videos, status updates, and messages (Verdyun et al., 2017). It is plausible then that social media platforms provide an additional (and pervasive) venue for individuals to disclose information about themselves, and in turn experience increases in the quality of their friendships (Desjarlais, Gilmour, Sinclair, Howell & West, 2015; Valkenburg & Peter, 2009). Indeed, self disclosing online has resulted in increases in friendship quality (Valkenburg & Peter, 2007), social connectedness (Burke, Kraut, &

Marlow, 2011), and social support (Wright et al., 2012). Further, there are instances where disclosing online may be preferred over face-to-face disclosures, such as during sensitive or embarrassing conversations (Yang, Yang, & Chiou, 2010). These findings provide support for the increases in friendship quality that accompany self-disclosure, as well as suggest that the themes observed in the creation of the social penetration theory extend to social media.

Self-disclosure also plays a role in identity development, that is the development of a specific set of goals, values, morals, and personal beliefs that encompass the way an individual views, and acts in, day to day life (Marcia, 1966). One perspective on identity development suggests that social environments are essential for creating, understanding and interpreting an individual's identity (Goffman, 1959). This is potentially because social environments offer individuals the opportunity for self expression, where individuals are able to present themselves, or present who they wish to be, through sharing personal information with those around them (Goffman, 1959; Walther, 2007). Self-disclosure then could be viewed as the mechanism for said self expression. In fact, Mclean (2005) found that sharing personal information that is pertinent to one's identity, such as sharing an experience that represents who one is, helps individuals develop their own personal narratives, which ultimately then shapes identity. It is also believed that sharing information, gaining feedback, and comparing oneself to others is a means by which individuals explore, alter, and develop their identity (Festinger, 1954; Turner, 1975).

While there is evidence to suggest that an individual's identity is impacted by disclosing while face-to-face (e.g., Mclean, 2005), social media sites offer additional social environments for individuals to share personal information that can impact identity (Code, 2013; Katz & Rice, 2002; Valkenburg, Shouten, & Peter, 2005; Zhao, Grasmuck, & Martin, 2008). While on social media, users are able to actively engage in disclosing personal information in the form of photo uploads, video uploads, updating statuses (sharing what is on one's mind), as well as sharing links, memories, or memes that one identifies with (Ellison et al., 2007). Thus, while on social media, the sharing of personal information is typically in the form of showing oneself as opposed to directly telling others about oneself (Zhao, Grasmuck, & Martin, 2008). The content shared on social media is also fully controlled by the user, such that the poster has the ability to modify or conceal parts of themselves, as well as chose to only present the most socially attractive and desirable information about themselves (selective self presentation; Walther, 2007). Social media environments then offer a more controlled and safer environment for users to disclose information about themselves, allowing for more control when engaging in identity experiments (McKenna & Bargh, 2000). Valkenburg, Shouten, and Peter (2005) also found that adolescents who use social media report having engaged in identity experiments while online. These adolescents reported that they were motivated to disclose online as a means of self exploration, as well as gaining others' reactions to their identity related posts (Valkenburg, Shouten, & Peter, 2005).

CLINICAL APPLICATIONS

It is long standing wisdom that humans possess a fundamental need for friendship and belonging (Altman & Taylor, 1974). These friendships are imperative for an individual's well-being (Diener et al., 1999). It is also clear that the mechanism by which people build friendships and meaningful relationships is through self-disclosure (Altman & Taylor, 1974). Self-disclosure also plays an important role in identity development, both online and offline (Valkenburg, Shouten, & Peter, 2005). What about the instances however, when developing social relationships, or self disclosing in general, becomes hindered as part

of a clinical diagnosis or social marginalization? Could social media offer a venue for more comfortable and safe disclosures for these populations?

According to Valkenburg and Peter's (2009) social compensation hypothesis, the anonymity, reduced audio/visual cues, and expected delayed response time that are associated with social media provide a comfortable environment for shy, and/or socially anxious individuals to take part in meaningful conversations that may have been too difficult when face-to-face (see also Desjarlais & Willoughby, 2010). Thus, social media may provide a safe and comfortable environment for users to share and connect with friends, and perhaps be used as a compensatory resource for individuals whose social skills/comfort are either lacking or underdeveloped.

While there is a growing body of literature that suggests that social media offers a comfortable environment for socially anxious users to disclose and build friendships, the literature focuses on the general population. This typically includes high, or average, functioning young adults with no qualms or issues with developing friendships or identity; or individuals with higher levels of social anxiety relative to a sample as opposed to meeting clinical criteria. The question that arises then is, could the findings regarding social media being used as a facilitatory resource for comfortable disclosure extend to clinical populations? More specifically, and in line with the social compensation hypothesis, could social media provide a venue for individuals coping with severe social afflictions as part of a clinical diagnosis, such as in autism, depression and anxiety, schizophrenia and psychosis, or due to social marginalization such as in the LGBT+ community to more comfortably self disclose?

The objective of the remainder of the chapter is to synthesize the current literature regarding how disclosing on social media impacts populations of people with the aforementioned social limitations. Each topic will be presented separately and include brief discussions regarding (1) how socialization is hindered for the specific population; and (2) highlight current findings regarding self-disclosure on social media for these populations, and whether social media disclosures impact friendship and/or identity for them.

SOCIAL MEDIA AND AUTISM SPECTRUM DISORDER

Autism spectrum disorder (ASD) is a clinical term that is used in the classification of a neurodevelopmental disorder that includes pervasive developmental delays and significant impairments in interpreting, understanding, and engaging in social situations (American Psychiatric Association, 2013; World Health Organization, 2018). The social challenges that are paramount to ASD typically include difficulty making and understanding eye contact (Senju, & Johnson, 2009), as well as an inability to decode complex social information such as body language or facial cues (Frith, 2003; Sainsbury, 2000). This then results in an inability to initiate and/or engage in social conversations (Bauminger & Shulman, 2003). As such, individuals coping with ASD diagnoses have limited social exchanges with peers and lack the social skills to be able to build closer relationships (Lawson, 2001). It should be noted however, that individuals on the autism spectrum do report feelings of loneliness (Sainsbury, 2000), and a desire to gain friendships (Rowley et al., 2012). Given that social media offers more structure and control, and includes less reliance on interpreting non-verbal information such as body language or changing facial expressions (Burke et al., 2010; Valkenburg & Peter, 2009), social media may provide a more comfortable venue for individuals on the autism spectrum to engage in social exchanges, share and interpret personal information, and ultimately build social relationships.

The current literature on social media and ASD highlights that, in general, individuals on the autism spectrum typically prefer screen time when compared to their average functioning counterparts; this has been observed in both adolescents (eight-18 years; Mazurek, Shattuck, Wagner, & Cooper, 2012; Mazurek & Wenstrup, 2012; van Schalwyk et al., 2017), and adults (Mazurek, 2013). During screen time, these individuals do report using social media (Mazurek, 2013). Their preferences for social engagements while on social media typically reside in online gaming as opposed to social networking sites (Mazurek et al., 2012; Mazurek & Engelhardt, 2013). Individuals with ASD who do choose to engage in social activity while gaming (i.e., online chatting or messaging during gameplay), do exhibit increases in social interactions and social connectedness (Cole & Griffiths, 2007; Sunsberg, 2018), and decreases in loneliness (Sunsberg, 2018).

It should also be noted that although individuals with ASD are not necessarily motivated to use social networking over gaming, their social media consumption does include social networking sites. In fact, one study by Mazurek (2013) indicated that nearly 80% of young adult participants with ASD reported using social networking sites. Further, the most common motivation for using these sites included gaining social connections (Mazurek, 2013). Perhaps most importantly, individuals with ASD who do choose to gain connections via social networking sites report increases in social interactions and thus increases in social connections (Mazurek, 2013), as well as significant decreases in loneliness (Ward, Dill-Shackleford, & Mazurek, 2018).

Taken together, the current literature then suggests that, consistent with the social compensation hypothesis, the features of social media (particularly in gaming and social networking environments) may offer the structure, control, and simplicity necessary for individuals with ASD to be comfortable socializing. Social media then may provide a compensatory resource for these individuals to engage in more social exchanges with peers and ultimately gain friendships that may not have been possible offline.

SOCIAL MEDIA, SOCIAL ANXIETY, AND MAJOR DEPRESSIVE DISORDER

Major depressive disorder and social anxiety are also clinical diagnoses that include a lack of social exchanges, and deficits in developing close friendships. These disorders are also highly prevalent throughout the world. The World Health Organization (2017) estimates that, internationally, over 300 million people suffer from depression, anxiety, or some combination thereof (aka comorbidity). For the following discussion regarding major depressive disorder, social anxiety, and social media, the two diagnoses will be discussed concurrently for two reasons. First, comorbidity of these diagnoses is exceptionally common, such that the vast majority of people suffering from major depressive disorder (approximately 85%) also suffer from clinical anxiety (Gorman, 1996). The comorbidity of these disorders is also stable across various life stages (Essau et al., 2018). Second, behaviourally, social inhibitions present similarly across both diagnoses in that, in both cases, social withdrawal and isolation tends to be the major contributing factor for lacking social exchanges and deficits in friendships among these populations. For instance, individuals with major depressive disorder tend to exhibit decreased interest in social activities and engaging with others (Saunders & Roy, 1999), often resulting in avoiding social interactions altogether (Coyne et al., 1987). Similarly, individuals with anxiety, especially social anxiety and/or social phobias, also tend to engage in severe social avoidance (Watson & Friend 1969). Individuals with anxiety also present a preoccupation with hiding imperfections and fears of being judged by others or viewed as inadequate (Clarke & Wells, 1995; Hewitt et al., 2003; Watson & Friend, 1969). Given that, in both

cases, social avoidance and/or withdrawal is a factor, individuals with either, or a combination, of these diagnoses are at risk for social isolation and loneliness (Weiss, 1973).

Considering the increased control over the personal information shared and the lack of engagement expectations associated with social media platforms, these environments may provide avenues for individuals with depression and/or anxiety to engage in social situations and reduce their risk of loneliness and social isolation. The vast majority of the literature highlighting social media use among depressed and/or anxious populations, however, is speculative. This is because research in this area typically measures relative levels of depressive symptoms (e.g., Tandoc, Ferrucci, & Duffy 2015), or relative social anxiety (e.g., Desjarlais & Willoughby, 2012) while on social media, as opposed to clinical levels.

What can be derived from the studies that have measured relative levels of depression is that (1) the majority of studies, including the studies highlighted in this section, have focused on social networking sites as the social media platform of interest in these samples; and (2) how social networking sites influence depression, anxiety, and social connections depends on how an individual uses the social networking site. If users are passively engaged while on social media, such that they are scrolling through their social media news feeds with no posting or interacting (aka *passive* Facebook use), it is typically associated with increases in depressive symptoms for young adults (Kraut et al., 1998; Tandoc, Ferrucci, & Duffy, 2015; Verduyn et al., 2015). The underlying mechanisms responsible for these increases in depressive symptoms while browsing social media are negative social comparison and envy (see Joseph, Desjarlais, & Herceg, 2019 for review). In this context, users are effectively comparing themselves to the information their friends post about themselves, and feeling as though their friends are happier and better off than they are (Chou & Edge, 2012). For example, Tandoc, Ferrucci, and Duffy (2015) found that when users passively engage on Facebook, they then negatively compare themselves to the information their friends have posted about themselves, feel envious of the attractiveness, power, and popularity exemplified by their friends' posts, and thus exhibit increases in depressive symptoms. Conversely, when users more actively engage while on social media, such that they are actively sharing personal information via posting photos, status updates, sending messages, or sharing links, memes, or memories they affiliate with (aka *active* Facebook use), they exhibit decreases in depression. Here, social media use is associated with increases in young adults' social connectedness (große Deters & Mehl, 2013) and decreases in depressive symptoms (Grieve, Indian, Witteveen, Tolan, & Marrington, 2013). Furthermore, a longitudinal study by große Deters and Mehl (2013) indicated that higher levels of status updates on social media negatively predicted loneliness one week later, through feelings of social connectedness.

Similarly, research examining social media as a compensatory resource for individuals with social anxiety has also largely been based on relative levels of social anxiety. This research has demonstrated that individuals with relatively high anxiety do exhibit increases in friendship quality from actively sharing and/or chatting online (Kraut et al., 2002; Valkenburg & Peter, 2009). For example, Desjarlais and Willoughby (2010) found that, among adolescent boys with relatively higher levels of social anxiety, those who reported more instances of chatting online reported greater friendship quality than those who chat online less frequently.

While research on social media use among individuals with clinical depression or anxiety is sparse, the studies that have been conducted are consistent with the preceding findings. Studies show that clinically depressed individuals exhibit envy while browsing on social media, even more so than their non-depressed counterparts (Appel, Crusius, & Gerlach, 2015). Additionally, clinically depressed individuals tend to perceive that social media only provides them with social support when they actively share, or post, information about themselves that is positive (Park et al., 2016). This may be of particular interest

given that individuals with clinical depression tend to post more negative information than non-depressed people, and thus feel more depressed after posting (Moreno et al., 2012).

Insofar as social media being used as a compensatory resource for individuals with clinical depression and/or social anxiety to gain close friendships, it appears to be a double-edged sword. On one hand, and consistent with the social compensation hypothesis, social media may provide the opportunity for clinically depressed and/or anxious individuals to engage in social situations, and gain closer friendships, provided that they are actively posting, sharing, and chatting while on social media. On the other hand, if clinically depressed or anxious individuals passively browse social media, it could lead to feelings of envy and thus be detrimental to their friendships and their clinical symptoms.

SOCIAL MEDIA, SCHIZOPHRENIA, AND PSYCHOSIS

Schizophrenia Spectrum Disorder is classified as a pervasive psychotic disorder that includes significant social, emotional, and daily life impairments (American Psychiatric Association, 2013). Deficits in social functioning have been paramount in the diagnosis of schizophrenia since the DSM III (American Psychiatric Association, 1987; Bellack, Morrison, Wixted, & Mueser, 1990). The social impairments associated with schizophrenia typically stem from two general origins: (1) negative symptoms such as flat affect and disorganized speaking, thinking, and interpreting (Andreasen, 1982; Bellack et al., 1990); and (2) behavioural symptoms such as deficits in verbal communication (Lavelle, Healey, & McCabe, 2013), and underdeveloped social skills, including difficulties sharing appropriately and understanding social situations in general (Bellack et al., 1990). This is important because the deficits in social functioning that are attributed to schizophrenia often result in diminished social networks (Erickson, Beiser, Iacono, Fleming, & Lin, 1989; Giacco, 2013). This then leaves these individuals at risk for social isolation (Kohn & Clausen, 1955) and loneliness (Neeleman, & Power, 1994).

Given that social media platforms require less decoding of audio and visual cues, less reliance on speaking and speech interpretation, and offer users the ability to take time to formulate appropriate responses, social media may provide an avenue for individuals coping with schizophrenia, or symptoms of psychosis, to increase social connections. Indeed, both adolescents (Mittal, Tessner, & Walker, 2007), and adults (18-65 years; Schrank, Sibitz, Unger, & Amering, 2010) with schizophrenia do report frequently using social networking sites, as well as video sharing sites (Naslund, Grande, Aschbrenner, & Elwyn, 2014). Adolescents with schizophrenia typically report that they are motivated to use social media to maintain the offline friendships that they do have (Mittal et al., 2007), as well as establish and maintain new friendships (Daley et al., 2005). Further, both adolescents and young adults with schizophrenia who do use social media report feelings of social support, reduced isolation, and the ability to learn from others (Naslund et al., 2014), as well as report closer friendships and the desire to include texting, chatting, and social networking into their treatment plans (Miller et al., 2015).

These self-report findings are also supported by empirical evidence. Studies show that chatting and direct/text messaging increases socialization among these populations (Alvarez-Jimenez et al., 2014; Alvarez-Jimenez et al., 2018; Granholm, Ben-Zeev, Link, Bradshaw, & Holden, 2011). In an experimental study by Alvarez-Jimenez and colleagues (2018), a social networking site was created by the researchers, and changes in social functioning, life satisfaction, and social support among users with schizophrenia were observed. The results demonstrated that participants exhibited increases in social functioning, social support, and life satisfaction after using the social networking site, both immediately

and after a two-month follow-up (Alvarez-Jimenez et al., 2018). It should be noted however, that some of the social challenges that individuals on the schizophrenia spectrum experience offline may also transfer online. For instance, over-sharing or sharing socially inappropriate information is prominent among YouTube users with schizophrenia (Naslund et al., 2014). In addition, social media users with schizophrenia also tend to consistently post more negative information than control users, especially when sharing information about depression and anxiety while online (Hswen, Naslund, Brownstein, & Hawkins, 2018). This is important considering self-indulgent and/or negative posts tend to get fewer acknowledgements from other social media users (Burke & Develin, 2016) and thus may hinder making social connections via social media.

The research highlighted in this section indicates that there may be some benefits for social media users coping with schizophrenia and psychosis, especially surrounding increased socialization and social functioning. Although, more social coaching surrounding what is most appropriate to share online may be needed in tandem with encouraging these users to engage in social networking, chatting, and video sharing to help with social connections.

SOCIAL MEDIA AND SOCIAL MARGINALIZATION

In addition to social connections being hindered as part of clinical diagnoses, there are instances where typically functioning individuals are socially marginalized to the point where both social connections and identity development may be at risk. These risks are particularly prominent among members of the lesbian, gay, bisexual, and transgender (LGBT+) community. This is because of the stigma attached to the sexual orientation, expression, and identity of these individuals, whose sexual narratives fall outside the expected heterosexual, bi-gender norms that are pervasive in society today (Subhrajit, 2014). As such, members of the LGBT+ community experience significant social marginalization and isolation (Hillier et al., 2010; Hiller, Mitchell, & Ybarra, 2012; Ryan & Rivers, 2003), as well as become victims of bullying and/or physical abuse for their sexual differences (D'Augelli, 2002). The effects of the marginalization, isolation, and victimization then leading to long-term mental health concerns, including depleting social networks, and an increased likelihood of depression (D'Augelli, 2002).

Research examining social media use among members of the LGBT+ community, and how it relates to friendship and identity, have found that adolescent members of this community do report feeling as though social media are safe places to share personal information and receive social support from friends (Hiller, Horsely, & Kurdas, 2004), some reporting that they are a safer place to socialize than traditional face-to-face environments (Hiller & Harrison, 2007). As such, researchers have found that members of this community turn to social media to express their marginalized identities, gain social support and social connections, and promote social understanding and social change (Mehra, Merkel, & Bishop, 2004). This then results in LGBT+ youth gaining support and understanding for their marginalized experiences (Ybarral Mitchell, Palmer, & Reiser, 2015), and creating friendships that may not have been possible otherwise (Pullen & Cooper, 2010). In addition, the anonymity and control offered by social media environments allows LGBT+ users to more safely experiment with, and learn about, their own identities (Pullen & Cooper, 2010). For instance, Fox and Ralston (2016) found that LGBT+ adolescent social media users report turning to social media for resources to learn about their emerging identity, experiment with their identity, and teach others about their identity while online (see also DeHaan et al., 2013).

Taken together, and consistent with social compensation hypothesis, social media environments provide the opportunity for LGBT+ community members to engage in identity experiments, and build friendships and support networks that may not have been possible offline. Where social compensation hypothesis has typically presented social media as a means of socially anxious, or socially inept, individuals to gain connections online, these themes may also transfer to the socially marginalized and isolated members of the LGBT+ community.

RECOMMENDATIONS FOR FUTURE PROGRAM DEVELOPMENT

Moving forward, support networks such as clinicians, educators, and parents should be aware of the potential for social media to be used as a compensatory resource for individuals struggling with severe and/or clinical social deficits—perhaps especially in the development of treatment plans, education, or social remediation programs. When working to develop this type of programming for these populations, there are a few key points to bear in mind. First, there is evidence to suggest that these specialized populations do exhibit benefits in friendship quality and well-being from using social media platforms. These platforms could then, at the very least, be considered as a tool or resource for these individuals to engage in social exchanges that may not have existed otherwise (aka social compensation).

Second, the benefits for friendships and well-being that are associated with social media use among clinical and/or marginalized populations are consistent across a variety of age categories. This suggests that the inclusion of social media platforms in social remediation programming may be beneficial for both adolescents and adults. Further, given that adolescence is a period where social skills, identity, and friendships are rapidly developing (Choudhury, Blakemore, & Charman, 2006), and that social media may be viewed as a compensatory resource for adolescents who are struggling with social development and friendships (in both clinical and general populations), adolescents may benefit the most from social interventions that include a social media component. It may be particularly beneficial to then target adolescents with deficits in social functioning when developing future programming.

Finally, clinical support networks should consider whether using social media benefits everyone, and whether promoting social media use among clinical populations needs to be treated differently from promotion in the general population. It should be noted that although the majority of the research presented in this chapter highlights the potential for social media to be used as a positive resource to engage in personal self-disclosure and gain social connections, social media sites could have negative consequences—perhaps especially for clinical or marginalized populations. In addition to the negative social comparison and increases in clinical symptoms that can accompany passively browsing social media (e.g., Verdyun et al., 2015), there are other factors that can negatively impact social media use that are outside the scope of the present chapter (e.g., cyberbullying, social media addiction). Individuals with clinical or marginalized social disadvantages may particularly be at risk for these negative consequences (e.g., Mazurek & Engelhardt, 2013). As such, future program development may need to consider including a component that helps these individuals not only use social media, but encourage ways for them to effectively, actively, and appropriately engage (van Schalkwyk et al., 2017).

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

This chapter highlighted the current literature pertaining to the use of social media among clinical and socially marginalized populations, exploring the idea that social media may be used as a compensatory mechanism for the social disadvantages experienced by these populations. For knowledge advancement, future researchers will need to assess the long-term effects and magnitude of the effects, as well as develop ways to test whether the use of social media is beneficial for the specific social disadvantages posed by each of the preceding diagnoses.

The vast majority of research highlighted in the current chapter is cross-sectional and correlational. While this research can reveal the relationship between variables (e.g., social media use is associated with increases in social connectedness and/or social skills), the directionality and causal links among variables are currently speculative. The research suggests that individuals with social disadvantages exhibit benefits from using social media, however, it is equally plausible that individuals who have higher levels of social functioning are the ones turning to social media to utilize and rehearse the social skills that they already possess, and thus gaining additional social benefits. Although there are a few experimental studies that have examined the causality of these effects (e.g., schizophrenia and social media; Alvarez-Jimenez et al., 2018; Granholm, Ben-Zeev, Link, Bradshaw, & Holden, 2011), they are limited and do not exist across all the diagnoses discussed in the present chapter. Future research will need to include experimental manipulations of social media use across ASD, major depressive disorder, social anxiety, schizophrenia, and social marginalization to truly justify whether the use of social media does have a positive social impact for these populations.

Longitudinal studies are also necessary to evaluate the practical significance of the relationship between social media use and friendships among clinical and/or marginalized populations. Although using social networking sites, video gaming, and video sharing platforms are positively correlated with increases in social activity, social skills, and friendship development, how meaningful these increases are over time is largely unexplored. On one hand, it may be that social media use produces additive effects over time, such that the more these individuals use these platforms to gain social skills and social support, the more significant and meaningful the effects are for the users' psychosocial functioning. On the other hand, it may be that the benefits associated with social media use are more immediate, making the individual feel more connected in the moments that they are using the social media sites, but may not facilitate the long-term social skills development needed by these populations. Therefore, longitudinal research would be valuable for understanding any reciprocal relationships between use and psychosocial functioning as well as additive effects.

Lastly, perhaps particularly among clinically depressed or socially anxious individuals, the proposed social benefits for these populations are derived from speculating that the benefits associated from social media use among typical users with relatively higher levels of depression or anxiety symptoms will extend to clinical populations. Further, although there are studies that do consider clinical populations, the scales used to assess the social media benefits are largely those developed for average functioning individuals that are being used in a clinical context. To gain insight as to whether using social media is truly beneficial for specialized populations, future researchers will need to develop measurement strategies that assess the specific social disadvantages characterized by each of the clinical diagnoses discussed in the present chapter, and whether social media may compensate for the specific, respective social impairments therein (e.g., Mazurek et al., 2012; van Schalkwyk, 2017).

CONCLUSION

There are common themes detected among the studies highlighted in this chapter. First, social penetration theory offers an appropriate theoretical framework to describe that individuals gain closer friendships via sharing increasingly more personal and intimate about themselves (Altman & Taylor, 1975). Further, this framework can be extended to social media, such that when social media users engage in active, positive, and personal disclosures while online, they too exhibit increases in the quality of close friendships (Desjarlais et al., 2015). Perhaps most importantly, the benefits for friendships that occur from disclosing on social media may extend to populations of people with significant social disturbances, such as in the diagnosis of autism, anxiety, depression, and schizophrenia, or in cases of social marginalization as found in the LGBT+ community.

In addition, Valkenburg and Peter's (2009) social compensation hypothesis may also extend to clinical and/or marginalized populations. Although the social compensation hypothesis was initially created to suggest that individuals with relatively higher levels of social anxiety, or shyness, may use social media platforms as compensatory resources for their lack of social interactions, the findings highlighted in the current chapter suggest that this theoretical framework may extend farther. More specifically, individuals struggling with severe social impairments such as in autism and schizophrenia spectrum disorders, clinical depression, and/or clinical anxiety may also benefit from social media interactions for increasing social skills and social connections, and be able to compensate for some of their social difficulties offline. Further, individuals struggling with social marginalization, and the ensuing deficits for friendships and identity development, may also experience compensatory benefits for sharing on social media. Ultimately then, the social compensation hypothesis may be extended to clinical and marginalized populations, suggesting that these individuals could also benefit from the structure and functions of online social environments, and compensate for their offline social struggles. Moving forward, support networks such as clinicians, educators, and parents should be aware of the potential for social media to be used as a compensatory resource for individuals struggling with severe and/or clinical social deficits—perhaps especially in the development of treatment plans, or social remediation programs.

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KEY TERMS AND DEFINITIONS

Anxiety: A clinical term used to define a state of fear, worry, and stress. Anxiety is also a cluster of a variety of fear and stressed based symptoms that often result in social avoidance.

Autism Spectrum Disorder: A clinical term used to classify symptoms of a disorder that includes pervasive developmental delays and severely impaired social functioning.

Depression: Clinically referred to as Major Depressive Disorder, a clinical categorization for a disorder containing extreme sadness, hopelessness, and decreased interest in social engagements.

Friendship: An interpersonal bond between two or more people that includes a level of emotional attachment.

Identity: A specific set of principles, morals, and values by which an individual views, and acts in, the world around them.

Schizophrenia Spectrum Disorder: A clinical term used in the classification of symptoms including psychosis, hallucinations, delusions, disorganization, and marked social impairments.

Social Compensation Hypothesis: A hypothesis that postulates that individuals with social challenges may be able to use social media to compensate for their limited social exchanges.

Clinical Topics in Social Media

Social Media: A term that extends to any technological medium that helps facilitate communication and connections.

Social Networking Sites: A specific form of social media that includes creating an online profile to share photos, videos, and text based personal information that is broadcasted to friends on the internet.

Social Penetration Theory: A theory developed to demonstrate the mechanism by which individuals develop close relationships is through increasingly personal self-disclosure.

Video Sharing Sites: A specific form of social media that includes uploading or sharing videos and broadcasting them to some combination of friends and/or strangers.

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Chapter 9

The Facebook Me: Gender, Self-Esteem, and Personality on Social Media

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ABSTRACT

For a better understanding of social networking site usage, the present study examines the influence of gender, personality, and self-esteem on social media presentation. The researchers found that extroverted women posted more Facebook pictures than extroverted men did. Neuroticism was related to self-presentation, and agreeableness is related to Facebook friends. Lower self-esteem was related to more self-presentation on Facebook. Women were more likely to post gender role expressions than men were. And higher levels of neuroticism were related to greater gender role expressions.

INTRODUCTION

Millions of people are living part of their lives on social networking sites. Social networking sites are places where users present themselves to the world. Individuals have the opportunity to mold their images for social purposes online by using social networking sites like Facebook and Twitter (Rosenberg & Egbert, 2011). Social networking sites permit users to create unique profiles to influence how others see them in order to build up the images they desire.

Individuals communicate and engage with others through social networking sites by using the images they created online, revealing personal details and insights into their lives. Personalities and self-esteem are both influential factors of how individuals communicate with others (Hamburger & Ben-Artzi, 2000; MacIntyre, Babin, & Clément, 1999). Many social networking sites allow users to post status updates to express emotions. The posts reflect the ways they present themselves, which can be used to examine

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their personality and self-esteem in online environments. To understand the relationships between these factors better, the current study assesses how individuals' personality traits and self-esteem impact self-presentation on Facebook. Gender differences in communication have been discussed in many aspects, and personality has been shown to be relevant to many types of interactions (Adrianson, 2001; Muscanell & Guadagno, 2012; Simpson & Stroh, 2004). In online communication, people form and manage their online image and interact with each other using different tactics (Aronson, Wilson, Timothy, Akert, & Robin, 2009).

This study explores the relationship between personality and social media usage to provide a better understanding of the differences in social media usage among men and women based on their personality and self-esteem. The purpose of this study is to determine if there is a connection among gender and personalities in terms of the use of social media. The participants in this study are undergraduate students. The results of this study could be used to gain a deeper understanding of the link between social media usage and personality among young adults. The body of literature on engaging through social media is limited; this research will gain a greater understanding of social trends as well as a better understanding of college students' social media usage by gender, self-esteem, and personality traits.

GENDER STEREOTYPES

The distinction between men and women is a basic organization principle for every society. Men and women identify their gender during their childhood and continue to behave in ways following prescribed gender role stereotypes (Bem, 1981). Gender role stereotypes are also displayed in the way men and women communicate. Researchers have spent considerable energy examining gender differences in face-to-face (FtF) communication (Simpson & Stroh, 2004).

Simpson and Stroh (2004) found that men and women have different ways to display emotions in FtF communication. Women more often tend to follow feminine expression rules, which require the suppression of negative emotions such as anger and frustration. Feminine expression rules also support the simulation of positive emotions such as enthusiasm, warmth, and love. Conversely, men more often adopt masculine expression rules, which dictate the subdual of positive emotions and encourage the expression of negative ones. The researchers also found that emotions that contribute to the maintenance of social relationships, such as warmth and cheerfulness, tend to be regarded as more appropriate for women, but the expression of positive emotions is generally found to be less desirable for men. The results suggest emotional display patterns in FtF communication are different between men and women.

Crick (1997) indicated that in communication, the expression of anger and aggression are generally seen as acceptable for men but not for women. This is in line with Adrianson's (2001) idea that social judgments were more positive from women than from men, and that women expressed more opinions and agreements in communication than men did.

Gender role stereotypes in communication have been examined in both FtF and computer-mediated communication (CMC) environments. There have been many studies conducted about trends based on gender in social media use (Adrianson, 2001; Muscanell & Guadagno, 2012; Simpson & Stroh, 2004). Men and women use different amounts of time and have different motivations for using social networking sites (Sheldon, 2008).

Men and women use social networking sites in different ways and for different purposes. In general, researchers have found that women generally use social networking services more often than men and

for distinctive social purposes (Simpson & Stroh, 2004). For women, their online behavior tends to be interpersonal in nature, while men are considered to be more task-and information-oriented (Jackson, Ervin, Gardner, & Schmitt, 2001).

Women use many tactics to build their images in computer-mediated communication to elicit more socially favorable impressions. Previous studies showed that women spend more time on Facebook (Sheldon, 2008) and use social networking sites more frequently to compare themselves with others. Conversely men are more likely to view other people's profiles and find friends (Haferkamp, Eimler, Papadakis, & Kruck, 2012). These tendencies not only indicate dissimilarities in the way men and women use social media, but also suggest fundamental differences in the underlying reasons for engaging in social media.

Recent research indicates that the amount of time spent online and the motivations for Internet use are different between men and women (Muscanell & Guadagno, 2012). For example, compared with men, women use the Internet more frequently to moderate social interaction and behave in ways that are consistent with feminine stereotypes that promote relationship maintenance. Men are more likely to engaging in more task-focused activities online, such as reading the news and obtaining financial information. Additionally, men have been found to be more likely to behave in ways consistent with masculine stereotypes that promote an achievement-orientation (Adrianson, 2001).

GENDER ROLE EXPRESSION ON SOCIAL MEDIA

With the increasing presence of social media in the average person's life, gender role expectations for online behavior often shape the way people choose to represent themselves online. Research on how gender role stereotypes work in social media often amount to the expression of those roles by the author. Research has argued that women are more likely than men to portray themselves as attractive and as wanting or needing social connectivity (Haferkamp et al., 2012; Manago, Graham, Greenfield, & Salimkhan, 2008). That is not to say that presentation of gender is inherently problematic. On the contrary, the expression of femininity including feminine sexuality by women on social media can be quite liberating and empowering (Dobson, 2015), even though such expressions can then be redistributed and repurposed by men in objectifying ways (Davis, 2018). Steeves (2015) wrote about the very complex balancing act girls and women must maintain to follow the unwritten rules of social media.

They described social media as a place where they faced an incredible amount of judgment and pressure, especially about their bodies: a place where girls are open to criticism because they are too fat, too made up, not made up enough, expose too much cleavage (and are therefore sluts), don't expose enough cleavage, have too many friends (and are therefore desperate), and/or don't have enough friends (and are therefore losers). The oppressive need for attention to detail, to present that just right image, was often exhausting, especially for high school students. (p. 163)

SELF-PRESENTATION AND IMPRESSION MANAGEMENT

Desired impressions are impressions a person wants to display (Leary, 1996). Making desired impressions is a goal both males and females attempt to achieve (Leary, 1996). Desired impressions are manipulated more easily in an online environment than in FtF interactions. Goffman (1959), though writing in a time

long before computer-mediated communication, offered insight for understanding the functions and meaning of women's communication in online environments. Before engaging in self-presentation and impression management tactics, people first must decide what impression they hope to make. In this context, developing a favorable impression is thought to be the primary goal. Once the primary goal has been identified, individuals will use self-presentation and the management of impressions to reach the goal.

Self-presentation is a type of communication behavior used to create an image of oneself to present to others (Lee, Quigley, Nesler, Corbett, & Tedeschi, 1999). Individuals design an image of themselves to exert their personal identity and present themselves in a way that is consistent with that desired image (Schlenker, 1980). Through communication, people identify the image they want to present to the public then constantly use many tactics to present themselves to the public in order to build up their desired image. Self-presentation researchers have provided a great deal of support for the existence and use of many self-presentation tactics (Jones & Pittman, 1982; Lee et al., 1999). Self-presentation is an important aspect of daily life, and people use self-presentation to lead others to perceive them positively, such as being trustworthy, competent, friendly, and caring. Individuals often employ multiple self-presentation tactics to create a favorable image (as cited in Rosenberg & Egbert, 2011).

Impression management theory states that an individual or organization must create and maintain impressions that correspond with the perceptions they wish to convey to the public (Goffman, 1959). Goffman asserted that people engage in strategic actions to establish and sustain a desired image. He also wrote that people not only try to convince others to view them as just, respectable, and moral people, but also that people want to maintain the positive impressions they have already established (as cited in Rosenberg & Egbert, 2011). People adopt many different impression management strategies. According to experts (Aronson et al., 2009; Goffman, 1959; Schlenker, 1980), the strategies can be divided into three categories. The first is ingratiation, where people use flattery or praise to increase their interpersonal attractiveness by emphasizing their best traits so that others will like them (Schlenker, 1980). Intimidation is another impression management strategy, and it involves aggressively showing anger to get others to listen and obey. The third one is self-handicapping (Aronson et al., 2009). Individuals use self-handicapping when they generate "obstacles" and "excuses" (Aronson et al., 2009, p. 174) for themselves so they can avoid accountability when they fail to succeed. People who self-handicap elect to blame their failures on external causes rather than internal causes, such as their own lack of ability.

Both self-presentation and impression management are tactics used to achieve socially favorable impressions. Most of these tactics fall into two major categories: one is self-enhancement, which means efforts to increase one's appeal to others, which includes self-handicapping. The other is other-enhancement, which indicates efforts to make other people feel good, which includes ingratiation and intimidation (as cited in Pandey, Singh, & Singh, 1987). Self-presentation and impression management are both efforts people make consciously to present and display certain behaviors and traits in order to make a desired and designed impression on a target audience (Leary, 1996; Schlenker, & Pontari, 2000).

Impression management and self-presentation are applicable not only to FtF interactions, but also online (Zhao, Grasmuck, & Martin, 2008). When considering online environments, such as social networking sites, a great deal of convenience is provided for users to interact with each other and maintain relationships. The ease of online communication allows people to interact with more people with less effort expended, which results in individuals maintaining relationships they would be unable to manage face to face.

According to Leary (1996), there are two motivations for the management of impression in online environments. The first is publicity, and the second is the likelihood of future interactions. The public

nature of the individual's impression encourages him or her to manage impressions more carefully. In addition, future interactions with a person's social media connections are highly likely to occur, perhaps both FtF and online, which contributes to individuals' motivation to manage their impressions closely.

Social media is used as a public social setting, and users perceive social networking sites as social settings because much information is disclosed on the platform. However, social media also blurs these lines because people are alone when they use it. This may affect the users' expressions on social networking sites. Buck, Losow, Murphy, and Costanzo (1992) presented evidence that the expressions and communication of emotion can be "either facilitated or inhibited by the presence of others, depending on the nature of the emotional stimulus and of the personal or social relationship with the other or others" (p. 967). According to Buck et al. (1992), people's behavior and responses vary depending on if they are alone or in a perceived social environment; when a subject is alone the spontaneous response to emotional stimuli is relatively clear, but in a social setting the response is relatively complicated.

The nature of impression management in general is socially favorable. According to Walther (1996), "people expend considerable social energy attempting to get others to like and to appreciate them" (p. 91). Walther (2007) also mentioned the hyperpersonal model of CMC, which involves people using CMC to judiciously craft messages in order to manage impressions and build relationships. Messages on CMC are editable, a unique feature not available in FtF communication. Users can revise and refine their content before they publish it with less social awkwardness (Walther, 2007). Manago et al. (2008) suggested that college students use social media to explore their identities, engage in social comparison, and express idealized aspects of themselves that they wish to become. The study also suggested that social networking sites provide meaningful opportunities for emerging adults to explore potential versions of themselves and form desirable impressions. Procuring a desired socially favorable impression is one reason for people's self-presentation on social networking sites. To achieve the desired impressions, different users with different personalities would present themselves and manage impressions through different ways.

PERSONALITY

The "Big Five" (Benet-Martínez & John, 1998) model of personality traits has been widely used by many researchers in recent years (Amichai-Hamburger & Ben-Artzi, 2003; Golbeck, Robles, & Turner 2011; Qiu, Lin, Ramsay, & Yang, 2012). Many researchers have discussed the relationship between social media usage and personality traits (Hughes, Rowe, Batey, & Lee, 2012; Schrammel, Köffel, & Tscheligi, 2009). The "Big Five" model has become a major personality measurement. The "Big Five" personality dimensions include openness to new experiences, conscientiousness, extraversion, agreeableness, and neuroticism. Golbeck et al. (2011) argued that these personality traits come with their own attributes. Openness to new experiences is a personality trait that relates to being positively receptive to a diversity of personal experiences and is characterized by being curious, intelligent, and imaginative. Conscientiousness is a personality trait that relates to the responsibility one feels toward goals, being organized, and persevering. Extraversion is a personality trait that relates to socialization, being amicable, and being assertive. Agreeableness is a personality trait that relates to a prosocial proclivity, being cooperative, being helpful, and being nurturing. Neuroticism is a personality trait that relates to emotional reactivity, anxiety, insecurity, and sensitivity. Specifically, the researchers for the present study were interested in the personality traits of extraversion, agreeableness, and neuroticism.

Social media is a place where users present themselves to the public and reveal personal details. Users with different personality tendencies use Internet services differently (Hamburger & Ben-Artzi, 2000). Social networking sites are becoming increasingly popular in peoples' lives. People often use microblogs, such as Twitter, in order to express their opinions and activities; it is reasonable to expect that an individual's microblog will also contain his or her personality-related residue (Qiu et al., 2012). Social networking sites can be used to predict and present users' personality, and there are several studies that attempt to find the relationship between social media and personality. Golbeck et al. (2011) wrote about how social media users' "Big Five" personality traits could be predicted from the information they shared on social media. Social media can also be used to examine personality expressions occurring in writings (Qiu et al., 2012). In this case, many social networking sites allow users to post status updates to express emotions, which can be used to examine personality and also see if the posts actually reflect users' personalities.

In recent years, many researchers have found that men and women belong to different patterns in the relationship between personality factors and Internet use. Men's use of social networking sites is not related to loneliness, neuroticism, or extraversion; however, in comparison with men, women who are lonely prefer to use the Internet mostly to avoid loneliness and find group belonging (Amichai-Hamburger & Ben-Artzi, 2003). According to Correa, Hinsley and De Zuniga (2010), extraverted men and women were both likely to be more frequent users of social networking sites. Women who are more extraverted and open to new experiences are more likely to engage in online interactions. Men who are high in extraversion use social media more often and are more likely to engage in social interaction (Correa, et al., 2010). Generally, gender differences are vaguely present among personalities' differences in social media usage, but there are still slight differences between them.

SELF-ESTEEM

Self-esteem is a self-valuation; it is how people perceive their own value and how valuable they think they are to others (MacIntyre et al., 1999). Many scholars have discussed the relationship between self-esteem and communication behaviors. MacIntyre et al. (1999) indicated that people who are lower in self-esteem are less likely to engage in communication than those who are higher in self-esteem, because they think they may have less to contribute to the conversation and are likely to receive negative feedback from others. Individuals with lower self-esteem are less likely to be involved in FtF communication. Research indicates that individuals with lower self-esteem spend increased time using instant messaging instead of FtF communication because they find communicating with others via technology easier than FtF (Ehrenberg, Juckes, White, & Walsh, 2008). Therefore, individuals with lower self-esteem are less likely to take part in FtF communication. However, research is unclear about how lower self-esteem individuals act online compared with those who have greater self-esteem.

FACEBOOK

By 2018, Facebook remains the No. 2 most popular social media site, just behind YouTube (Murnane, 2018). Even though the overall growth has decelerated, Facebook acts as the home base for most social media users and overlaps with other social media sites (Duggan, Ellison, Lampe, Lenhart, & Mardden,

2015). Facebook is a flexible and versatile social networking site; users can upload pictures, videos, games, and many other social activities to their profiles, implant information from other social networking sites, and post calendar events among other socialization activities.

Facebook, like many other social networking sites, provides a setting for people to communicate with other individuals. Facebook is specifically known as a friend-networking site, the main purpose of using Facebook is to maintain relationships. Facebook also provides a space for people to communicate with others, present themselves in the way they want, and share selected personal information. Many researchers have already conducted studies on Facebook and self-presentation. Research has shown that the number of Facebook friends have a positive relationship with individuals' social attractiveness (Walther, Van Der Heide, Kim, Westerman, & Tong, 2008). According to Caers and Castelyns (2010), individuals usually believe Facebook profile pictures are providing accurate signals on the profile owner's level of extraversion and maturity, which indicated individuals consider their profile pictures as an important way of self-presentation (Zarghooni, 2007).

SOCIAL MEDIA COMMUNICATION BY GENDER

Gender stereotypes appear both in FtF communication and in online communication. Men and women use self-presentation and impression management tactics to present themselves to the public (Aronson et al., 2009; Goffman, 1959; Schlenker, 1980). According to the literature, individuals with different personalities presented themselves in different ways and also have different social networking site use habits (Amichai-Hamburger & Ben-Artzi, 2003; Golbeck et al., 2011; Qiu et al., 2012; Schrammel et al., 2009). Self-esteem is also a factor, which influences how individuals use social networking sites (Ehrenberg et al., 2008). Despite extensive research on social media use related to gender, impression management, personality, and self-esteem, the nature of young adults' social media expressions' relationship with personalities and self-esteem is still unknown. Furthermore, the gender differences in self-presentation based on social media expression and personality require further research.

According to the literature above, men and women have different patterns in communication and Internet-based communication on social media. Women's Internet-based communication on social media usually exposes their emotions more often than compared with men. In addition, women disclosed more detailed information on their social media sites than men do (Jackson et al., 2001). The goal of the present study is to examine the relationship between social media expressions and personality for men and women. Personality traits and self-esteem are related to users' expression on social media.

Previous reviews of related literature show that men and women have different patterns in FtF communication and CMC on social media (Adrianson, 2001; Muscanell & Guadagno, 2012; Simpson & Stroh, 2004). Women's CMC on social networking sites more often expose their emotions when compared with men's communication, and women reveal more personal information and details on their social networking sites than men do. According to Schrammel et al. (2009) there are no significant relations between personality traits and information disclosure on social media. There are several aspects connected to the personality and social media usage patterns. For example, individuals who are highly extraverted are more sociable and have more online friends than individuals with lower scores on extraversion (Schrammel et al., 2009). According to recent research, men and women tend to have different communication patterns, so the relationship between personality and social media use may differ by gender. Social media allows

individuals to display every aspect of their lives, and it can also allow someone to portray himself or herself with a different persona (Correa et al., 2010).

Extraversion is related to being sociable and outgoing. According to Schrammel et al. (2009), individuals high in extraversion have more friends on social networking sites than individuals in low extraversion. Simpson and Stroh (2004) indicated that women who are extraverted prefer to use social networking sites more than men and for more social purposes. Profile pictures are a way to build individuals' physical attractiveness, and women try to receive positive evaluations on social networking sites in comparison with men. In this case, women may try to disclose their appearance by posting more photos than men. Thus, the following hypothesis was posed.

H1: Women who are high in extraversion will post more Facebook profile pictures than men who are high in extraversion.

Agreeableness relates to trusting, cooperative, helpful, and tender-minded people who prefer to maintain positive relations (Jensen & Graziano, 2001). Thus, it stands to reason that there will be a relationship between agreeableness and online connections. So a second hypothesis is posed.

H2: Individuals who are high in agreeableness will have more Facebook friends than individuals who are high in other personality traits.

Neuroticism relates to emotional reactivity, anxiousness, insecurity, and sensitivity. Research has found individuals who are highly neurotic are highly interested in using the Internet for communication (Amichai-Hamburger, Wainapel, & Fox, 2002). In order to examine the relationship between neuroticism and self-presentation online, Hypothesis 3 is posed.

H3: Individuals who are high in neuroticism will do more self-presentation on Facebook.

According to research reviewed, gender accounts for differences in CMC communication and self-presentation. Many studies have shown that the effect of gender may be influenced by personality (Correa et al., 2010; Schrammel et al., 2009). Thus, it is necessary to examine the relationships that gender, personality, and self-esteem have on social media presentation. Research indicates that individuals with lower self-esteem spend more time using instant messaging instead of FtF communication because they find communicating with others via technology easier than FtF (Ehrenberg et al., 2008). Therefore, individuals with lower self-esteem are less likely to take part in FtF communication. Therefore, the first research question is posed.

RQ1: What is the relationship between self-esteem and self-presentation on Facebook?

Muscanell and Guadagno (2012) wrote about how women are more likely to use the Internet to maintain social interaction and engage in behavior consistent with feminine stereotypes to maintain relationships compared with men. However, recent research suggests that both men and women might be less inclined to express stereotypical gender roles on Facebook profiles (Oberst, Renau, Chamarro, & Carbonell, 2016). So the frequency of women who express gender roles compared to men is still unknown. Also, research

has suggested there is a relationship between gender roles and neuroticism (Davis, Dionne, & Lazarus, 1996; Tokar, Fischer, Schaub, & Moradi, 2000). Thus, the following research questions are posed.

RQ2: Will women present more gender role expressions than men do on Facebook?

RQ3: What is the relationship between neuroticism and gender-role expression?

METHOD

In order to examine the personality and social media use habits between genders, an online questionnaire to investigate participants' social media use habits was devised. In this study, participants took a survey to indicate their social media use habits, personality characteristics, and self-esteem levels. The participants were asked to provide their Facebook user names so that the researchers could follow them and see their posts and subsequently code them.

Participants and Procedure

This research was conducted at a mid-sized regional university in Appalachia. The experiment was administered to participants through an online survey tool. A total of 459 participants took the online survey. That included 314 women (68.41%) and 143 men (31.15%). Participants ranged in age from 18 to 58 years old. However, the sample consisted mostly of female college students between the ages 18 and 24. Participants answered a survey questionnaire that included four parts. The first part was demographic questions concerning age, gender, education, and employment information. The second part featured social media usage questions concerning participants' social networking sites use and online activities. The third part was the 44-item inventory that measures an individual on the Big Five Factors of personality (Benet-Martinez & John, 1998). The last part was levels of self-esteem questions, which were derived from the Rosenberg Self-Esteem Scale (Rosenberg, 1965).

At the end of the survey, participants were asked to provide their Facebook user names. The researchers created a Facebook account related to the project so that the researchers were able to follow participants for one month. Data was then collected including every Facebook post made by participants; this information was coded for self-presentation expression. The participants' profiles were coded based on a coding sheet. The researchers chose the month of February to code, as it was after the New Year and after the start of school but prior to spring break and any major disruption of normal collegiate life. Participants' status updates on Facebook were coded based on a coding sheet. Only the participants' initial posts were recorded. Any comments or responses from anyone other than participants were not recorded. No personal information from the posts in the research was used; participants are identified only by their codes.

Measures of the Online Survey

A self-developed scale was used to gather demographic questions concerning age, sex, and employment status; and measure Facebook usage. The Big Five personality measures (Benet-Martinez & John, 1998), and the self-esteem Likert scale (Rosenberg, 1965) were collated into a single online questionnaire.

Social Media Usage

The social media usage portion of the survey contained multiple-choice questions and a 7-point frequency scale. The multiple-choice questions examined participants' preferred social networking sites by asking, "Which of the following social networking websites do you currently have an account with?" and "In a typical week, which of the following social networking websites do you use most often?" Participants were also asked to respond questions about the frequency of their use of social media. For example, participants will be asked to report, "How often do you update your status on social media?" and "How often do you check your social media feed?" Participants answered based on a 7-point scale from 1 = Less than once a month to 7 = Many times a day.

Personality Traits

Extraversion, agreeableness, and neuroticism were assessed using the 44-item Big Five Inventory (Benet-Martinez & John, 1998). Openness and conscientiousness data were collected but not used for this study. The 44 items include participants' responses to self-examination questions such as, "I see myself as someone who is relaxed and handles stress well." The Likert-scale answers are based on participants' self-examination of feelings about themselves from Disagree Strongly = 1 to Agree Strongly = 5.

Self-Esteem

A ten-item survey derived from Rosenberg (1965) answered on a 4-point Likert-scale was used to measure self-esteem. The scale had five positive statements and five negative statements, for example, "On the whole, I am satisfied with myself, " and "All in all, I am inclined to feel that I am a failure." Participants chose from a scale of Strongly Agree = 3 to Strongly Disagree = 0.

Coding

Profile Coding

Participants' basic information from the questionnaire and profile information from social media was coded using a profile-coding sheet and its corresponding answer sheet. The profile-coding sheet categorizes the demographics, personalities, and self-esteem of participants. The corresponding answer sheet identifies the number of friends, schools, and companies shown in a Facebook profile. The number of albums and profile pictures is counted.

Post Coding

To address the concerns of the research questions and hypotheses for this study, a Facebook posts coding sheet and its corresponding answer sheet were developed. The coding sheet's content was influenced by past researchers, which included some but not all of the aspects of this study, such as Capwell (1997) and Kane (2008). On the post-coding sheet, self-presentation and impression management tactics were evaluated (Goffman, 1959). These tactics include how participants use self-presentation and impression management in posts on Facebook, such as ingratiation, self-handicapping, intimidation, exemplifica-

tion, and supplication. Each tactic on the coding sheet has a detailed explanation. The coders, who were both women, determined gender role expressions by selecting from expressions of gender role, such as marriage/family roles (references to being a wife/husband, a mother/father, a daughter/son, a sister/brother), or overt expressions about femininity (a selfie or post featuring relationships, cooking, home décor, or fashion and/or jewelry typically associated with women) or masculinity (a selfie or post featuring sports, cars, tools, or references to toughness, manliness/machismo, hypermasculinity). Expressions of self-attractiveness related to pictures of beauty, romance/sex (specifically pictures that demonstrate physical attractiveness), and social life are coded. Other pictures that do not fit in these categories are coded as “Other” with explanations. Expressions of social status, social relationships, inner thoughts and feelings, and mundane experiences were coded in the final section.

For self-presentation and impression management tactics, and gender role expressions, 1 represented “Present”, 0 represented “Not present”, and 99 represented “Cannot tell.” Expressions of personal life were participants’ ways of choosing to display aspects of themselves, such as social life, family roles, etc., as presented in Facebook posts. The code for expression of personal life was, 1 represented “Yes”, 0 represented “No”, and 99 represented “Cannot tell.”

Coder Training and Intercoder Reliability

Two coders coded participants’ Facebook profile information and each post participants shared for the month. An intercoder reliability analysis using the Cohen’s (1960, 1968) Kappa statistic was executed to define the consistency among coders. A 10% random subsample of coding sheets was used to evaluate the extent to which there was intercoder reliability. The results of the intercoder analysis were $Kappa=0.869$ with $p < 0.001$. This measure of agreement is statistically significant.

Content Analysis

Variables

In this study, gender was the primary independent variable. This study also relied on Rosenberg’s (1965) Self-Esteem Scale and Benet-Martinez and John’s (1998) Big Five Personality Scale to determine the covariates such as the self-esteem score, extraversion, agreeableness, and neuroticism.

The dependent variables of this study were the tactics of self-presentation and impression management, gender role expression, and personal life expressions on Facebook. The number of Facebook friends also acted as a dependent variable in this study. The coders rated these metrics according to the post-coding sheet. Self-presentation and impression management on Facebook were measured by what tactics were used to establish online identity. Gender role expressions on Facebook were measured by the public image of being masculine or feminine that participants present online.

Cronbach’s alpha (1951) was used to evaluate the reliability of all scales. The gender role expression on Facebook had a reliability coefficient of $\alpha = .90$. The five items of Facebook self-presentation tactics were reliable measure with a reliability coefficient of $\alpha = .649$, which is acceptable because the sample distribution is uneven among men and women in this research.

There were 129 (28%) participants that offered their Facebook account in the online survey. And two of them declined to answer personality and self-esteem questions. The number of Facebook friends, Facebook self-expression and Facebook gender role expressions are used as variables in data analyses.

RESULTS

This study was aimed to examine the internal relationship of gender, social media usage, self-esteem, and personality. Of the 459 participants who took part in the online survey, 314 (68.41%) of them were women and 143 (31.15%) of them were men. Facebook account information was offered by 131 participants (28.54%), 101 (77.1%) of which were women and 30 (22.9%) were men.

Extraversion

H1 predicted that women who scored high in extraversion would have more Facebook profile pictures than men who scored high in extraversion. No significant relationships were found among gender, extraversion, and number of Facebook profile pictures ($F(1, 127) = .11, p = .74$). In order to examine the relationship between gender and number of Facebook profile pictures, a t test was conducted but no significant relationship was found ($t(129) = -2.50, p = .01$). There was a statistically significant relationship between gender and the number of Facebook profile pictures. The number of profile pictures provided by women ($M=34.06, S.D.=43.22$) was significantly higher than the number of profile pictures provided by men ($M=19.37, S.D. = 21.82$), therefore women tended to post more Facebook profile pictures than men did. A regression test also did not reveal significant relationships between extraversion and the number of Facebook profile pictures ($F(1, 129) = .82, p = .78$). Therefore, H1 was not supported. However, the data does indicate that women do post more Facebook profile pictures than men do.

Agreeableness

A regression test was conducted to examine H2, the relationship between agreeableness and the number of Facebook friends ($F(1, 129) = 4.81, p = .03$), with an R^2 of 0.36. A β of .19 shows a positive relationship. Thus, H2 is supported; the individuals who scored higher in agreeableness tended to have more friends on Facebook.

Neuroticism

H3 predicted individuals who scored high in neuroticism would make more self-presentation posts on Facebook. The researchers conducted a regression test to examine the relationship between neuroticism and Facebook self-presentation ($F(1, 129) = 4.43, p = .04$), with an R^2 of .03. A β of .18 shows a positive relationship. H3 is supported; individuals who are higher in neuroticism tended to have more self-presentation posts on Facebook.

The research questions in the study sought to explore the relationships between gender and a number of other variables: self-presentation, profile pictures, and gender role expressions.

Self-Esteem

RQ1 examined the relationship between self-esteem and self-presentation on social networking sites, a regression test was conducted to examine the relationship ($F(1, 129) = 4.86, p = .029$), with an R^2 of 0.36. A β of -.19 indicated a negative relationship between self-esteem and Facebook self-presentation; the lower a person's self-esteem, the more self-presentation individuals did on Facebook.

Gender Role Expressions

RQ2 was posed to find the differences between men and women in expression of gender roles on Facebook. A *t* test was conducted to examine the relationship ($t(129) = -2.34, p = .021$). Posts that fit gender role expectation for women ($M = 2.79, S.D. = 4.92$) were significantly higher than gender role expectation posts for men ($M = 1.23, S.D. = 2.47$). The results show that women post more gender role expressions on Facebook than men do.

RQ3 was posed to examine the relationships between gender role expressions on Facebook and neuroticism. The researchers conducted a regression test and found a significant relationship between neuroticism and Facebook gender role expressions ($F(1, 129), p = .02$), with an $R^2 = .04$, and a β of .20. The positive relationship indicates that individuals who are higher in neuroticism expressed more gender role traits on Facebook than did those who were lower in neuroticism.

DISCUSSION

The body of literature on engaging through social media is limited; the goal of this research project was to study individuals' expressions through social media with consideration of their gender. The study explores the relationship between personality and gender differences in online communication to gain a better understanding of young adult men and women's self-presentation on social networking sites.

The results of H1 indicated women post more Facebook profile pictures than men do. However, no significant differences between genders were found in terms of extraversion. This result is in line with Schrammel et al.'s (2009) research where women revealed more detailed personal information on their social media sites than men did. No significant relations between personality traits and information disclosure on social media were found.

H2 results indicated that individuals who were higher in agreeableness had more friends on Facebook. People may be more likely to be friends with other people who exhibit traits of agreeableness in FtF communication and in online communication. And this makes sense given that the agreeableness personality trait is one that is marked by friendly connections to others.

H3 results indicated that individuals who scored high in neuroticism would engage in more self-presentation on Facebook. Finding a relationship between neuroticism and self-presentation is supported by some research (Dunn & Guadagno, 2012) and would tend to be in line with the idea that neurotic people may tweak their self-presentations out of insecurities.

RQ1 investigated the relationship between self-esteem and self-presentation on social networking sites. The results indicated a negative relationship between self-esteem and Facebook self-presentation; the lower self-esteem is, the more self-presentation individuals did on Facebook. People with lower self-esteem obviously did more self-presenting online than people with higher self-esteem. These results may be affected due to the date during which social media data were gathered. The data were collected during February, a time period that includes Valentine's Day. During this holiday, people tend to be concerned about their relationships and self-present more around Valentine's Day than other times of the year. Due to the tendency of people to be especially sensitive to relationship status, activities, and gifts at this time, participants may have posted more during this time than during other months.

This study explored whether women present more gender role expressions than men do on Facebook in RQ2. The results indicated that women posted more gender role expressions, those that are stereotypi-

cal expectations of femininity, such as relationships, beauty, fashion, cosmetics, on Facebook than men did. This finding supports Muscanell and Guadagno's (2012) study that found women were more likely to engage in behavior in line with feminine gender role expectations that foster relationship maintenance compared with men. Based on the results from this study, women tended post more gender role expressions than men did and engaged in feminine gender role norms. Based on RQ3, this study also found a positive relationship between neuroticism and Facebook gender role expression. Individuals who scored high in neuroticism expressed more about gender roles on Facebook. The findings could suggest that women might post more gender role expressions due to the high gender role conformity expectations for women in society, particularly as one considers the growth in beauty influencers. Moreover, because of the pressure to conform to gender role expectations, women might post more about their gender role norms. A positive relationship between neuroticism and gender role expressions was also found in this study, which is logical because individuals who worry a great deal and tend to be more anxious, insecure, and sensitive might try harder to present themselves in an acceptable way on social media by posting more gender role congruent expressions to avoid conflict and receive positive feedback.

The goal of this study was to investigate individuals' expressions through social media with consideration of their personalities, and levels of self-esteem. The results of the study indicated women post more Facebook profile pictures than men do. This result is in line with Haferkamp et al.'s study (2012); the choice of photographs used in social networking sites is related to women's need for self-presentation. Profile pictures are particularly attractive because pictures provide people with the measures to present themselves in a way to obtain valuable social image or social capital. Women tend to show more physical attractiveness as one aspect of self-presentation in comparison with men; in this case, women try to disclose their appearance in detail by photos.

Women posted more gender role expressions on Facebook than men. The gender differences found in this study included the number of Facebook profile pictures and the frequency of gender role expressions. The results indicated women might try to receive positive evaluations on social networking sites by disclosing their appearance and meeting gender role expectations.

Individuals who are higher in agreeableness have more friends on Facebook. Among the more common motivations for social media use, particularly among women, is communication, interaction, and maintaining relationships. Facebook allows individuals to feel informed and involved with others and maintain relationships. People who are more agreeable tend to be cooperative, helpful, and nurturing, they tend to maintain their relationships online, and they might be more interested in developing a larger number of online friendships.

The research has two findings related to neuroticism. Individuals who are high in neuroticism expressed more about gender roles and did more self-presentation on Facebook. Neuroticism relates to emotional reactivity, anxiety insecurity, and sensitivity. Research has found individuals who are highly neurotic are primarily interested in using the Internet for communication and presenting their real identity (Amichai-Hamburger et al., 2002). So the results of this study are supported by literature, individuals who scored high in neuroticism tended to present themselves more and tried to build up a desirable image for themselves online to meet the models provided by peer groups because they may be insecure and want to act acceptable online.

The study found the lower individuals' self-esteem, the more self-presentation individuals did on Facebook. People who are lower in self-esteem tend to be less confident; they may not want to take part in FtF communications because they think they are less valuable to others (MacIntyre et al., 1999). The results of the current study are in line with previous research that has shown individuals with lower self-

esteem spend increased time communicating with others via technology instead of FtF communication because they find CMC easier than FtF (Ehrenberg et al., 2008). Individuals with lower self-esteem tend to present themselves in CMC rather than FtF communication, because in CMC they may feel more comfortable doing self-presentation.

The results of this study show that the self-expressions through social media do not actually reflect individuals' personalities and levels of self-esteem. CMC is different than FtF communication; individuals with neurotic personality traits and individuals with a lower level of self-esteem may present themselves online in a way that is contrary to the way they behave in real life.

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Section 2

Development and Design Methodologies

Chapter 10

Psychological Impact and Assessment of Youth for the Use of Social Network

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ABSTRACT

This chapter dissects the effect of online life on each youngster in both the negative and positive bearing of their development utilizing the social impact hypothesis. Reliance of youth via web-based networking media has both negative and beneficial outcomes. This hypothesis portrays social effect concerning social power handle that encroach upon us, pushing us to think or keep thinking about a specific goal. These social powers have been stood out from physical powers that control the transmission of light, solid, gravity, interest, and so forth. The discoveries uncovered that the utilization of internet-based life impacts adolescent conduct when contrasted with positive aspects. This study shows a connection among contradictory and imaginative qualities of online life and displays roads for future investigations by encouraging a superior comprehension of electronic interpersonal organization use. In the chapter, the social effect felt by a person as a component of the quality, instantaneousness, and number of source people is exhibited and examined.

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INTRODUCTION

This section gives an understanding how web based life has turned out to be interlinking into the material of most recent youth. Youth trust vigorously via web-based networking media for correspondence, cooperation, and subsequently the dispersal of information. Web based life could be a territory that is supercharged by people, and can, in this way, reverberation individuals' best aims, yet as their awfully most exceedingly terrible; those that search for to hurt others region unit strong by the web, by indistinguishable will be aforementioned for those that search for exclusively to help others. Online life makes our social relationship inside the feeling that, being on field we'd not be prepared to manufacture a great deal of companions. The reliance of young people on the online life has come to at such dimension that, while not web based life, every adolescent can't depend on the course of their development. Reliance of youth via web-based networking media has each negative and positive effect .

Researchers have discovered that abuse of innovation ordinarily, and web based life most importantly, makes an incitement design equivalent to the example made by various propensity shaping practices. a fresh out of the plastic new investigation demonstrates that getting "likes" via web-based networking media actuates indistinguishable circuits inside the youthful mind that territory unit enacted by nourishing chocolate or winning money. The pros and cons of social network affects the psychological behaviour of youth when interacting on a social network. It is basic for teenagers to check sources and truth, rather than taking all that youth should see as truth. They tend to wish to be "pulled over the coals" as a result of a wrong move that they tend to work by posting one thing that is inadequately investigated and eventually exposed. The technique by which the youth convey their contemplations when online defines the impact of the features and facilities on the social network.

BACKGROUND

Online Social Networks (OSNs) area unit seen because the pay attention of framework resource for affiliations that association key regard and business execution (Zhou, Wu, and Luo, 2007). On bigger casual network areas, people area unit commonly not eager to meet new individuals however rather area unit logically enthused regarding supervision associations by maintaining contacts with recent mates WHO area unit beginning at currently a part of their wide comprehensive relative association (Boyd and Ralph Waldo Ellison, 2007). To total up, casual association goals will be seen as elective specific mechanical assemblies that support existing associations and activities during a fun and hanging method that may build up the customers' experiences several relative association destinations have risen; actuation specifically get-togethers of consumers subject to their economic science and a few be careful for systems with unequivocal shared interests (Palmer and Koenig-Lewis, 2009). there's nowadays a good deal of affirmation that easy going affiliation zones have pushed toward obtaining the prospect to be normal and it's been spoken to it all around, these objectives address one in at traditional intervals spent on the net (Jones, 2009). fifty four % of internet shoppers some spot within the extent of sixteen and twenty four have created their terribly own exceptional page or profile on someone to singular correspondence website page (Palmer and Koenig-Lewis, 2009). Social affiliation locales have party of individuals quite another on-line life these days. Facebook accomplishes 710 million customers (H. Hanafizadeh and Behboudi, 2012). Meanwhile, if Facebook were a rustic, it'd be the third greatest nation on earth, waiting behind simply China and Asian country. half those "locals" check in faithfully and victimization

the positioning once per day (Zarrella and Zarrella, 2011). the standard client has one hundred thirty partners and is expounded with eighty system pages, social affairs, and events each pay a normal of forty six minutes out of systematically on Facebook (Facebook.com, 2011). Moreover, one hundred million individuals build a social proceed onward YouTube faithfully and 800 million distinctive customers visit this website every month (Youtube.com). Casual association districts provide opportunities to attach with these arduous to-contact social affairs of people sailplaning faraway from normal media. it would be deduced that utilization of relative association is extending at Associate in Nursing large speed, and it's influencing however individuals share information over the world. SNS may be a crisp out of the plastic new purpose for authorities thanks to its relative peculiarity, and one or two of researchers in numerous settings tried to contemplate this new phenomena. The impact of casual associations is logically bound, with activities running from the financial e.g., shopping and advancing e.g. complete building, advertising) to the social (e.g., social and physiological impacts) and enlightening (e.g., separate preparing) (for instance mangold-wurzel and Smith, 2011; golf player and Koenig-Lewis, 2009; S. Pookulangara and K. Koesler, 2011; Teo, Chan, Weib, and Zhang, 2003). In any case, paying very little mind to its noteworthiness within the new info time, no total composition review has been driven within the field of casual networks beside a review paper coordinated by Hanafizadeh, et al. (2012) on casual correspondence business effects composing. Everything thought of, there's a necessity for driving this type of analysis works, since it'll fill in as a guide for the 2 scholastics and specialists. it'll in like manner show the lilting movement state and course of analysis subjects, and will be of interest. a web relative association (OSN) may be a growth of the quality casual association on the web, that is very internet based mostly programming that individuals use to develop social affiliations. OSN fuses numerous on-line headways, for example, blog, Twitter, Facebook, Mashup, content, video gathering, virtual world, linguistics destinations, . (S. M. Lee and subgenus Chen, 2011). OSNs use computer support because the reason of correspondence among its individuals (Andrews, Preece, and Turoff, 2001). Drawing on Boyd and Ralph Waldo Ellison (2007), OSNs area unit represented as on-line associations that (1) have interaction individuals to create Associate in Nursing open or semi-open profile for themselves within Associate in Nursing obligated framework, (2) show a fast summary of various shoppers with whom they're connected, and (3) see and investigate their summation of affiliations and people created out by totally different shoppers within the structure. In express settings, as an example, the propellant structure, the terms 'online social affiliation' and 'virtual framework' area unit frequently utilised synonymously. Virtual society area unit seen as consumer parties of adjusting sizes that expire habitually and for a few zero in a managed manner over the web through a typical zone or fragment to accomplish individual additionally as shared focuses of their kin (Dholakia, Bagozzi, and Pearo, 2004; Ridings, Gefen, and Arinze, 2002). the \$64000 nice position of OSN is its capability to grant a lot of important long vary easygoing correspondence openings than the quality social affiliation transversally over numerous geographical, social, social, or institutional settings. OSN doesn't uproot the quality easygoing affiliation, rather supplements it and starts new social affiliations. The affront of OSN is that people have low trust and faithfully feel nervous or unsure within the virtual condition (S. M. Lee and subgenus Chen, 2011).

WHAT IS A SOCIAL NETWORK?

Social network is online unit organizations that helps people to build up an and open profile, to develop an online posting platform of different users with whom they share an affiliation and read their once-over of affiliations and people made by others users on the network.

CHARACTERISTICS OF SOCIAL NETWORKS

Interpersonal interaction Sites like Facebook and LinkedIn are the most prevalent web goals today . They give a stage to individuals to interface with companions, relatives and colleagues over the world. They have basic characteristics that make them well known and utilized by today's youth.

Core Characteristics of Social Networks.

Those characteristics are as follows.

1. **User-based:** Before online social network like Facebook or twitter turned into the standard, sites depended on substance that was refreshed by all youth age group users. The progression of data was in a solitary bearing, and the course of future updates was dictated by the website admin, or author. Online social organizations, then again, are manufactured and coordinated by users themselves. Without the users, the system would be an unfilled space loaded up with void discussions, applications, and talk rooms. Clients populate the system with discussions and substance .
2. **Interactive:** In the present day informal communities is the way that they are so intuitive that an informal community isn't only a gathering of chatrooms and discussions any longer for youth. Sites like Facebook are loaded up with system based gaming applications, where you can play poker together or challenge a companion to a chess competition.
3. **Community-driven:** Social systems are fabricated and flourish from network ideas. This implies simply like networks or social gatherings around the globe are established on the way that individuals hold basic convictions or leisure activities, interpersonal organizations depend on a similar standard.
4. **Relationships:** The ability to viably utilize web search tools and see has been contemplated by United Nations office or what associations made or support the information; wherever the data originates from and its believability . Join that have some expertise in morals, style and cooperation make a significant commitment to discussions round the job of internet based life in scholarly settings, giving numerous chances to inventive reasoning and articulation, while maintaining a strategic distance from the over-disentangled investigation that might be identified with sane evaluate of online networking writings. In any case, while concurring that such open doors should be important elements of online networking in scholastic settings, we will in general contend that there's as yet a need for reflexive scrutinize.
5. **Emotion over content:** Another one of a kind normal for social network is the passionate factor. While sites of the past were focused essentially around giving data to a guest, the online community really furnishes young users with enthusiastic security and a feeling that regardless of what occurs, their companions are inside simple reach.

6. Persistence: Unlike the fleeting nature of discourse in unmediated publics, arranged interchanges are recorded for descendants. This empowers offbeat correspondence however it likewise expands the time of presence of any discourse demonstration. Accessibility can be improved in light of the fact that articulations are recorded and character is set up through content, hunt and disclosure devices help individuals discover like personalities. While individuals can't at present procure the geological directions of any individual in unmediated spaces, discovering one's computerized body online is simply an issue of keystrokes. While we can outwardly identify a great many people who can catch our discourse in unmediated spaces, it is for all intents and purposes difficult to discover each one of the individuals who may keep running over our appearances in arranged publics.

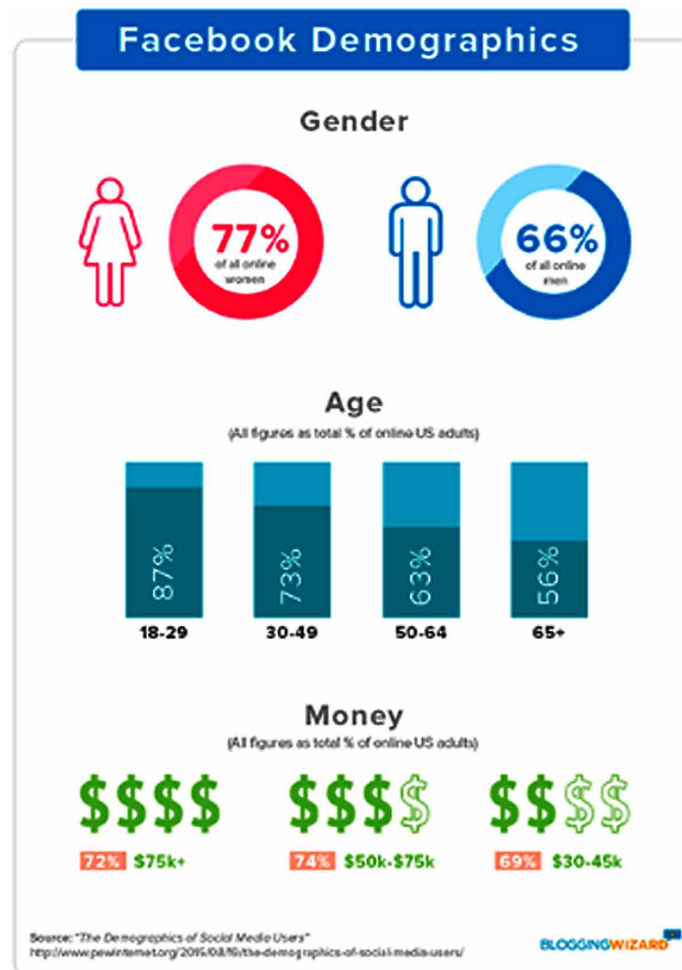
Empirical Characteristics of Social Network

Unlike the fleeting nature of discourse in unmediated publics, arranged interchanges are recorded for descendants. This empowers offbeat correspondence however it likewise expands the time of presence of any discourse demonstration. Accessibility can be improved in light of the fact that articulations are recorded and character is set up through content, hunt and disclosure devices help individuals discover like personalities. While individuals can't at present procure the geological directions of any individual in unmediated spaces, discovering one's computerized body online is simply an issue of keystrokes. While we can outwardly identify a great many people who can catch our discourse in unmediated spaces, it is for all intents and purposes difficult to discover each one of the individuals who may keep running over our appearances in arranged public.

Facebook

Facebook is an Internet-based administration going for interfacing individuals, sharing substance and transferring photographs among companions and relationship. Facebook cases to have in excess of 55 million clients and a normal of 250,000 new enrolled clients every day (by April 2008), consequently being one of the world most prevalent administrations. Usefulness and configuration show an emphasis on private use and contacts are alluded to as "companions". The framework is created and kept up by the proprietors yet the substance, similar to pictures, diversions and connections, are transferred and kept up by the clients. Each client creates and keeps up their very own online profile, which should concur with their disconnected character, yet no genuine control is made (or is conceivable). Users are urged to create applications inside the structure of the site, bringing about in excess of 20,000 one of a kind applications. Facebook has progressively grown new highlights, as Facebook Notes and news channels showing the ongoing exercises of part's companions. The organic reach for pages has nearly flatlined, it is popularly utilised by seventy two of all adult net users in America as shown in Figure 1 . More women users: seventy seven of on-line female users area unit on Facebook. The Younger audience: eighty 2 of all on-line users between 18-29 area unit on Facebook. The Facebook Demographics analysis results show as USA (14%), Republic of India (9%) and Brazil (7%) kind the three largest markets.

Figure 1. Facebook demographics usage

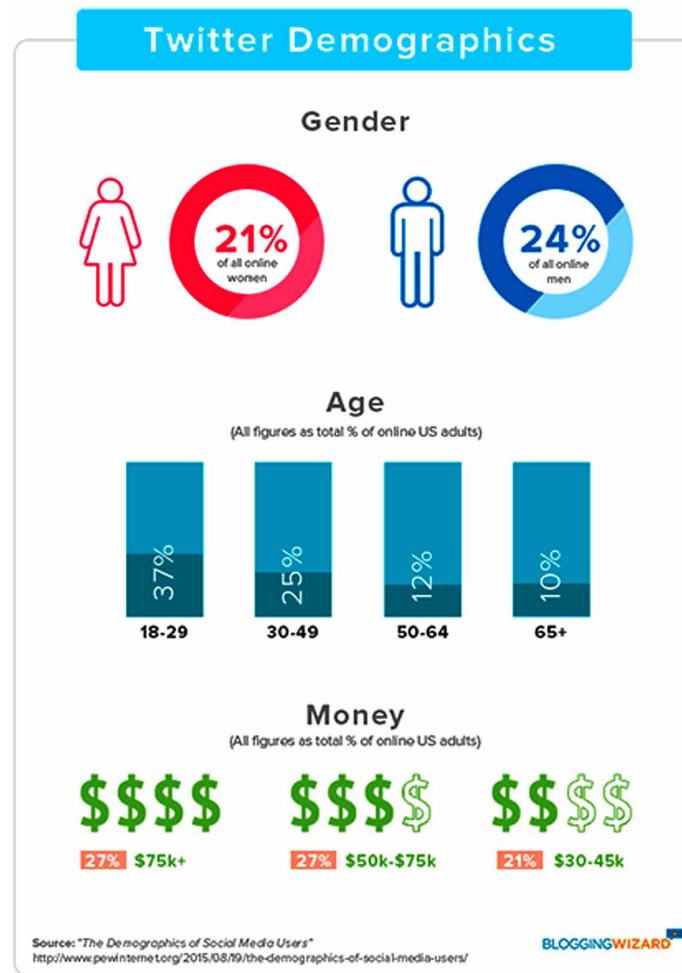


Twitter

Twitter, propelled in 2006, is an on-line application planned around the idea of smaller scale blogging. The on-line stage enables clients to send open updates (“tweets”) about themselves as short content based presents available on different clients who have joined to get them. Presents are constrained on 140 characters, which make them reasonable for conveyance through texting administrations, (e.g.: MSN Messenger), or short message benefits on cell phones. Twitter is likewise intended to coordinate inside outsider informal communication programming, for example, Facebook. Facebook clients can buy in to Twitter and control it’s administrations through Facebook. Clients who become companions, can peruse each other’s posts on either the Twitter site, a cell phone, another SNS stage, or a texting administration. Clients can control which companions get their updates, and confine the updates got from others: for example, short message administration on cell phones can be turned off around evening time, or undesired clients’ updates can be won’t. The product permits the expansion of client made applications, for example, realistic representation of the systems made by client memberships to individual miniaturized

scale postings. Twitter's snappy streaming 'data stream' pulls in A crowd of people that swings more youthful and is normally urban and semi-urban. The Youngers utilized it by thirty seventh of all on-line clients somewhere in the range of eighteen and twenty-nine. The Educated community has fifty-four of users have either graduated faculty or have some faculty experience. The Richer square measure fifty-four of on-line adults World Health Organization produce over \$50,000 and have area unit on Twitter (Figure 2). Overall, twenty third of on-line adult's area unit on Twitter.

Figure 2. Twitter demographics usage

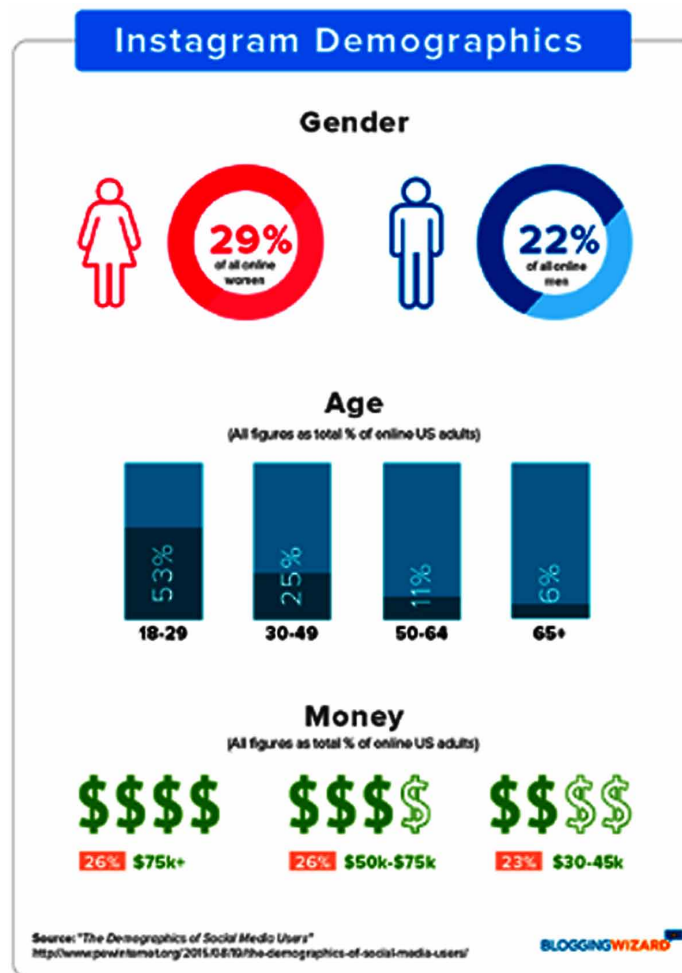


Instagram

Instagram recently overtook Twitter to become the second largest social network. bench estimates that twenty sixth of all on-line adults unit on Instagram inside the USA as shown in figure 5. There are a lot of women victimisation than, twenty ninth of all on-line women unit on Instagram, vs. alone twenty second of all men. fifty 3 of all 18 to 29 year olds unit on Instagram in figure 3. The Less educated on

Instagram users unit college graduates, whereas thirty initial have some college experience that is fitting as primarily younger audience.

Figure 3. Instagram demographics usage

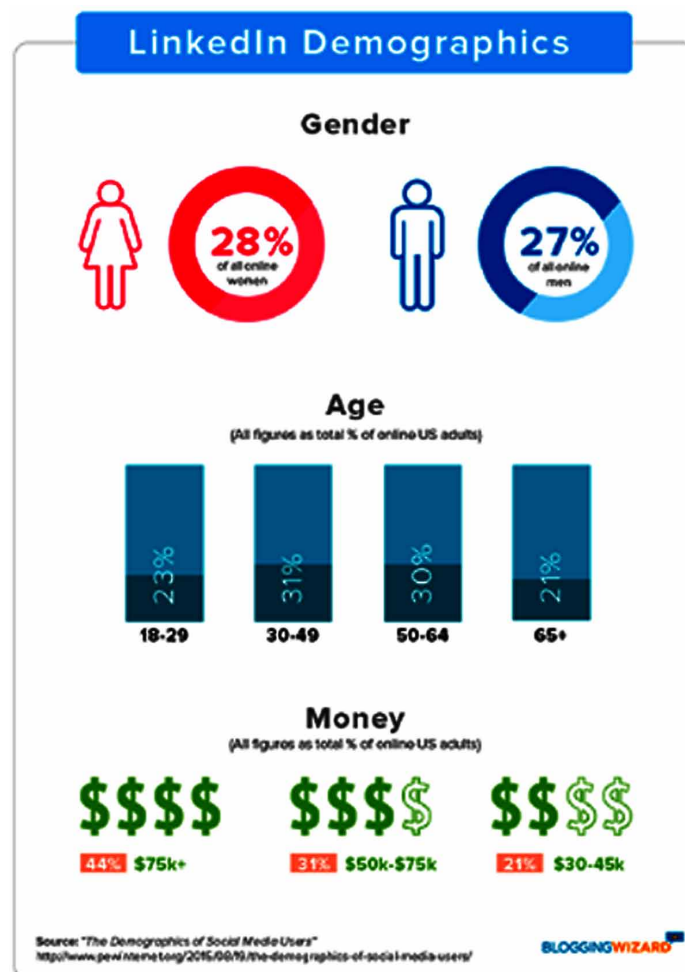


LinkedIn

LinkedIn is an Internet-based virtual world propelled in 2003, created by Linden Research, Inc. A downloadable customer program called the Second Life Viewer empowers its clients (occupants) to cooperate with one another's symbols, giving a propelled long range informal communication administration. Linden Labs guarantees more than 6,000,000 occupants from 106 nations. Occupants can investigate, meet different inhabitants, mingle, take an interest in individual and gathering exercises, and make and exchange things (virtual property) and administrations. Second Life has its own in-world monetary market and money (Linden dollar - replaceable for genuine monetary forms). Though the geo-spatial foundation is overseen by the proprietors, the destinations (islands) are principally worked by inhabitants

in-world, utilizing three-dimensional graphical control and scripting. Organizations, intrigue gatherings and NGOs are generally spoken to, as are government offices and ideological groups. Second Life's computerized world has numerous associations with the outside world. The more seasoned network has only twenty third of clients unit between 18-29 years later. Twenty first percent were more than sixty five years, and thirty one percent somewhere in the range of thirty and forty nine years versed people as appeared in figure 4. The Urban individuals truly limited differ of provincial clients – solely 14 July. sixty one unit either urban or regional territory. The Wealthier people square measure seventy fifth of clients acquire over \$50,000. The incredibly instructed contribute 5 hundredth of LinkedIn clients unit personnel graduates. An additional twenty second have some workforce understudies.

Figure 4. LinkedIn demographics usage



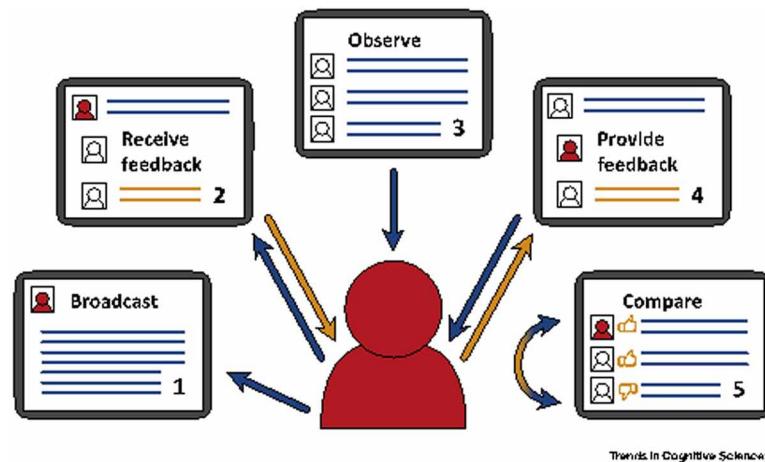
SOCIAL NETWORK PSCHYCOLOGY

An social network is comprised of people or associations who impart and connect with one another. Long range informal communication destinations for example, Facebook, Twitter, and LinkedIn – are characterized as innovation empowered instruments that help clients with making and keeping up their connections. The users identified with long range interpersonal communication is affected by real individual contrasts. The individuals contrast methodically in the amount and nature of their social connections. Two of the principle character attributes that are in charge of this fluctuation are the characteristics of extraversion and introspection. Extraversion alludes to the inclination to be socially prevailing, apply authority, and impact on others. Contrastingly, introspection alludes to the propensity of an individual to have an air of modesty, social fear, or even maintain a strategic distance from social circumstances through and through, which could prompt a decrease in the quantity of potential contacts that individual may have. These individual contrasts may result in various long range interpersonal communication results. Other mental variables identified with internet based life are: melancholy, uneasiness, connection, self-character, and the need to have a place. Internet based life and mind capacity go connected at the hip. Our cerebrum is the ‘social organ’ of our bodies and the maker of online networking itself. The mind needs to associate with other individuals, to submerge and comprehend other individuals’ encounters through correspondence, regardless of whether that be up close and personal or through broad communications. Internet based life requires a lot of self-referential idea. Individuals utilize internet based life as a stage to express their suppositions and hotshot their over a wide span of time selves. Self-referential idea includes movement in the average prefrontal cortex and the back cingulate cortex. The cerebrum utilizes these specific frameworks when considering oneself. The information encased in a profile shifts by interpersonal organization, anyway some of the time incorporates a picture of the client and a client name, also as information in regards to socioeconomics and demeanour, similar to sexual orientation, dates of birth, training, business, and interests. Facebook is by and by the premier wide utilized on-line interpersonal organization, with 1.5 billion ordinary clients on various informal communities spend significant time in explicit employments. LinkedIn, Twitter with a microblogging centre, and Instagram with a photograph partaking in various significant classes of informal organization . System sharing stages, as twitter and Instagram, give people a field to share system like recordings or photographs. This class normally covers with informal communities, because of system sharing stages commonly give profiles, remarks, or input on indicate content. for example, Instagram has been classified as each an informal organization focused on sharing, also as a system sharing stage. Social news stages, as Reddit and Digg, give people with a field to share and talk about news. The users will create, alter, and erase content, anyway ordinarily don’t move as socially as in various platforms.

The online users give a stage for people to fulfil these rudimentary social drives. In particular, interpersonal organization license youth to join with others and husband to be our name through at least 5 key practices (Figure 5)- *Social network users can:*

1. Broadcast information;
2. Receive feedback on this information;
3. Observe the broadcasts of others;
4. Provide feedback on the broadcasts of others;
5. Compare themselves with others.

Figure 5. Five key social network behaviours



For instance, an online user may require photographs of an excursion that she might truly want to impart to other people. The online user photographs to informal community so various users give criticism by remarking on the pictures and additionally giving an image of endorsement (e.g., a ‘like’ or ‘top choice’, looking on the interpersonal organization stage). This correspondence works inside the other route also: (iii) users watch information communicated by others; and (iv) users give criticism on others’ posts. for example, a user would conceivably observe a picture of a companion’s get-away, ‘similar to’ the picture on Facebook, so address what amount fun the occasion looked. Input is here and there noticeable to the client’s system or, at times, people in general. In either case, (v) user communicate in social correlation, by various their very own communicates and input to other people, similar to the amount of preferences got.

Web-based social networking has turned out to be interlaced into the texture of most recent youthfulness. Youth trust vigorously web-based networking media for correspondence, association, and consequently the scattering of data. Web based life may be a space that is supercharged by individuals, and can, accordingly, reverberation individuals’ best goals, in any case as their most noticeably terrible; individuals who scrounge around for to hurt others square measure brave by the net, still indistinguishable are previously mentioned for individuals who scavenge around for just to help other people. Web based life shapes social relationship inside the feeling that, being on field online who are capable not have the option to construct huge amounts of companions.

Web based life may be a stage in making new companions. It causes the young to frame relationship by knowing ourselves higher and apparently inside the more drawn out term, we’d end up serving to ourselves. Our reality isn’t planning to alteration, and innovation will at present infiltrate society much more profound exertion next to zero opportunity to respond to the clearly day by day augmentations to our lives. Utilization of online long range interpersonal communication is accomplice principal a region of Indian youth today. Over utilization of web based life, has gotten the thought of youth completely. The dependence of youngsters on the online life has come to at such measurement that, while not web based life, each juvenile can’t recognize the course of their advancement. Dependence of youth by means of online systems administration media has each negative and constructive outcome. Specialists have found that maltreatment of advancement unremarkably, and electronic long range informal communication

exceptionally, makes a prompting structure unclear in light of the way that the model made by absolutely novel addictive lead. The points of interest and drawbacks of electronic life through and through depend on yet we tend to use it. regardless, it's as one essential to expect the opposite side thusly on keep up a key separation from any sort of complexities. it's central for U.S. to check sources and truth, instead of taking all that we should constantly see as truth. we tend to should be "pulled over the coals" inferable from a wrong move that we tend to make by posting one factor that is deficiently researched and finally uncovered! the framework by that we will when all is said in done pass on our thoughts to our gathering of spectators might be raised to quality on condition that those contemplations zone unit a unit particularly contained with checked convictions and sources.

It has right now turned into a clear and normal sight to face individuals being unfeeling toward talk in revering places, homes once relatives and visitors square measure around, expressways, schools, schools and parties whereby youth is so distracted and charmed into their telephones that they are doing not bother to appear up on wherever they're which finishes in their failure to put on what's fundamental and what isn't. The essential target of this section is to toss light on anyway viably has the use of person to person communication destinations influenced the young by assessing every one of its positive and negative angles.

With connection to the discoveries it completely was obviously confounded out anyway reasonable, insightful, humorous and mindful the young is inside the present time. Through the help of the data that was gathered and examined very couple of ends have been drawn down which might be explained and intricate as pursues .The young now a days isn't exclusively mindful to what fits in best for them in any case, are sharp and ardent to draw their own needs and fix on to which of them square measure most critical and the way. similarly these destinations fill to their need of associating them with people the whole way across the globe by not hampering their work hours and timetables. Be that as it may, interpersonal interaction destinations supply them a stage to append with new individuals, share encounters and increase presentation. With connection to the normal result the investigation has delighted to an unmistakable edge whereby not exclusively negative effects have well-endeavoured to exist through the utilization of long range informal communication locales be that as it may likewise the presence of positive effects have involved a zone in one's life. The teenagers have decided their own limits and have set their possess restrains on be that as it may and once to utilize online networking paying little respect to the positive and negative impacts .

SOCIAL NETWORK ACTIONS

Why We've Got an Inclination to Post on Social Network

People dedicate concerning thirty to four-hundredth ever talking concerning themselves. be that as it may, on-line that determination bounces to concerning eightieth of interpersonal organization posts. Talking eye to eye is chaotic and genuinely is concerned. We don't have sufficient energy to acknowledge what to state, we must peruse facial prompts and correspondence on-line. We have time to develop and refine clinicians call of self-introduction, situating yourself the way you'd like to be seen. The inclination we have a tendency to prompt from self-introduction is seeing your own Facebook profile has been appeared to expand your vainness. What's together captivating for advertisers is that the preeminent extraordinary

proposes that we have a tendency to will in general work on self-introduction is through things, purchasing things and stress things that mean UN office we have a tendency to demonstrate.

Why We've a Bent to Share on Social Network

On the off chance that we have a bowed to love talking concerning ourselves such loads, what might create our picture to share one issue of somebody else's. It encourages for Self-introduction and reinforcing connections that help to make our own self-esteem. As indicated by review directed sixty eight of individuals state they offer to oversee others the following feeling of United Nations organization they are and what they care concerning. But the chief fundamental reason we've a twisted to share is concerning different people: seventy eight folks } state they share as a consequences of it causes them to remain associated with individuals. various investigations have demonstrated that the preeminent powerful indicators of infectious ideas among the cerebrum square measure related with the components that attention on contemplations concerning people. this suggests substance intended for informal community doesn't need to be constrained to appeal to A curiously large bunch or a mean group. it only should appeal to a chose individual. Informal community Currency is by having one issue captivating to state.

Why We've Got a Bent to Like on Social Network

Facebook, with over an attempt of billion month to month dynamic clients could likewise be a wonderful case of a stage where individuals wish to like. Truth be told, since Facebook implemented the "Like" catch, it has been utilized over one.13 multiple times, therewith choice developing by the day. We do this as a consequences of we will in general need to require care of connections. when we watch out for most loved and like each other's posts. Teenagers got a bowed to highlight an incentive to the connection, and strengthen that closeness. we will in general set up together turn out a correspondence result. We have a bowed to feel committed to oversee back to the individuals who have given to North American nation to redesign the scales. A man of science sent Christmas cards to 600 arbitrary outsiders and got two hundred equally. That is the intensity of correspondence. Youth can correspondence on Instagram in like manner, where getting a tag or direct message makes you feel constrained to send one back. What's more, whenever anyone get a like on your profile, they potentially feel scarcely dismantle to respond in be that as it may, regardless of whether or not by sharing one factor proportionally, language up upgrades out social connections.

Why We've Got a Bent to Comment

The selling organizations will in general guess discussions with clients region unit massively significant. The commitment, cooperation with the most clients the greatest sum as potential forms long help. An overview of over seven thousand clients found that only twenty third percent people did that what they did, solely 13 referred to visit associations with the whole as an explanation behind having a relationship. The customers same shared qualities were a so a lot bigger driver for a relationship than unnumbered cooperation with a whole clients. this can be to not say that remarks aren't amazing. Indeed, they will be unrealistically so there's an advancement alluded to as shared reality that claims our entire experience of 1 issue is stricken by if and in this manner the way we have a twisted to impart it to others.85% various individuals' reactions on an issue helps U.S.A. comprehend and approach data and occasions. This

implies remarks even have the ability to change our psyches, and science backs this up. An investigation on news destinations demonstrated that remarks that simply assault the creator, without any realities the littlest sum bit, are sufficient to shift our impression of an issue. On the elective hand, well-mannered audits – even once they’re negative – cause a whole to be viewed as a lot of legitimate and healthy. Clients were truly ready to pay concerning \$41 a lot of for a watch once they saw courteous negative audits than once the surveys were evacuated. Essentially, any remark concerning you, anyplace on-line, is to a customer an impression of what very organization you are. It’s not explicitly coherent, yet that is nevertheless our cerebrums work. This implies being effectively connected inside the remarks area of your diary and with the customer audits of your item is critical, not such a lot to the individual you’re reacting to beside everybody taking an interest inside the mutual truth of remarks and surveys.

Selfie Craze

Historically, portraits are relating to standing, and dominant the means that our image is perceived.

Today, they’re the thanks to estimate for the tendency WHO we tend to be. The “looking-glass self” could also be a psychological thought that claims that we can, we will, we are able to ne’er be really see ourselves. We would really like our reflection from others therefore on grasp who we have an inclination to be. Selfies put together work as a results of we have an inclination to pay loads of attention to faces than we’ve an inclination to try and do to the remainder. The profile image is that the first place the eye is drawn to on Facebook and different social network sites. On Instagram, footage with human faces are thirty eight percent loads of in all probability to receive likes and thirty 2% that is loads of in all probability to attract comments. Eye-tracking studies show that on-line, we’ve an inclination to follow the eyes of the oldsters we’ve an inclination to check on screen.

Emoji Power on Social Network

Most people have a bent to mimic each other’s expressions in face-to-face spoken communication. In on-line arena, we have a bent to recreate that crucial a part of sympathy using emoticons and emoji. Today, ninety 2 of people out hundreds of times use stickers, emoticons or emojis in their on-line communication, and 10 billion emoji are sent around the world every day. Emoji may be a powerful link between emoji use and social network power. it’s Associate in Nursing analysis of over 5 years in social network found that emoji were a customary issue among important and customary social network sharers. A study that had participants chat on-line with various forms of specialists found that participants rated the specialists friendlier and tons of competent once they used emoticons in their communication. There are several fun ways that during which to incorporate emoji into your merchandising campaigns. Brands like Ikea, Coca-Cola, Burger King and Comedy Central have even created their own branded emoji for their popularity.

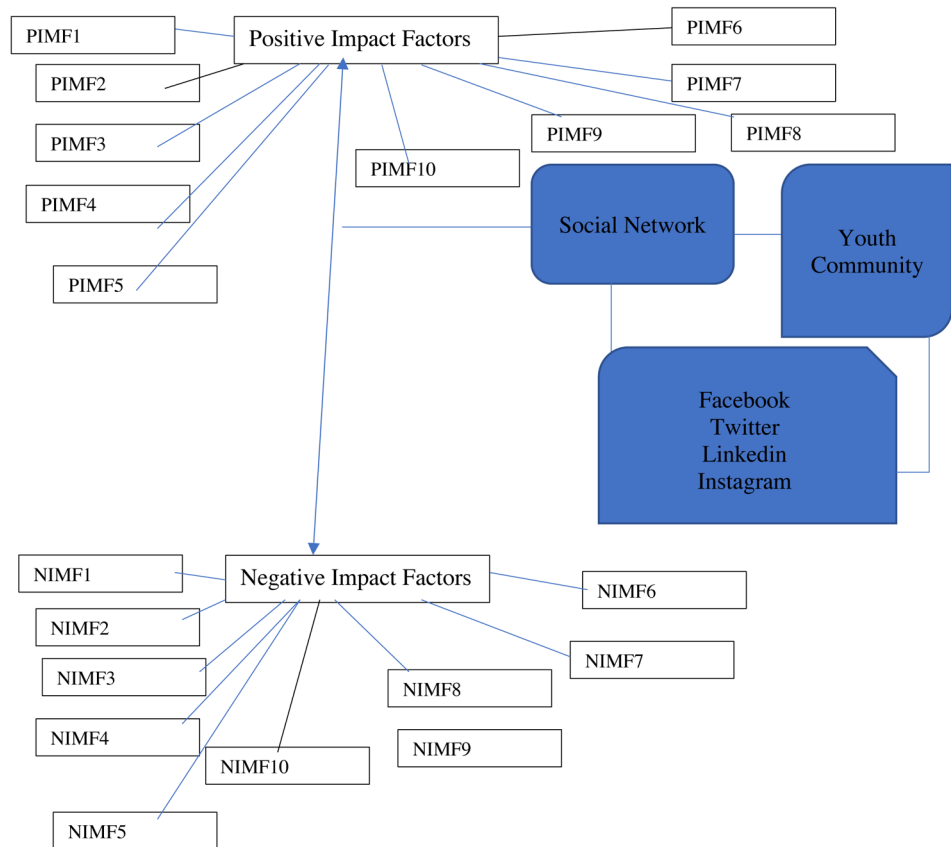
Network Nostalgia

Sometimes the network and life moves thus fast that we have a tendency to would like things to dam. This is where craving comes in, and this longing for the past is an unbelievable strategy for modern social network selling. yearning is universal across all cultures and it provides U.S. the way of social connectedness, feelings of being favourite and protected.

CONCEPTUAL FRAMEWORK

See Figure 6.

Figure 6. Conceptual framework



POSITIVE SOCIAL NETWORK PSYCHOLOGY

Web-based social networking is progressively turning into a basic component of human culture by changing our social standards, qualities, and culture. Data sharing and the conveyance of substance are getting to be significant social wants . Web based life has changed how individuals, including college understudies impart, cooperate, and associate through the span of their learning forms at instructive establishments. This new type of media is assuming an imperative job in substance sharing among colleges understudies and the remainder of society. Understudies currently have the chance to partake in social talk by sharing pictures and pictures, posting their remarks, scattering thoughts, . . . Advanced media and person to person communication are altering strategies for ordinary correspondence, coordinated effort, data sharing, and data utilization .

Media Skill

The ability to viably utilize web search tools and see has been contemplated by United Nations office or what associations made or support the information; wherever the data originates from and its believability. Join that have some expertise in morals, style and cooperation make a significant commitment to discussions round the job of internet based life in scholarly settings, giving numerous chances to inventive reasoning and articulation, while maintaining a strategic distance from the over-disentangled investigation that might be identified with sane evaluate of online networking writings. In any case, while concurring that such open doors should be important elements of online networking in scholastic settings, we will in general contend that there's as yet a need for reflexive scrutinize.

Technical Acquirement

The information and skills needed to use a laptop, application or specific package program or application. company learners World Health Organization have a high degree of technical acquirement acumen to use technology to their advantage. they will realize all the knowledge they have by looking out the net and exploitation the tech-based resources that square measure out there. These people even have the ability to beat everyday challenges and reach their goals with the assistance of their mobile devices. Technical acquirement is important in our tech-centric society.

Critical Content Skill

The ability to viably utilize web search tools and see has been contemplated by United Nations office or what associations made or support the information; wherever the data originates from and its believability. Join that have some expertise in morals, style and cooperation make a significant commitment to discussions round the job of internet based life in scholarly settings, giving numerous chances to inventive reasoning and articulation, while maintaining a strategic distance from the over-disentangled investigation that might be identified with sane evaluate of online networking writings. In any case, while concurring that such open doors should be important elements of online networking in scholastic settings, we will in general contend that there's as yet a need for reflexive scrutinize.

Communicative and Social Networking Literacy

Open partner studied informal communication process in different totally various zones of correspondence on the online web. The formal standards that administer guide the material conduct, dimension of protection to influence undesirable or unseemly correspondence through them; creative substance and visual securing furthermore to the capacities to shape and exchange picture and video content this incorporates seeing how on-line visual substance is adjusted and developed, what sensibly substance is satisfactory and the manner in which copyright applies to their exercises. Research shows that the work of long range interpersonal communication administrations will bolster the occasion of media procurement. The creation and sharing of substance on administrations like Myspace has been believed to expand every youthful people groups specialized education, as they figure out how to utilize code to frame their profiles, and inventive substance and visual literacy.

Formal Education Outcome

The potential of public SNS and social media like blogs to help to conduct formal tutorial activities and enhance learning outcomes, whereas e-learning frameworks square measure presently integrated into most tutorial settings, the use of SNS could be a smaller quantity comprehensively used. The SNS varies in keeping with state and there's inadequacy of proof on the impact of SNS on young people's formal education. SNS is in addition obtaining accustomed increase opportunities for formal learning across geographical contexts. Using SNS, youngsters from the two schools act with learners from over forty various SNS use between lecturers and students can improve rapport and motivation and engagement with education. Studies conducted inside the point on the role of ICT in learning and development.

On-line forums and SNS can support the continuation and extension of learning and discussion outside formal as Peer based learning can be a key characteristic of the strategy throughout that teenagers direct their own learning outside school & formal organisations. Evaluations of e-learning ways that have found SNS platforms enable the extension of learning discussion outside the formal area setting, therefore promoting deeper learning as teenagers not exclusively interact with the material for extended but square measure further apparently to relate thereto and incorporate it into their everyday lives. Finally, studies conducted on the use of hand-held devices to deliver point learning demonstrable that regular accessibility suggests that children can access resources in a very technique that is every convenient and relevant to them. The elearning tutorials have positive impact on learners and help socio-economic backgrounds and folks living in remote areas, face persistent challenges of internet access and skill. Increasing the benefits of SNS for these groups specifically wants addressing access and digital skill.

Creativity

Rapid uptake of digital technologies have displayed unexampled prospects for amateur users to make and distribute content specified media users became producers. User-generated content describes each the generation of „original“ inventive content and „remixed“ content that creatively reworks or repurposes existing content. The interrelatedness between SNS and social media has provided a key impetus (via platforms like youtube.com and flickr.com) for the sharing of this self-generated content with broader networks. teens particularly area unit additional immersed during this democratic media surroundings than the other age-group. They currently produce and share their own 'small media' in their everyday communicative, inventive and social activities.

Creative content sharing practices such as blogs, animations, videos, photos associate degree digital collages. It plays a big role in young people developing sense of identity and community. inventive content production and sharing empowers individual teens through the subsequent incontestable benefits. Developing a way of aspiration, personal action and self-worth, and fostering additional creative thinking and self-Notley of all of that area unit key predictors of wellbeing.

Individual Identity and Self-Expression

Individual Identity SNS area necessary for the expression of identity. This articulation is not simply egotistic, but supports essential peer-based nature. As a results of SNS area unit essentially versatile and designed to push individual customisation youngsters use SNS to experiment nonetheless as notice legitimacy for his or her political, ethnic, cultural or sexual identity.

SNS can offer youngsters with a part to work out identity and standing, add from cultural cues and discuss public life. Free from adult regulation young people's articulation and expression of assorted components of their identity to their friends et al. supports essential peer-based nature . Such processes of socialisation area unit essential for psychosocial development at a time once many youngsters are consolidating their identities, propulsion up roots from their family, pains for independence and developing new sorts of relationships, yet as intimate ones .

Strengthening Existing Relationships

Having positive social relationships in web use, generally, has been found to strengthen young people's existing social relationships Most analysis has centered on the role SNS play within the maintaining and strengthening of existing offline relationships. However, for a few teenagers, notably those that area unit marginalised or otherwise socially isolated, on line relationships provided a major, and generally the sole, chance for such socialisation. As a study of SNS for teenagers that suffer chronic sickness and/or incapacity demonstrates, not solely did it offer the chance to develop such friendships however participants represented these friendships as "true friends" that were amongst their most dependable and enduring . Another study incontestable however Facebook helped teenagers with lower levels of social skills develop friendships on-line that then translated offline .Indeed, teenagers area unit more and more partaking at the same time in on-line and offline social networking. As an example, multi-player gambling includes a long tradition of mixing on-line and offline interactions of players with web cafes and computer network parties providing such areas .whereas there has been very little analysis it seems that teenagers typically work collaboratively within the on-line area through SNS, making and commenting on YouTube videos or different such activities, whereas physically co-located. teenagers not solely can take into account their on-line and offline worlds together however truly mix the two during a physical and temporal sense. This insight is additional emphatic by analysis demonstrating that the potential of SNS for promoting social inclusion depends upon finding ways that of bridging online communication .

Belonging and Collective Identity

SNS facilitates people, children, kids, youngsters, teenagers, teens, adolescents, youth . The sexually and gender varied to meet folks and learn from each other, creating the sense of happiness to a broader community . This sense of happiness and acceptance can mean that youth United Nations agency might even be tons of in danger of isolation like those with chronic malady or a incapacity usually keep members of an online community long once their initial impetus is content sharing plays a major role in cultivating happiness and some way of collective identity. Sharing written, visual or audio content on SNS that represents or portrays a private or community experience invites others to act and relate. This phenomenon is associated with current visual access to a small-scale communication cluster or community via spontaneous and everyday photos uploaded to a cooperative media space. Such a mode of sharing and connection does not want of time communication and will to boot mitigate feelings of social isolation.

Civic and Political Participation

SNS speak to new territories for municipal commitment and political cooperation just as information sharing and transferral along new systems for activity using email, client produced substance and dis-

tinctive systems administration rehearses. Concentrates inside the U.S. understand that thirty seventh of eighteen – twenty multi year olds use online journals and SNS for political or community commitment. Political competitors zone unit increasingly using SNS and online life, as territory unit backing and issue-situated groups. SNS zone unit getting utilized for dialog, association and assembly as a piece of rising political talk in youthful people groups presence . despite the fact that focused on balloting, efforts like Rock the Vote, The Hip Hop Summit Action Network, subject adjustment and Voces del Pueblo zone unit tests of the technique that long range informal communication is inserted in new assortments of network and political sorting out and electioneering . For youth United Nations organization don't consider their investment in community or issue-based exercises as inside the old or institutional sense, SNS region unit thought of a great deal of fundamental than „civic locales. Person to person communication administrations, as web.myspace.com region unit acclimated choose what individuals do by associating with individuals with comparable interests, existing efforts or distributive data in regards to their own comes.

NEGATIVE SOCIAL NETWORK PSYCHOLOGY

The threatening effects of these individual to individual correspondence goals surpass the helpful ones. The study suggests that electronic life is an engaging way for understudies to keep up a vital separation from weariness while they are thinking about or glancing through their course material web, diverting their thought from their work . The online network filling has a net-negative effect on one life. For instance, the going with electronic life stages have been situated from the most to the least negative reliant on customer evaluations: Twitter, Facebook, linkedin, and Instagram.

Sedentary Behaviour

Inactive practices square measure exercises that include sitting or resting and square measure described by an espresso Metabolic Equivalent Total (MET) vitality use. Inert practices square measure performed at or somewhat over the resting rate go 1 to 1.5 METS and grasp an assortment of exercises like television seeing, PC use, appreciating computer games, and latent diversion These dormant practices square measure unavoidable in our general public, grown-ups pay a middle of twenty eight hours out of each week recognition . Internet based life more supports these sorts of dormant practices. Commonly, an individual uses web based life on their workstation or cell phone while hanging loose all through a dormant movement: sitting on the train or transport, holding up in line, and so on. In any case, very that, internet based life commonly works as Associate in Nursing movement amid and of itself – as in an individual will plunk down all through relaxation time explicitly to imagine their web-based social networking destinations, making idle conduct rather than only exploiting it. Inactive practices, similar to those propelled by web based life use, are joined to physical wellbeing dangers. The raised danger of kind polygenic infection lard, issue, high weight level, and metabolic disorder square measure all identified with idle conduct. Be that as it may, less is thought in regards to the consequences of idle conduct on the peril of mental state issues.

Displaced Behaviour

As per uprooting hypothesis, it isn't simply the web based life use all by itself that effects affects emotional wellness, but instead the nonattendance of different exercises. One idea may put forth a defense for anyway the dormant practices motivated by web based life influence mental state is that of uprooting. people that compensation longer in inert practices like web based life use possess less energy for up close and personal social association and physical movement, both of that are attempted to ensure against mental issue. In accordance with removal hypothesis, it's not simply the online networking use all by itself that affects mental state, anyway rather the nonattendance of various exercises. As per Open Thinking Exchange (2013), Americans matured 18-64 United Nations office utilize informal communities report that they pay a mean of three.2 hours every day doing in this manner. This range is significantly higher for youthful grown-ups: 18-34-year-olds report abuse internet based life a mean of three.8 hours out of every day, with one out of five clients matured 18-34 reportage that they're on interpersonal interaction destinations six or a great deal of hours out of each day. NBC News reports that in July 2012 alone, Americans went through a joined 230,060 years via web-based networking media destinations. concerning hundredth of the time Americans utilize their PCs, they are via web-based networking media; half-hour of the time region on their cell phones they're completing a proportional. Whatever the reason, work up is all around archived to support mental state. The dangers of supplanting physical exercises with an inert conduct, together with web based life use, must be thought of as an achievable issue once talking about the outcomes of web based life use on mental health. Face-to-confront social cooperation conjointly plays an occupation in uprooted conduct hypothesis. Like work out, it diminishes the opportunity of creating mental state issues and eases mental state issues that exist as of now. The uprooted conduct hypothesis contends that dormant practices like web-based social networking use could be dislodging this vis-à-vis cooperation and along these lines the edges it offers. The social withdrawal theory is one system of clarifying the relationship between expanding latent practices and expanding danger of despondency. This speculation recommends that the a ton of generally people stare at the TV or utilize the PC/web, the any they expel themselves from social collaboration, that progressively will build their danger of despondency. Krout (2002) expanded this hypothesis alongside his social confinement speculation, recommending that drawn out commitment in latent practices, similar to TV survey or pc use, not just expels the client from social connection, anyway conjointly results in the breakdown of social help or correspondence systems which can result in expanded danger of mental sick wellbeing.

Sleep Interruption Due to Blue Light-Weight

Wright. (2013) found that individuals United Nations association went through consistently spot to remain inside the Rocky Mountains, displayed to solely ordinary light-weight and no electronic contraptions, had their unit of time tickers synchronized with the development and fall of the sun. Regardless, these normal unit of time rhythms are not by any means the standard in the present snappy and involved world. Our typical rest cycles are being meddled with .An Associate in Nursing said our workstations, cell phones what's more, cell phones and pc screens wont to peruse internet based life destinations all share one issue practically speaking. The concealed interims their which sparkle, they emanate abnormal amounts of blue light-weight. This fake light-weight upsets sound rest cycles demonstrated that evening time introduction to fake light-weight disturbs the body's organic time, or the 24-hour system that controls our rest cycle. In what capacity will this counterfeit light-weight disturb rest per Holzman

(2010), the blue light-weight encased in fake light-weight is that the most destructive to people. Blue light-weight smothers inner discharge, or the mind's "sluggish compound," creation extra keenly than various wavelengths. Blue light-weight stifles inner discharge through one in every one of the sensors in our eye: the essentially light-delicate retinal neural structure cells, or RGCs. The RGCs are most delicate to blue light; in this way, it exclusively takes a little amount of blue light-weight for the mind to flag the ductless organ to forestall causation out interior discharge, making it problematic to desire to rest. This inside discharge smothering blue light-weight is blessing in our TVs, pc screens and cell phones. Perusing internet based life before bed isn't just diverting from rest, it will for all intents and purposes prevent you from being drowsy peered toward in any regard.

Rapid Task Switch

Fast errand change (additionally alluded to as performing various tasks), propelled by online life, could likewise be one root clarification for wretchedness. Rosen et al. (2013) states that "while performing various tasks is innately a character's property, innovation has possibly excessively roused and advanced it by our multi-window workstation situations, multi-application cell phone screens and furthermore the wide-going tangible incitement (and diversion) offered by top notch, adjustable visual and methodology flag also material incitement through vibration.

Cybersickness

Cybersickness is tantamount to kinetosis and for the most part occurs all through or once drenching in an exceedingly virtual climate. Cybersickness is accepted to happen essentially as an aftereffects of contentions between 3 tangible frameworks: visual, proprioception and interoception. therefore, the eyes comprehend a development that is out of alter by a few milliseconds with what's apparent by the vestibular device, while the remainder of the body remains for all intents and purposes unmoving. Cybersickness might be brought about by elements related with the work of video game instrumentation (for example largeness of the head protector, closeness of screen to the eyes. As per Kennedy, Lane, Berbaum and Lilienthal (1993), the transitory feature impacts related to cybersickness will be isolated into 3 classes of indications related with the tactile clashes and to the work of computer game gear: (1) visual side effects (eyestrains, obscured vision, cerebral pains), (2) confusion (vertigo, unevenness) and (3) sickness (regurgitating, tipsiness). Visual side effects normally happen as an aftereffects of closeness of the screen and square measure limited fundamentally to the work of a virtual protective cap. The sickness and bewilderment extreme square measure brief, like perusing in an exceedingly moving vehicle and square measure caused essentially as an after-effects of tactile clash.

In any event hour of computer game climate clients report having felt side effects of cybersickness all through an essential session. The extent of individual who feel extra serious and long-run auxiliary impacts is like the extent of individuals who are experiencing an affectability to kinetosis. around five-hitter of clients really feel no feature impacts of any sort as an after-effects of being drenched inside the computer game air.

Cyberbullying

Cyberbullying is harassing that happens over computerized gadgets like phones, PCs, and tablets. Cyberbullying will happen through SMS, Text, and applications, or on-line in online life, gatherings, or redirection wherever people will peruse, take an interest in, or offer substance. Cyberbullying incorporates causation, posting, or sharing negative, unsafe, false, or mean substance with respect to another person. It will grasp sharing individual or non-open data in regards to another person perpetrating shame or embarrassment. Some cyberbullying crosses the street into unlawful or criminal conduct. The most widely recognized places wherever cyberbullying happens are: Online life, as Facebook, Instagram, Snapchat, and Twitter, SMS (Short Message Service) moreover alluded to as Text Message sent through gadgets Text (by means of gadgets, email provider administrations, applications, and online networking electronic informing highlights) email. With the predominance of internet based life and computerized gatherings, remarks, photographs, posts, and substance shared by individuals will ordinarily be seen by outsiders besides as associates. The substance an individual offers on-line – each their own substance moreover as any negative, mean, or pernicious substance – makes a type of lasting open record of their perspectives, exercises, and conduct. This open record will be thought of as a web name, which can be available to universities, businesses, schools. UN organization is likewise exploring an individual right now or inside what's to come. Cyberbullying will hurt the net notoriety of everyone concerned isn't just the individual being scared, anyway those doing the harassing or partaking in it .

Cyberaddiction

Internet addiction is represented as an impulse management disorder, that doesn't involve use of an intoxicating drug and is extremely the same as pathological gambling. Some web users could develop AN emotional attachment to on-line friends and activities they produce on their laptop screens. web users could get pleasure from aspects of the web that enable them to satisfy, socialize, and exchange concepts through the utilization of chat rooms, social networking websites, or "virtual communities." different web users pay endless hours researching topics of interest on-line or "blogging". Blogging may be a contraction of the term "Web log", within which a private can post commentaries and keep regular chronicle of events. It may be viewed as journaling and also the entries area unit primarily matter. Similar to different addictions, those full of web addiction use the virtual phantasy to attach with real individuals through the web, as a substitution for real-life human association, that they're unable to realize ordinarily. Internet addiction leads to personal, family, academic, financial, and activity issues that area unit characteristic of different addictions. Impairments of real world relationships area unit non continuous as a results of excessive use of the web. people full of web addiction pay longer in solitary seclusion, pay less time with real individuals in their lives, and area unit usually viewed as socially awkward. Arguments could result thanks to the degree of your time spent on-line. Those full of web addiction could conceive to conceal the quantity of your time spent on-line, which ends in distrust and also the disturbance of quality in once stable relationships. Some full of web addiction could produce on-line personas or profiles wherever they're ready to alter their identities and fake to be somebody apart from himself or herself. Those at highest risk for creation of a secret life area unit those that suffer from low-self esteem feelings of inadequacy, and concern of disapproval. Such negative self-concepts result in clinical issues of depression and anxiety.

Many persons United Nations agency conceive to quit their web use expertise withdrawal including: anger, depression, relief, mood swings, anxiety, fear, irritability, sadness, loneliness, boredom, restlessness, procrastination, and dyspepsia. Being captivated with the web may also cause physical discomfort or medical issues such as: Carpal Tunnel Syndrome, dry eyes, backaches, severe headaches, consumption irregularities such as skipping meals, failure to attend to non-public hygiene, and sleep disturbance.

Cyber Depression

Another research presumes that there's if in all honesty a causative connection between the use of online networking and negative impacts on prosperity, basically despondency and dejection. The investigation was uncovered inside the Journal of Social and psychotherapeutics. "What we tend to establish by and large is that in the event that you utilize less web based life, you're extremely less discouraged and less forlorn, which implies that the decreased internet based life use is the thing that causes that subjective move in your prosperity," previously mentioned Jordyn Young, a creator of the paper and a senior at the University of Pennsylvania. The scientists state this is frequently the essential time a causative connection has ever been built up in research venture. The examination encased 143 understudies from the University of Pennsylvania. They were helter and skelter named 2groups: one that may proceed with their online networking propensities as was normal or one that may significantly restrain access to internet based life. For three weeks, the exploratory group had their web based life utilize decreased to half-hour of the day for ten minutes on 3 entirely using Facebook, Instagram, and Twitter. In request to remain these trial conditions, the specialists looked at telephone use data, that reported what amount time was spent exploitation each application every day. The majority of the examination members needed to utilize iPhones. The outcomes were clear: The bunch that utilized less web-based social networking, despite the fact that it wasn't completely disposed of, had higher mental state results. Gauge readings for members were taken toward the beginning of the preliminary in numerous zones of prosperity: social help, stress of passing up a great opportunity, forlornness, tension, dejection, vanity, independence, and self-acknowledgment. At the tip of the preliminary, those inside the test group saw every forlornness and burdensome side effects decay, with the most significant changes occurring in those that revealed greater dimensions of melancholy.

Eating Disorders

"Selfies, self-image, vanity and therefore the "self" is incredibly abundant at the guts of socialmedia these days. It pay loads of your time urging folks with ingestion disorders to be additional crucial of the bloggers they give the impression of being at, as a result they're promoting their lifestyles on social media . Whether clean ingestion, fitspiration or the virtues of veganism, several celebrities and "vloggers" use social media sites to push their food decisions, exercise regimes and toned bodies. For folks fighting low vanity and body confidence, the constant timeline of body and food-related posts could cause heightened levels of stress and anxiety around what they understand because the perfect lifestyle.

Attention Deficit Upset Disorder

Teens diagnosed having Attention Deficit Disorder (ADD) expertise identical core symptoms as younger youngsters with the disorder, including: basic cognitive process, impulsivity, and, in some

cases, disorder. Teens conjointly face exaggerated expectations socially and academically throughout this point, which may work to accentuate some symptoms of attention deficit disorder. Developmentally, teenagers may be characterised by higher educational and social expectations. Teens have additional autonomy and fewer structure each in school and reception, and fewer teacher oversight once it involves finishing assignments and maintaining with work. For teens with minimal brain dysfunction which is new independence will backfire.

Many youngsters with minimal brain dysfunction exhibit difficulties in peer relationships thanks to impulsivity, hyperactivity, and aggression. Frequent interruptions, issue dealing with frustration, and poor social skills will negatively impact early friendships, which pattern will continue into adolescence. The importance of peer relationships will increase throughout adolescence, as teens pay additional of their time engaged with peers. Lack of follow with social skills within the early years will build it troublesome to ascertain new friendships throughout the teenager years. Many teens with minimal brain dysfunction expertise alternative difficulties. analysis shows high levels of comorbidity between minimal brain dysfunction and mood disorders, anxiety disorders, and conduct disorder.⁴ One study found that adolescent females with minimal brain dysfunction have a pair of 0.5 times higher risk of major depression than feminine adolescents while not minimal brain dysfunction.

Teens with minimal brain dysfunction want further emotional support from their folks and lecturers. The behaviours that folks and lecturers take for frustrating or annoying are the terribly behaviours that trigger anxiety and low vanity in teens with minimal brain dysfunction. Left uncurbed, these behaviours will intensify and end in symptoms of tension depressive disorders. Due to impulsivity, emotional regulation may be a struggle for teens with minimal brain dysfunction. mix exaggerated pressure, high educational demands, low social interaction skills with low emotional regulation skills and it all adds up to teens with minimal brain dysfunction combating varied social-emotional struggles day after day.

SOCIAL IMPACT THEORY

Social Impact Theory become created turned into by Bibb Latane in 1981 as a shape for comprehension the general regulations that guide the association of networks and connections. Social effect alludes to, as Latane noticed, “the pleasant form of adjustments in physiological states and abstract sentiments, thought tactics and feelings, perceptions and convictions, qualities and conduct, that manifest in an individual as an aftereffects of the large, inferred, or whimsical nearness or activities of non-compulsory people. Latane stated that take a seat wasn’t produced for its explicitness or its ability to explain the exact methodologies by using that social effect is exchanged from person to an change. sit down just shows that social effect is a part into ‘social powers’ along with high-quality, instantaneousness, and quantity, which the impact of every social strength are regularly spoken to numerically. Latane(1981) displays each social power and its essential examination, regardless of the fact that he concedes that most of his related statistics alludes to his third social electricity. run as an detail of social effect alludes, most sensibly, to the amount of humans that shape up an impacting supply. Latane contends that enthusiastic or intellectual element sway on an man or woman will increment in light of the reality that the affecting institution develops in length. however, the impact of each affecting individual is a littler sum than that of the individual that preceded. Latane clarifies the idea through a similarity: while price of a person’s first dollar is as much as the unique estimation in their one centesimal dollar, the impact of the one hundredth greenback is a littler sum than the effect of the important. eventually, the social impact of quite a few 100 humans is not

a couple of times as massive in mild of the truth that the effect of 1 character. Latane communicates the instance part of team spirit thru a situation, wherever “I” is social impact, “s” could be a scaling regular, “N” is that the scope of resources, and “t” will be a value but one: $I = sNt$. research that, Latane closes, is confirmative of sit down and typically confirmative of his clinical articulation of bunch size consists of an expansion of each human and non-human practices, collectively with ingesting spot tip estimate in regard to bolstering gathering size, situation in guinea pigs, and similarity amongst understudies. The social powers, great and quickness, are not any reduced, Latane (1981) states, however he exhibits this kind of terrific deal much less confirmative examination. every quality (i.e. the standing or depth of an affecting source) and quickness, or “the closeness in house or time and nonappearance of interceding hindrances or channels,” are represented as Latane reviews the outcomes of news events. Latane alludes to his own exam with Bassett, gave in 1976, that researched every of the 3 social powers with the aid of displaying numerous fake functions and test information memories to technology understudies. Understudies have been entrusted with deciding on what quantity article inches each story ought to be relegated. The status (or strength) of the issues concerned in each story perceived to haven’t any have an impact on at the users choices, but the quantity of subjects concerned and also the space of the occasion (Columbus, close to; Phoenix, some distance) did. Fewer column inches had been committed to occasions in Phoenix, and even though the amount of topics worried collected column inches for each near and far off occasions, the gap among the 2 sets widened as cluster size collected. Latane concludes that distance would not boom impact logarithmically, and later is going on to specify that impact, “might be an mathematical feature of the sq. of the space among people. The result would possibly, perhaps, be extra associated with strength than Latané supposes. Latane in 1996 redeveloped sit as dynamic Social impact idea. Dynamic Social Impact Theory conceives of social effect as an repetitious approach inside which probably haphazardly distributed attributes cluster over the years supported, in part, physical distance through immediacy. Latane shows that much less well favored attributes persist thru minority subgroups. therefore, dynamic take a seat proposes that these social forces are responsible for a backside-up formation of culture thru communication. As a consequences of Latane development, this principle will become in general concerning styles and social groupings, cultural shifts and social commonalities.

Legal Guidelines of Conduct

Latané contends that every individual is conceivably a “source” or an “objective” of social impact now and then each on the double. He supposes there are three recommendations or legal guidelines at paintings.

Social Pressure

Social force is made by impact, danger, amusingness, disgrace and diverse consequences that is contained power, Immediacy and Numbers:

1. Power: that is how a whole lot strength you believe the man or woman influencing you has. for example, if the man or woman has rank in an association, their solicitations could have extra fine.
2. Immediacy: that is the methods via which later the effect is and the way close you, from a solicitation a minute again out of your leader standing suitable with the aid of you (fast) to an electronic mail you obtain out of your director seven days prior (now not fast)

3. Numbers: The extra people placing weight on you to attain something, the extra social power they'll have

The Psychosocial Law

The Psychosocial law in social impact will occur within the advancement from 0 to one source .the amount of assets are manufactures. The condition Latané uses for this regulation is $\text{impact} = s.Nt$. The electricity (t) of the quantity of people (N) copied with the aid of the scaling unfaltering (s) chooses social impact. Asch's stated of congruity in understudies denies the psychosocial law, displaying up or three wellsprings of social impact have little impact. Regardless, Gerard, Wilhelmy, and Conolley drove a practically equal document on closeness testing from auxiliary school understudies. The Auxiliary school understudies were regarded as greater against be impenetrable to likeness than college students. Latane explained his law to pantomime likewise, the use of Milgram's sizeable check. in this exam diverse amounts of confederates stayed on a road nook in new york expanding and expanding on the sky. The outcomes showed that greater confederates inferred greater spectators, and the trade ended up being logically beside the point as more confederates were available. In an exam Latane and Harkins proved before a set of human beings warning and shame, the effects in like manner renowned the psychosocial law seeming moreover assembling of individuals human beings inferred steadily great uneasiness and that the pleasant distinction existed some location within the scope of 0 and 1 swarm human beings.

Divisions of Effect

The regulation of division impact communicates that the exceptional, immediacy, and wide variety of targets take delivery of an occupation . The more pleasant and immediacy and the more essential quantity of centers in a social scenario reasons the social effect to be apportioned amongst maximum of the destinations. The condition that addresses this division is $\text{affect} = f(\text{SIN})$.The social effect hypothesis is each a generalizable and a particular hypothesis. It uses one parcel of conditions, that are cloth to diverse social situations. for instance, the psychosocial regulation may be used to ascertain times of comparability, pantomime and shame. in any case, it's miles in like way unequivocal in light of the truth that the gauges that it makes are express and can be associated with and noticed on earth. The concept is falsifiable furthermore. It makes dreams making use of conditions; in any case, the conditions could be undeserving to correctly predict the consequence of social situations. Social impact principle is in like way accommodating. It might be used to fathom which social situations result in the exceptional impact and which conditions gift exceptions to the gauges. Even as Social effect hypothesis explores social conditions and can assist count on the consequences of social situations, it moreover has multiple inadequacies and questions which might be left uncertain. The regulations coordinating the idea depict human beings as recipients that latently understand social effect and do not take into account the social impact that human beings may accurately hunt out. The model is in like manner static, and does no longer completely compensate for the additives drew in with social participations. The principle is tolerably new and fails to address some pertinent problems. those issues consolidate finding dynamically genuine approaches to address degree social results, know-how the "t" type in psychosocial law, considering, perceiving how flashing results can shape into steady outcomes, utility to accumulate affiliations, know-how the version's inclination .

APPLYING SOCIAL IMPACT THEORY

Survey Approach

Social impact theory facilitates around the non-separate social powers, which might be the span of the affecting accumulating and the influencer's high-quality popularity or intensity of the influencer. This exploration turned into meant to restrict or dispense with impedance from those social powers. right off the bat, it turned into clarified to participants that their mission companion turned into someone. This element was communicated whilst booking project aid and amid project hobby in some exceptional ways. to begin with, the challenge companion changed into continuously alluded to as a specific detail. second, a particular separation become given to each member to their errand partner. ultimately, amid challenge funding, the elements included had been recorded within the "Babbles on-line" place of the speak application, and the main names recorded had been the member, the expert, and the gazing scientist. exceptional as a social strength became an increasing number of muddled to represent. Conversationalists are in all likelihood going to border conclusions approximately the status in their cooperating accomplices dependent on subsequent to no facts. because of the want of giving the equivalent printed contributions to every member, it turned into considered as full-size that the pre-composed reactions suggest subsequent to no approximately the mission partner/specialist. Reactions have been composed with insignificant slang and internet-specific expressing or truncations, general spelling, popular accentuation and capitalization, and negligible but responsive utilization of emoticons. This changed into finished to restriction the opportunity that members would create suppositions about the age, instructive status, or sexual orientation of their undertaking accomplice (Marwick, 2013). In light of time limitations, reactions sent amid undertaking interest should have been brisk. Hence, the pre-composed reactions were sent, reliably crosswise over errand cooperation, as fast as it was esteemed conceivable to have kept in touch with them at a sensible speed in order to keep away from suggestions that may have identified with age or capacity. At last, on the grounds that an enormous concern in regards to much past SIT research is that members may have predispositions about specific places, this investigation tried member conduct and observation utilizing a separation and not a spot.

Data was collected from University Students of Jamia Hamdard through survey. A self administered questionnaire was used for data collection. In the survey the data was collected from students (n = 560) to examine the validity and reliability of the adapted scales. The questionnaire pattern for the study was prepared in two portions to examine the opinions of the respondents. This investigation additionally incorporated an open-ended inquiry to assemble data about the view of undergraduates' learning conduct through web based life. The study asked college undergraduates to answer inquiries dependent on positive and negative elements, demonstrating how such components influenced their every day lives, particularly regarding maintainable instructive learning. The study depended on a five-point Likert scale to survey the level of understanding. The information of study one was incorporated into the complete information to keep up the consistency in the information gathered from arbitrary example of undergraduates. Total 560 questionnaires were distributed online using google forms among the randomly chosen students and the response rate was 83%. The age ranges of the sample students were as follows. The sample students were enrolled in undergraduate degree programs, graduate degree programs, and postgraduate degree programs respectively. The result analysis shown in figure 7 analysed that facebook has strength 60%, immediacy as 48% with approx. 200 users, twitter has strength 51%, immediacy as 50% with 240 users, Instagram has strength 93%, immediacy 50% with 120 users, linkden has strength 51%, immediacy 20% with 100 users.

The Psychosocial Law Impact for the survey is calculated as Impact which is 224 people per transaction can be used to understand which social situations and behaviour. The division of impact for all the users has impact of diffusion of responsibility refers to the decreased responsibility of action each member of a group feels when she or he is part of a group. As per the diffusion of responsibility, people feel that their need to intervene in a situation decreases as the number of other (perceived) witnesses increases which has both negative and positive effect on the behaviour of the user. Group size significantly influenced the likelihood of helping behaviour in a staged emergency: 85% of participants responded with intervention when alone, 62% of participants took action when with one other person, and only 31% did when there were four other bystanders. Figure 8 shows the behaviour impact analysis on the user according to the age groups. The analysis resulted that >21 age group have most changing behaviour on online networks, age group between 21-29 shows steady change in behaviour analysis as compared to age group > 31.

Figure 7. SIT survey analysis

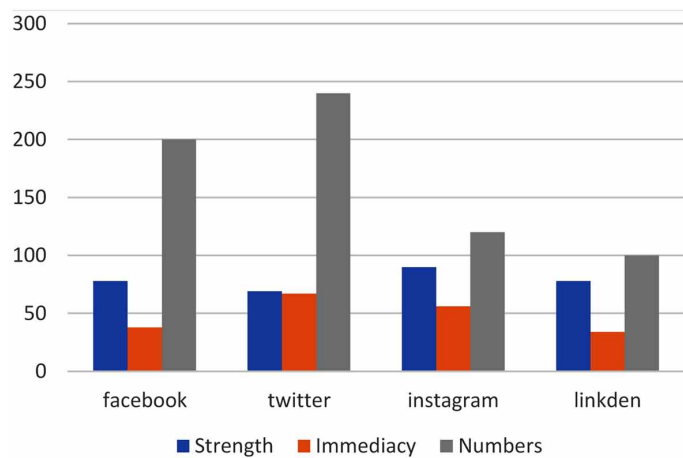
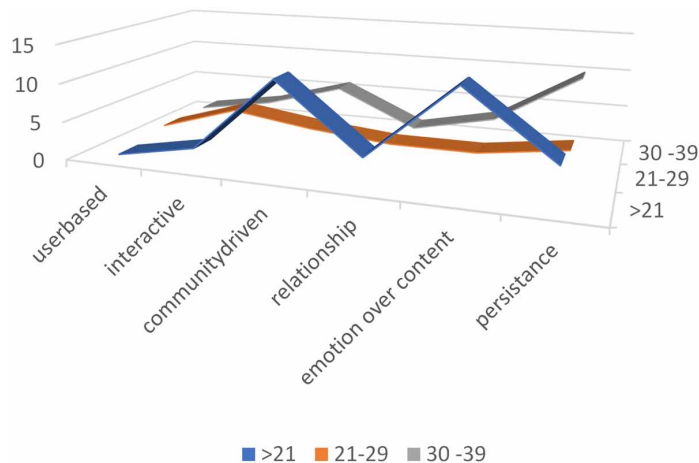


Figure 8. Behaviour impact analysis



Psychological Impact Factors List

The data we gathered from the surveys from the users through google forms, the information was checked, sent into the SPSS programming variant 25. Next, expressive measurements, recurrence investigation, dependability, graphic insights examination, ANOVA, and a t-test were performed on the legitimate information of the 560 respondents. The reaction rate resulted to be 87.033%, which is an incredible reaction rate. Our discoveries demonstrate that 53.08% of the respondents hold a graduate degree; 36.02% of the respondents hold a four year certification, and 10.90% of the understudy respondents hold an expert degree. Table 1 presents 10 chose web-based social networking factors. The estimation of Cronbach's alpha for the positive web based life elements estimated was agreeable ($\alpha = 0.7$), and the negative web based life factors likewise introduced a palatable Cronbach's alpha esteem ($\alpha = 0.9$). Information consistency mirrors the information source, and it requires data about the respondents' comprehension of the chose survey. This investigation connected Cronbach's alpha (α) to evaluate the dependability of the got information, and the ascertaining instrument was SPSS rendition 25. Accordingly, the unwavering quality of the overview poll uncovered a satisfactory estimation of Cronbach's alpha ($\alpha = 0.762$, $\alpha = 0.815$) for both the positive and negative internet based life factors, and these outcomes demonstrate that the respondents had a full hold and comprehension of the data incorporated into the study and great nature with the effect of the positive and negative components of web based life use on the online network.

Figure 9. Positive and negative psychological impact factors

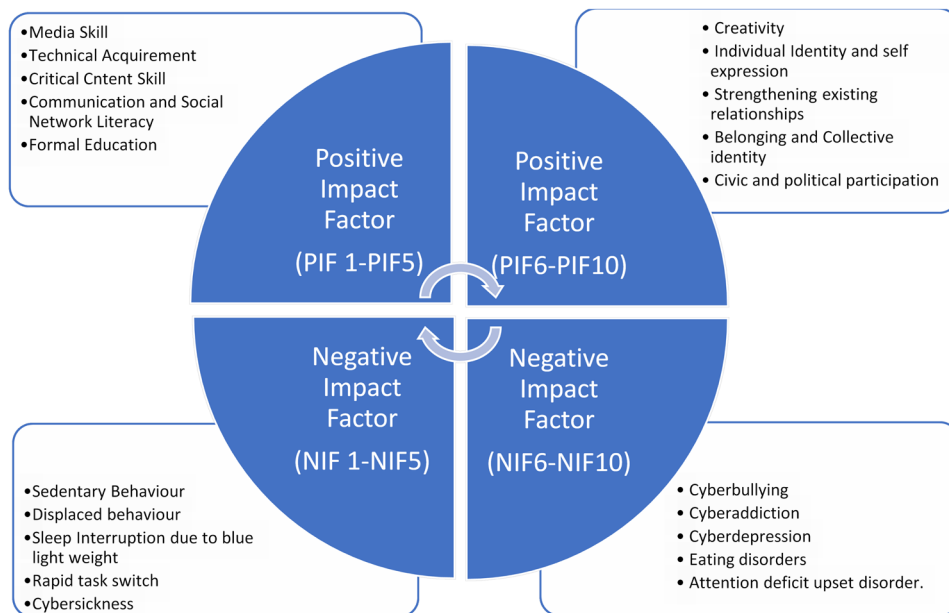


Table 1. Cronbach's alpha values for psychological impact positive and negative factors

Reliability Test -Positive factors	
Scale Items No of Items -10 Positive Psychological Impact Factors of Social Network	Data Reliability 0.862 Crobach's alpha values
Scale Items No of Items -10 Negative Psychological Impact Factors of Social Network	Data Reliability 0.715 Crobach's alpha values

Data Processing

In the data processing the primary challenge of this specific study was to explore and determine the most influential social media factors and their ultimate impact on the students' communities. These factors were identified from the previous literature after an in-depth investigation, and each element was analysed independently. Table 2 displays the mean score (M) and standard deviation (SD) of the selected positive social media factors.

Table 2. Participants using various applications of social media

Social Network Types	Frequency	Percent	Valid Percent	Cumulative Percent (%)
Facebook	280	41	41	41
Twitter	160	11.6	11.6	52.6
Instagram	100	7.8	7.8	60.4
Linkedin	120	31.6	31.6	92.1
All	66	7.9	7.9	100

Positive Psychological Impact Positive Factor Social Network Analysis

Table 3 describes the mean scores (M) and standard deviations (SD) of selected positive social media factors. The results of all the positively related factors are close to each other. The most significant impacts of social media include the following: Media Skill (M = 4.0241, SD = 1.3566), Technical Acquirement (M = 4.0144, SD = 1.3298), Critical Content Skill (M = 4.0903, SD = 1.1955), Communication and Social network literacy (M = 4.0542, SD = 1.3101), Formal education outcome (M = 4.0830, SD = 1.3431), and Strengthening existing relationship (M = 4.0457, SD = 1.3282).

Negative Psychological Impact positive Factor Social Network Analysis

Table 4 shows the antagonistic effects of the unreasonable utilization of web based life and nine basic variables chose from the writing. Figure 12 demonstrates the most significant negative factors, the particular mean score (M) and standard deviation (SD), and the situating of the components of this gathering dependent on the respondents' perspectives: Sedentary Behaviour (M = 4.0975, SD = 1.3076),

Cyberbullying (M= 3.2058, SD = 1.0664), Cyberdepression (M = 4.0241, SD = 1.3566), Cybersickness (M = 4.0878, SD = 1.3374), Cyberaddiction (M = 4.0866, SD = 1.3207), and Attention deficit upset disorder (M = 4.0710, SD = 1.3285). The mean scores of the selected factors are shown respectively.

Table 3. Mean scores and standard deviations of positive psychological impact positive factors

PIF	Positive Psychological Impact Positive Factor	M	SD
PIF1	Media Skill	4.0241	1.355
PIF2	Technical Acquirement	4.0144	1.3101
PIF3	Critical Content Skill	4.0903	1.3566
PIF4	Communication and Social network literacy	4.0542	1.3101
PIF5	Formal education outcome	4.0830	1.3431
PIF6	Creativity	3.042	0.342
PIF7	Individual Identity and self-expression	3.219	0.231
PIF8	Strengthening existing relationship	4.0557	1.3282
PIF9	Belonging and collective identity	4.001	1.562
PIF10	Civic and Political Participation	3.780	1.674

Table 4. Mean scores and standard deviations of negative psychological impact positive factors

NIF	Negative Psychological Impact Positive Factor	M	SD
NIF1	Sedentary Behaviour	4.0975	1.3076
NIF2	Displaced Behaviour	4.0144	1.3101
NIF3	Sleep Interruption due to blue light	4.0903	1.3566
NIF4	Rapid Task switch	4.0542	1.3101
NIF5	Cybersickness	4.0878	1.3374
NIF6	Cyberbullying	3.2058	1.0664
NIF7	Cyberaddiction	4.0866	1.3566
NIF8	Cyberdepression	4.0241	1.3566
NIF9	Eating Disorders	4.001	1.562
NIF10	Attention deficit upset disorder	4.0710	1.3285

CONCLUSION AND RECOMMENDATIONS

Web-based social networking has a few advantages, it is a spot to make associations, for private and gifted work. Anyway there are standard issues with web-based social networking, especially on the long range informal communication destinations, there are some elective online life issues which establish that the Update Syndrome issue delineates the extra you keep and take a gander at what others have shared, or see the welcome to make diversions, or visit unnecessary pages, the more you squander subsequently ignoring family and duties. Today's youth assemble associations with on-line companions, check their

profiles before making companions with them and depend on-line companions rather than physical companions. This survey shows new exact discoveries with respect to internet based life utilization, and it expected to look at the impacts of online networking on college understudies learning conduct and social change . The point of this investigation is bolstered by the earlier writing, as online life has turned into a fundamental component of training, and it has turned out to be progressively significant in both course conveyance and course appraisals. Crafted by Stathopoulou et al. (2019) uncovered that consolidating internet based life in training positively affects understudies' profound learning knowledge. Internet based life is a supporting device for understudies amid the learning procedure, and it is useful for teachers also. Be that as it may, instructors and guardians have been encouraged to keep up a sound equalization when permitting the utilization of web-based social networking, as inordinate use may result in unfavourable consequences for understudies . These examination discoveries uncovered that internet based life has both positive and negative effects on understudies' learning forms, and a fair methodology is suggested while utilizing online networking applications .The social effect hypothesis indicates the impacts of social factors quality, quickness, and number of sources . In this way, in the use of the social impact theory to instigate somebody with a restricting position to change, and strength, the capacity to enable the individuals who to concur with somebody's perspective to oppose the impact of others, is presented. Eventually, a person's probability of progress and being affected is an immediate capacity influence, promptness and the quantity of promoters and is an immediate opposite capacity of solidarity steadiness, instantaneousness and number of target people.

DISCUSSION QUESTIONS

1. Define the Social Networking.
2. What are the advantages and disadvantages of social networking?
3. Do you think that excessive social networking affects lifestyle and food habits? Do teenagers get influenced with the popular trends going online?
4. What is Social Impact theory.
5. Today's youth has knowledge of the contrasts between who you appear to be and who you think you are. Does spending pretending to be someone you are in deepest darkest fear for teenagers? What do you think Attention Syndrome is responsible for Cyber Crimes ?
6. How can Strength factor of social impact theory help to improve the psychological analysis of behaviour on social network websites?
7. What are characteristics of social network?
8. Communication may be evolving but being a quality communicator will remain a critical success factor. What are the implications for building effective lines of communication with different generation?
9. Teasing, lying, gossiping, threatening, spreading rumours, and harassing are all forms of bullying. If these things occur online, are they perceived as harming? How these actions can be prevented?
10. The usage of social media on youth affects the physical, social emotional, and psychological feature development. Does the problems concerning body image, educational action, and behaviour interrelated? Does it affect social relationships?

11. Social networks have failed to tackle cyber-bullying which results in affecting the mental health of young people. The teenagers just delete your account to stop the bullying, but that's taking something away from that young person's life for something that's not their fault. Do you think it is best way to avoid it?
12. What is Cyberaddiction?
13. What is Social Network literacy?
14. What is cyberdepression?
15. What is division of impact?

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KEY TERMS AND DEFINITIONS

Brain Science: It is the logical investigation of the human personality and its capacities, particularly those influencing conduct in a given setting.

Cyberbullying: Cyberbullying is tormenting that happens over computerized gadgets like mobile phones, PCs, and tablets.

Cybersickness: Cybersickness for the most part occurs all through or once submersion in an exceedingly virtual air.

Digital Laws: Cyber law is the piece of the generally lawful framework that manages the Internet, the internet, and their particular lawful issues.

Dispersion of Responsibility: Being a piece of a huge gathering makes individuals feel mysterious and this lessens their sentiments of obligation. It may make them less inclined to obey orders.

Informal Organization: The stage online unit that administers the license individuals to develop an open or open profile and construct a posting of various clients with whom they share an association and read their rundown of associations and individuals made by others among the framework.

Media Skill: It is the capacity to get to, dissect, assess, make, and act utilizing all types of correspondence.

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APPENDIX

Research Into Social Impact Theory

Latané (1981) discusses various instances of Social Impact with an intriguing findings with US Christian TV minister Billy Graham (see left). The theory was that Billy Graham would make more believers before little gatherings of people. Latané looked into the quantities of individuals who reacted to Graham's intrigue for proselytes and found that when the groups of onlookers were little, individuals were all the more ready to sign cards enabling nearby vicars to reach them later. This exhibits divisions of effect (otherwise called dispersion of duty). Sedikides and Jackson (1990) did a field try in the perch room at a zoo. A confederate advised gatherings of guests not to incline toward the railings close to the winged creature confines.

Applying Social Impact Theory (Ao2)

With regards to submission, a ton relies upon whether you see the individual giving the requests to be an expert figure or not. Various types of Power helps to provide details of applying the theory-

French and Raven (1959) distinguished various sorts of power:

1. Genuine power which expert figures with high status
2. Remunerate influence with the individuals who have cash or who can perform favors
3. Coercive power with individuals who can rebuff others
4. Master control individuals which are proficient), and
5. Referent power with individuals users have a place with gatherings you regard.

This fits in well with Social Impact Theory since it clarifies the various reasons why an individual's requests may have Social Force. "Referent Power" likewise applies to Tajfel's Social Identity Theory since it demonstrates that requests originating from an individual from our ingroup convey more Social Force than requests originating from an outgroup part. This is the reason a group part may have more specialist over a young man than an instructor: the educator has authentic expert however the posse part may have reward control, coercive power and referent power since he can give the teenager favors, they will hurt you in the event that him cross him and the teenager sees him as his ingroup.

Dispersion of Responsibility

Being a piece of a huge gathering makes individuals feel unknown and this diminishes their sentiments of duty. It may make them less inclined to obey orders. Latané and Darley (1968) completed a celebrated analysis into this. Members sat in corners examining medical problems over a radio. One of the speakers was a confederate who might profess to show at least a bit of kindness assault. In the event that there was just a single other member, they went for assistance 85% of the time; this dropped to 62% if there were two different members and 31% if there were 4+. Nobody was giving requests in this investigation, however the standard "proceed to get help when somebody breakdown" is a kind of request that is available all the time in the public eye. Following these kind of social guidelines is called prosocial

conduct and defying the norms is standoffish conduct. Social Impact Theory clarifies prosocial conduct just as dutifulness.

There's a developing assemblage of research supporting Social Impact Theory. What's more, the hypothesis likewise comprehends a ton of Classic investigations from the '60s and '70s that used to appear irrelevant – like Latané and Darley (1968) into dispersion of duty, Tajfel (1970) into intergroup separation also, Milgram (1963) into compliance. Looking back, these investigations can be viewed as taking a gander at various viewpoints of Social Impact. There have been later augmentations to Social Impact Theory. Lateen et al. (1996) developed Dynamic Social Impact Theory to focus on how minorities and larger parts impact one another, for example, how individuals will in general change their perspectives to coordinate the gathering they are in yet why they now and then “adhere to their weapons”.

Protests

Social Impact gives a ton of consideration to the attributes of the individual giving the requests however very little to the individual accepting them. For instance, there might be character types that are especially consistent (oblige anything) or defiant. An individual might be glad to oblige a few sorts of requests yet adhere to a meaningful boundary at others –, for example, arranges that annoy them ethically or humiliate them socially. A comparative issue is that Social Impact Theory treats individuals as latent. It suggests that anyone will do anything if the appropriate measure of Social Force is applied as a powerful influence for them. In any case, individuals here and there obey orders while in the meantime subverting them. A model may be Oskar Schindler who given Jewish representatives over to the Nazis amid WWII while covertly helping numerous others to get away.

Contrasts

Milgram's Agency Theory is oversimplified contrasted with Social Impact Theory. Milgram recommends we have advanced to go into a respectful mental state around anybody we perceive as an expert. There's very little proof for this by and large. Social Impact Theory recommends numerous highlights of Agency Theory are valid – that the quality (S) of the expert figure is a significant indicator of how devoted somebody will be – yet there are other situational factors too, similar to the quantities of individuals included (N) and the instantaneousness (I) of the requests. In any case, Agency Theory clarifies a few things superior to Social Impact Theory. For instance, in Variation #10, compliance was let in a summary office contrasted with Yale University. Milgram clarifies this through the eminence of the setting adding to the expert figure's status, yet this is hard for Latane to give a scientific incentive to. Also, Milgram has a clarification for the shaking and sobbing his members occupied with – moral strain. There's no discourse of good strain in Social Impact Theory, which perspectives individuals as either obeying or ignoring and nothing in the middle.

Applications

The possibility of a numerical equation to compute Social Impact is valuable. Lateen trusts that, in the event that you know the number (N) of individuals included and the instantaneousness (I) of the request and the quality (S) of the expert figure, you can ascertain precisely that somebody is so liable to comply

(I) utilizing the recipe $I = f(\text{SIN})$. This implies you can anticipate whether laws will be pursued, regardless of whether mobs will break out and whether 9B will get their work done.

The hypothesis proposes in the event that you need to get individuals to comply, you have to coordinate Social Force at them when they are in little gatherings and in a perfect world stop them getting together into enormous gatherings. This is the reason some oppressive governments endeavour to stop individuals utilizing internet based life and social occasion for open gatherings. Since requests should be prompt it is essential to rehash them frequently and put them on signs, TV adverts and customary declarations.

Dynamic Social Impact Theory

The Dynamic Social Impact Theory by Bibb Latane and his associates has great impact of individuals among dominant part and minority gatherings. Dynamic social effect hypothesis recommends that culture is made and moulded by neighbourhood social impact as characterized by four wonders:

1. Clustering, or provincial contrasts in social components;
2. Relationship, or rising relationship between components;
3. Combination, or a decrease in fluctuation; and (iv) proceeding with assorted variety.

The hypothesis fills in as expansion of the beginning Social Impact Theory (i.e., impact is controlled by the quality, quickness, and number of sources present) as it clarifies how gatherings, as intricate frameworks, change and create after some time. Gatherings are always sorting out and re-arranging into four essential examples: combination, grouping, relationship, and proceeding with decent variety. These examples are predictable with gatherings that are spatially appropriated and interfacing more than once after some time.

1. **Union:** As people communicate with one another normally, their activities, demeanours, and suppositions become increasingly uniform. The assessments done have good effect all through the gathering and the minority diminishes in size.
 - a. E.g., Individuals who live in a similar school residence will, after some time, create comparable demeanors on an assortment of subjects.
2. **Bunching:** Happens when gathering individuals convey all the more as often as possible as an outcome of closeness. As the law of social effect recommends, people are defenseless to impact by their nearest individuals, thus bunches of gathering individuals with comparative suppositions rise in gatherings. Minority bunch individuals are regularly protected from larger part impact because of grouping. In this manner, subgroups can develop which may have comparative plans to each other, however hold unexpected convictions in comparison to the greater part populace. E.g., Neighbors on a sub-urban road persuade different neighbors to shape a network watch gathering.
3. **Connection:** After some time, singular gathering individuals' conclusions on an assortment of issues of join, with the goal of suppositions to become associated. E.g., Individuals on an official society, discover they concede to subjects they have talked about all through a gathering -, for example, the best money related arrangement, however that they likewise concur on points which they have not examined.

4. **Proceeding With Diversity:** As referenced beforehand, minority individuals are frequently protected from larger part impact because of bunching. Assorted variety exists if Sedikides and Jackson (1990) did a field try in the perch room at a zoo. The confederate suggested gatherings of guests not to rail close to the winged creature confines. The guests were then seen to check whether they complied.

In the event that the confederate was wearing the uniform of a zookeeper, submission was high, yet on the off chance that he was dressed coolly, it was lower. This shows differing Social Force, specifically S (Strength) due to the apparent expert of the confederate. As time passed, more guests began overlooking the guidance not to incline toward the railing. This likewise indicates Social Force, particularly I (Immediacy), on the grounds that as the guidance gets less prompt it has less effect. Divisions of effect were additionally considered.

Chapter 11

Formation and Control of Identity: In a Social Media World

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ABSTRACT

This chapter explores the construction of identity in online communities and websites for social purposes, and its consequences in terms of how one's online identity may be utilized to such an extent that one's real-world identity is either enforced or eroded. It does so by investigating the very nature of identity, coming predominantly from a cultural studies research and philosophical view, although it also cites some related findings and advances in computing and information systems (IS) research. The central argument across the chapter is two-fold: firstly, in promoting an initial shift in focus from the management of online identity to the nature and significance of identity itself whose construction may be conceptualized as a process of sense making and strengthening; and only then, armed with a better understanding of identity, one can focus back upon the management of it more effectively, with a view to the individual taking more control of their own identity within cyberspace, which is increasingly transitioning us all into a functioning global community, in both predictable and unforeseen ways.

INTRODUCTION

This chapter explores the construction of identity in online communities and websites for social purposes, and its consequences in terms of how one's online identity may be utilized to such an extent that one's real-world identity is either enforced or eroded. We also present a case study with the aim of demonstrating that an individual's identity can be methodically represented, so that they may be appropriately notified of information coming in from the online world from multiple sources; and, which may be used as both

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an aide in taking control of how one is represented in the online world, and in placing information in the context of one's own roles, interests and knowledge generation.

This chapter argues that identity is an imagined "site" the boundaries of which distinguish whoever is assigned within them, from those outside. Identity is flexible and ever-changing in nature, constructed on the needs of an individual to react to the demands of their political, economic, societal and cultural circumstances. As such, the formation, standardization and circulation of one's identity within society affects not only how one understands and represents oneself to others, but is also the basis of how one is recognized and treated by others accordingly. Furthermore, from the individual's point of view, having a model that represents identity, helps them stay orientated on the things that matter to them. In his book *The News: A User's Manual* philosopher Alain de Botton wrote, that immersing ourselves in the daily electronic news feeds and other news sources, is "*to raise a shell to our ears and to be overpowered by the roar of humanity*". That there is too much of it for our own good, and that we are becoming "news junkies". He suggests that one must know themselves well, to not be left disorientated and distracted by the constant flow of news and information.

To take this argument one step further, unlike the real world, the Internet is capable of enabling one to reach across nearly all political, cultural and sociological traits that are commonly used to construct one's identity as an imagined "site". What's more, the Internet (also known as cyberspace) itself is an imagined "site" whose social functions, capacities and protocols are continually expanding and regularly redefined. The imagined boundaries of the Internet are therefore considerably different from those of the real world, creating the needs, opportunities and means for one to continuously present, reproduce and dynamically manage one's online identity. Most importantly, in the case of online identity, it is more often a matter of one's choice to actively construct a specific identity than being randomly assigned an identity by others. This presents one with ample opportunity and choice not only to represent oneself but also to have a significant bearing on how one is recognized.

As a result, there is a clear and urgent need to examine the formation, standardization and circulation of one's online identity and how it impacts upon the ways in which one interacts with others on the Internet. Because of the social nature of online communities and websites, the imagined "site" that is online identity becomes even more fluid and its boundaries increasingly fragile due to a lack of protection against misrepresentation and privacy violations. At this point it is worth stating that Identity is researched, defined and managed from several different fields of study. The research behind this paper is best described as Cultural in nature. However, given the technological foundation of the Internet that enables cyberspace as we know it, Information Systems (IS) research and development also has a significant interest and research record in Identity, which we draw upon in the case study. While this paper focuses on cultural and even philosophical aspects of identity, papers in other fields including IS are cited from time-to-time as there are some parallel findings and observations across these disparate fields of study.

Additionally, when Facebook, LinkedIn, Google+ and other social network platforms are discussed further down, we will see that there is a continuing push from the technology companies behind the preeminent social networking platforms today, to mesh one's real world identity, with as many of one's online sub-identities as possible, through our various interactions spread across the Internet. Indeed, in February 2017, the Facebook founder outlined what has become known in the tech industry as the Facebook Manifesto (Zuckerberg, 2017) in an article titled – Building Global Community – in which he puts heavy emphasis on Facebook supporting (by evolving Facebook tools) real world traditional community groups, and in doing so, wooing them to come online if such groups do not already have a representation on Facebook. Zuckerberg expresses the eventual goal of forming a functioning worldwide

community of sub-communities, with media, safety and recovery mechanisms, voting on community standards (initially, but later global governance), and other functionality.

At this point a useful paper from IS research by Roussos et al. (2003), titled 'Mobile Identity Management: An Enacted View', suggests three principles regarding Identity. The first two are of some use in clarifying the discussion here:

- **The Locality Principle:** Identities are situated within particular contexts, roles, relationships and communities. People will have multiple different and overlapping identities in (these) different contexts, and each of these should be respected.
- **The Understanding Principle:** In human relationships, knowledge of identities is negotiated and both sides in a relationship should know how properties that characterize identity are exchanged and used. Relationships should be symmetrical and reciprocal.

The third principle, not repeated here, is really a restatement of the second with emphasis upon mutual understanding by those in a relationship. Much of the technology and management issues around identity focus on the Locality Principle (e.g. identifiers and how they are used for particular services, while in specific contexts), whereas, the Understanding Principle as given by Roussos et al., leans much more towards a Cultural Studies approach to identity, such as the emphasis in this paper. And yet, both principles involve aspects of identity that we are all interested in, and have a particular view on, no matter what one's outer field of study.

While the technical, legal and security issues have been and will continue to be investigated from IS, sociological and psychological perspectives, this paper argues for two things: a shift in focus from the management of online identity to the nature and significance of identity itself whose construction may be conceptualized as a long process of sense making and strengthening; and then, armed with a better understanding of identity, one can focus back upon the management of it more effectively, with a view to the individual taking more control of their own identity within the technology space.

An inquiry into how one positions oneself on the Internet also helps in the estimation and measurement of the extent to which such positioning, affects what is being said by whom and for what social purposes they are saying it. Finally, we add to the current and future research on the management of one's reputation on the Internet through tactics of online identity disclosure and control. The case study we refer to, models identity and considers technology outside of and apart from the various social networks, to help an individual identify, disclose and control aspects of themselves, and to also aggregate information and assemble knowledge specific to them according to the Locality Principle, with less reliance on external filters

IDENTITY AS A SELF-PRODUCED CONTINUITY AND THE MEDIA

In his essay "Cultural Identity and Cinematic Representation" (Hall, 1989), British cultural theorist Stuart Hall proposed to define identities as being "always constructed through memory, fantasy, narrative and myths". Instead of providing "unifying and unchanging points of reference and meaning", identities are made "within the discourses of history and culture" and are therefore "not an essence but a positioning". This view supports the argument that identity is not and should not be seen as a "given fact", although the persuasiveness of a given representation may lead to this form of essentialization. Instead, it is neces-

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sary to conceptualize identity as a constructed, normalized and widely circulated cultural “norm” that has the potential to cause different positive and/or negative effects on different individuals and groups.

Hall’s essay mainly deals with cinematic constructions and presentations of national identity in Caribbean countries, where new generations of native artists strove to create and express a “Caribbean uniqueness” in films that may unify their people politically and culturally against a colonized past. However, Hall’s conceptualization of identity as a self-produced continuity that designates what is said by whom and for what purposes, is particularly useful for this chapter, as it attempts to understand the formation, standardization and circulation of identity through powerful social channels which includes the Internet. Hall’s view is further supported by Graeme Turner who, in his essay “Media Texts and Messages” (Turner, 1997), studies the important role of the media in the promotion of a national identity in the Australian context:

While there have been plenty of nationalist arguments for the media’s active collaboration in the preservation of an Australian “identity”, most recent accounts accept that such an identity is an invention. By this I mean that there is no “natural” reason why all of us who live on this island continent should share the same government, the same institutions, common values or characteristics. That Australians think of themselves as doing so, “naturally”, is a result of the cultural construction of the idea of the nation through language, myths and history. The “national identity” is in a sense of a “national fiction” Australians collaborate in producing everyday.

Turner suggests that the analysis of the media is important because media texts “are among the most important sites for interrogating the work of representing the nation, assessing its effects and interests, and revealing its ideological and political determinants”. This is because the texts produced by the media are “crucial components in definitions of the nation which do not simply represent a ‘real’, national identity, but which selectively construct versions of nationhood which serve some interests, and not others”. Yet, if the words “nation” and “national” are omitted from the quotations above, and if one supplants “the media” with one’s personal communications via the Internet, then it becomes obvious that Turner’s argument is highly relevant to an investigation on how much the construction of one’s identity reveals about oneself. In this context, the political, cultural and sociological traits used by the *individual* to establish, maintain and utilize one’s identity are the most important sites in which one’s perceptions of oneself may be adequately explored. Particularly in communications with others for social purposes, one’s identity is a form of “personal fiction” that we and those around us collaborate in producing everyday, with each intercommunication further defining, refining or rebuking minute aspects, bit by bit.

Alain de Botton (ibid) places the role in society of the media, specifically *the news*, at an even higher level of impact. He argues that the news is a major source of authority in modern technological society to the point where it has replaced religion as a dominant source of guidance to many, becoming the “prime creator of political and social reality”. Little wonder the turmoil surrounding fake news involving Facebook and Google emanating from the 2016 US election (more on fake news later), where it has been revealed that more than half of the American people receive their news through Facebook. If we take the analogy made in the previous paragraph, i.e. from society to the individual, then the impact of the deluge of news on and through the Internet upon an individual, taking into consideration de Botton’s well-argued view, is highly likely to affect the nature of identity further in the more-fluid direction. This may help explain the rise of social networks on the Internet – as something of a refuge from that increasing fluidity, just as they were originally something of a refuge from spam email. In this light, the

rise of so-called *filter bubbles* within social networks and search engines, is not surprising. A definition of filter bubbles from Wikipedia (2017):

A filter bubble is a state of intellectual isolation that can result from personalized searches when a web-site algorithm selectively guesses what information a user would like to see based on information about the user, such as location, past click-behavior and search history. As a result, users become separated from information that disagrees with their viewpoints, effectively isolating them in their own cultural or ideological bubbles. The choices made by these algorithms are not transparent. Prime examples include Google Personalized Search results and Facebook's personalized news-stream.

Many have been concerned about the *political polarization* (a person's view being reinforced by an extreme counter view, without any consideration of other alternative views) and its effect on democracy that can come of filter bubbles, particular since the 2016 US election. It is one of the concerns discussed by the Facebook founder in (Zuckerberg, 2017). Since objections were first raised about personalised news feeds and search results, Facebook and others have conducted research about filter bubbles. E.g. Bleiberg & West (2015) report that "The Facebook study demonstrates that the polarization phenomenon also applies to the social network (even with personalisation filtering turned off). The study finds that roughly speaking a Facebook user has five politically likeminded friends for every one friend on the other side of the spectrum." I.e. According to the Facebook study, even in the absence of filter bubbles, people seek the articles and information that aligns with their interests and views and avoid the others, as evidence that there is nothing unique here regarding social media platforms.

Other researchers are concerned about filter bubbles with regard to the hidden algorithms selecting one's news, search results, and social network experience, and that some individuals may even have their identities socially constructed for them to some degree (Bozdag & Timmerman, 2011). After conceding the need for filtering to manage the information deluge, they state their concern is specifically related to transparency of the filtering used: "Personalized filtering is thus based on an interpretation of a user's identity. Identity refers to people's understanding of who they are over time, embracing both continuity and discontinuity. To a certain extent there is also a discontinuity of identity when a person moves from one context to the other." The filters are generally not aware of the subtleness of changing contexts. They finish with 3 guidelines for those designing personalisation filter algorithms:

1. Make sure different identities are allowed per user, which might differ per context.
2. Design for autonomy, so that the user can customize the filter, and change the identity that is formed on basis of his previous interactions.
3. Design for transparency, so that the user is aware that a filter is taking place. The user must be able to see which criteria is used for filtering, and which identity the system has of the user.

There is conflicting research about the effects of filter bubbles, and de Botton's insight coupled with the fluidity of identity backs up the idea that weighing us the pros and cons of personalised filtering is far from a simple choice situation.

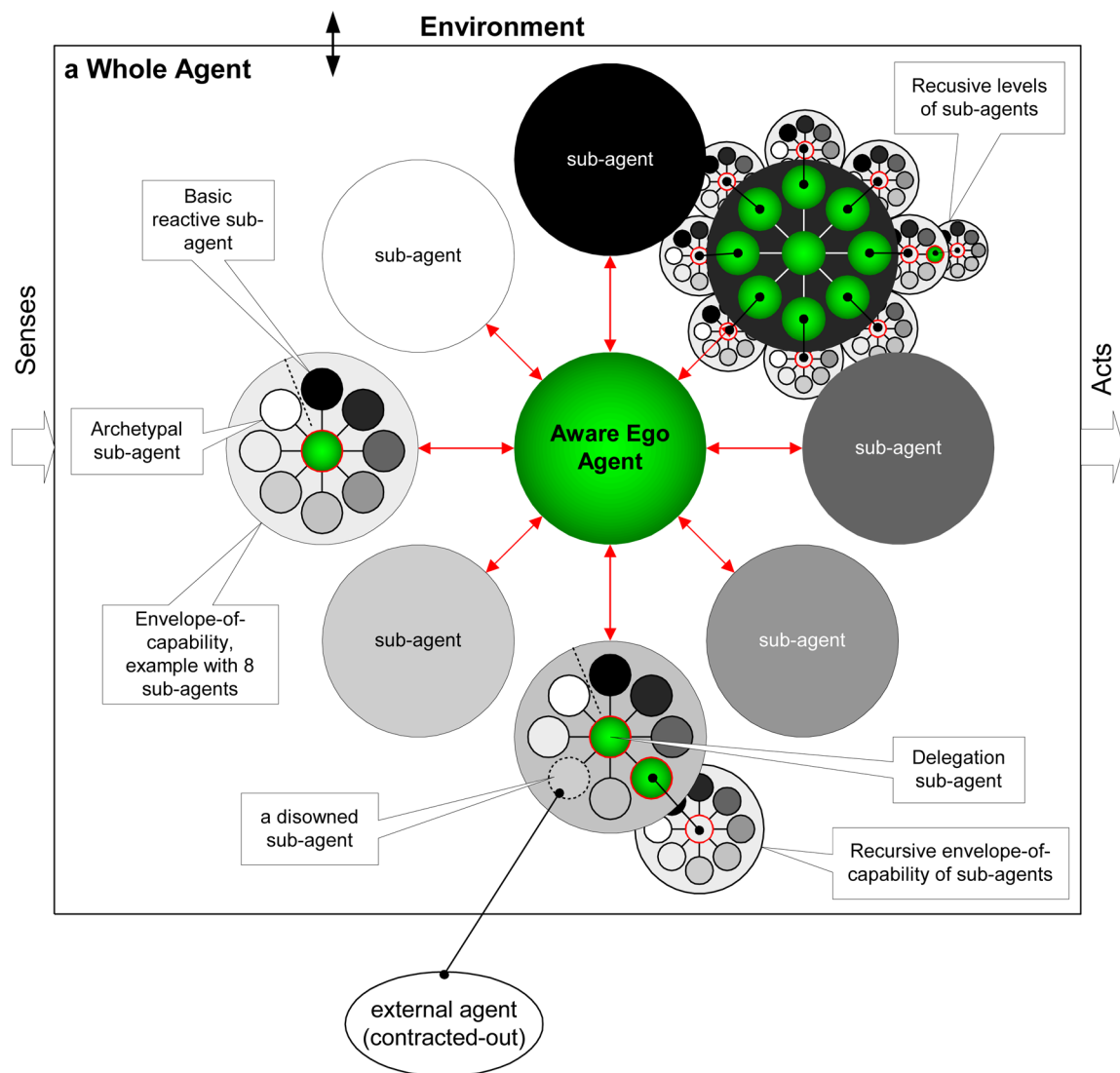
Identity is an invented and/or imagined label that is open to interpretation. Because identity is developed through shared patterns of interaction, one's identity in practice alters depending on the groups of people with whom one regularly and habitually interacts. This is explicitly illustrated by Paul Macgregor as he discusses the limits of geography and ethnicity as determinants of identity:

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We are part of a multiplicity of communities, and we interact with different communities on different occasions.

We thus have multiple identities, intrinsically tied to processes of shared communal activity. Depending on which community of people we are with, we change aspects of our speech, mannerisms, even, to an extent, our thoughts, to take part in the shared rituals of behavior which ties us together in temporary, yet continually repeated, gatherings of each community. We temporarily locate in a shared space, read the same newspapers, exchange according to shared patterns, then go off and join with other groups, make other patterns. (Macgregor, 1995)

Figure 1. The ShadowBoard Agent Architecture



What Macgregor illustrates here is the extremely complex nature of identity as an abstract construct embodied in practice, and thus given to change both historically and when it encounters all kinds of pressure within the context of an individual's or a group's everyday experience. One's identity is exhibited to a certain degree at any given moment, depending on the nature of the people with whom one interacts, the meaning of the occasion, the role one sees oneself in, and the location of the interaction. The result is that various "shared patterns" or "shared rituals of behaviour", which are always subject to change, are what constitute the flexible nature of identity in individual circumstances. This supports Hall's and Turner's conceptualization that identity is a never-ending process of positioning. More importantly, throughout this process, identity is not and should not be seen as something that is based on a mere "recovery" of the past, such as one's cultural roots which is waiting to be found, and when found, will secure one's sense of belonging. Rather, according to Hall, "identities are the names we give to the different ways we are positioned by, and position ourselves within, the narratives of the past" (Hall, 1989). In other words, identity is not only about the past, but also in the naming and the meaning attached to those names; about how one narrates and interprets such a past, in the present and in the future.

At this point some people may object somewhat to Hall's depiction of identity as 'an ongoing positioning', of being quite fluid, an identity that includes deeply held cultural and religious aspects, which they may view as definitely fixed, as 'unchanging points of reference and meaning'. It is certainly true that the majority of people do operate with a set of deeply held *core values*, but equally, most agree that other aspects and values of one's self-identity may well be subject to change, never mind their wider identity.

Helpfully, within Computing and Information Systems research, there are so-named agent-oriented (AO) systems that draw upon psychology for underlying models of the mind when building intelligent support systems (applied AI). One such AO architecture called ShadowBoard (see Figure 1), was created to help augment human abilities, particularly via the Internet. It is based on the *Theory of Sub-selves* from psychology. The theoretical source of a given *sub-agent* (embodied or enlisted software) within it, is the *sub-self*, within a hierarchical grouping of numerous sub-selves, that together make up the whole Agent (the one that augments the individual human). That psychological model fits the description of identity briefed upon in the above quote from Macgregor, quite well.

Note: The ShadowBoard agent architecture is the initial blueprint behind the software developed and used in our case study, a system that combines personal assistant agents. The overarching system is called the *DigitalFriend* (Figure 3), which we turn to, further down in the case study.

Furthermore, these sub-selves in the psychology are very often related to different roles in a given person's life (parent, daughter, manager, defender, critic, etc.), and that is where the overlap with the theory of sub-selves and the agent model in the ShadowBoard architecture, align. I.e. the sub-agents in the human-supporting technology also have *roles* – in turn supporting the roles of the person being augmented - and the *role model* that comes with the architecture, is central to a methodology (of the same name) for collecting and building sub-agents that populate and enhance one's *digital self* (Goschnick & Graham, 2006), enacted via the DigitalFriend software. See the role model in the ShadowBoard methodology in Table 1.

Returning to our discussion on the seemingly *fixed* aspects of identity: even deeply held core values are sometimes subject to change, albeit, at glacial speed or subject to seismic events in one's personal history. Consider this anecdote to underline several related points:

A Western-raised husband and a Chinese-ethnic raised wife have just seen the wife's mother off at the airport, heading home after a 6-week stay with the happy couple and their children. Husband says to

Formation and Control of Identity

wife: “The first 4 weeks was great, but nobody enjoyed the last week or two. Next time you should invite her to come for 4 weeks, it is a much better length of time, where we can focus the proper amount of attention and activity around her visit.” To which the wife answers: “I can’t suggest to her how long she should stay. There is no way in the world that I could ever say that to my mother! You don’t do that in my culture. Its called filial piety - very high respect for ones elders.” To which he answers: “I don’t see what the problem is? She’d be happier with a shorter stay. You’d be happier with a shorter stay. I’d be happier with a shorter stay. She might even visit more often if that were the case. Where is the disrespect? I can’t see the issue?” To which she again replies: “It is just impossible for me to have such a conversation with my mother.” To which he replies: “Some years ago now, it was similarly impossible that you could or would marry a foreigner, and yet, here we are.”

Table 1. Generic Roles and Sub-roles in the ShadowBoard methodology

Manager Benevolent Manager (<i>arch.</i>) Conciliatory Manager Planner Scheduler Coordinator Recycler Controller Decisive Manager (<i>reactive</i>)	Protector Safety Officer (<i>archetype</i>) Defender Risk Analyst Environmentalist Pacifier Doctor Exit Strategist (<i>reactive</i>)	Personal Assistant Selfless Pleaser (<i>archetype</i>) Service Provider Networker Communicator Marketer Teacher Adviser	Initiator Inventor (<i>archetype</i>) Success Seeker Resource Master Trouble Shooter Pusher Reminder (<i>reactive</i>)
Critic Perfectionist (<i>archetype</i>) Editor Quality Controller Doubter Cynic (<i>reactive</i>)	Adventurer Explorer (<i>archetype</i>) Risk Taker Traveller Vacationer 2D Situator 3D Situator Lazybones (<i>reactive</i>)	Knowledge Seeker Knowledge Worker (<i>arch.</i>) Concept Learner Learner Information Officer Data Miner Random Generator (<i>react.</i>)	Intuitive Seer (<i>archetype</i>) Mood Senser Pattern Finder Dreamer Profiler Role Keeper Core Value Bearer Affirmation Agent

That they each had a different view of the identity of the other (e.g. her self-identity, versus his idea of her identity), makes the point that identity is not a fixed nor a singular thing. Furthermore, the concept of identity being fluid, a continuing positioning, does not mean all aspects of an identity are fluid to the same degree, all the time. Some aspects might stay as fixed points of reference for very long periods of time, even a lifetime.

To take this argument one step further, not only can one actively form, standardize and circulate an identity for the purpose of distinguishing one from others under all kinds of political, economic, societal and cultural circumstances, but one can also be passively assigned an identity by others for the same reason. This is because one not only positions oneself within, but is also positioned *by*, the numerous narratives and interpretations of one’s surroundings that never cease re-producing and re-defining themselves. Therefore, if identity may be conceptualized as an imagined “site”, then one can either actively assign oneself or be passively assigned within its boundaries. While both acts of assignment can happen at the same time, they also take place constantly and continuously, in the same way that numerous identities or imagined “sites” are subject to ongoing construction and are continually impacting on how individuals and groups interact with each other, and why for example, democracy can bring about change (hence

the concerns raised above with filter bubbles). Ultimately, identity is a construction reified in practice and resembles geo-political entities such as Australia and the United States. It differs from geo-political entities insofar as it is somewhat more open-ended and subject to change.

Unfortunately, precisely because one's identity is constructed for the purpose of differentiating one from others, the boundaries of this imagined "site", though forever fluid and open to interpretation in their nature, are often considered to be as necessary and unalterable as geo-political borders that require safeguarding. Furthermore, such safeguarding is often conducted by those within or outside of the boundaries of an imagined "site" that is identity, or both, by enforcing those political, cultural and sociological traits that were used to construct this "site" in the first place. A risk thus occurs that these traits, or "shared patterns" or "shared rituals of behaviour" as referred to by Macgregor, are perceived by all involved to be as permanent and unchallengeable as the borders of geo-political entities. A highly likely result of such perception, intentional or otherwise, is the invention and prolonged utilization of all kinds of labels, or "norms", that affect the ways in which those both within and outside of the imagined "site" negotiate with each other and among themselves.

Most importantly, in the same way that the subjects of a geo-political entity such as Australia or the United States "naturally" consider themselves as belonging within its boundaries and feeling the need to distinguish themselves against those outside, those who assign themselves or are assigned by others to be within the boundaries of their identity may also feel its "binding power". That is, in spite of the fluid and complex nature of one's identity as an imagined "site", one is likely to do all that is possible to uphold and even strengthen those political, cultural and sociological traits that one considers as being essential to the continued existence of such identity or imagination, which provides one with a sense of belonging. That one "naturally" feels obliged to do so is the consequence of a long process of *sense making*. Instead of embracing all the narratives and interpretations of one's surroundings that can possibly be employed to help one position oneself, one willingly and actively chooses to acknowledge and even advocate a much lesser set that one believes are the "facts". It also involves less intellectual work. Some might call these their core values. To borrow Hall's words, the result of such an "essentialist" approach is to render identity as something concrete and permanent that provides "unifying and unchanging points of reference and meaning", whose existence cannot be neglected and whose omnipresent influence can be felt in one's life at any moment.

Such an "essentialist" approach is in sharp contrast to Turner's "non-essentialist" conceptualization of identity, "a positioning" as a form of "personal fiction" that one and those around one collaborate in producing every day. However, together, they explicitly illustrate the actual dichotomous nature of identity. Although one's identity may be formed, standardized and circulated either by oneself or by those around her for the purpose of differentiating one from others, it can easily become a self-produced continuity that grants value to one's existence and provides one with both a sense of belonging and of an evolving identity. More importantly, although one's identity is constructed using those various political, cultural and sociological traits that one is commonly associated with, these traits, or "shared patterns" or "shared rituals of behaviour", are often employed by both oneself and others as a "definite" and "necessary" means to uphold and even advocate such identity. Finally, although one's identity is flexible and always subject to some degree of change, it does have the potential to become a caricature, an identity made up of just that set of concrete "facts" that one "naturally" considers to being essential to one's existence under all kinds of political, economic, societal and cultural circumstances - something very much like a stereotype.

ONLINE IDENTITY, ITS CONSTRUCTION AND CIRCULATION

The conceptualization of identity as a “personal fiction”, a “positioning”, an imagined “site” whose boundaries are forever ambiguous and open to definition and interpretation by those assigned both within and outside of them - is a particularly useful idea here, with respect to exploring the construction of identity in online communities and websites for social purposes. Specifically, the formation, standardization and circulation of one’s online identity -- the deliberate and active establishment of one’s reputation on the Internet and its long-term management -- can have such profound consequences that one’s identity in the real world may be either enforced or eroded. Indeed, in the case of online identity, rather than one being randomly assigned a username, it is more often the matter of one’s choice to construct and maintain a special identity that well reflects how one positions oneself within the narratives and interpretations of the much larger and complex imagined “site” that is the Internet. Nonetheless, in the same way that identity is established to differentiate one from others under all kinds of political, economic, societal and cultural circumstances, online identity functions as a self-produced continuity that grants certain values to one’s existence and provides one with a sense of belonging on the Internet, something that has a global span. Whether online identity is capable of providing one with a sense of security within and outside of the Internet is a separate matter that was discussed in an earlier related paper (Sun, 2012).

In the same way that one’s identity is constructed using various political, cultural and sociological traits that one is commonly associated with, an online identity reveals varying amounts of information that help identify the characteristics of one’s real-world identity, depending on whom one interacts with and for what purpose. As Dorian Wiszniewski and Richard Coyne propose in their paper ‘Mask and Identity: The Hermeneutics of Self-Construction in the Information Age’, one portrays a mask of one’s real-world identity whenever one interacts online for social purposes. “Identity is clearly related to community. The Enlightenment promoted the concept of the individual, the lone identity, who sets herself apart from the collection of other individuals, or amongst whom she has her place, and with whom she may ultimately identify. In as much as we wear a mask, it is to assume a role in the social sphere.” (Wiszniewski & Coyne, 2002). Throughout this process, at least something of the subject behind the mask is revealed by the kind of mask one chooses, whether it is by answering specific questions about one’s age, gender, address and so on, in the process of registering as a member of an online community or website, or through the style of writing, vocabulary and topics one frequently uses as one interacts with others. In the words of Wiszniewski and Coyne, “the mask is an artifice, but the face behind it is subject to the same account. The question of what constitutes a mask and what is not is subject to the workings of the practical field of engagement”. This observation supports Macgregor’s argument that identity as a construction reified in practice is “intrinsically tied to processes of shared communal activity”. Just as much online as in the real world, one changes aspects of one’s speech, mannerisms and even thoughts in order to take part in the shared rituals of behavior that ties together the members of each community.

Wiszniewski and Coyne further suggest “insofar as it acts as a signifier, the mask deflects the function of the sign away from the object behind the mask to some other object”. As a result, attention is deflected “away from the mask to the context, the situation in which the masking takes place”. For example, if one chooses to blog about American writer Stephen King, this mask reveals an interest in horror fiction. Even if one chooses to hide behind a completely false online identity, this in itself reveals something about a fear or perhaps a lack of self-esteem behind the false mask.

An online identity is one of the numerous “points of reference and meaning” that helps one position oneself and be positioned by others on the Internet. As one participates in different online communities and websites, one establishes different online identities, each of them being an abstract construct embodied in practice and forever subject to change in nature. It is through the process in which these online identities are formed, standardized and circulated *that glimpses of one’s identity in the real world are gained*. The metaphor of “mask”, in this case, may signify not only one’s online identity but also one’s real-world identity, both of which can also be seen as “masks” that reveal something about oneself as an individual among the numerous narratives and interpretations of one’s surroundings. While a commonly accepted notion is that there is nothing behind the mask that is online identity (e.g. “On the Internet, nobody knows you’re a dog”, which is generally perceived as a comment on one’s ability to socialize online in general anonymity), others argue there is everything behind such a self-produced mask (e.g. “On the Internet, everybody knows you’re a dog”, a comment created to illustrate the collective human effort in collaborated exposure and mass distribution of personal information amidst the “human flesh search” phenomenon in China, which an earlier paper discusses (Sun, 2012), strongly related to ‘wisdom of the crowd’ in the West). Tension inevitably arises between these two views, as the act of “masking” that is the construction and management of online identity, is scrutinized. However, it is the interaction among one’s many masks both online and in the real world that is and should always be the focus of attention.

Wisniewski and Coyne declare in their paper that “it is no longer possible to discuss identity in traditional terms. Identity is constantly in flux, the repetition of the question into identity being the only constant. By its very nature, identity is always elusive, and the notion of community follows suit”. Such a view sheds light onto the significance of online identity as a self-produced continuity for social purposes, an abstract construct that grants certain values to one’s existence and provides one with a sense of belonging on the Internet. Specifically, while those assigned within an imagined “site” that is identity, are distinguished from those outside of it. The two groups are also intrinsically connected via the boundary of this “site”, and neither can exist without the other. This conceptualization is particularly applicable to the case of online identity because, on the Internet, the notion of self cannot make sense without that of community.

One’s perception of oneself via the formation, standardization and circulation of online identity very much reflects one’s awareness of the other members of the enormous imagined “site” that is the Internet. Note: further down we draw on the ShadowBoard methodology introduced in Table 1 above, to construct a representation of a digital self on a computer, done so within the DigitalFriend (software based on the ShadowBoard Architecture shown earlier in Figure 1). This example digital self is held outside of all of one’s communities on Internet, where an individual can create and ‘nurture’ a digital representation of their self-identity, from which facets of self (see Figure 1) can be revealed in specific online communities that they choose; but more so, it is used to store and reference information and other resources in a private space, as the individual selects and builds knowledge, through the filter of their own goals, interests, activities, interactions, capabilities and outcomes.

Finally, considering the fact that online identity is more often than not proactively established for social purposes, Coyne (2011) observes in his essay “Profile Yourself (Narcissus online)” that:

Social media encourage personal and private disclosures, or at least, the tools for presenting oneself professionally readily elide into tools for personal presentation. You have to decide whether to let your online professional persona deliver insights into hobbies, holidays and family matters. The scope of identity formation seems to be expanding, or at least changing. There will always be some group or

other, no matter how small, amongst whom one can entertain unusual or idiosyncratic interests, and with whom one can readily identify. There is a group out there, possibly not yet formed, and unknown to you, amongst whom you can enjoy a ration of fame if you really want it.

Specifically, in the process of constructing one's online identity, one has "control (or at least the illusion of control)" over how one projects oneself to others (notwithstanding lone trolls and other reputation damaging entities), what one chooses to make public or private, and the extent to which one may reveal different identities in different contexts. This is a significant distinction between one's online identity and real-world identity -- this ability to control, or at least the sense of it, that enables one to choose the extent to which one reveals some characteristics of one's real-world identity to different groups on the Internet. Specifically, the imagined boundaries of one's identity as a series of political, cultural and sociological traits, are often employed by oneself or others as "definite" and "necessary" ways to uphold and even advocate such identity. In sharp contrast, one is free to establish and manage any online identity that one deems as "definite" and "necessary", as ways to uphold and advocate the kinds of political, cultural and sociological traits that one considers as representative of oneself. More importantly, as a result of constant and continuous management, one's online identity has the tendency to become a caricature of a set of concrete "facts" that one considers as being essential to one's existence *on the Internet*, as one interacts with others under all kinds of political, economic, societal and cultural circumstances. This, to a large extent, is distinct from one's real-life identity that is more fluid and subject to change - both one's self-identity and how others identify us: that two-way real-life identity. Think of a well-known author's or celebrity's online profile, maintained over a decade or two, versus their changing real life circumstances over the same time period. For some there is little difference, for others, it is greatly so.

It is this separation between one's online managed identity, and one's real world identity, that the largest social network companies, particularly Facebook, Google and Twitter, want to bring into alignment, for all sorts of reason's but mainly for capturing the advertising dollar, upon which their respective main business models are founded. They want to have the ultimate profile of an individual, all individuals. They want a complete identity, no matter how unrealistic that possibility is (i.e. the myths "We know what you want to buy before you do!" and "We know what you will do before you do?"). We will discuss this further in the next section.

SOCIAL MEDIA IDENTITY AND THE MEANING OF SELF

Since this paper investigates the complex interrelations between oneself and the communities with which one interacts, both online and in the real world, we find Yehudah Mirsky's position in his essay 'Identity = ?' (Mirsky, 2011), to be acutely helpful. Using 'Jewish identity' as an example in his discussion of what it means to be Jewish in contemporary America, Mirsky argues

instead of signifying that individuals are what they are in any fixed sense, as in $x = x$, 'identity' today is often used to indicate that individuals are what they will themselves to be, over time and in different ways. Resistant to classification by any external standard or institution, one's identity is, rather, a complex truth that emerges from within.

This existentialist notion that “individuals are what they will themselves to be”, that identity is something that “emerges within”, echoes what Coyne refers to as the decision, and often the determination as well, to “profile yourself” (Coyne, 2011). Coyne declares “part of the definition of identity involves connections with people, associating with the right group of other individuals (identifying with them), and letting it be known with whom you identify”. In other words, it is not only the act of “identifying” with a community, but also that of “letting it be known” that such identification is established, that explicitly illustrates the nature and significance of online identity. The social function of online identity is thus self-evident.

Indeed, on today’s Internet, particularly in Facebook, LinkedIn, Google+, other online communities, mobile apps and websites with a social aspect - one is increasingly required to “profile” oneself, to provide a series of political, cultural and sociological traits that can be used to not only identify but also verify and even solidify oneself to others, including to marketers and instruments of government. (E.g. Not only do they try to get you to use your ‘Google Login’ or your ‘Facebook Login’ on other partnering web-sites, they also try to extract the details of your contacts from your mobile phone, both to grow their membership, and to enhance their knowledge of the social network in your pocket). To make various aspects of one’s real-world identity available online is to make even more elastic the boundaries of the imagined “site” that is one’s self. Instead of eradicating the abstract line that distinguishes one from others, it allows personal and private disclosures that enable others to cross this line in a way, at a time and/or on an occasion that one determines and makes known. In doing so, *when appropriate safeguards are in place*, one allows such crossings to take place conditionally upon certain political, economic, societal and cultural circumstances. Throughout this process, one’s sense of self can be considerably strengthened, and one’s awareness of the larger imagined “site” that is the Internet can also be enhanced - *provided that the line crossings abide by one’s agreed to conditions*. Unlike one’s identity in the real world, which may be either self-produced or assigned by others, one’s online identity is almost always proactively formed, standardized and circulated by oneself, in the first instance. However, the amassed identity behind the scenes, built up by the profiling engines behind Facebook, Google and other social network facilitators, is far more complex and detailed than that one initially outlined in the submitted profile. And they work at continually adding detail to it.

Currently, the 2 billion active users of Facebook (Constine, 2017) across the globe are ‘required’ to provide their true identities in terms of their basic details – name, age, gender, and so. Although there are clear violations of these Facebook designated terms by many, including the 7.5+ million children under the age of 13 with accounts even back in 2011 (Fox, 2011). The popularity and high penetration rate of this social networking platform does indicate the desire of its users to announce, affirm and promote something of their real-world identities on the Internet. This phenomenon is intriguing because it represents a large-scale attempt to merge real-world identity and online identity; or, more specifically, to “borrow” from one’s real-world identity and use that as one’s online identity in order to enhance one’s interactions with communities both online and in the real world.

Particularly with the conceptualization of identity as an imagined “site” in mind, the Facebook phenomenon appears to suggest a tendency (willed or co-erced?) amongst the website’s users to combine into one, the many imagined “sites” that they have previously constructed and assigned their identity within, including those much larger “sites” that are the greater Internet and the real world. There is also an apparent attempt by many of those users, to join together, or at least make coexistent, those many real-world and online *communities* with which one associates, which may be readily achieved through various Facebook features such as Messenger, Groups, Events, Like Pages, Share, News Feed, Notifica-

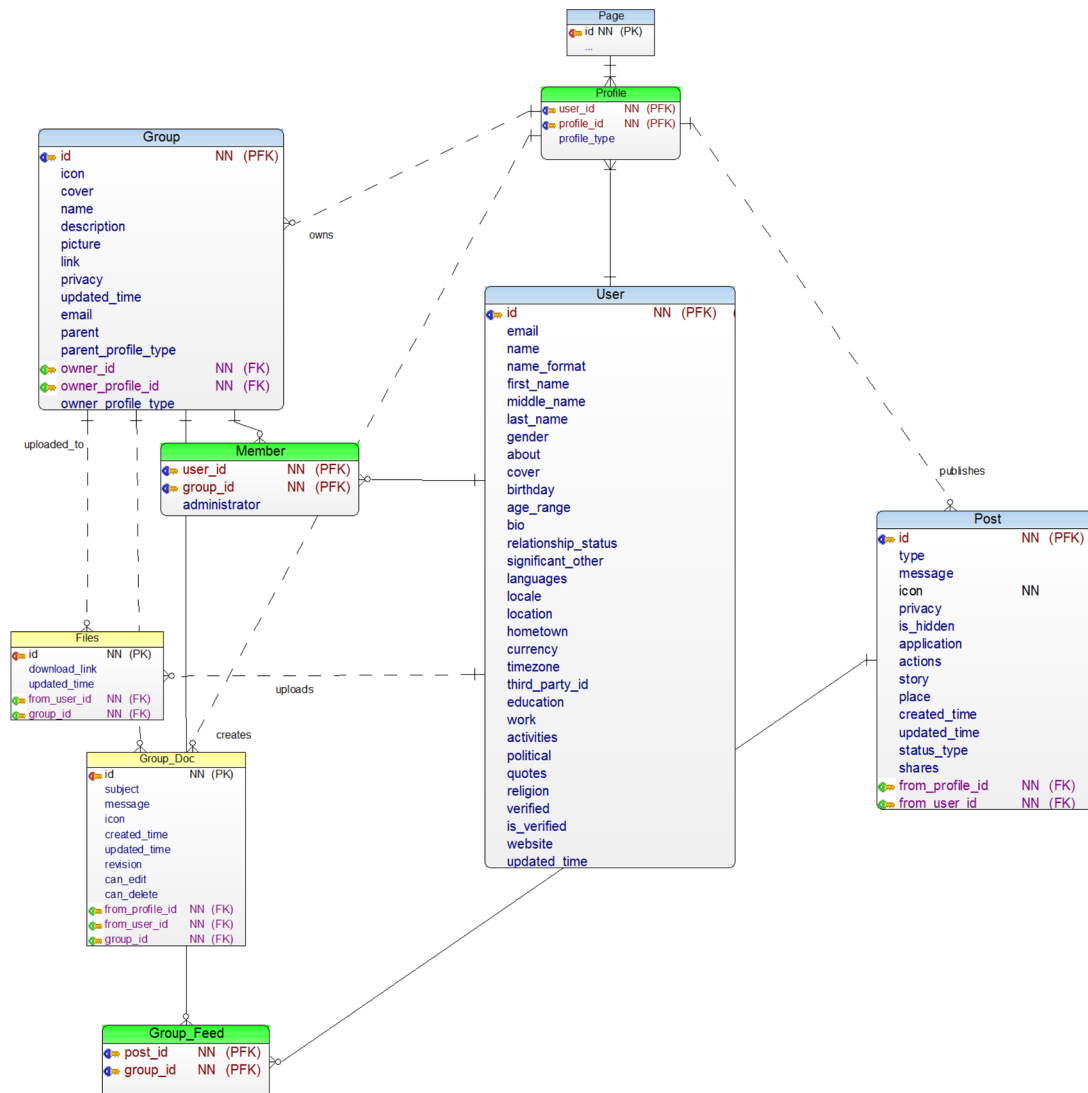
tions, Photo and Video Tagging, Status Updates, and even checking-in to Places (i.e. tying one's online Facebook identity, with one's current geographic location in the real world, and with the identities of those who you are with). Mobile social media apps have accelerated this trend, given that one's mobile phone is on or near one's person, for most of the waking hours.

Mark Zuckerberg is famously said to have “emphasized three times in a single interview” with David Kirkpatrick in his book *The Facebook Effect: The Inside Story of the Company that is Connecting the World* (2010), “you have one identity... The days of you having a different image for your work friends or co-workers and for the other people you know are probably coming to an end pretty quickly”. So, it seems safe to suggest that these words, together with Zuckerberg's observation “having two identities for yourself is an example of a lack of integrity” (Culter, Kim-Mai, 2010), explicitly illustrate Facebook's approach to providing what Hall refers to as the “unifying and unchanging points of reference and meaning” among the numerous narratives and interpretations of one's online surroundings.

In other words, in Facebook currently, the identity of each user is “essentialist”, rather than one of “positioning”. Although it started out with your ‘friends’ and ‘family’, it soon appropriated everyone else that it could. As each user is encouraged to allow crossings over the boundaries of the imagined “site” that is his or her self, either by agreeing to accept others as new friends or by requesting to become a friend of others, or to allow public *Follows*, it considerably essentialises one's awareness of self. This process of essentialisation also merges the online and real-world communities with which one interacts, as the “shared patterns” or “shared rituals of behaviour” that connect the members of each community, are no longer distinguished. All communities that one ever had anything to do with, are merged into one that is conceptualized by the user as a larger imagined “site” that is the Facebook universe. The jury is still out on whether Zuckerberg has identified and is servicing some new social trend in this regard for some large percentage of people, or whether his particular 20-something view back then (2010) on identity is yet to embrace the broader complexities of identity as one moves further through other parts of the life-cycle, including having one's own children, as he now has, and holding passionate time-consuming interests beyond ones immediate passion for the work currently being done. Not to mention the security and privacy issues regarding unforeseen crossing of the lines one had hoped to keep control over.

Two other social networking websites/platforms requiring users to provide their true identities are LinkedIn (bought by Microsoft in 2016 for \$26 billion) and Google+. Unlike Facebook whose users are encouraged to add anyone and everyone on Facebook to their Friends Lists, to get maximum inclusion on the site, LinkedIn is (currently) mainly used for professional networking, while the ‘Circles’ feature of Google+ enables users to organize their ‘contacts’ into different groups as a first-class feature, from the ground up. Whereas *Groups* within the Facebook platform, is a relatively recent addition in its considerable lifeline (inception in 2005) as an evolving technical platform (Chai, 2010), and is currently non-hierarchical (i.e. no sub-groups of groups). It seems reasonable to suggest that in sharp contrast to Facebook's “essentialist” approach, LinkedIn and Google+ attempt to help their users better position themselves among the numerous narratives and interpretations of their surroundings by distinguishing the “professional” and “personal” aspects of their social lives on the Internet. In fact, Jeff Weiner, the Chief Executive Officer (CEO) of LinkedIn (with 7 years prior senior management experience at Yahoo, a company also heavily invested in social media), is on record as saying that he believes there are *at least* three distinct, major, social groupings that Facebook has attempted to merge into one, namely: “Personal, Professional and Family” (Weiner & Battelle, 2010) - while conceding that they overlap, more or less depending on the individual. Accordingly, LinkedIn has differentiated itself from Facebook by going for just the “professional identity”.

Figure 2. That part of the Conceptual Data Model dealing with Facebook Groups (from figure 1.6, Goschnick (2014))



A shift of focus is necessary here, from the notion of disclosure to that of control over disclosure. That is to say, despite the social functions of Facebook, LinkedIn and Google+, the fact that these social networking platforms enable their users to choose their own privacy settings and decide who can see specific parts of their profiles, explicitly demonstrates the resilient nature of the boundaries of the imagined “site” that is one’s self. The sense of control (or at least the illusion of it, as Coyne suggests) over how one projects oneself to others, what one chooses to make public or private, and the extent to which one might reveal different aspects of one’s online and/or real-world identities in different contexts, is so fundamental that Facebook has met prolonged criticism on numerous related issues since its launch in February 2004 (Wikipedia, 2017). Indeed, the aforementioned later addition of Groups (see Figure

2) to the Facebook technology platform, came about to address users expressed need to differentiate amongst their accumulated Facebook 'Friends'. This addition is expressed in the data model part of the overall Facebook data model, that caters for Groups. Note: a *Group* is expressed as a first-class entity that a number of *Users* can join, represented in the *Member* many-to-many entity (i.e. a Group can have many Users as Members, while a User can also be a Member of many Groups). In addition to sharing general Facebook *Posts* via the *Group-Feed*, these individuals can also share other *Files* and even collaboratively edit shared documents (see the *Group_Doc* entity in Figure 2).

Google+, launched in 2011, which came after the addition of the Groups feature in Facebook (in October, 2010), picked up on that much needed feature, calling their approach 'Circles' and embedding it into the opening user interface in a much more intuitive and usable manner than Facebook did with their Groups feature. Even LinkedIn, which so far has been considered by many as having "a solid track record of taking user privacy seriously", faces questions of how to protect the data of its users from being accessed by third parties (Sampson, 2011). Indeed, some of their business model revolves around providing paid access to various details of people beyond those an individual has listed as their immediate 'Connections', via an annual subscription fee to 'LinkedIn Premium'.

What is worth noting here is the ambiguous nature of the boundaries of the imagined "site" that is one's self on the Internet. On the one hand, one actively forms, standardizes and circulates an online identity by disclosing and distributing one's personal and private information, an act that Yehudah Mirsky and the social network industry in general refers to as 'opting-in' that not only is 'meaningful' but also helps "realize the significance of today's personal freedom" (Mirsky, 2011). On the other hand, one constantly fears the discovery and disclosure of such personal and private information by others without one's permission, and/or in ways not originally foreseen, such as by potential employers far in the future. Consider the following legal terms designated by Google when it launched Google+, with regard to the content one submits, posts or displays on or through its numerous services:

You retain copyright and any other rights you already hold in Content which you submit, post or display on or through the Services. By submitting, posting or displaying the content you give Google a perpetual, irrevocable, worldwide, royalty-free, and non-exclusive license to reproduce, adapt, modify, translate, publish, publicly perform, publicly display and distribute any Content which you submit, post or display on or through the Services. This license is for the sole purpose of enabling Google to display, distribute and promote the Services and may be revoked for certain Services as defined in the Additional Terms of those Services. (Google, 2011)

It seems highly unlikely that a sane person would sign a contract giving someone such free range with his or her intellectual property if they consider it to have any value. However, according to Google's then CEO Larry Page, within just three weeks of the launch of Google+ in its invite-only "field testing" phase on June 28, 2011, there were already more than 10 million users sharing and receiving more than a billion items each day (Matthews, 2011). While not all of these items may be of a private nature, and many of these people were probably early-adopters of technology for the sake of evaluation, the need for users of supposedly free social networking websites such as Google+ to disclose and distribute personal information to each other is evidently overwhelming - enough to overcome terse conditions of usage. As one makes these boundaries of the imagined "site" that is one's online identity, extremely flexible,

the risk that others can cross these boundaries in ways, at times and/or on occasions that one may not be able to anticipate or control nor even be aware of, apparently becomes an almost insignificant personal consideration to many, when signing on to these so-called ‘free’ services. This well demonstrates the perceived nature and significance of online identity as a self-produced and community-oriented continuity.

There are earlier precedents of ‘service providers’ taking many more benefits than their ‘users’, in such provider-consumer arrangements, that hold forewarnings for both parties in the current use of social networking websites/platforms. In Satchell et al’s paper ‘Knowing Me, Knowing You: End User Perceptions of Identity Management Systems’ (2006), the authors set out in an IS research project, to determine people’s views and reactions to, what is called *Federated Identity*. The concept of Federated Identity, although used across inter-related organizations in the past (e.g. using Microsoft Passport), to provide ‘one login’ (i.e. username and password authentication), has been more recently subscribed to by Facebook and other Internet based companies. E.g. third-party Facebook developers can allow their users to in turn use their Facebook login, to access the 3rd party site in question, and use various services there (such as posting a facebook Like against content on that site, which shows up in the news feeds of the user’s friends, etc.). What Satchell et al found with Federated Identity, was that the benefits were very much in the providers favor and not in the end users favor much at all - apart from the convenience of that single login.

However and more importantly, they found that when the “options to control and personalise” ones data was out of the end users hands, and very much in the providers hands, users usually provided as little information about themselves as possible. E.g. one user informed “I separate or compartmentalise my personal information when I don’t know the source of who is asking for them.” and “if all information is kept under one banner it could be accessed by the wrong person (or people).” Satchell et al concluded: “failure to provide control (to end users) results in the erosion of trust between users and the provider and culminates in a culture of use where the user aims to suppress rather than reveal information.” Anecdotally, that is certainly the way that many people have adapted their usage of Facebook, Google+ and other social networking websites in more recent times, as control and disclosure mechanisms are perceived to be further out of users hands than they had thought when they first signed on, not to mention the ramification emanating from the fake news and political polarisation issues for Facebook, Twitter and Google in particular, being researched and examined since the 2016 US election (Allcott & Gentzkow, 2017).

The number of users of these sites is significant. While Facebook has gone on to 2 billion users, Google+ has struggled with 395 million active accounts in 2017, but with only 34 million of them visiting per month (<https://www.statisticbrain.com/google-plus-demographics-statistics/>). However, Google’s YouTube site has 1.5 billion active monthly users, and numerous other social media sites have gained significant numbers, particular via mobile apps (Constine, 2017): WeChat with 890 million (mainly China), Twitter 328 million, SnapChat 255 million, Line 217 million (mainly Japan), KaKaoTalk 43 million (South Korea), and Facebook-owned WhatsApp 2 billion (its not clear how many of these are also Facebook users). LinkedIn has 470 million users with 106 million of the active per month (<https://www.linkedin.com/pulse/linkedin-numbers-2017-statistics-meenakshi-chaudhary>)

Interestingly, LinkedIn also has 10,000 employees worldwide, which makes it a very significant commercial organisation in scale. For comparison, Facebook had 19,000 employees by March 2017 (<https://qz.com/975081/facebook-fb-is-adding-employees-at-a-faster-clip-even-as-revenue-growth-slows/>).

Formation and Control of Identity

Table 2. Action Types that third-party Facebook Developers can use (Facebook, 2017)

Name	Description
apps.saves	An action representing someone saving an app to try later.
books.quotes	An action representing someone quoting from a book.
books.rates	An action representing someone rating a book.
books.reads	An action representing someone reading a book.
books.wants_to_read	An action representing someone wanting to read a book.
fitness.bikes	An action representing someone cycling a course.
fitness.runs	An action representing someone running a course.
fitness.walks	An action representing someone walking a course.
games.achieves	An action representing someone reaching a game achievement.
games.celebrate	An action representing someone celebrating a victory in a game.
games.plays	An action representing someone playing a game. Stories for this action will only appear in the activity log.
games.saves	An action representing someone saving a game.
music.listens	An action representing someone listening to a song, album, radio station, playlist or musician
music.playlists	An action representing someone creating a playlist.
news.publishes	An action representing someone publishing a news article.
news.reads	An action representing someone reading a news article.
og.follows	An action representing someone following a Facebook user
og.likes	An action representing someone liking any object.
pages.saves	An action representing someone saving a place.
restaurant.visited	An action representing someone visiting a restaurant.
restaurant.wants_to_visit	An action representing someone wanting to visit a restaurant
sellers.rates	An action representing a commerce seller has been given a rating.
video.rates	An action representing someone rating a movie, TV show, episode or another piece of video content.
video.wants_to_watch	An action representing someone wanting to watch video content.
video.watches	An action representing someone watching video content.

Also demanding attention is that one's sense of self on the Internet inevitably comes under the influence of the communities with which one *interacts*, both online and in the real world. While LinkedIn may have borrowed that part of our professional identity that was traditionally captured on the 'business cards' that people physically share, now that it is in an electronic and social form, it balloons in scope and blends with other sites, at a scale not before seen in professional identity management. For an example of that increased scope, LinkedIn offers "Hiring Solutions at massive scale" (Weiner & Batelle, 2010). As an example of blending, LinkedIn integrates with Twitter to some degree - the *Comments* in one can be automatically passed on to the other. Similarly, the "Like" button on websites external to Facebook, allows external political, commercial, cultural and sociological promotion, to enter the Facebook universe with ease (Facebook, 2011), in a similar manner to the Federated Identity approach discussed above, in past identity management systems. In linking and blending such websites and the related new functionality, the boundaries of the imagined "site" that is one's online identity are increasingly blurred,

causing one to constantly re-define and re-interpret the meaning of privacy. And *Like* is just the first verb that Facebook appropriated for its representation of one's identity through *structured interaction*. It has appropriated other verbs for use on similar buttons and in other ways, to represent other activities such as *Eating*, *Watching*, *Reading* and *Running* (Geron, 2011), in what it terms 'frictionless sharing'. See table 2 for the current *Action Types* that Facebook has available to third party developers. Clearly, these verbs were chosen as significant handles that the advertising dollar can use.

Facebook on Building a Global Community in the Near Future

According to the aforementioned Facebook manifesto (Zuckerberg, 2017), Facebook now intends to dramatically expand its Groups feature ("social infrastructure for communities"), towards a platform capable of supporting a Global Community. In what seems to be a new recognition of the need for diversity and multiple identities of individual users, Zuckerberg lays down a blueprint of what Facebook thinks is needed, and what its already doing about it. That is, to turn their platform into one that will support a truly Global Community, effectively etching out a real world global community (connected, voting, caring through action – since global problems require global solutions) in the absence of one that includes the individual participants themselves (i.e. not just one's representative in the UN). In the online article:

- He makes a pitch for traditional communities ("Whether they're *churches, sports teams, unions or other local groups*, they all share important roles as social infrastructure for our communities...") to join up, offering them technology-enabled functionalities that come with the social network platform, to help traditional groups arrest "their declining memberships in recent times". Zuckerberg calls these groups "very meaningful groups". I.e. the sort that Mirsky (ibid) positions one as: "identifying" with a community, and also that of "letting it be known" that is where I stand.
- At the same time he pitches to people to join existing virtual Facebook Groups, and to would-be leaders to create new virtual communities on common interests, that can aspire to the sociability that those real world traditional communities already have: "These communities don't just interact online. They hold get-togethers, organize dinners, and support each other in their daily lives".
- On the Global Community front, he shows a careful eye to the importance of balance in benefits between *service provider* and *user* that Satchell (ibid) highlighted, as he outlines the benefits that a global community in a single social network would reap: "Problems like terrorism, natural disasters, disease, refugee crises, and climate change need coordinated responses from a worldwide vantage point ... There is a real opportunity to build global safety infrastructure, ... the *Facebook community is in a unique position* to help prevent harm, assist during a crisis, or come together to rebuild afterwards ... When a child goes missing, we've built infrastructure to show *Amber Alerts* ... To *rebuild* after a crisis, we've built the world's largest social infrastructure for collective action. A few years ago, after an earthquake in Nepal, the *Facebook community raised \$15 million to help people recover and rebuild...*"
- He also has an eye on the new revenue stream that would come of it, with those same structured 'actions' in mind as depicted in table 2, coming into play: "We can *look at many activities* through the *lens of building community*. Watching video of *our favorite sports team or TV show*, reading *our favorite newspaper*, or playing *our favorite game* are not just entertainment or information but a *shared experience* ...", but it is a learned eye that concurs with Macgregor's (ibid) argument

discussed earlier, that identity as a construction reified in practice is “intrinsically tied to processes of shared communal activity”.

- To counter the *fake news* issues that have dogged Facebook recently, he turns to advancing AI techniques to identify it, and to increasing Facebook’s fact checking ability.
- To counter the *filter bubble* concerns of critics outlined above, he discussed the complexity of the issue, then to disarm the polarisation of opinions, he suggests “A more effective approach is to show a range of perspectives, let people see where their views are on a spectrum and come to a conclusion on what they think is right” and to do enable that: “A strong news industry is also critical to building an informed community. Giving people a voice is not enough without having people dedicated to uncovering new information and analyzing it”. As mentioned above, more than 50% of the US population admit to getting their news through Facebook, and now Facebook looks like doubling-down on traditional/partnered news outlets for more professional collection and analysis of news intermixed within the people’s personal news feeds. Interestingly, de Botton (ibid) thinks that “proper” investigative journalism should “start with an all-encompassing interest in the full range of factors that sabotage group and individual existence”, including health, family structures, relationships, architecture, leisure time, and so on – all the complexities of modern life. Social media in general and Facebook in particular, are in an excellent position to do that with news if they so wish, beyond just the advertising opportunities.
- A lot of people and companies see a lucrative future for electronic voting systems. Zuckerberg sees that future too. He sees a way that brings cultural diversity into those new ‘meaningful groups’ (e.g. traditional communities) in Facebook. By allowing them to vote on their own ‘community standards’. “The guiding principles are that *the Community Standards should reflect the cultural norms of (the) community*, that each person should see as little objectionable content as possible, and each person should be able to share what they want while being told they cannot share something as little as possible...” In addition to voting, AI will be used to apply the results to the group as a whole, or customised for the individual within that group: “The approach is to combine creating a large-scale democratic process to determine standards with AI to help enforce them. The idea is to give everyone in the community options for how they would like to set the content policy for themselves. Where is your line on nudity? On violence? On graphic content? On profanity? What you decide will be your personal settings... For those who don’t make a decision, the default will be whatever the majority of people in your region (sub-community) selected. Of course, you will always be free to update your personal settings”. That, becomes a compelling reason to provide even more profile information to Facebook.
- Beyond voting within respective ‘meaningful groups’ Zuckerberg has a global scale voting technology in mind: “Building an inclusive global community requires establishing a new process for citizens worldwide to participate in community governance. I hope that we can explore examples of how collective decision-making might work at scale.”

In other words, in that new future Facebook, the identity of each user will serve as both “essentialist” and “positioning”. Where he has people “positioning” beyond just family and friends via the melding of Facebook with traditional and other “meaningful” groups; while the “essential” identity of each user, is both centred on an ‘authentic’ Facebook profile – a much expanded profile via the voting upon numerous community standards options that may be expanded by the service provider into the future - and upon a new Global Citizenship. While Zuckerberg never mentions the UN at any point in the article, his

musings are in that same sphere of governance, but the one he envisages involves mass participation, through Facebook technologies.

Zuckerberg's article outlines an audacious plan in a mid-way career built on audacious plans. Given the current 2 billion users of Facebook and a market value hovering around \$400 billion in 2017, the article/plan is worth a full read and should not be dismissed lightly in any discussion on the future of identity and the impact upon it by social media.

Echoing Mersky's observation above is Danah Boyd's assertion that "cyberspace is not our utopian fantasy; many of the social constraints that frame physical reality are quickly seeping into the digital realm" (Boyd, 2011). Boyd's observation of the differences between social interaction on the Internet and that in the real world is worth quoting at some length:

The underlying architecture of the digital environment does not provide the forms of feedback and context to which people have become accustomed. The lack of embodiment makes it difficult to present oneself and to perceive the presentation of others. As people operate through digital agents, they are forced to articulate their performance in new ways. Additionally, the contextual information that they draw from does not have the same implications online. Situational context can be collapsed with ease, thereby exposing an individual in an out-of-context manner. Unlike physical architecture, the digital equivalent is composed of bits, which have fundamentally different properties than atoms. The interface to the digital world is explicitly constructed and designed around a user's desires. As with any fundamental differences in architecture, there are resultant differences in paradigms of use, interpersonal expectations, and social norms. Performing online requires that people be aware of and adjust to these differences so as to achieve the same level of social proficiency that they have mastered offline.

That Facebook has invested heavily in Virtual Reality (VR) technology via its Oculus Go technology (ABC, 2017), is an investment in adding embodiment to the virtual world.

The whole approach at Facebook to building global community is often in stark contrast to other existing (potentially) global communities, such as some of the citizen science projects with inclusive social network functionality, as alluded to by Preece (2017) in an article appropriately titled: *How two billion smartphone users can save species*. For example, the iNaturalist.org site. The push in that article is one of global responsibility via local action, in the form of collecting data to be used by scientists to record changes in the population and distribution of species, "enabling us" (global citizens) to take action to help save threatened species in particular (of which is a lot) and maintain biodiversity (of the planet). The biodiversity data is typically "collected using smartphones can include photos, comments, numerical data, video, and sound, together with metadata (e.g., time, date, and geolocation logging)". The focus of citizen science is on the real world, using the virtual world in a crowd sourcing manner. These citizen science biodiversity projects are interested in using people's smartphones as information probes to collect data around the individual, while building participant commitment, enthusiasm and community for a cause. While Facebook is more interested in the data from the same devices that can add detail to the profile of the individual. Citizen science projects are happy with a slice of an individual's life and attention, often focusing on pressing issues facing humanity. Facebook wants the lot. Wants to do the lot, global platform wise. However, both Zuckerberg and Preece (ibid) make a play for attracting would-be leaders in creating new 'meaningful groups'. In Preece's case, to members of the HCI community to start new biodiversity maintaining initiatives, lending their unique skillset to make citizen science a more effective vehicle for global health – and making HCI even more relevant. In Facebook's

case ‘think of a meaning group’ – making Facebook even more relevant. Facebook assumes it will gather all of your identity information; citizen science projects just want a slice of your time and resources, and to focus your passion on a particular scientific quest, for humanity – a slice of your identity.

Boyd’s study, titled “Faceted Id/entity: Managing representation in a digital world”, specifically focuses on one’s ability to maintain control of personal representation and identity information. While she too argues for “a design approach that will aid sociable designers in developing human-centred technologies that allow for individual control over personal identity”, it is equally important that one is constantly aware of the flexible nature of identity as one interacts online for social purposes, as well as the positive and negative consequences such interaction may have on one’s reputation both on the Internet and in the real world. Only a full awareness of identity can empower one with a desire to appropriately control it.

A CASE STUDY IN REPRESENTATION AND CONTROL OF IDENTITY AND PRIVACY

That future Facebook realised, or not, one’s sense of community is changing, as a result of different online communities being introduced within the confines of one larger imagined “site” that is the Internet, which increasingly causes the distinct “shared patterns” or “shared rituals of behaviors” of each community to impact upon each other. Empowered individuals are increasingly becoming global citizens at some level of their identity. This forces the commonly accepted notion of privacy to become open to interpretation, depending on the nature of the community with whom one interacts, the meaning of the occasion, and the location of the interaction not only online but also in the real world.

As Mirsky observes, the construction of identity “involves not just trying out, or trying on, a random set of ‘shifting, syncretic, and constructed’ accoutrements that ‘can be re-forged under new circumstances’ but assuming real, durable responsibilities” (Mirsky, 2011). In the context of the Internet, where many traditional structures of the real world appear to have dissolved for a time, such “real, durable responsibilities” entail the ability to remain aware of the fact that one’s online identity is simply an imagined “site”, and then being rather proactive in positioning one’s self among the numerous narratives and interpretations of numerous much larger imagined “sites” that are the online communities with which one interacts. The flexibility of the boundaries of these “sites” very much depends on whether a fine balance can be achieved throughout this process of positioning between the disclosure and control of personal and private information for social purposes. However, much like the assumption that people read the legal conditions when signing up to a so-called ‘free’ service such as Google+ or Facebook, to assume that people will really embrace such a responsibility en masse, is a big and probably unrealistic Ask - or whether they even can if they wished to. This question of balance between disclosure and control - whether it can realistically be achieved within these new overlapping, interrelated technologies - still has a long way to run. At stake is mass trust in the service providers of these new social media and search platforms. Also at stake is the last interior privacy firewall of Self.

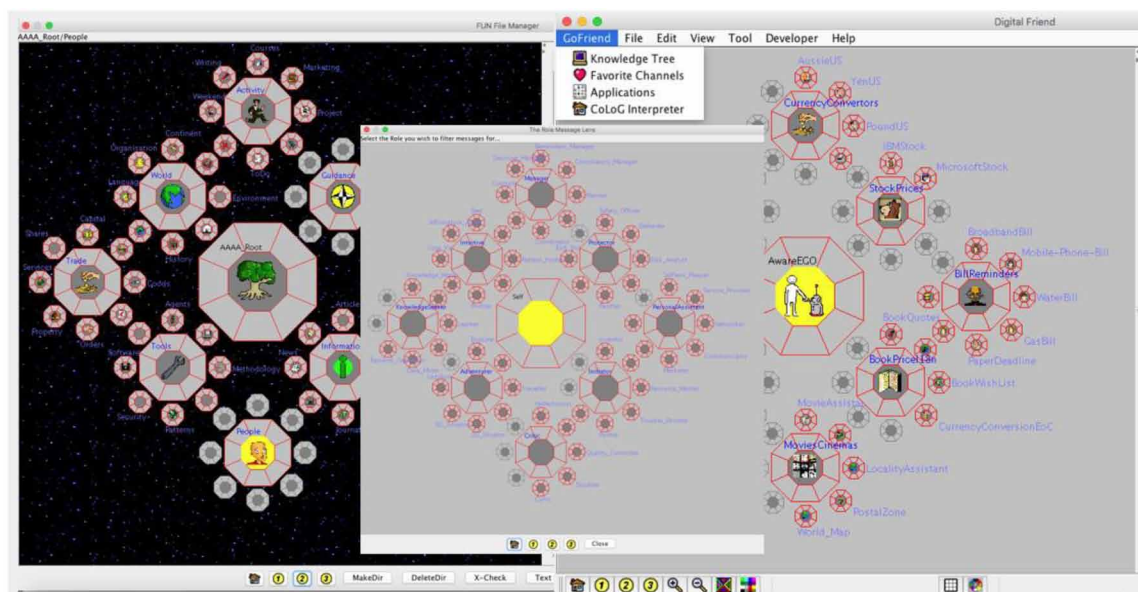
A REPRESENTATION OF A DIGITAL SELF IN THE DIGITALFRIEND

Where better to create a digit self, a digital representation of one’s self-identity, than on a personal computer (PC)? However, the question then quickly moves to a technical one, of what constitutes one’s

personal computer these days? Is it a laptop, a desktop, a tablet, a smart phone or some other mobile device? Or a virtualisation that materialises on all of the above, when summoned, as needed? We are going to leave that technical question out of this discussion while we briefly present a working example of a such a digital representation of a self-identity, one that does run on many platforms, but in this case (Figure 3) on a personal desktop computer.

However, before describing what is represented in this figure, we return to Mirsky's notion that "individuals are what they will themselves to be", that identity is "resistant to classification by any external standard or institution, one's identity is, rather, a complex truth that emerges from within". The approach taken in this case study, is that rather than have one's identity either: classified by some external entity, or floating around in mind where it is perhaps stronger on a good day than not, or that can perhaps be somehow gleaned from a super-set of all those on and off-line communities pronouncements and activities – the best thing to do once one knows themselves well, is to build a computer model of it on one's private personal computing device. The DigitalFriend is like a living diary for both building and maintaining such a representation. As Satchell et al (ibid) concluded: "failure to provide control (to end users) results in the erosion of trust between users and the provider and culminates in a culture of use where the user aims to suppress rather than reveal information." We are yet to see an online system or social network where the user is both aware of the full model of themselves that has been built up behind the scenes, nor one where the user can control such a model, in particular, who has access to it, for what purposes, now and in the future. Keeping the most complete model themselves, of themselves, and deciding themselves on which information goes to which provider, is the most obvious solution to having providers get the best reveals of accurate information for the actual service they are providing. It is the individual's Identity, after all. It seems that the citizen science communities assume this, while the large social media platforms, fight it.

Figure 3. Interface of the DigitalFriend representing a Digital Self



Furthermore, by having a deliberative and reactive system (i.e. applied AI), that can store, retrieve, notify and monitor all sorts of relevant information feeds, makes for a representation of identity that is live, that is running in real time with the user, and even as they sleep, and in many ways, can augment their cognitive functions.

The hierarchy on the left is the user's custom Knowledge Tree, where personal files and all sorts of data is stored. Again, the methodology used with the DigitalFriend provides a starting personal ontology as a default structure (Goschnick, 2005), which the user can modify or completely replace, as their personal ontology deems necessary over time. The user can store their photos, videos, documents and files of all sorts into this hierarchy, where they can easily relocate them any time. Other sorts of data that is deposited into this personal ontology, are the newsfeeds coming from RSS aggregators (news feeds) and various types of web services. Bozdag & Timmerman (2011) argued that the good that comes of having information can only be obtained by individuals if they rely on filtering technology of some sort, due to the enormous increase in the information supply – hence the complexity around the discussion on filter bubbles mentioned above. As de Botton (2014) tells us, the way to deal with the excessive amounts of information available via the Internet, is to 'know yourself well' and use those biases as the filter. By having both a personal role model, a goal model, and a personal ontology structure to receive the information, the individual is in control of what information they gather and store for future use. Bozdag & Timmerman (ibid) also identified three important criteria in the design of personalization systems: autonomy, identity and transparency. The DigitalFriend has all three very well covered.

The hierarchy to the right is the configuration of the user's personal assistant agents. These are running processes, either receiving information from the internet, from sensors in an IoT way (Internet of Things), or using stored data within the Knowledge Tree, or computing new information possibly from those other sources. These running agents are interlinked in such a way that they can achieve user goals (computational plans), and even carry out some of their forward intentions (e.g. sending a message off to the outside world, when a desired condition has been met).

The conceptual model in Figure 4 is a structural model for the first version of the DigitalFriend. We have advanced it considerable since then. The conceptual model in Figure 5, taken from and explained more fully in Goschnick et al. (2015), is the model of the second version of the DigitalFriend, currently in beta. One small detail to note here: the SocialWorld hierarchy in the right middle of the figure -- it enables a structure of sub-communities within communities, to any depth -- the sort that Zuckerberg (2017) alludes to in a future Facebook. Where the V1 model had 4 interrelated hierarchies, the V2 model has 8 interrelated hierarchies. (Note: These extra levels of complexity add to the functionality and sophistication but don't need to add to complexity in the user interface – the reverse is often the case in software. For example, there are many more levels of complexity behind the user interface in an iPad than there are in a Windows XP interface, and there are many more levels of complexity in the Windows XP interface than there are in the harder to use character-based interface of Microsoft DOS)

That is all the explanation of the DigitalFriend we give in this chapter – it is presented here to demonstrate what is possible regarding a self-managed computational representation of identity (a digital self). It is well documented in the references already given above. This example of one's digital self is held on a private personal computer, outside of all of one's communities on the Internet. The individual has full autonomy and control over it, where they can create and evolve a digital representation of their self-identity. From it, sub-sets of information about their identity can be put out into specific online communities. Furthermore, it is used to store and reference information and other resources, as the individual goes about their life building knowledge through the filter of their own interests, activities, interactions, capabilities, goals and their outcomes.

reference among the many narratives and interpretations of one's surroundings, online identity is far more proactively constructed and managed for social purposes. In the same way that one's identity can be conceptualized as an imagined "site" whose boundaries are those political, cultural and sociological traits commonly that one commonly subscribes to, one's online identity also reveals various amounts of information that help identify the characteristics of one's real-world identity, depending on whom one interacts with and on what occasion. There is a clear and present risk that the boundaries of both real-world identity and online identity are perceived to be as permanent and unchallengeable as the borders of geo-political entities, which in turn prompts the invention and prolonged utilization of all kinds of labels, caricatures and "norms", that affect the ways in which those within and outside of these imagined "sites" interact with each other and among themselves, in our daily lives.

In section *Social Media Identity and the Meaning of Self* we outline how one can 'position' oneself in both the online world and in the real world, by identifying with communities, in a 'let it be known' way. In early social media platforms we are free to present and manage what one considers to be the current best representation of oneself if one wills it so (e.g. LinkedIn is for a professional identity) - with better control over the disclosure of personal and private details at a time, in a way and on an occasion that one sees fit.

However, after discussing several different platforms that use the Internet -- namely, Facebook, LinkedIn and Google+ -- it becomes clear that personal control over one's Internet identity has been significantly loosened. The individual needs to be aware and on guard that the timely disclosure and personal control over one's private information used for social purposes in the online communities they interact with, is paramount to being able to manage one's online identity. Platforms such as Facebook have continued to try and meld one's online identity with real world identity, with plans to bring in many more traditional communities, where peoples 'essentialist' identities are likely to reside, together with your 'positioning' identities, such as your professional network. As incentive to get people to meld their identities in Facebook, they make a pitch with their unprecedented infrastructure and toolset to build a truly global community. Meanwhile, certain citizen science communities (e.g. those dedicated to maintaining biodiversity), demonstrate how authentic global communities, are being built through local action for (up to) global responsibilities. We looked at lessons from earlier research on 'federated identity' in IS, and apply them to Social Media ambitions.

Awareness of identity as an imagined "site" helps in managing all crossings over its boundaries, but if one can personally facilitate much of the traffic between this "site" and other larger imagined "sites" that are the communities in which one interacts both online and offline, then one can ensure a balanced control of the fluidity of the borders. If one cannot do so through a lack of proper control over such deliberate disclosures then ones reputation, opportunities and even safety may at times be at risk. Mass erosion of trust in the mainstream service providers may well then follow. People need to be fully aware of what Identity is and the issues that surround it, to be empowered rather than disempowered by these increasingly sophisticated social media platforms.

In *A Case Study in Representation and Control of Identity and Privacy* we present an innovative approach to dealing with the issues and actions that revolve around the control and disclosure of identity, outlined above. Initial emphasis is placed on 'knowing yourself well' through one's interests and roles in life. We present two conceptual models of the technology used to instantiated a digital-self, running on a personal computing device, that helps a person manage and evolve their own identity, as they interact in the online world, both through social media and the greater Internet.

In this chapter we urge a careful re-evaluation of the nature of online identity and a comprehensive comparison between its formation, standardization and circulation and that of identity in general. The central argument that runs across this chapter is two-fold, firstly, we promote and indeed demonstrate an initial shift in focus from the management of online identity to the nature and significance of identity itself, whose construction may be conceptualized as a process of sense making and strengthening. We demonstrate with theory, an example technology and a methodology, how this can be assisted at the individual level. Then, armed with a better understanding of identity, one can focus back upon the management of it more effectively, with a view to the individual taking more control of their own identity, particularly with regard to privacy. We emphasise the importance of this, as the technology space (most notably but not limited to, social media, search engines, and mobile apps) is increasingly transitioning us all into members of a global community, that needs to be functional not dysfunctional. It is important that we are each represented in this community as authentically as possible while also only revealing as much of ourselves that we agree to, in each sub-community in which we have a role. Gaining proper permission from each individual, and revealing transparency (to each person) regarding the storage and usage of identity data by service providers and their communities, is necessary for the sake of both individual privacy and reputation, and for gaining and maintaining trust in service providers, community organisations, and their governance. The larger the community, the more important these issues are.

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Chapter 12

Development and Validation of the Social Media Self- Esteem Scale for Adolescents

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ABSTRACT

Development of the self is a vital aspect during the period of adolescence. Interaction with peers contributes to the development of various aspects of self. Due to the technological advances in today's times, adolescents interact with their peers through social media sites and portals. It is essential to study this development in light of the increasing use of social media by adolescence. Thus, the study aimed at developing an item pool to tap the construct of social media influencing self-esteem of adolescents following the procedure of tool construction. Participants included adolescents ranging between 16 to 18 years of age, who have at least one social media account for personal use. There were 110 participants for the first phase and 397 participants for the second phase of the study. The scale has eight items with the overall reliability of .7. It indicates a fitting measure of self-esteem influenced by social media, with looking-glass self theory, according to which individuals develop their self, based on their perceptions of others responses to their behaviour.

INTRODUCTION

Adolescence is a period where interaction with peers becomes significant for the development of the self (Long & Chen, 2007. The feedback from their peers plays a vital role in the development of the adolescent's identity (Erikson, Theory of identity development, 1959). With society becoming sophisticated and technologically advanced, one must consider the developmental influences these new technologies

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have on adolescents. Thus interaction with peers has become more influential because of technology (Hawi & Samaha, 2016).

There is widespread use of social media due to increased ownership of Smartphone and tablet ownership and advancement of technologies and substantial applications, to the extent that it often leads to addiction (Hawi & Samaha, 2016). According to a survey conducted by The Associated Chambers of Commerce and Industry of India (ASSOCHAM) Social Development Foundation (ASDF) in 2015 on Indian teenagers found that 95% of teens use the internet, 81% use social media and 72% use social media for more than once a day. Hence the online platforms play a crucial role in the social and emotional development of adolescents (O’Keeffe & Clarke-Pearson, 2011).

The internet has enabled new forms of interactions through uploading content on social media which could be photographs, of themselves or anything they like. The pictures are not only to celebrate the various important events in one’s lives but also to record their daily life routines and interactions. Seeing that social media is an essential part of an adolescents’ life, it does influence the way they think about themselves. Through posting pictures and other content, communication on social media, affects the adolescent (Stefnone, Lackaff, & Rosen, 2011).

Much of the content to present an online self is posted on social media. This self-presentation may be with a motivation to create a favourable impression on others, which corresponds to one’s ideals. Now social media is a space where the teenagers can present themselves and explore the effects of this online self-presentation. The teenagers receive feedback on this self-presentation which may be positive or negative, which in turn affects their self-esteem (Herring & Kapidzic, 2015). When adolescents upload a post on social media, the response to it influences their self-esteem (Pounders, Kowalczyk, & Stowers, 2016). People receive recognition on social media through the number of likes or comments from their ‘high-status friends’ on the posts they put up, which may boost their self-esteem (Blease, 2015, as cited in Gallagher, 2017). Also, if they do not receive as many likes and comments as they thought they would, it affects their self-esteem. If they receive a large number of negative reactions to their posts, there would be an adverse effect on self-esteem (Gallagher, 2017).

The tone of the feedback received on social media influences adolescents’ self-esteem. If they receive positive responses, it enhances their self-esteem, and if they receive negative responses it reduces their self-esteem (Valkenburg, Peter, & Schouten, 2006). Responses through “likes” and “comments”, makes individuals aware of their limitations and shortcomings, which could lower their self-esteem or increase their self-esteem depending on the responses and how they have presented themselves (Gonzales & Hancock, 2011).

Enhanced self-esteem due to the responses they receive on their posts could have a detrimental effect on their behaviour. The response they receive on their self-presentation on social media enhances their self-esteem which could lead to a decrease in self-control and being involved in impulsive or indulgent behaviours (Wilcox & Stephen, 2013). Low self-esteem, on the other hand, could lead to the development of poor mental and physical health (Trzesniewski, Donnellan, Moffitt, Robins, Poulton, & Caspi, 2006). Therefore, a scale is developed to determine how social media influences adolescents’ self-esteem.

Looking-Glass Theory of Self forms the theoretical background for developing the scale. According to this theory, one’s self-concept is developed based on how one believes they appear in front of others. The self being involved in the social environment, must also be influenced by it. Thus, one’s ideas about self are affected by how others evaluate us and more importantly, how we view these evaluations (Gecas & Schwalbe, 1983).

The scale would aim to give a view about how responses from social media influence an adolescent's self-esteem. Therefore, the objective of the study is to develop a scale tapping the construct of self-esteem in the context of social media, secure the items based on item analysis and test the psychometric properties of the developed unidimensional scale.

METHOD

Participants

Participants of the study included 500 high school adolescents from various English medium school in Bengaluru city, India. All participants had a smartphone and at least one social media account. They had their accounts on Whatsapp, Instagram, Facebook and/or Snapchat. Participants age ranged from 16 to 18 years. The item analysis phase included 110 participants and final administration included 397 participants.

Research Design

A tool was developed to determine how social media influences self-esteem in adolescents. Social media self-esteem was defined as positive and negative feelings about the self-developed based on the frequency of the use of various social media platforms and nature of responses received on the posts uploaded (Gonzales & Hancock, 2011).

Materials

Item generation phase included the Rosenberg self-esteem scale which measures both positive and negative feelings about self. The Rosenberg self-esteem scale is a unidimensional scale with a 4-point Likert scale format ranging from strongly agree to strongly disagree. This scale inspired for wording and structuring the items to measure self-esteem. The alpha reliability of Rosenberg Self-Esteem Scale is 0.88 and the concurrent validity of the scale with a single item self-esteem scale is 0.75. The factor analysis of the ten items suggested a single general factor (Robins, Hendin, & Trzesniewski, 2001). Other resources include referring to the existing literature on how social media influences an adolescent's self-esteem. These resources provided an excellent source for the development of items of high quality for the five-point Likert scale. A potential tool to assess social media self-esteem was developed and tested.

Procedure

The researchers scrutinized and filtered the items. Three experts in the field of psychology with a research experience of more than ten years in the area of tool development or adolescent psychology reviewed and validated the tool items. The item pool was pilot tested on a group of six participants. The group rated the items as accept, reject, revise, change or if they were vague. The items that the majority accepted were retained and other items were reviewed based on the suggestions. The developed items were administered on 110 participants for item analysis. All ethical considerations of using human participants in the research were followed. The participants were briefed about their rights, including

voluntary participation and informed consent. All participant response sheets were coded, and the participant identity was maintained.

Data Analysis

Item analysis was done to determine the item discrimination index by the point biserial method and Cronbach's alpha. Based on the point bi-serial value, the mean and standard deviation of each item, items were reduced, and the scale was given shape.

The researcher approached 500 participants. Out of which responses of 397 participants were fit for use. The rest of the 103 data were rejected due to the response being incomplete or because they did not fit the inclusion criteria. Exploratory Factor Analysis was run on the data that determined if there were any underlying factors developed. Following this procedure, the items that do fall in factors were eliminated, and the final scale was developed.

RESULTS AND DISCUSSION

Phase 1

Based on the theoretical background, the item pool generation was completed along the dimensions of self-esteem and responses from social media. A total of 80 items were generated. The response pattern that was selected was five-point Likert-scale ranging from strongly agree to strongly disagree. The objective of this phase was to use expert evaluation and statistical analysis to decide between retaining and discarding items.

Expert Evaluation

Three experts from the field of social psychology evaluated the items and provided their expert validation to the items. They assessed the items along with the basis of the context, simplicity of words and how closely it tapped the construct. The items were generated with differently worded items. After expert validation, many items were eliminated based on redundancy in meaning, context and language. The number of items retained was 24. All the items were along the dimensions of self-esteem influenced by social media.

The 24-item scale was administered on a hundred and ten participants. The results were as follows.

Item Analysis

The score of 1-5 was assigned to the responses strongly disagree to strongly agree respectively. Negatively worded items were reverse scored. The mean, standard deviation, correlation and bi-serial correlation values of the items were computed. The items with mean values ranging from 2-4 and standard deviation value of greater than one were retained (Sungoh & Lyngdoh, 2017). Mean and standard deviation values were obtained to compute item difficulty. Items such as 'I feel happy about myself when my post is shared by someone' had a standard deviation value of .975 which indicated low item difficulty. Thus, these items were rejected from the pool.

Development and Validation of the Social Media Self-Esteem Scale for Adolescents

Table 1. Item analysis of self-esteem influenced by social media scale showing mean, SD, point bi-serial and Cronbach's alpha if the item is deleted

Items	Mean	SD	r_{pbs}	Cronbach's Alpha if Item Deleted
I feel satisfied with myself when I get the expected number of likes on my post.*	3.339	1.155	-0.16	.514
I think I am not good enough to be on social media when I don't get the likes I desire.	3.60	1.080	+0.14	.479
When I get a desired number of likes I think I have qualities that are admirable.	3.17	1.153	-0.18	.477
When I get lesser likes than I expect, I feel like should delete my account.*	4.10	1.055	+0.3	.479
I feel I am not good enough to be on social media.	3.54	1.291	+0.15	.492
I don't feel the need to get a certain number of likes every time I post something on social media.*	3.62	1.043	-0.21	.508
I will remove my post from social media, if I don't get the likes I expected.	4.11	1.040	+0.3	.506
Gaining a particular number of likes on my post is a way gaining approval from my peers.*	2.74	1.144	+0.07	.507
Getting a high number of likes on my post is a matter of recognition for me.*	2.78	1.291	-0.28	.537
I am not affected when I get a low number of likes on my post.*	3.99	1.068	-0.13	.486
When I am complimented on social media, I feel good about myself.*	3.62	1.034	+0.21	.468
I feel bad about myself when I don't get any comments on the post I upload on social media.	3.75	1.150	+0.22	.481
I am not bothered about the comments I receive on my post on social media.*	3.77	1.095	-0.12	.499
Only when I receive good comments on my post I feel good about myself.*	2.49	1.185	-0.12	.535
Whenever I get negative comments on my post, I believe it's true.	3.40	1.181	+0.37	.480
I feel admirable about myself when I gain a follower.*	3.09	1.233	-0.05	.507
Having a certain number of followers is not important for me.	3.84	1.134	+0.28	.516
I feel that I am not good enough to be on social media when I lose some followers.	3.91	1.095	+0.13	.475
Looking at the number of likes on someone else's post, I feel that I can reach that number too.*	2.93	1.308	-0.11	.530
It is very important for me to get more number of likes than others.	3.81	1.183	+0.39	.508
I am satisfied with the number of followers on social media*	3.80	1.077	-0.07	.478
I feel good about myself when I see I have same number of posts as my close friends.*	3.25	1.158	-0.16	.533
I feel happy about myself when my post is shared by someone.*	3.69	.975	-0.12	.490
I feel I am good enough to be on social media.*	3.55	1.118	+0.08	.456

*Indicates rejected items

Point bi-serial correlation value was calculated to compute the item discrimination index. This was done by arranging the values in ascending order. The first thirty responses were assigned with the value of zero and the lower thirty responses with the value of one. The difference between the upper 27% of responses and lower 27% of responses of the total 110 responses shows value of item discrimination. As mentioned in Table 1, the items that showed a point biserial value of or above +0.12 were retained and the items which showed a point bi-serial value lesser than +0.12 were rejected. Items with point biserial of .012 show acceptable point-biserial values (Varma, 2006). Thus, the items marked '*' were rejected from the scale.

The Cronbach's alpha- score of reliability was .509. Items which showed that upon rejection increased the overall reliability above .509 were rejected. Based on this, the above twenty-five items were rejected and nine items were retained. The revised scale consists of nine items. The reliability of the revised scale was to .780.

Phase 2

Exploratory Factor Analysis (EFA) is a technique for data exploration and to determine the structure of factors to be analysed. This technique is also a data reduction method and it uses several extraction methods for constructing a scale. The objective of this stage was to identify the factors of the scale using principal component analysis. The nine-item scale was administered to 397 adolescents based on purposive sampling. The data obtained was run in SPSS to compute factor analysis. Sample adequacy and Bartlett's test of sphericity and Kaiser-Meyer-Olkin (KMO) were measured first. The results indicated that the KMO value is .841 which indicates the sample size was adequate and significant. Bartlett's test result is also significant ($\chi^2(36) = 947.720, p < .05$). These results indicated that the data was fit for running the process of factor analysis (Williams, Onsman, & Brown, 2010). Table 2 represents KMO and Bartlett's test results of sampling adequacy.

Table 2. Results of KMO and Bartlett's test

KMO	χ^2	df	p
.897	947.720	36	.000

The purpose of exploratory factor analysis is to find the number of factors that explain the correlations. The most commonly used method of factor analysis is the Principal Component Analysis and widely used factor rotation is the Varimax rotation. The standard Varimax factors denote a high possibility of the depiction of corresponding domain factors (Kaiser, 1958). As commonly considered, items attaining the eigenvalue of one or above due to high factor loading were retained (Hayton, Allen, & Scarpello, 2004). This paved the way for two factors. Factor 1 explained 29.762% of the variance, whereas factor 2 explained 10.400%.

Commonalities measure the percent of the variance in a given variable explained by all the factors jointly and may be interpreted as the reliability of the indicator. An item with a commonality of less than .40, may either not be related to the other items or additional factor be explored. A high value of extraction indicates that extracted items represent the variable well (Costello & Osborne, 2005). The range of commonalities obtained was .059 to .609. Table 3 shows the commonalities for each variable.

Now, item 'Having a certain number of followers is not important for me' obtained a commonality of .059, which is less. Thus, this item was removed from the scale. Other items, with commonalities less than .40, such as the item 'I will remove my post from social media if I don't get the likes I expected', 'I feel bad about myself when I don't get any comments on the post I upload on social media' and 'Whenever I get negative comments on my post, I believe it is true' had to be deleted from the present scale, but the statements seem to have potential to gauge more information about the social media self-esteem of the adolescent and thus could have items of the similar nature in further research.

Table 3. Extraction values obtained by principal axis factoring (commonalities)

Items	Extraction
I think that I am not good enough to be on social media when I don't get the likes I desire.	.609
When I get lesser likes than I expect, I feel like I should delete my account.	.507
I feel I am not good enough to be on social media, if I don't get the likes I expected.	.432
I will remove my post from social media if I don't get the likes I expected.	.387
I feel bad about myself when I don't get any comments on the post I upload on social media.	.399
Whenever I get negative comments on my post, I believe it is true.	.186
Having a certain number of followers is not important for me.	.059
I feel that I am not good enough to be on social media when I lose some followers.	.511
It is very important for me to get more number of likes than others.	.526

Table 4. Rotated factor matrix of factor loading

Items	Component	
	1	2
I think that I am not good enough to be on social media when I don't get the likes I desire.	.777	
When I get lesser likes than I expect, I feel like I should delete my account.	.670	
I feel I am not good enough to be on social media, if I don't get the likes I expected.	-.655	
I will remove my post from social media if I don't get the likes I expected.	.532	.322
I feel bad about myself when I don't get any comments on the post I upload on social media.	.502	.384
Whenever I get negative comments on my post, I believe it is true.	.387	
Having a certain number of followers is not important for me.	-	
I feel that I am not good enough to be on social media when I lose some followers.	.596	.395
It is very important for me to get more number of likes than others.	.396	.608

Table 4 represents the rotated factor matrix of factor loading. It indicated how much the item representing the factor it had loaded in. For instance, all the items except item 'Having a certain number of followers is not important for me' had not loaded in either of the factors. Thus, it indicated that the item did not measure anything on the scale or either of the factors.

There were two emerging factors. The first factor threw light on how one feels based on the likes, comments and followers they receive for their posts on social media. The items in this factor indicated the aspect of self-worth, which is a factor under self-esteem. Self-worth is the evaluative experience of oneself as a social object, good or bad person (Tafarodi & Swann, 2001). The items indicated how the individuals ascribe themselves a social value based on the responses they receive on social media. The second factor indicated a comparison of self with others. It showed how one would feel based on comparing their responses to their post on social media with that of the responses on the posts of others.

However, as seen, item 'It is very important for me to get more number of likes than others', is loaded in both the factors. When careful attention to the item was paid it did not stand out significantly from the other items. The item 'It is very important for me to get more number of likes than others' indicated

low self-esteem due to low number of likes on the post uploaded on social media, which did not seem to be significantly different from items, 'I think I am not good enough to be on social media when I don't get the likes I desire', 'When I get lesser likes than I expect, I feel like I should delete my account', 'I feel I am not good enough to be on social media, if I don't get the likes I expected' and 'I will remove my post from social media if I don't get the likes I expected'. Therefore, it was not created as a different dimension. The revised scale is a unidimensional scale. The item 'Having a certain number of followers, is not important for me' did not have loadings in either of the factors, so it was removed from the scale. On the whole, the retained items on the scale indicated the influence of social media on the adolescent's self-esteem, for instance, the items tapped on how not receiving a certain number of likes, or how having certain comments on their post would influence how they feel about themselves being on social media.

Looking-Glass Self Theory asserts that one's self-concept is a reflection of one's perceptions about how one appears to others. The self is inseparable from social life and necessarily involves some reference to others. Thus, one's attitudes about the self can be based on the person's observations of his behaviour and the stimulus in which it occurs. These attitudes could be functionally similar to those that an observer would make about the person (Shrauger & Shoeneman, 1979). Thus, using Looking-Glass Self theory as the theoretical base among adolescents, the social media self-esteem scale provided an appropriate measure for self-esteem. The items indicated how one's self-evaluations are affected by the evaluations which others have on us and importantly, how one perceives those evaluations. Items such as 'I think I am not good enough to be on social media when I don't get the likes I desire', 'When I get lesser likes than I expect, I feel like should delete my account', 'I will remove my post from social media, if I don't get the likes I expected', 'I feel bad about myself when I don't get any comments on the post I upload on social media', 'Whenever I get negative comments on my post, I believe it's true' and 'I feel that I am not good enough to be on social media when I lose some followers' indicated adolescents' perception of themselves based on other's responses to their post. The item such as 'I feel I am not good enough to be on social media', signified individuals' overall social media self-esteem, to understand how the individual feels about themselves being on social media. The item 'It is very important for me to get more number of likes than others' was added to the scale since comparison of self is another reason why adolescents use social media and which also contributes to their self-esteem (Barker, 2009).

In this stage the reliability of the scale was computed. Cronbach's alpha reliability was 0.653. However, Split-half test of reliability showed reliability was 0.7.

This tool is useful for organisations working with adolescents and adolescents with internet addiction. It helps to determine how self-esteem is related to internet addiction or the use of social media. Individuals with lower self-esteem and traits with neuroticism reported more definite addictive tendencies (Ehrenberg, Juckes, White, & Walsh, 2008). The tool could be used for further research on adolescent's self-development in this growing age technology. There is growing research on how adolescents use social media and how it influences their development of self (Valkenburg & Peter, 2011).

Furthermore, the scale could help as a determinant if adolescents spend more time than required on social media. Parents and teachers could guide them on the use of social media and how adolescents can build their confidence and self-recognition. Adolescents make comparisons of themselves with others on social media which may negatively affect their self-confidence. Increased usage of social media and increased comparisons could indicate low self-esteem (Jan, Soomro, & Ahmad, 2017).

Limitations

There could be more data added for item analysis phase so that it would provide better information about the items to be retained so that more items could be retained. The scale has not been through the process of Confirmatory Factor Analysis (CFA). Thus, the underlying factors weren't confirmed and the Convergent and Divergent Validity of the scale was also not determined.

Implications

Further research may focus on developing more items on the scale. The developed scale could be resourceful in understanding if low self-esteem due to the influence of social media, predicts internet addiction. The scale could also help to determine if low social media self-esteem is related to depression among adolescents, considering the high use of social media among them. The scale could also help to predict the amount of time being spent on the consumption of social media.

CONCLUSION

The present study developed and validated the instrument for measuring how social media influence the self-esteem of adolescents. Social Media Self-Esteem was measured using the definition- the positive and negative feelings about the self, which was developed based on the use of various social media platforms and nature and responses received on the posts uploaded (Gonzales & Hancock, 2011). Looking at adolescents' growing use of social media, during crucial period in life where they are developing their identity and self-image, it essential to understand how social media influenced their self-esteem. Considering how important the development of self-esteem affects their growth, this tool provides much more help to understand this aspect.

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Chapter 13

A Study of Networking and Information Exchange Factors Influencing User Participation in Niche Social Networking Sites

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ABSTRACT

This article tests a number of networking and information exchange factors that may influence users' participation in niche social networking sites (SNS). The factors identified in the literature review as influential for participation in social networking sites were implemented in a model tested using quantitative data from 152 users. Gratifications related to socialising, self-status seeking, social support, and learning and innovativeness were identified as significant for participating in niche SNS. As only a subset of the general purpose SNS gratifications were found to be of statistical significance for niche sites, it is suggested that further research that includes a wider set of factors is necessary to determine the similarities and differences between gratifications influencing participation in general purpose and niche SNS.

1. INTRODUCTION

Users are a critical resource for the success of any social networking site (SNS) (Xu et al. 2014). Achieving users' participation in SNS is considered to be one of the main factors in having a sustainable community in which users remain engaged over time. For this reason, researchers and practitioners are interested in finding what the factors influencing the participation in the network are. So far, research has had a

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strong focus on large SNS, which are mostly associated with general purpose SNS like Facebook and Twitter (Leskovec et al. 2008, Foregger 2008, Goggins et al. 2011, Smock et al. 2011, Tosun 2012, Kourouthanassis et al. 2015, Chen 2014, Yang and Lin 2014) General purpose networks are only part of the SNS world, which also includes niche SNS (Boyd and Ellison 2008). Niche SNS seek to narrow audiences by focusing on characteristics of the population, activities, identity and/or affiliations (Boyd and Ellison, 2008). Examples of niche SNS include Beautifulpeople.com, which is a network oriented to good looking people, Cafemom.com, which is oriented to women who are or who are going to be mothers, and Mychurch.org, which is oriented to Christian people.

One of the most accepted definitions of what a social networking site is was given by Boyd and Ellison (2008), who defined an SNS as “*web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system*” (Boyd and Ellison, 2008, p. 2). This definition implies that the scope of the network is defined by the system, which these authors use later to differentiate between general purpose and niche SNS. The main difference relies on the purpose of the SNS, wherein the niche ones focus on characteristics of the population as noted above, narrowing their public to people with those characteristics or people interested in what the network is about. Niche SNS are gaining part of the market due precisely to their private nature (Bhappu and Schultze 2018, Calero-Valdez et al 2018, Crawford et al 2017, Kwon et al 2017, Lim, et al 2018). An additional fact arising is that Facebook, which is the most representative example of a general purpose SNS, has been losing a significant amount of users recently, not only due to privacy issues such as Cambridge Analytica, but also due to generational change (Castillo, 2018; Welch, 2018), which helps to show how people prefer to be with others who are similar to them, known as homophily (Kim, Lee, & Bonn, 2016; Kwon et al., 2017). Since SNS are now part of our everyday routine, if people leave Facebook, they will go to another SNS, and that is where niche SNS become an alternative given the homophilous tendency of SNS users.

A parallel topic that arises with the study of SNS types is the study of SNS user types, which made it possible to discover that not everyone in the network behaves in the same way. Research like that developed by Brandtzæg (2012) proposed the following types of SNS users: Sporadics, Lurkers, Socializers, Debaters, which is similar to Constantinides et al (2010), who identified beginners, habitual Users, outstanding Users and Experts. These typologies contrast with the one proposed by Kilian et al, (2012) who, in their research about millennials, identified three clusters, namely: the restrained millennials, the entertainment-seeking millennials and the highly connected millennials. A similar approach was taken by Bulut and Doğan (2017), who identified advanced users, business-oriented users, communication seekers, and dawdlers. The classifications of SNS users shows a variety of approaches that this topic can take, producing different typologies. However, acknowledging the importance of user typologies, this topic goes beyond the scope of the present research, as we first have to find whether there is a difference between General Purpose and Niche SNS, and then we can start wondering about the types of users and their behaviours on the networks.

Due to the difficulty of accessing niche networks and their participants, it is not surprising that most research related to SNS participation typically revolves around general purpose SNS (Boyd and Ellison, 2008), leaving a gap for research into niche SNS. Given the differences in the nature and objectives of the two types of networks, it cannot be assumed that the findings obtained for general purpose networks can be generalised for niche SNS. In fact differences in motivations for using SNS may exist even for general-purpose networks (Chung et al 2015, Gan & Wang 2015, Kim and Jiyoung 2017, Phua et al.

2017, Krasnova 2017, Bae 2018, Bulut & Doğan 2017). This paper's objective is to test this assumption, by examining a number of factors related to networking and information exchange identified for general purpose networks in a niche SNS environment. A better understanding of the reasons for using niche SNS and the differences from and similarities to general purpose ones could have significant implications. For example, it can inform the design and promotion of such networks when competing against the general purpose ones for users' attention. Given the above, in this project we adopted the uses and gratifications theory in order to study users' participation and, more specifically, the networking and information exchange factors that affect participation. The section following presents the relevant literature and the hypotheses to be tested. The paper then continues by outlining the methodology followed. In turn, it presents the results and findings of the analysis, which are put in the context of the previous studies. The paper concludes by considering future research avenues.

2. LITERATURE REVIEW

One of the most significant indicators of SNS health is the proportion of active users, showing to what extent people are using the network, which can be complemented by the number of transactions or the amount of bandwidth required. Since the success of the network is mostly associated with participation, this has become the main focus for academics and practitioner research. The most common approaches to studying SNS participation are framed within the Theory of Planned Behaviour (TPB) (Hajli et al. 2015, Huang and Shiau 2015, Chen et al. 2016) and its variation, the Decomposed Theory of Planned Behaviour (Gironda and Korgaonkar 2014).

TPB aims to explain a particular human behaviour based on the intention, which is influenced by attitudinal beliefs and social norms and perceived behaviour control. According to TPB, attitudinal belief is orientated towards the favourability that the user has towards performing certain behaviour. Subjective norm is related to the social pressure to perform the behaviour, and perceived behavioural control (PBC) is related to the resources and opportunities available that may influence the behaviour (Ajzen, 1991). One of the main criticisms of the TPB is the unidimensionality of the factors involved in the standard TPB model for explaining belief formation (Hsu et al., 2006, Taylor and Todd, 1995). Closely related to the TPB, the Technology Acceptance Model has also been used to investigate participation (Shen 2015, Zhu et al. 2014, Xu et al. 2012, Lorenzo-Romero, Constantinides, & Alarcón-del-Amo, 2011), Kwon and Wen 2010). This model, similarly to the TPB, predicts the behaviour based on the intention, considering attitude, perceived usefulness and perceived ease of use as antecedents. The parsimony of TAM is also one of its potential shortcomings as *"it is unreasonable to expect that one model, and one so simple, would explain decisions and behaviour fully across a wide range of technologies, adoption situations, and differences in decision making and decision makers"*. (Bagozzi, 2007, p. 244). These theories find their origins in the Theory of Reasoned Action (Fishbein and Ajzen 1975), and are based on a cognitive/behavioural framework, aimed at predicting a behaviour (in this case SNS participation) based on the intention to perform that behaviour. A second stream of user participation research follows the Uses and Gratifications (U&G) theory (Baek 2011, Giannakos et al. 2013, Yang and Lin 2014, Hsu et al. 2015, Chiu and Huang 2015b, Chiu and Huang 2015a, Wei et al. 2015, Bulut and Doğan 2017, Bae 2018, Gan & Wang, 2015), which is based on psychosocial variables attempting to understand decision making processes about media (Rubin 2002). For this project a flexible approach such as the

U&G theory was better suited to the aims of the project, as it includes a broader variety of constructs to understand users' participation.

The theory of uses and gratifications (U&G) was postulated by Katz et al. (1973), based on sociological and psychological foundations. U&G has been used to explain the reasons for choosing one particular medium over another, suggesting that *"people's needs influence their media selections; by seeking out and using specific media, people can meet these individual needs"* (Foregger 2008, p. 2). The initial aims of U&G theory were "a) to explain how people use media to gratify their needs, b) to understand motives for media behaviour, and c) to identify functions or consequences that follow" (Rubin 2002, p. 166). The original foundations of the model were proposed by Katz (as cited by Foregger 2008, p. 15) in five elements: *"a) the audience is active, b) media choice depends on the audience's link between media and need gratification, c) media compete with other sources, both interpersonal and other media, for need satisfaction, d) audience members can self-report their needs, and e) value judgments of mass media content should be suspended until motives and gratifications are understood"*. These assumptions were revised by Rubin (Rubin 2002), who proposed an updated version based on the evolution of the media. The revised assumptions are: firstly, that communication behaviour is goal-directed, purposive, and motivated; secondly that people select media; thirdly that many factors guide our media selection; fourthly, that media compete with other channels for messages; and finally that people are typically more influential than media (Rubin 2002). The updated version considers the role of the user as a more active element, influenced mainly by needs, social and psychological factors and interpersonal interactions (Rubin 2002), along with the influence of the messages in the selection of the media. These assumptions fit with the aim of the research as people have the choice between general purpose and niche SNS to post what they want to say, as well as where to look for information and where to spend their time. Baek et al. (2011) stated that the main objective of this theory is to examine the motivations for media use, as well as the factors influencing these motivations by the users. Given the above, this paper focuses on the networking and information exchange factors that affect user intentions to participate in niche networks. These are discussed in more detail below.

2.1. Networking and Information Exchange in Niche Networks

2.1.1. Networking and Socialising

Networking and socialising are needs related to building and maintaining a network of contacts, as well as the benefits obtained from the contacts in the network. Bulut and Doğan (2017) studied how social gratifications such as socialisation and status seeking influence not only the usage of the networks, but also how they change according to the type of user present on the networks. The creation and maintenance of contacts in the social network looks to build the network of contacts either with relationships previously created (offline) or with new relationships created online (Cha 2010, Foregger 2008, Kim et al. 2010, Kim et al. 2011, Papacharissi and Rubin 2000, Park et al. 2009, Sangwan 2005, Xu et al. 2012, Hou 2011, Hsu et al. 2015, Bae 2018). Regarding the benefits obtained from the network, the gratifications of this type are related to what can be achieved (and/or offered) through the interaction with the members of the network. Thus, *socialising* is at the core of the gratifications for SNS participation (Goggins et al. 2011, Chen 2014, Cheung et al. 2011, Hsu et al. 2015, Park et al. 2009, Cocosila and Igonor 2015, Bulut and Doğan 2017). Due to the social needs of human beings, SNS have been gaining terrain as a space to develop and enhance the social activities that were held offline previously, hence

having a positive influence on SNS participation. Associated to socialisation are the gratifications related to *interconnectedness*, which relates to expanding your network of contacts by finding people through existing contacts, having a direct relation with SNS usage (Foregger 2008, Ali-Hassan et al. 2015, Syn and Oh 2015). Another frequent use of SNS is *maintaining of old ties* (Foregger 2008, Joinson 2008, Ellison et al. 2007, Raacke and Bonds-Raacke 2008), which is exemplified by bringing friends from off-line networks, such as friends from school or former work colleagues, and adding them to your online network. Along with the use of SNS to find their old friends, people are highly motivated to use SNS to find new friends (*seeking friends*) (Kim et al. 2011, Ellison et al. 2007, Huang 2008, Papacharissi and Rubin 2000, Smock et al. 2011).

Based on the presented literature we hypothesise that:

H: (1) Socialising, (2) interconnectedness, (3) maintaining old ties, (4) seeking friends, have a positive and significant effect on the intensity of participation in niche SNS.

Using SNS to share information with your whole network or part of it is a popular gratification. Among the examples are the changes in relationship status such as being in a relationship, break-ups, engagements, etc., or sharing photos from different events. Likewise, the groups are used to arrange events and resolve conflicts in the group (Dimmick et al. 2007, Baek et al. 2011, Ramirez Jr et al. 2008, Hsu et al. 2015).

Interpersonal utility (Cha 2010, Papacharissi and Rubin 2000, Wong 2012), which is related with the information that the user finds important for personal life, such as the opinion that other people have about him or her, information about social events or keeping up to date with what is going on in the user's circles. Following the utility of the SNS, there is an additional gratification related with the image that the user wants to project in the SNS, which is labelled *self-status seeking* (Park et al. 2009, Hsu et al. 2015), which has traditionally been presented as the efforts that people make to present themselves in a particular manner to others. The image that the user portrays in the network can be a real reflection of the user's life, or a desired image that the user wants to project, which is associated with belongingness and narcissistic behaviours (Schau and Gilly 2003, Pugh 2010, Zhao et al. 2008, Mehdizadeh 2010). In this regard, Chung et al (2017) presented the self-image, which is closely related to self-status seeking, as a "constant process of controlling and managing information to continuously deliver one's specific image to others" (p. 82), which can be connected with the finding of Baek et al. (2011), who found the likelihood for people to share information about themselves, with this information sharing having an impact on SNS usage. A final gratification in this group is *seeking social support*, which is very common in networks related with health issues like Iahadcancer.com, in which the members support each other by providing pastoral care as well as sharing treatments and medicines that have helped them to feel better, having a positive effect on network participation (Kim et al. 2011, Shen 2015, Hajli et al. 2015, Ridings and Gefen 2004, Wong 2012, Bae 2018). Chung et al (2017) argue that the more people interact with each other, the more they start creating this attachment to others, which allows them to extend and ask for help given the situation, which in turn strengthens the ties between them.

Based on the above we propose that:

H: (5) interpersonal utility, (6) self-status seeking, and (7) seeking social support have a positive and significant effect on the intensity of participation in niche SNS.

2.1.2. Information Exchange

Information exchange is a key motivation for participating in social networking sites, as studied by Chung et al. (2017), considering the number of members in the network, social interaction helping and self-image as predictors of this factor and Crawford et al. (2017), who focused on the self-status motivation of the user. This information could be about the user (i.e. personal information such as photos, list of contacts, movies, bands, among others) or information about specific interests or purposes, for example photography, astronomy, etc. Information exchange gratifications are related to the second type of information, considering the SNS as a repository of information about specific topics. For the *information exchange*, the user comes to the network either looking for information and the opinions of the members of the networks about topics of interest to them, or looking to acquire deeper knowledge of the topics discussed in the network (Cha 2010, Foregger 2008, Kim et al. 2011, Papacharissi and Rubin 2000, Huang 2008, Chung et al. 2012, Park et al. 2014, Chang and Chen 2014, Hsu et al. 2015, Park et al. 2015, Syn and Oh 2015, Yen 2016, Chung et al. 2015). This *information seeking* and exchange results in a new alternative type of web search known as “*social search*” (Lampe et al. 2006), as well as in a “*social shopping*” process (Kang and Johnson 2015), which is based on the opinions of the network members about specific topics.

Attached to the *information seeking* are the *learning and knowledge gratifications*, whereby it is expected that people will access better or specialised resources that are not usually shared in the general SNS groups, this being an attractive motivation to use the SNS (Cha 2010, Huang 2008, Kim et al. 2011, Papacharissi and Rubin 2000, Park et al. 2009, Chunngam et al. 2014, Lingreen et al. 2013, Syn and Oh 2015, Yen 2016). *Innovativeness* is a popular gratification in SNS (Huang 2008, Sangwan 2005, Park et al. 2015), which is related to the openness to new ideas (Cha 2010, Rogers 2003). The next factor is related to the convenience of the SNS as a tool to conduct specific activities. A representative example is the use of the SNS as a *communication tool*, making it possible to be in touch with other members of the network at a fraction of the cost paid when compared to other means. In addition to the money savings, there are some time and effort savings (Cha 2010, Dimmick et al. 2007, Foregger 2008, Kim et al. 2011, Papacharissi and Rubin 2000, Ramirez Jr et al. 2008, Dimmick et al. 2000, Huang 2008, Nyland 2007, Sangwan 2005).

Given the above, we put forward the following hypotheses:

H: (8) information seeking, (9) learning, (10) innovativeness and (11) communication gratifications have a positive and significant effect on the participation in niche SNS.

3. METHODOLOGY

3.1. Questionnaire design

Studies grounded on U&G are typically based on questionnaires using Likert scales to collect data from primary sources (Lee et al. 2010, Cheung et al. 2011, Kim et al. 2010, Papacharissi and Rubin 2000). Following the example of previous research, a survey was adopted as the instrument for data collection using a Likert scale of five points. Due to the lack of research on niche SNS, this research adopted the constructs identified as influential in general purpose networks, when it came to networking and

information seeking to develop the data collection instrument. Using these constructs was considered to be a good first approach to understanding niche SNS. Further research could potentially include new constructs or exclude constructs among those examined by this paper. The model implemented tested the relationship of each item with the user's participation in SNS. The questionnaire was tested in a pilot study and feedback was received about the length of the questionnaire and items with similar wording, with minor adjustments made before finalising the questionnaire. Given the nature of the research, a web-based survey was deemed appropriate for collecting data. Tables 1 and 2 present the constructs and items used in the questionnaire to collect data.

Table 1. Niche SNS participation construct sources

Gratifications	Acronym	Definition	Source	Items	Niche Mean	Niche Std. Dev.
Socialising	SOC	Is based on the need for and interest in meeting and talking with other people	(Park et al. 2009)	4	3.572	0.997
Interconnectedness	IC	Finding connections and information through existing contacts	(Foregger 2008)	7	2.809	0.996
Maintaining old ties	MAT	Keeping the connection online with friends known from before	(Foregger 2008)	5	2.845	1.174
Seeking friends	SFRIE	Finding new friends to exchange information with	(Kim et al. 2011)	2	3.552	0.955
Interpersonal utility	IPU	The utility sought in the interaction with other people at a relational level	(Cha 2010, Papacharissi and Rubin 2000)	8	3.580	0.853
Self-status seeking	STA	Seeking and maintaining the user's personal status through online group participation	(Park et al. 2009)	3	3.747	1.053
Seeking social support	SUP	Obtaining emotional support from their group of contact	(Kim et al. 2011)	3	2.477	1.183
Information seeking	INSK	Searching for information that is of interest to the users, such as activities carried out by their group of contacts	(Papacharissi and Rubin 2000, Park et al. 2009, Kim et al. 2011)	5	3.570	0.898
Learning	LEARN	Obtain information and being educated about a topic, and learning new things	(Cha, 2010)	4	2.618	1.076
Innovativeness	INNOV	Individual's tendency to be more receptive to new ideas	(Cha, 2010)	4	3.281	1.021
Communication convenience	COM-CON	How SNS facilitates the communication process with other people	(Cha 2010)	4	3.290	0.853
Intensity of use	INT-USE	Measures the engagement of the user with the SNS based on the integration of the SNS with the user's routine	(Ellison et al. 2007)	5	3.411	0.915

Table 2. Items used for each construct

Gratification	Acronym	Items
Socialising	soc1	To stay in touch with people I know
	soc2	To meet interesting people
	soc3	To talk about something with others
	soc4	To get peer support from others
Interconnectedness	ic1	To network with others
	ic2	To see who knows who
	ic3	To look at pictures of my “friends’ friends”
	ic4	To see who my contacts and I have in common
	ic5	To see if my contacts and I know the same people
	ic6	To see how everyone is connected
	ic7	To see where people know each other from
Maintain/Establish old ties	mat1	To keep in touch with old friends
	mat2	To contact out-of-state friends
	mat3	To track down old friends
	mat4	To see where people are at now
	mat5	To maintain old friendships
Seeking Friends	sfrie1	To hang out with people I enjoy
	sfrie2	To talk with people with the same interests
Interpersonal utility motive	ipu1	To meet new people
	ipu2	To belong to a group
	ipu3	To express myself freely
	ipu4	Because I wonder what other people said
	ipu5	To keep contact with my contacts
	ipu6	To feel involved with what’s going on with other people
	ipu7	To keep my contacts up-to-date
	ipu8	To strengthen my relationships with my contacts
Self-status seeking	sta1	Because it makes myself look cool
	sta2	To develop my career through group participation
	sta3	Because I feel peer pressure to participate
Seeking Social Support	sup1	To let out my emotions easily to others who will understand me
	sup2	To talk out my problems and get advice
	sup3	To let others know I care about their feelings
Information seeking	insk1	To look for information
	insk2	To get information for free
	insk3	Because it is easier to search for information
	insk4	To see what is out there
	insk5	Because it is a new way to do research

continues on following page

Table 2. Continued

Gratification	Acronym	Items
Learning motive	learn1	Because it lets me explore new things
	learn2	Because it extends my mind
	learn3	Because it advances my knowledge
	learn4	Because it opens me up to new ideas
Innovativeness	innov1	Because I am very curious about how things work
	innov2	Because I like to experiment with new ways of doing things
	innov3	Because I like to take a chance
	innov4	Because I like to be around unconventional people who dare to try new things
Communication convenience	com-con1	Using SNS makes me more efficient
	com-con 2	Using SNS helps me accomplish things more quickly
	com-con 3	Using SNS makes my life easier
	com-con 4	Using SNS would be useful in my life
Intensity of use	Int-use1	This niche network is part of my everyday activity
	Int-use2	I am proud to tell people I'm on this niche network
	Int-use3	I feel out of touch when I haven't logged onto this niche network for a while
	Int-use4	I feel I am part of the this niche network community
	Int-use5	I would be sorry if this niche network shut down

3.2. Sampling

Based on the gap and the research question for this study, the initial population framework was users of niche SNS. Following the definition of Boyd and Ellison (2008), a niche SNS is a network with a specific purpose and/or oriented to a specific target of the population. Thus, niche SNS could be networks from LinkedIn, which, despite its size, is oriented to professional purposes, to networks like Little Monsters, oriented to the fans of Lady Gaga. However, the very niche nature of these networks makes it difficult to map the population, as many of them are only known among the group of people who share the same interest. Looking for statistics to define a population framework, it was found that there is a lack of information about how many networks there are or how many users are registered in each of these networks. There are some private initiatives trying to generate network directories, but they are not reliable enough to create a full map of the population. Based on the above, it was deemed appropriate to use a non-probabilistic sampling method. Since the sampling framework was unknown, volunteer opportunity sampling was the most suitable alternative to reach niche network users. The sample was narrowed down to UK residents to ensure a minimum of experiential consistency. The invitations to participate in this research project were posted on different social media accounts as recommended by Hewson and Laurent (2012). In addition, a second strategy to collect data was based on identifying the main niche SNS platforms. From this search, Ning, SocialGo and Elgg were found to be popular options. The first group approached was the developers' community on these platforms, as they are usually the administrators of their own networks. The invitation to complete the questionnaire, including the link, was posted on these forums. Likewise, network administrators were contacted via email, requesting permission to post the invitation on their networks. Posting the invitation on an open forum was found

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to be a more effective strategy, compared to the option of the administrators, as they were reluctant to promote the questionnaire in their networks.

Of the 203 questionnaires completed over four months in Q3/2012, we filtered out those indicated using an SNS that was not a niche one or were outliers. The final samples used for the analysis had responses from 152 participants. 44% were from women and 56% were from men, so there was a relatively balanced composition of the sample regarding gender. The average age of participants was 29.53 years old (std. dev.=11.01). When it came to the occupation of the participants, 55.26% were students, 23.03% were full time employees, 10.53% were part-time employees and finally 9.21% were self-employed. From the results, LinkedIn was the most popular niche SNS, with 25 cases. This network is followed by QQ from China, with 14 respondents, academia with 10 and VKontakte with 7. These four networks represent 36.84% of the total respondents. Given the nature of niche SNS, there is a wide variety of networks with few cases. Examples of these niche SNS used by the respondents are DevianArt, Path, Naijapals, and Tony Arts. More details about the demographic variables are presented in Table 3.

Table 3. Sample demographics

Characteristic	Frequency	%	Characteristic	Frequency	%
Gender			Age		
Male	85	55.92%	Blank	1	0.66%
Female	67	44.08%	< 19	6	3.95%
Total	152	100%	20-29	89	58.55%
Employment Status			30-39	37	24.34%
Paid full-time employment	35	23.03%	40-49	5	3.29%
Paid part-time employment	16	10.53%	> 50	14	9.21%
Self-employment	14	9.21%	Total	152	100%
Unemployed	3	1.97%	Educational attainment		
Student	84	55.26%	Primary School	0	0.00%
Total	152	100%	High School	13	8.55%
Annual household income			Technical Education	5	3.29%
Less than £10,000	50	32.89%	Undergraduate	53	34.87%
£10,000 to £19,999	21	13.82%	Postgraduate	68	44.74%
£20,000 to £29,999	16	10.53%	Doctorate degree	13	8.55%
£30,000 to £39,999	24	15.79%	Total	152	100%
£40,000 to £49,999	12	7.89%			
£50,000 to £59,999	10	6.58%			
£60,000 or more	19	12.50%			
Total	152	100%			

3.3. Analysis

The information was cleaned and the constructs were tested regarding validity. The diagonal of Table 3 lists the Cronbach's Alpha for each construct. A Kaiser-Meyer-Olkin (KMO) Test and a factor analysis were also conducted (Table 4 & 5). A multiple regression analysis was used to analyse the data. The regression model was run in SPSS, starting with all the variables proposed above using the stepwise method. The Durbin-Watson coefficient was 2, meaning that there were no autocorrelation issues, and the VIF values for all the significant variables were below 1.55, suggesting that there were no collinearity issues. The residuals showed no evident patterns. All these considerations suggested that the model complied with the assumptions of the regression model.

Table 4. KMO and Bartlett's test

KMO and Bartlett's test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.865
Bartlett's test of sphericity	Approx. Chi-Square	7802.795
	df	1431
	Sig.	.000

Table 5. Factor analysis

	Component									
	ipu	mat	ic	int use	sta	learn	com-con	sup	innov	soc
Int_use1				0.765						
Int_use2				0.710						
Int_use3				0.769						
Int_use4				0.814						
Int_use5				0.754						
soc1										
soc2										0.724
soc3										
soc4										0.339
ic1			0.261							
ic2			0.769							
ic3			0.322							
ic4			0.797							
ic5			0.819							
ic6			0.785							
ic7			0.746							
mat1		0.866								

continues on following page

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Table 5. Continued

	Component									
	ipu	mat	ic	int use	sta	learn	com-con	sup	innov	soc
mat2		0.784								
mat3		0.783								
mat4		0.588								
mat5		0.858								
sfrie1										
sfrie2										
ipu1	0.410									
ipu2	0.734									
ipu3	0.778									
ipu4	0.779									
ipu5	0.755									
ipu6	0.656									
ipu7	0.792									
ipu8	0.755									
sta1					0.718					
sta2					0.803					
sta3					0.580					
sup1								0.786		
sup2								0.748		
sup3								0.739		
insk1										
insk2										
insk3										
insk4										
insk5										
learn1						0.837				
learn2						0.904				
learn3						0.906				
learn4						0.716				
innov1									0.739	
innov2									0.556	
innov3									0.720	
innov4									0.738	
pu1							0.826			
pu2							0.800			
pu3							0.798			
pu4							0.782			

4. RESULTS

Table 6 presents the correlation coefficients of the variables included in the model, as well as its reliability coefficients.

Table 6. Correlation matrix and Cronbach's alpha (diagonal)

	1	2	3	4	5	6	7	8	9	10	11	12
Socialising	0.739											
Interconnectedness	.288**	0.914										
Maintaining old ties	.082	.476**	0.914									
Seeking friends	.165*	.042	-.106	0.608								
Interpersonal utility	.229**	.186*	-.117	.588**	0.900							
Self-status seeking	.429**	.010	-.142	.517**	.422**	0.808						
Seek. social support	.380**	.227**	.375**	-.122	-.063	.001	0.857					
Information seeking	.420**	.104	-.155	.435**	.405**	.504**	-.013	0.760				
Learning	.031	.273**	.259**	.139	.101	.094	.295**	.126	0.934			
Innovativeness	.156	.353**	.415**	-.006	.038	.096	.146	.223**	.363**	0.871		
Com. convenience	.205*	.251**	.197*	.128	.284**	.121	.085	.246**	.158	.332**	0.867	
Intensity of use	.563**	.124	.108	.184*	.234**	.385**	.331**	.297**	-.052	.198*	.175*	0.871

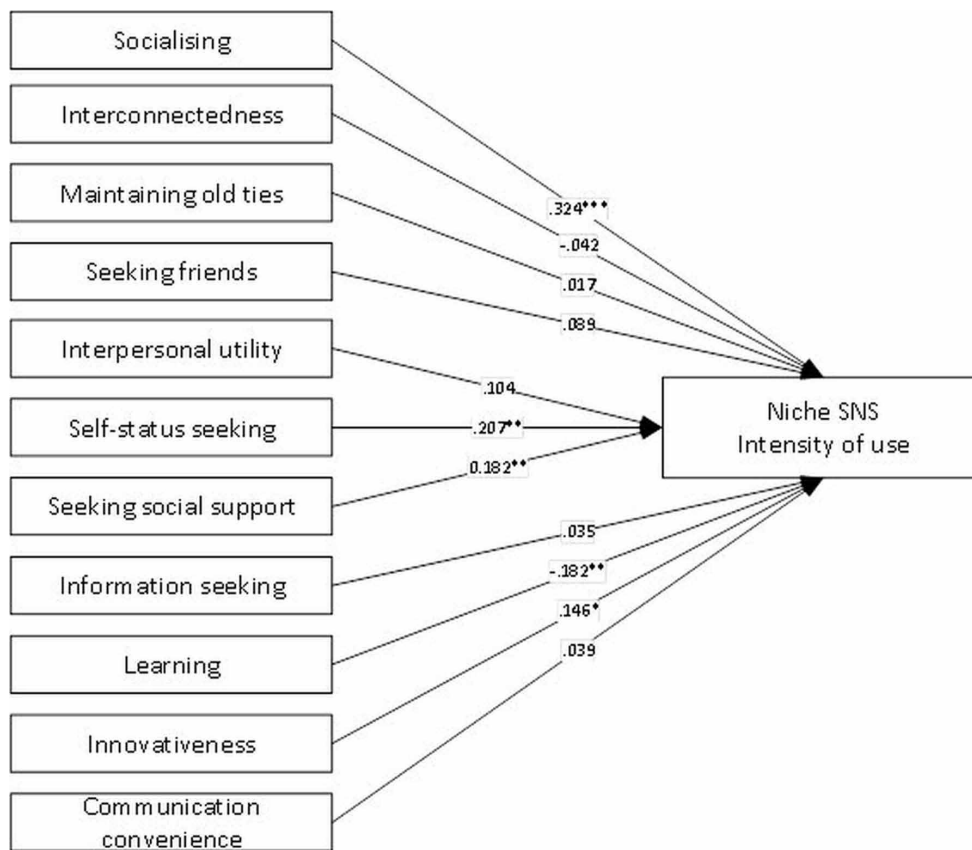
*p<0.05; **p<0.01; ***p<0.001

The value of R^2 for the regression was 41.2%. Based on the results obtained, the significant factors were found to be the socialising, self-status seeking, seeking social support and learning and innovativeness gratifications (Figure 1). These results show that users prefer to use the niche SNS for specific purposes and interact with like-minded people, which is the purpose of the niche SNS. Likewise, the results show that gratifications related with creating/maintaining the network of contacts are not significant for niche SNS, suggesting that these gratifications apply only to general purpose networks.

5. DISCUSSION

The model proposed for testing the motivations for participating in niche SNS aimed to study the direct relationship of each construct with the intensity of use. Out of the 11 gratifications tested, five were found to be significant. Keeping in mind that the model aimed to test whether the gratifications identified for general purpose networks applied to niche ones, it was no surprise that only a few variables were not as relevant and were eventually rejected. This suggests that there is indeed a difference in the motivations to participate in general purpose networks and niche SNS, contrary to the current practice that treats all networks as the same (Wilson et al. 2012) Further research on niche SNS is needed if we are to understand user behaviour in these networks better and more reliably.

Figure 1. The model and results



More specifically, the socialising hypothesis related to the social nature of the SNS, which regardless of the type, niche or general purpose, is still a key factor explaining why a user participates in an SNS as Bulut and Doğan (2017) show in their research. This is reflected in the value of its coefficient, which is the largest among the factors tested. Users participate in niche SNS for social reasons, but not the typical reasons such as people looking to connect with old contacts or to meet new people for the sake of it. This argument is supported by the rejection of the interconnectedness and maintaining old ties, which are factors associated with these behaviours. Considering these results, it can be argued that socialising, as presented by Park (2009), is more about sharing time and opinions with like-minded people on topics that they are interested in, which fits with the purpose of a niche SNS.

The second significant factor was support sought and/or provided by people sharing the same issues, interest, goals or tastes (Cha 2010, Foregger 2008, Kim et al. 2011, Li et al. 2015, Hajli et al. 2015, Shen 2015, Wong 2012). As an example, one may consider a health-related network called tdiabetes.org, which is a network oriented to people dealing with diabetes, also providing a platform to share experiences with other people with the same condition. Kim et al. (2011) argue that the social support is rooted in the need to belong to a community of people with similar characteristics to the user created by a sense of identification, and this is supported by Kwon et al (2017), Shen (2015), and by Wong (2012). This identification with the group is reflected in the search for encouragement and companionship from

the people in the network (either previous contacts or new contacts made in the network). This identification enables them to express themselves more openly, as people in the group can understand what the person is looking for more easily. Also, sharing the same interest/condition makes it possible for them to be less concerned about being judged or misinterpreted by other people (Chung et al. 2015). A common practice in general purpose networks is to put together all the contacts, mixing family, friends, colleagues, etc. Still, when people need support, they prefer to appeal to those who can understand them better. A niche SNS could potentially be a safe place in which the users can express themselves freely, as these networks consist of people with similar characteristics to the user (from physical condition, to similar interests, etc.).

The third gratification was self-status seeking, which is related to building and maintaining an image through the continuous participation in a group. This participation is based on the identification with the group and the desire to be acknowledged as part of the group (Nadkarni and Hofmann 2011, Kilian et al, 2012). Sangwan (2005) argues that the self-status seeking gratification looks to reaffirm the self-identity by being recognised as the image the user is projecting, as well as interacting with (influential) people in the group that otherwise would be difficult to meet. The identity is reaffirmed by the acknowledgement of one's status as a member of the group, feeding the self-satisfaction need. In this regard, Bulut and Doğan (2017) stressed the importance of status seeking as part of the reinforcement of personal values and the creation of a social identity, which is part of the identification process. This identification process points to belongingness as one of the needs that people look for when participating in SNS (Krasnova et al. 2008, Pai and Arnott 2012, Smock et al. 2011, Zolkepli and Kamarulzaman 2015, Hsu et al. 2015, Nadkarni and Hofmann 2011, Wong 2012). The belongingness is fostered by the interaction with people that otherwise it would be difficult to be in contact with, due to geographical distance, different social circles, etc. The belongingness has been studied by Chung et al (2016) by the attachment that the person has to a group, which makes them share information that they will not share with everybody. This finding is in line with Tan's (Tan et al. 2015) argument about the importance of weak ties over the strong ones regarding trust and identification with a specialised group. It is important to highlight that the identity projected in the network does not necessarily match the identity of the person in real life (Zhao et al. 2008, Wong 2012, Tosun 2012). In fact, a user can have accounts on different networks for different purposes (Mital and Sarkar 2011), having the chance to create a different identity on each one of them, or even create several users in the same network. Each can have a different identity, as in the case of people with different Facebook accounts or the current trend of fake intagram accounts (finstagram) used by people to post their private photos (Carman 2018, The Guardian 2017). This point is important, as when users join due to peer or superior pressure, they may not necessarily project their real self (Tosun 2012). The same may apply to those users participating in niche networks for operational reasons, e.g. trying to get some benefit from the network, such as information, contacts or knowledge. These users will participate in the network just to get what they are looking for. There may exist conditions for admitting new users, like the case of aSmallworld, which is an SNS for millionaires, and the people are accepted only if they are invited by a current member of the network.

The fourth gratification emerging as an important factor for understanding participation in a niche SNS was learning. Contrary to prior research (Cha, 2010, Foregger 2008), the coefficient for this variable was negative. Considering that self-status seeking was found to be a significant factor, one may interpret this as evidence that users on niche networks are more interested in sharing in order to be recognised as experts by their peers, rather than learning. Those who participate in niche SNS may want to position themselves as experts on the topic more than on the learner role. This situation can be seen on LinkedIn,

on which users demonstrate their expertise not only using the information presented on their profiles, but also by drawing kudos from the recommendations of other users. Users participate in niche SNS as these networks provide information about a specific topic, as well as access to people who know about the topic (Cha 2010, Huang 2008, Kim et al. 2011, Papacharissi and Rubin, 2000 Park et al. 2009). The resources (people and information) that people perceive they will find in the niche SNS are something that they will rarely find in the general-purpose networks. Posting specialised views on niche networks may have been more appreciated compared to general purpose networks, while the highly focused discussion would help engage more members, encouraging them not only to read, but also to contribute to the conversation.

Finally, innovativeness follows the use of niche SNS for specific purposes, in this case as a source of innovative ideas, alternative points of view, or information that can lead to new developments. Cha (2010) portrays innovativeness as the tendency of the person to be more open or receptive to new ideas. Niche SNS contain information that is interesting for their members, and that users can post and where they can find information that is not easy to find elsewhere. Users participating in these networks are looking for new ideas, to enrich and receive feedback about their ideas, or to propose initiatives that can be found to be interesting for the other members of the network. The information sharing was found important by Baek et al. (2011) to explain the SNS usage, as it allowed information exchange and ideas that could be useful. Niche SNS can offer more opportunities to find specific information, ideas and projects to be noticed by the right audience than when posted on general purpose networks, where they could go under the radar and be ignored along with the other sea of posts presented on the timeline.

6. CONCLUSION

This research has provided evidence that there may be potentially different factors influencing the participation in general purpose networks and niche SNS. In turn, this suggests that general purpose and niche SNS cannot be assumed to be similar in nature or treated in the same manner.

The literature review suggested that socialisation and information exchange gratifications played an important role in user participation. A number of factors related to these gratifications were tested on niche SNS users. Socialising, social support, self-status seeking, learning and innovativeness were the main factors that motivated users to participate in niche SNS. Socialising, social support and self-status seeking gratifications suggested that belongingness was an underlying factor in participating, following the findings of Park et al (2009) about SNS usage and Chung et al (2016) about attachment. Users want to be with people who share the same interest; they want to be part of the groups of like-minded people, which aligns with the concept of homophily (Leskovec et al. 2008, Goggins et al. 2011). In niche SNS, Identity plays an important role as people participate in the SNS as a way of reaffirming their own identity (real or desired) through the participation in the network, which is related with research on self-status seeking (Park et al. 2009, Chung et al 2009) This triggers the identification process, which enables users to share the situation they are going through more easily, looking for support from others in the network. In the same vein, users reaffirm their identity through group validation. The results are related to the self-status seeking and learning gratifications. They suggest that users may participate in niche SNS as an opportunity to demonstrate their knowledge about a specific topic (self-status seeking). Niche SNS present a good opportunity for users not only to access specialised information, but also to interact with other similarly-minded users interested in the same topics, integrating the self-status seeking and social

support characteristics in this gratification. These gratifications are complemented by innovativeness. Users may utilise niche SNS as a source for new ideas or as an outlet to present their ideas or projects to a public that has a higher chance of being interested in it or hearing about it, following Baek et al.'s (2011) results.

As it is becoming more frequent for business or interest groups to establish their own social networks, the managerial implications of this research are oriented towards potential ways of designing such SNS and promoting user participation in them. People are present in niche SNS not only because of the socialisation gratifications, but because they want to create links with like-minded people, following the homophily concept, wherein the degree of specialisation of the network, the topics, and/or its members, becomes a differential of the network. In other words, they are networks that are not for everybody, creating a sense of exclusivity. This sense of exclusivity is supported by the self-status seeking gratification, as people search actively to be recognised by the people they try to identify with. A niche SNS makes it possible for users to showcase their expertise, offering users a platform on which to propose new ideas that can be improved by others. Thus, a niche SNS allows the user to establish a reputation among people related to their interest, which could be difficult to reach in general purpose SNS. In the same vein, learning and innovativeness gratifications can be used by niche SNS managers to encourage participation among users, as these networks are places where they can be inspired to do new things or to go for innovative ideas and learn how to do it, which can be exemplified with academic SNS such as academia or research gate, who are niche SNS for academics.

6.1. Research Implications and Further Research

This proposed approach to adopt general purpose constructs and test them in a niche SNS context was able to explain 41.2% of the variance of the dependent variable. Although such a result could be considered as a good starting point, shedding light on the motivations to participate in niche SNS, it also calls for more research to be undertaken in this area. Future efforts can help increase the predictive power of the model by including new variables that could be relevant to niche SNS. Another stream of research is the type of users in niche SNS, which is guided by the research of Constantinides et al, (2010), Constantinides and Stagno (2011), Kilian et al, (2012), Brandtzæg (2012) and Bulut and Dogan (2017), who found that different types of users have different motivations to use SNS. Consequently, it would be interesting to study the type of users and their proportion in niche SNS. Due to the difficulties of accessing primary sources, it is recommended that qualitative research approaches be used in order to gain a deeper understanding of these networks. Such an approach could potentially help identify a wider list of influential factors to test in a quantitative manner, within models like the one adopted for this research. A case study approach may also be useful for gaining insights into specific niche networks considering different types of networks, e.g. based on objectives, audiences, geographical attributes etc.

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Chapter 14

Participation in Online Social Networks: Theories and Models

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ABSTRACT

Why and how more and more people get involved and use social networking systems are critical topics in social network analysis (SNA). As a matter of fact, social networking systems bring online a growing number of acquaintances, for many different purposes. Both business interests and personal recreational goals are motivations for using online social networks (OSN) or other social networking systems. The participation in social networks is a phenomenon which has been studied with several theories, and SNA is useful for common business problems, e.g., launching distributed teams, retaining people with vital knowledge for the organization, improving access to knowledge and spreading ideas and innovation. Nevertheless, there are some difficulties, such as anti-social behaviors of participants, lack of incentives, organizational costs and risks. In this article, a survey of the basic features of SNA, participation theories and models are discussed, with emphasis on social capital, information spreading, motivations for participation, and anti-social behaviors of social network users.

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INTRODUCTION

Widespread participation to online social networks has rapidly become a matter of fact, worldwide. In fact, social networking systems attract billions of people all around the world. Many of them -- from several different social groups, regardless of age, gender, education, or nationality -- participate daily in social online activities. While some systems are dedicated to some specific scope, most of them instead blur the distinction between the private and working spheres, and users are known to use such systems both at home and on the work place both professionally and with recreational goals. For example, the chat systems, that are embedded in social networking platforms and may be used to organize a birthday party, are often the most practical way to contact a colleague to ask an urgent question, to organize a work meeting, or a formal event with colleagues, especially in technologically oriented companies. At the same time, several traditional information systems have been modified in order to include social aspects. Currently, social networking platforms are mostly used without corporate blessing, maintaining their status as feral systems. In fact, the attitude of firms and organizations is quite varied: in some cases, external social networking platforms are tolerated or even encouraged (e.g., Facebook was available for Microsoft and Apple employees before the general public launch), at least for specific purposes (Millen et al., 2006); in other cases, internal tools are promoted or imposed (DiMicco & Millen, 2007).

While the phenomenon of online social networking is relatively new, however to understand some of its dynamics, it is necessary to use analytical models, based on both network topology and users' own interests. For example, according to DiMicco (2008), most users that use social networking platforms for work purposes are mostly interested in accumulating social capital, either for career advancement or to gather support for their own projects inside the company. In fact, in order to understand how a social network could be used to increase interactions, information sharing and benefits in teams and organizations, it is useful to refer to Social Network Analysis, a set of data analysis techniques that focuses on the structural and topological features of the network (Otte, 2002). Also, participation in such networks has long been studied as a social phenomenon according to different theories. Understanding the status of a social network, or the usage pattern of an online social networking platform, requires study of the system according to both static and dynamic models. Moreover, the theories of participation in social networks allow not only to study, but also to guide the dynamics of a given social network.

The review is organized in the following way. First of all, we will describe the different kinds of virtual communities, social media technologies and applications which are available. Then, we will focus on models and theories of participation in social media, discussing also various models of information spreading and the issue of anti-social behaviours. We will then highlight the challenges faced by organizations and firms in adopting social media, either in internal or public way. Finally, we will provide some concluding remarks.

TECHNOLOGIES FOR SOCIAL ONLINE COLLABORATION

In general, Computer-Mediated Communication (CMC) is defined as any human communication that occurs through the use of two or more electronic devices (McQuail, 2005). Through CMC, users are able to create various kinds of virtual communities, i.e., networks of users whose connections mainly exist online. In the following paragraphs we discuss the features of the most typical kinds of virtual communities: (i) Virtual Organizations, (ii) Virtual Teams, and (iii) online Networks of Practice.

Types of Virtual Communities

Although there are several differences that clearly set the concepts apart, different kinds of virtual communities may share some common traits, including (i) the lack of central authority, (ii) their temporary and impromptu nature, and (iii) the importance of reputation and trust as opposed to bureaucracy and law.

According to the definition given by Mowshowitz (1994), a virtual organization is "...a temporary network of autonomous organizations that cooperate based on complementary competencies and connect their information systems to those of their partners via networks aiming at developing, making, and distributing products in cooperation." The term was then popularized by the Grid Computing community, referring to Virtual Organizations as "...flexible, secure, coordinated resource sharing among dynamic collections of individuals, institutions, and resources..." (Foster et al., 2001). The premise of Virtual Organizations is the technical availability of tools for effective collaboration among people located in different places, but their definition also emphasizes the possibility to share a large number of resources, including documents, data, knowledge and tools among interested people (Poggi & Tomaiuolo, 2010; Bergenti et al., 2005). Their importance is sustained by continuing trends in production and social forms, including the growing number of knowledge workers, the emergence of integrated industrial district and other aspects developing at an international level, like dynamic supply chains, just-in-time production, sub-contracting, delocalization, externalization, global logistics and mass migrations which collectively are usually named "globalization."

A virtual team, according to Powell et al. (2004), is a "...group of geographically, organizationally and/or time dispersed workers brought together by information and telecommunication technologies to accomplish one or more organizational tasks." Virtual Teams can represent organizational structures within the context of Virtual Organizations, but they can also come into existence in other situations, where independent people collaborate on a project, for example an open source software.

An online network of practice (or interest) is a group of people who share a profession or a craft, whose main interactions occur through communication networks and tools, including forums and other discussion boards. The creation of the group typically occurs either: (i) in a spontaneous and natural way, because of a common interest of its members, or (ii) it can be tailored exclusively to actual practitioners, forged specifically with the goal of sharing and increasing their professional skills and knowledge.

Requirements and Features of Online Social Networks

In OSNs there are at least three distinct functional elements: (i) profile management, (ii) social graph management and (iii) content production and discussion. In fact, by definition, a social network cannot lack social graph management and self-presentation, no matter how minimal. On the other hand, virtually no modern OSN lacks the content generation features.

According to these three main functional areas, it is also possible to draw a classification of the OSNs in three main categories: (i) systems where the profile and social graph management is prevalent; (ii) systems where the content has a prominent role with respect to social networking activities and there are frequent interactions with people not closely related; and (iii) systems where the two aspects have roughly the same importance.

The archetypal examples of the first category of systems are business-related and professional OSNs, like LinkedIn. People pay a great deal of attention in creating their profile. In this type of systems there are usually various relationships among users, representing the variety of relationships that members

may have in real life. Most users do not visit the site daily and do not add content to the system often (Skeels & Grudin, 2008).

The second type includes blogging, micro-blogging and media sharing web sites, like Twitter. The “follow” relationships, which are typical for a system of this kind, are usually not symmetric. The focus is in information transmission; often the system does not support a proper profile and sometimes even the contacts may be hidden. Often weak semantic techniques such as Twitter hash-tags are used, in order to read content by subject instead than by author. Through collaborative tagging, the actors of the system may develop a sort of emergent semantics (Mika, 2007), possibly in the form of so-called “folksonomies.” Considering that tags usage is a heavy tailed power-law like distribution, i.e., most people actually uses very few tags, collaborative tagging usually produce a good classification of data (Halpin et al., 2007).

The third category includes the personal OSNs, like Facebook. In this type of systems, users have a profile, partly public and partly confidential. Frequently, there is only one kind of relation, “friendship,” which is symmetric and requires approval by both users. These sites have extremely frequent updates: a noticeable percentage of users perform activities on the system at least on a daily basis.

One of the goals motivating the participation in online communities is the benefit of team work over solo work. Various studies (Van de Ven et al., 1976; Malone & Crowstone, 1994) describe the advantages and costs of coordinating team activities. In fact, while an increase in coordination can lead to greater effectiveness, typically it also produces a faster growth of coordination costs. As a consequence, a lot of effort is being devoted in creating tools and technologies that make group work more effective by containing the costs of their coordination. Virtual Teams assembly is another problem that online social platforms can help to solve. In fact, the success of a team depends largely on its assembly process, for identifying the best possible members.

Social collaboration platforms should also help to model and manage multidimensional networks. In fact, apart from direct relationships among people, such platforms should also include other resources. For example, in the area of academic research, a network model could include both people and the events they attend (Wasserman & Faust, 1994), thus creating a bimodal network. Su and Contractor (2011) propose a more complex multi-dimensional network model, including people, documents, data sets, tools, keywords/concepts, etc.

Additionally, in some online communities, participation may also strongly depend on adopted mechanisms and policies for preserving privacy, including confidentiality of messages and identity. For personal identity privacy, stable pseudonyms could be assigned at registration (Andrews, 2002). Moreover, in online communities and Virtual Teams, acquaintance may happen online, without previous connection in real life. In those cases, a member’s reputation is directly related to his pseudonym, and ratability of his online activities may be more important than his real-world identity for creating trust (Poggi et al., 2003). Complete anonymity may also have a value in some activities of Virtual Teams, apart from encouraging participation in general. For example, an anonymous brainstorm activity may help opening a conversation about trust and ground rules for online meetings (Young, 2009).

For reaching wider and more effective adoption in open and dynamic online communities, including Virtual Organizations, Virtual Teams and online Networks of Practice, we argue that social networking platforms should embrace an open approach (Franchi et al., 2016a; Poggi & Tomaiuolo, 2013). The model of autonomous software agents has been often used in the development such systems (Poggi & Tomaiuolo, 2010; Poggi & Tomaiuolo, 2013; Bergenti, Poggi & Tomaiuolo, 2014). In fact, many isolated sites could not satisfy the need for an inter-organizational collaborative environment. On the other hand, organizations are not keen to rely on a single centralized site, which may pose risks to privacy and may

control published data. Moreover, openness is important for participation, too. In fact, a closed environment can hardly reach the minimal dimension and variety required for activating the typical dynamics at the basis of the different theories taken into consideration by analysts, for explaining participation in OSNs.

Integration of Social Features Into Existing Applications

The trend toward introducing social media systems in the work environment has seen a massive increase in importance in recent years. At their first appearance, without indications from the management and without integration with internal information systems, social media took the form of feral systems. However, organizations and firms are finally becoming to accept this situation as a matter of fact, trying to gain benefits from the same features that drove the introduction of social platforms in the first place. Thus, information systems are moving from the communication level, to the coordination and collaboration levels, increasingly acknowledging and leveraging the various dimensions of social relations among people, both internally and across organization boundaries.

A first strategy, that some organizations and brands are adopting, is to use social media for improving their customer relationship management (CRM). In fact, social media can be a means for firms and organizations to listen to customers and to cope with the difficulties in collecting data through interviews (Murphy et al., 2011). Social media allow the use of online sources of information, sometimes for free. So, firms and organizations are moving to reduce costs and time needed by traditional survey researches. Moreover, in the last years several social media monitoring tools and platforms have been developed to listen to the social media users, analyze and measure their content in relation to a brand or enterprise business and so it is reducing the time necessary for extracting the useful information through the huge data provided by social media (Stavrakantonakis et al., 2012). However, this quite popular trend towards so-called “*Social CRM*” has not always been satisfactory. A study by IBM (2011) shows that there’s a quite large gap between the expectations of brand managers and social media users. In fact, only the 23% of users are keen to engage with brands on social media, and only 5% of users declare active participation. The majority, instead, limit their communications and shares with parents and relatives. Among the potentially interested people, many expect tangible benefits, including discounts, services, additional information and reviews about products. The study is in accordance with the difficulties that brands face to engage with users and to launch viral campaigns. Nevertheless, businesses continue to be greatly interested in using social media for rapid distribution of offers and content, reaching new people through trusted introducers, but also for improving customer care and research.

A second type of effort is directed to augment internal tools, in particular knowledge management (KM) systems, with explicit and rich data about relationships among involved people. The long-term goal of KM, in fact, is to let insights and experiences existing in implicit way into an organization emerge and become easily accessible for wider internal adoption. Such knowledge can be either possessed by individuals or embedded into common practices. To provide effective access to valuable internal knowledge and expertise, it is essential to recognize and value the particular knowledge possessed by different persons, and then to have means to contact the relevant persons in a timely manner, thus making information-seeking an easier and more successful experience. In many regards, such a scenario can be fully developed only on the basis of the evolution of existing ICT tools and the creation of new ones, by making some typical features of social networking applications available in tools for daily activities.

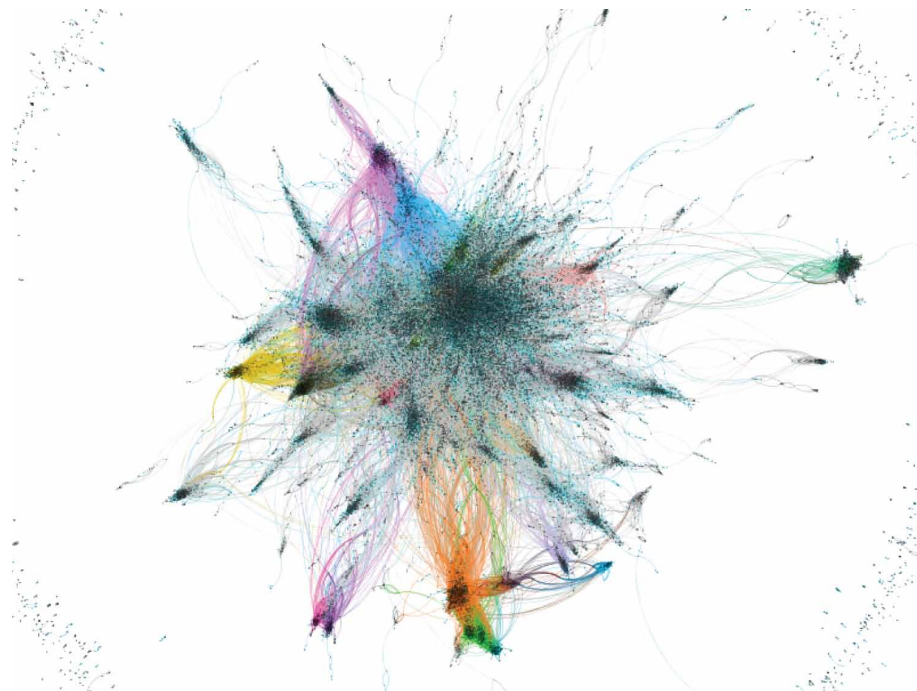
This trend regards existing Information Systems and also, for some aspects, platforms for enterprise resource planning (ERP). In fact, some aspects of traditional ERP systems are integrating features of

social networking platforms, fostering collaboration among people on the basis of direct interpersonal links and simple knowledge sharing tools. The centralized and inward approach of early systems is being challenged also in the core area of production management software. The drift towards network of integrated enterprises is testified by an increasingly dynamic production environment, arranged in the form of complex Virtual Organizations and Virtual Enterprises. In this context, the tasks of supply chain management, project and activity management, data services and access control management require the participation of actors of different organizations and possibly different places and cultures.

MODELS OF PARTICIPATION

The result of the interactions among the users in a social networking system is an Online Social Network, i.e., a special case of the more general concept of social network. A social network is defined as a set or sets of actors and the relations defined on them (Wasserman & Faust, 1994). Social networks are typically studied using social network analysis, a discipline that focuses on the structural and topological features of the network. More recently, additional dimensions have been added to the traditional social network analytic approach (Monge & Contractor 2003; Borgatti & Foster 2003; Parkhe et al. 2006; Hoang & Antoncic 2003).

Figure 1. A graphical illustration of the IMDb online movie database. The depicted social network consists of 58984 nodes and 295099 edges. Nodes represent actors who starred in at least two movies, in the period 2001 – 2010, and edges connect actors if they starred together in at least 2 movies (undirected graph). Edges colors emphasize subgroups of actors, called communities, found by the PaNDEMON algorithm (Amoretti et al.,2016).



Social Network Analysis

Social network analysis (SNA) is the process of studying social networks and understanding the behaviours of their members (Laumann & Pappi, 2013). Graph theory provides the basic foundations for representing and studying a social network (Wasserman & Faust, 1994). In fact, each member of the social network can be mapped onto a node of the graph and each relationship between two members onto an edge that connects two nodes. An example is shown in Figure 1.

In real life, it is very common to find examples of social networks: groups of friends, a company's employees, contributors with different aims, etc. In fact, SNA is currently used in many research fields including anthropology, biology, economics, geography, information science, organizational studies, political science and social psychology.

The main goals of SNA are:

- To investigate behaviours of some network users;
- To identify users' membership and position into sub-communities;
- To find possible relationships among some users;
- To discover changes in network structure over time.

Different aspects are useful for investigating the behaviours of a participant in a social network: the most relevant are his position in the social network (i.e., which other members it is connected to) and his contributions to discussions or collaborations (knowing which groups he belongs to could be an important information). Another important aspect is the kind of activity performed by a user in his social network (Klein, Ahlf & Sharma, 2015). Mainly, a user can be identified as "active" (when he produces contents, sends videos and photos, comments posts of other users, reports original texts and documents) or "passive" (when he is only a consumer of other users' contents, limiting himself to liking or unliking those contents).

A second aspect, which we want to focus in, is the relationship between two members of the network (Golbeck & Hendler, 2006). Discovering the type of relationship between two members, their reciprocal trust, and their distance in the network, are basic information used by SNA to speculate about information diffusion and users contamination or contagion, i.e., the mechanism of imitation in social contexts (Burt, 1995).

Another significant application of SNA is to find subgroups composed by different users, i.e., to perform community detection (Amoretti et al., 2016), as shown in Figure 1. For example, Fortunato (2010) presents a case study about the Belgian population, which can be split and clustered using phone communication data. Many users can be considered a community if existing connections between them are many more than the number of users (this situation is similar to a dense graph). Detecting the presence of a community allows analysts to recognize the paths followed by information for reaching the network users. According to a user's position, it is possible to identify three main metrics: Degree Centrality, Betweenness Centrality, and Closeness Centrality. Degree Centrality, strictly connected to the concept of graph-node degree, tells us the number of direct connections a node has. The higher the degree, the stronger the capability to spread information to other users is. Instead, Betweenness Centrality is a gauging of how much a user could be able to diffuse information from a community to another, especially if he belongs to many communities. A very interesting approach aims at identifying influential users on the basis of their activity level, comparing it with the activity and reactions of their

followers/friends (Klein, Ahlf & Sharma, 2015). Finally, Closeness Centrality is a measurement connected to the concept of graph-path length. It provides information about how far a user is from all the users of his community: the shorter this value is, the greater the possibility to reach all the participants of the network is, when he posts a content.

The last major aspect, which SNA concentrates in, is to discover the changes of a social network structure during time (Barabási et al., 2002). Studying the dynamics of a network allows analysts to detect persistent relationships, if they exist, and also to discover the lead users. Lead users play an important role in the network, since they have the best marks, according to the main centrality metrics mentioned before, and remain stable in the network for a long period. Studying network changes can also be useful in predicting users' real connections (Wang et al., 2011).

Social Capital

An important theoretical foundation for the analysis of participation in social networks is constituted by social capital. Social capital represents a person's benefit due to his relations with other persons, including family, colleagues, friends and generic contacts. The concept originated in studies about communities, to underline the importance of collective actions and the associated enduring relations of trust and cooperation, for the functioning of neighborhoods in large cities (Jacobs, 1961).

Social capital has been studied as a factor providing additional opportunities to some players in a competitive scenario, and, from this point of view, it has been studied in the context of firms (Backer, 1990), nations (Fukuyama, 1995) and geographic regions (Putnam, 1995). In this sense, social capital is defined as a third kind of capital that is brought in the competitive arena, along with financial capital, which includes machinery and raw materials, and human capital, which includes knowledge and skills. Moreover, the role of social capital in the development of human capital has been studied by Loury (1987) and Coleman (1988).

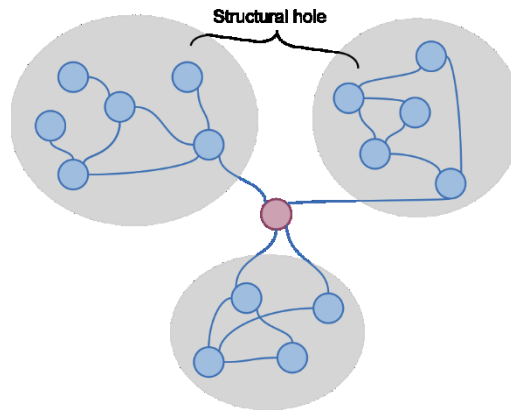
Social capital is typically studied: (i) by drawing a graph of connected people and their own resources, creating a connection between each player's resources and those of his closest contacts; or (ii) by analyzing social structures in their own right, and supposing that the network structure alone can be used to estimate some player's competitive advantage, at the social stance (Franchi et al., 2016b).

The size of the ego-centered social network is an important factor to estimate the social capital of one individual; however, the size alone does not provide enough information. According to Burt (1992) social capital is related with the number of non-redundant contacts and not directly with the simple number of contacts.

In fact, although information spreads rapidly among homogeneous, richly interconnected groups, Granovetter (1973) argues that new ideas and opportunities are introduced in the groups by contacts with people from outside the group. In order to explain this phenomenon, Granovetter distinguished among three types of ties: (i) strong ties, (ii) weak ties, and (iii) absent ties.

A quantitative distinction between strong and weak ties has been subject of debate, but intuitively weak ties are simple acquaintances, while strong ties are reserved for close friends and family. The "absent ties" indicate missing relations in the network. Burt capitalizes on Granovetter's insight, and emphasizes the importance of absent ties, that create the "structural holes" in the network texture. According to Burt, structural holes allow the individuals that create a weak link among two otherwise separated communities to greatly increase their social capital. A graphical example of structural holes is illustrated in the following figure 2.

Figure 2. The simple social network in the image illustrates the concept of structural hole. In grey, the three different and separated communities are highlighted, and the node with the maximum betweenness centrality score is colored in red. Such a node is also responsible of linking those communities, allowing exchanges among them, which increase significantly its social capital.



Nahapiet and Goshal (1998) discuss the role of social capital in building intellectual capital inside organizations. The authors distinguish the structural, relational, and cognitive aspects of social networks. The structural properties describe the patterns of connection among actors and regard the social system as a whole, i.e., given an actor, the set of actors it can reach and the way it could relate with them. The relational properties describe the type of ties people have developed during their interactions, including relationships like friendship, trust, and respect. As a concrete example, consider two actors which have similar networks, and that their positions inside such networks could be considered equivalent: their actions may differ significantly, based on their different attachment w.r.t. other members, in emotional and personal extent. The cognitive properties refer to basic knowledge, representations, languages and other systems of meaning, shared among actors, e.g., shared narrative. Moreover, they focus on the development of intellectual capital, which is essentially an aspect of human capital, but may also be owned by a social collectivity. In fact, they classify knowledge as (i) either implicit or explicit, and (ii) either individual or social. In the case of social knowledge, they argue that social capital facilitates the creation of intellectual capital primarily by creating conditions for exchange and combination of knowledge. Finally, they discuss the features of an organization that are more effective for the development of intellectual capital, including duration of contacts, type and frequency of interactions, interdependence of actors and closure of the community.

Contractor and Monge (2003) proposed a multifaceted approach, with a Multi-theoretical multilevel (MTML) model, for explaining the various motivations for the existence of social connections in a network. Their analysis considers the following theories:

- **Self-interest:** According to the theories of self-interest, people create ties with other people and participate in team activities in order to maximize the satisfaction of their own goals. The most known theories of self-interest are based on the notion of social capital (Burt, 1992). Another foundation of these theories lies on transaction cost economics (Williamson, 1991);

- **Mutual interest and collective action:** These theories study the coordinated action of individuals in a team. They explain collective actions as a mean for reaching outcomes which would be unattainable by individual action (Fulk et al., 2004). Thus, individuals collaborate in a community because they share mutual interests;
- **Homophily and proximity:** The principle at the basis of these theories is that connections are mostly structured according to similarity (McPherson et al., 2001). Moreover, connections between dissimilar individuals break at a higher rate;
- **Exchange and dependency:** Another founding motivation for the emergence of groups can be the exchange of available and required resources (Cook, 1982). Thus, these theories explain the creation of communities by analyzing the network structure together with the distribution and flow of resources in the network. Examples of exchange networks vary from data analysts to bands of musicians;
- **Co-evolution:** The underlying principle of these theories is that evolution based on environmental selection can be applied to whole organizations, and not only to individuals. Thus, they study how organizations compete and cooperate to access limited resources, and how communities of individuals create ties both internally and towards other communities (Campbell, 1985; Baum, 1999);
- **Contagion:** For explaining the spread of innovations, contagion theories study how people are brought in contact through the social structure (Burt, 1987). Social contagion is described as a sort of interpersonal synapse through which ideas are spread. Conversely, some sort of social inoculations may prevent ideas from spreading to parts of the network;
- **Balance and transitivity:** Since macroscopic patterns originate from local structures of social networks, balance theories (Holland & Leinhardt, 1975) start from the study of triads in a digraph, or a socio-matrix. The typical distributions of triads configurations in real social networks show that individuals' choices have a consistent tendency to be transitive;
- **Cognition:** Finally, another aspect of social network analysis regards the importance of knowledge and semantics in the development of teams and the impact of increasing specialization over collaboration. In this sense, the decision to form a collective depends on what possible members know (Hollingshead et al. 2002). These studies are grounded on the concept of transactive memory.

The study of structure of Online Social Networks, expressed as patterns of links among nodes, can exploit models and ideas from classical sociology and anthropology, with particular attention to contextual and relational approaches. In fact, all the results obtained in decades of studies of human networks are also at the basis of the analysis of Online Social Networks. However, these results cannot be simply applied to the different context of online relations. Instead they have to be evaluated and adapted to the new networks, which may have significantly different structure and dynamics. Moreover, online social networking platforms may greatly vary both technically and in their aims. They may be used by people for organizing quite diverse activities, in different virtual communities.

Information Spreading

In social network analysis, the study of information spreading processes is a critical topic. As a matter of fact, understanding the dynamics of information (or rumor) spread in social networks is very important for many different purposes, such as marketing campaigns, political influence, news diffusion and so on.

The way a piece of information reaches people and how much time it takes to do it are examples of analysis of information spreading processes. They depend mainly on (i) network characteristics – topology, dynamism, sparsity, etc. –, (ii) the meaning of the information content, and (iii) the influence of the source of information.

Several models have been developed in order to study such a phenomenon, but there is no existing unique standard option, due to the heterogeneity of social networks (Moreno, Nekovee & Pacheco, 2004), that range from real-world ones to online social networks, such as micro-blogging services or forums.

Despite those diversities, social networks share common features that are taken as basis for the analysis. First of all, a network is often viewed as a graph $G = (V, E)$, where V is a discrete finite set of nodes (or vertices) that represents the people or users involved, and E is a binary relation on V , that represents relationships among users. The neighborhood of a node is the set of other nodes directly connected to him.

Depending on networks, the topological characteristics of the graph change, and several models have been investigated to match the correct shape of a network. Examples of such models include complete graphs (Pittel, 1987), hypercubes (Feige et al., 1990), random graphs (Erdős & Rényi, 1959) and evolving random graphs (Clementi et al., 2015), preferential attachment graphs (Barabási & Albert, 1999; Doerr, Fouz & Friedrich, 2012), power-law degree graphs (Fountoulakis, Panagiotou & Sauerwald, 2012).

Among these models, there is not a “better” one. Choosing one of them depends on the problem to be addressed. For example, online social networks present often a scale-free structure, which can be successfully modeled by power-law degree graphs. If the focus is the time evolution of such a network, other models can be considered. As a matter of fact, evolving random graphs operates well in analyzing the problem of rumor spreading.

In literature, rumor spreading on a graph (thus, a social network) has been studied by means of two types of distributed mechanisms (Kuhn, Lynch & Oshman, 2010; Kuhn & Oshman, 2011): the push protocol and the flooding protocol. Both protocols are synchronous, i.e., time steps, or rounds, are used to describe the behavior of a node, and the piece of information or rumor originates by a single source node.

In flooding protocol, starting from the source at the first-time step, each node forwards the information to all nodes in its neighborhood. In push protocol, instead, at every time step, each informed node in the social network chooses uniformly at random another node and shares with it the piece of information. Behavior of such protocols are widely investigated for several types of graphs (Karp et al., 2000), and their performance, time of completion (Baumann, Crescenzi & Fraigniaud, 2011; Clementi et al., 2010) or other measures, such as conductance (Giakkoupis, 2011), are well-known.

The actual challenge is to understand when and how such protocols, or their variants, are suitable in order to describe information spreading in a certain social network, with its own topological model. Answers to such problems differ according to social network characteristics and platforms, taking account of communication patterns. For example, for online social networks, the Twitter retweet mechanism (Kwak et al., 2010; Ye & Wu, 2013) or the way Facebook users share posts (Fan & Yeung, 2013; Kee et al., 2016) can be considered as communication patterns.

The study of information diffusion often gives rise to other inherent questions, such as how a topic becomes popular and what mechanisms to make it viral (Zaman et al., 2010). Those matters are analyzed by means of statistical models. Such models aim to predict the future impact of a new information released within the social network.

Currently, “little is known about factors that could affect the dissemination of a single piece of information” (Wang et al., 2011), and several predictive models have been proposed. Each model have to face three main issues: (i) the impact of the topology of the underlying social network – with all the

related formalizations, (ii) the influence of the individual behaviour of users and, finally, (iii) the communication patterns of the community (online or not).

A common approach is to assign a score to the characteristic features of the network (Shah & Zaman, 2011; Zhou et al., 2008; Zaman, Fox & Bradlow, 2014). In some networks, the underlying graph model is very important because diffusion is subordinated to connection among users, for example if the piece of information is visible only to a user's neighborhood. In other networks, messages or posts are public, and this fact overcome topological limits, bypassing relationship to address wide audience. Moreover, the propagation speed depends on the context in which the piece of information is introduced.

All those considerations are useful to obtain the correct score of a feature, and then the scores are put together to obtain an estimation of the diffusion probability of a single topic. Such estimations are obtained, for example, by means of statistical methods such as the method of moments or the Maximum Likelihood Estimation (MLE), in which features represent the population of parameters to estimate (Scholz, 2014).

Motivations for Participation

In order to understand the reasons that motivate the users in engaging in online social activities in general, and, more specifically, in sharing their valued knowledge in online communities, it is necessary to analyze (i) the nature and the structure of their relationships in the context of a specific community, and (ii) their implication over both online and offline reputation. Wasko and Faraj (2005), for example, analyze the motivations for participation in a specific online Network of Practice. In particular, the analyzed network is a public online forum of legal professionals, who participate under their real identities. In Wasko and Faraj (2005) the following features are taken into account, as possible enablers of participation:

- **Individual motivations:** One key aspect of social contribution is an individual's expectation that some new value will be created, as result of his participation in the network. The individual should expect to receive some benefits from his contribution, even in the absence of direct acquaintance with other members of the community and without mechanisms enforcing or encouraging reciprocity. Increasing the reputation is one of the most important forms of return of investment, especially if the online reputation is believed to have a positive impact on the professional reputation;
- **Relational capital:** Another enabling factor for contributions to an online community is represented by the personal relationships among individuals, as members of that community. Relational capital is directly related to the level of an individual's identification with the community, trust with other members (Tomaiuolo, 2013), perception of obligation to participate and reciprocate, acceptance of common norms. In particular, commitment can be associated with a community, apart from individuals;
- **Cognitive capital:** Any meaningful interaction between two members of a community requires some basic shared understanding. All those common semantic resources, including languages, interpretations, narratives, contexts and norms, are usually described as cognitive capital. In fact, an individual can participate in community activities only if he possesses the required knowledge and, more in general, the required cognitive capital;
- **Structural capital:** Communities with dense internal connections show more collective actions than other types of networks. In fact, individuals who are strongly embedded in a social network, have many direct ties with other members and a habit of cooperation. On the other hand, an indi-

vidual's position in the network influences his willingness to contribute, thus increasing both the number and quality of interactions.

Those factors have different weight in different social contexts. In the case study analyzed by Wasko and Faraj (2005), reputation plays a crucial role, since it also affects professional reputation. Other factors, though, also have meaningful relationships with the number and usefulness of contributions in the online community. The final results compare both the level and helpfulness of contributions against the following factors: (i) reputation, (ii) willingness to help, (iii) centrality in the network structure, (iv) self-rated expertise, (v) tenure in field, (vi) commitment, (vii) reciprocity.

With regard to individual motivations, results for the case at hand show a stronger influence of reputation over intrinsic motivations, like willingness to help. Social capital, assessed by determining each individual's degree of centrality to the network, is confirmed to play the most significant role in knowledge exchange. Also, cognitive capital, assessed by self-rated expertise and tenure in the field, shows a strong influence over participation, but this is mostly limited to the individual's experience in the field, while self-rated expertise is not quite significant. Finally, in the analyzed Network of Practice, relational capital, assessed by commitment and reciprocity, is not strongly correlated with knowledge contribution, suggesting that these kinds of ties are more difficult to develop in an online network.

The increasingly important role of social media in society makes it clear to both individuals and organizations that they are crucial tools for innovation. In fact, creativity and innovation have long been notable subjects of organizational studies and social network analysis. Fedorowicz et al. (2008) note that creative ideas rarely come from individuals. More often, they come from teams and groups, including those formed through social media. Dwyer (2011) argues that, apart from the number of collaborators, it is also important to measure the quality of collaboration. In fact, various collaborator segments can be identified, with significant differences in the value of contributed ideas and the timing of participation. Thus, new metrics should be used, taking those differences into account and being based on information content. Hayne and Smith (2005) note that groupware performance depends on the fit between the structure and task of the group. However, they argue that an important role may also be played by the cognitive structure, which also maps to the group structure. In fact, collaborative tasks may push human cognitive capabilities to their limits, in terms of perception, attention and memory. Thus, the authors argue for the integration of different areas of study, such as: psychology, especially with regard to abilities and limitations; theories of social interactions, with regard to group communication and motivation; studies of groupware structures and human interactions mediated by artifacts.

Anti-Social Behaviours and Trolling

In Computer-Mediated Communication (CMC), user behavior is very different from a face-to-face communication and every type of communication medium creates its own communication rules. Depending on the kind of CMC, users are allowed to adjust the degree of identity they reveal. The level of anonymity usually guaranteed in online discussions allows users to engage in behaviours they would otherwise be averse to carry out in face-to-face discussion. This lack of identifiability has contributed to the codification of new communication behaviours, like trolling (Morrisey, 2010).

Trolls are often seen as corrupters within an online community. They often share a group's common interests and try to pass as a legitimate member of the group (Donath, 1999). After that, they try to lead the conversation toward pointless discussion (Herring et al., 2002). Morrissey (2010) suggests that "...

trolling is an utterer producing an intentionally false or incorrect utterance with high-order intention to elicit from recipient a particular response, generally negative or violent.”

Trolls can damage a group in many ways. They can interrupt discussions, give bad advice, or undermine the mutual confidence of the user community. Trolls usually post a message into different sections (Cross-Posting), by doing this they are able to annoy more groups simultaneously. Nowadays many companies are using tools such as blogs, forums, social media (including self-developed ones) for their own interests. Trolls are therefore a threat to private social platforms as well as for public ones.

The most widely used solution against trolls is to ignore provocations. Some systems provide filters (killfile, blacklist) that allow users to exclude trolls from public discussions. In recent years, many projects have been developed for the automatic detection of trolls in online communities. Some works (Seah et al., 2015) use a supervised learning algorithm, which allows to classify the polarity of posts and identify trolls as users with a high number of negative messages. The classifiers are trained using examples of positive and negative sentences. The polarity classifier is trained on a data set of movie reviews written in standard English. The Support Vector Machine algorithm is used to do binary classification of trolls. Since the data set contains messages from different topics (different forums), some domain adaptation techniques are used to get better results.

Furthermore, the frequency of messages, and possibly also the frequency of generated answers, is another factor for determining the presence of a troll in the network: the higher the frequency, the higher the probability that he is a troll (Buckels, Trapnell & Paulhus, 2014). In Ortega et al. (2012), the authors propose a method to compute a ranking of the users in a social network, regarding their reliability. The goal is to prevent malicious users to gain a good reputation in the network. To achieve this purpose, they create a graph taking the users of the network as the nodes. The edges represent the opinions of some users about others, and the weights of the edges correspond to the intensity of the relationship between the nodes.

In (Galán-García et al., 2015), the authors suppose that “...it is possible to link a trolling account to the corresponding real profile of the user behind the fake account, analysing different features present in the profile, connections data and tweets characteristics, including text, using machine learning algorithms.” In fact, machine learning techniques can be used to associate users’ posts with various emotions, in addition to generic positive or negative sentiments (Fornacciari, Mordonini & Tomaiuolo, 2015; Angiani et al., 2016).

More recently, researchers from Stanford and Cornell Universities have developed an algorithm that can estimate the need to ban a member of an online community, after observing only five to ten online posts (Cheng et al., 2015). In particular, the authors present a data-driven approach to detect antisocial behavior in online discussion. The data sets are collected from users that have been banned from a community.

RISKS AND CHALLENGES FOR FIRMS AND ORGANIZATIONS

The initial adoption of online collaboration tools and social networking platforms in the work environment has occurred largely on an individual basis. Faced with an increasingly decentralized, expanded and interconnected environment, workers and members of organizations began adopting social networking platforms as better tools for connecting and collaborating with colleagues and partners (Franchi et al., 2016a). Thus, social media made their first appearance in firms and organizations mostly without indica-

tions from the management and without integration with internal information systems. In this sense, they took the form of feral systems. In fact, (i) they were not “part of the corporation’s accepted information technology infrastructure”, and (ii) they were “designed to augment” that infrastructure, along with the definition of Feral Information Systems provided by Houghton and Kerr (2006). In a study published by AT&T (2008), ten main challenges are listed for the adoption of social media by businesses. In fact, these challenges can be grouped in three main areas: (i) organizational costs, (ii) risks of capital loss, and (iii) technical challenges.

About organizational costs, the first issue is that social networking has indirect benefits, which often are not fully appreciated. It is probably the main area of resistance, due to the perceived costs of networking time in terms of employees’ productivity. The necessity to allow employees to manage their working time with more freedom is restrained by the risk of decreasing the time and attention dedicated to the most cost-effective activities. However, traditional ROI methods make it difficult to incorporate all the benefits of social media, both direct and indirect. Thus, new performance indicators will be needed. Another issue is the definition of an effective plan to reach the critical mass for the social network to be functional. In fact, common figures of users creating content and collaborating through social media are pretty low, typically from 1% to 20%. Resistance to adoption can come from both regular employee and cadres, possibly including managers and executives. Such a plan would also face the problem of timeliness. In fact, developments in the Web 2.0 environment occur very fast: successful applications may reach millions of users in a couple of years, sometimes creating a new market.

Other challenges are related to the risk of loss of capital, faced by organizations in the adoption of social media. The capital at risk can include intellectual property, as well as human and social capital. In fact, organization members may easily and inadvertently leak sensible and protected content on social media, and such content may face rapid diffusion by “word of mouth” mechanisms. An even greater risk, however, may come from the increased mobility of organization members and employees. This risk is increased by the exposure of members’ profiles to the outside world, including other organizations and competitors.

Finally, the adoption of Online Social Networks incurs technical costs for creating and maintaining a more complex and open infrastructure. Some important challenges regard security, which is harder to enforce as intranets need to open to the external world, for enabling social collaboration (Franchi et al., 2015). The risks include the malicious behavior of users, as well as the proliferation of viruses and malware. Also, on the technical front, social media applications require increased levels of bandwidth, storage and computational capacity, to support interactions through videos and other form of rich content. Moreover, the increased and differentiated use of social media will pose challenges for the interoperability of different applications, especially with regard to security and authentication schemes.

While AT&T (2008) study was conducted in reference to the business context, it is interesting to notice that similar considerations are also referred to government agencies and other types of organizations. For example, Bev et al. (2008) describe the case of government agencies. Among other issues, the study underlines the problems of (i) employees wasting time on social networks, (ii) risk of malware and spyware coming from high traffic sites, and (iii) bandwidth requirements. About the first issue, that we described as one aspect of the organizational costs, we argue that the problem is not specific to Web 2.0 technologies. In fact, a similar argument was used with respect to mobile phones, emails, etc. For this reason, it is better treated as a management problem instead of a technology problem. About security, efforts should be dedicated to at least mitigate the risks, if they cannot be canceled. Finally, with regard

to bandwidth and other technological issues, enough resources should be deployed, to allow at least some selected employees to use rich-content media to communicate with the public, in the most effective way.

To leverage the advantages of social networking, organizations and firms should support their transition from the individual adoption as feral systems to the formal incorporation into existing information systems. To achieve this goal, knowledge management professionals should act as social networking architects, in conjunction with other managers and IT professionals. In fact, social network analysis can highlight the patterns of connection among individuals and the main knowledge flows in a whole organization. Thus, it can be used by managers as a basis for reshaping the organization and advancing towards the business goals. Anklam (2004) describes three main types of intervention, to conduct after a social network analysis: (i) structural/organizational, i.e. change the organigrams to improve the knowledge transfer; (ii) knowledge-network development, i.e. overcome resistance to action on the basis of evidence, instead of intuition; (iii) individual/leadership, i.e. resolve problems with the particular role of individuals, for example acting as factual gatekeepers and resulting in a knowledge bottleneck. More in general, social network analysis can be useful to cope with common business problems, including: launching distributed teams, retention of people with vital knowledge for the organization, improve access to knowledge and increase innovation.

Along the same lines, Roy (2012) discusses the profile of leaders in Virtual Teams. In fact, apart from usual technical and leadership capacities, to work effectively in a virtual environment, they also need abilities to build relationships among participants and to defuse frustrations. In fact, on the one hand, they need particular communication skills, as well as good knowledge for operating video conferencing software and other CSCW tools. On the other hand, they must be able to establish trust, embrace diversity, motivating team members and fostering the team spirit.

CONCLUSION

The theories of participation in social networks and the general results in the field of social network analysis are important for dealing with some crucial issues of modern online social networks. The study of individual motivations in order to belong to an online social network can benefit from classical social networking models, that have been developed in the general context of human sociology. In assessing the performance of a social media, those models are of great importance. Also, it is crucial to find the appropriate parameters for measuring the success factors of online social networks and virtual communities.

In this article, the discourse started with the reasons for and the benefits of belonging to a social network, with particular reference to the theories of social capital. Then, the problem of information spreading (i.e., virality) was analysed, since it is crucial for understanding and improving the diffusion of knowledge and innovation inside and among online communities. One problem that limits the potential of online social networks is their misuse by some participants who, for various reasons, adopt antisocial behaviours. The identification of so-called “trolls” is still an open research topic and, in part, it can be facilitated by an “ad hoc” knowledge on the network. Thus, it is important to join the different competences of computer engineers, data scientists and knowledge management professionals.

To augment the topological analysis of a social graph, a promising research area regards the study of the semantics of links, to refine the models of participation in an online social network. In particular, this kind of knowledge could be used for determining the corrective actions to adopt for improving the success of a certain social media initiative.

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Chapter 15

An Examination of Factors That Influence Social Networking Community Participation Among Millennials

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ABSTRACT

This study investigates main and moderating factors that influence Millennials' intention to participate in a social networking community (SNC). The authors modified the unified theory of consumers' acceptance and use of technology (UTAUT2) to incorporate six main and two moderating factors to explain Millennials' SNC participation intention. By considering the implications of the unique characteristics of Millennials on their social networking behavior, the authors' model is better suited to answer what drives these tech-savvy individuals to participate in a SNC via such sites as Facebook. Specifically, the authors find that hedonic motivation, trust in technology, trust in community, and social influence are significant factors in influencing Millennials' SNC participation intention, with hedonic motivation being the most influential factor. In addition, gender and educational background moderate the main effects of these determinants in different manner. Theoretical and practical implications of these findings are discussed.

1. INTRODUCTION

The purpose of this paper is to further our understanding of factors that influence Millennials' participation intention in a social networking community (SNC). Millennials are individuals born between 1981 to 1996 (Dimock, 2018) who grew up in the Internet age and are regarded as the always connected, social and tech-savvy generation (Pew Research Center, 2014). The integral use of information technology

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(IT) in the Millennials' social lives sets them apart from generations before them (Pew Research Center, 2010). Being digital natives, Millennials belong to a generation in which they have been immersed with everything digital since childhood. It is no surprise that Millennials are the first adopters of emerging technologies like tablets and digital wearables (Fleming et al., 2015). They are also avid producers and consumers of all kinds of digital contents – from blogs to video to photos to music to apps, with 55% of them posted a selfie on a social media (Pew Research Center, 2014). Over 75% of Millennials admit that they cannot live without their laptops or mobile phones (Brown, 2011). Social media defines their lives as 80% of Millennials are on sites like Twitter, Facebook and Weibo to chat, post comments, and send messages (Brown, 2011). Indeed, Millennials named “technology use” as what made their generation unique (Pew Research Center, 2010). Their technology use behavior has transformed social networking sites (where a group of people stay connected via social media) into SNCs (where a group of people interacting in social networking sites to fulfill their social needs and extend relationship building from family and friends to complete strangers), a phenomenon of interest in this paper. Note that unlike the formal-type of SNC such as Enterprise Architecture Group in LinkedIn, SNC here refers to an individual's personal group of friends and connections.

Millennials are also becoming a market segment of growing importance. They represent 25% of the world population, with 77 million in the US, 500 million in India, and 200 million in China (Brown, 2011). Millennials are the most educated generation with 33% of them having a college degree. They are highly optimistic about their financial future, with 53% believe they will have enough income to live the lives they want (Pew Research Center, 2014). Ten percent of them are already successful entrepreneurs and nearly 50% of them want to run their own business in the future (The Nielsen Company, 2014). A better understanding of the opportunities the Millennials present will equip business with effective strategies to reach, connect, and engage with this emerging economic power for long-term growth and success.

While much has been written about Millennials' beliefs, values, attitudes, traits and the like (e.g., they are multitaskers, open to change, adept with social networking, self-expressive, willing to share personal interests, opinion, and behaviors, community-minded, associate IT with information seeking and entertainment) (Moore, 2012; Seppanen and Gualtieri, 2012), there is a dearth of studies on exploring the implications of the unique characteristics of Millennials on their social networking behavior (Bolton et al., 2013). This is especially prudent as extant literature in information systems (IS) today focuses primarily on topics of IT acceptance and adoption from a utilitarian perspective in organizational contexts. We still know little about what drives individuals to SNC in particular, not to mention having to deal with a generation of individuals who are both avid providers and consumers of digital contents on SNCs. In order to fill this gap in literature, we argue for research that reexamines, challenges, and extends existing theories and models to better explain Millennials' participation in SNCs. As such, we develop a model based on Venkatesh et al.'s (2012) unified theory of consumers' acceptance and use of technology (UTAUT2) to do so.

UTAUT2 is an extension of Venkatesh et al.'s (2003) unified theory of technology acceptance and use of technology (UTAUT) to predict behavioral intention and use of a technology in a consumer context. UTAUT2 shares the same impressive explanatory power as UTAUT in accounting for about 70% of the variance in behavioral intention and 50% of the variance in technology use (Venkatesh et al., 2012). We retain relevant factors in UTAUT2 and add new relationships in our model after synthesizing past literature on SNC participation. The resultant model has trust in technology, trust in community, hedonic motivation, effort expectancy, social influence, and facilitating conditions as main factors and gender

and educational background as moderating factors. We empirically tested our model from surveys of university students in Taiwan.

This study has both theoretical and practical contributions. Theoretically, we integrate IS technology use with psychological theories on knowledge sharing and intrinsic motivation to advance a model to explain Millennials' SNC participation intention. Practically, our study has managerial implications for SNC service providers, online advertisers, and brand managers.

The rest of the paper is organized as follows. We discuss the relevant theoretical background of this study leading to the development of our research model and hypotheses in the next two sections. The research method and research results are described in sections 4 and 5 respectively. Research findings are presented in section 6. Finally, research implications and future research directions are detailed in section 7.

2. THEORETICAL BACKGROUND AND MODEL DEVELOPMENT

Extant literature has heavily relied on Davis' (1989) technology acceptance model (TAM) and its extension, particularly Venkatesh et al.'s (2003) unified theory of acceptance and use of technology (UTAUT), to explain IS adoption intention and behavior. TAM established perceived usefulness and perceived ease of use as the fundamental determinants of individuals' acceptance and use of IT (Davis, 1989). Since its inception, TAM has undergone validation (e.g., Davis and Venkatesh, 1996; Sambamurthy and Chin, 1994), extension (e.g., Gefen et al., 2003; Venkatesh and Davis, 2000), and unification (e.g., Venkatesh et al., 2003; Venkatesh et al., 2012). These extensions of TAM are reflective of the rapid advancement in IT that requires adapting current understanding of IT acceptance and use to new contexts, e.g., online banking (Chandio et al., 2017), mobile commerce, (Kalinic and Marinkovic, 2016), tablet adoption (Magsamen-Conrad et al., 2015), and social media use (Rauniar et al., 2014).

Of all the extensions of TAM, Venkatesh et al.'s (2012) UTAUT2 is by far the most up-to-date, comprehensive, theoretically-based and empirically-tested model to explain consumers' acceptance and use of IT. UTAUT2 extends Venkatesh et al.'s (2003) UTAUT from an organizational to a consumer context. UTAUT integrates eight theories of technology use into a model that consists of three direct determinants of intention to use IT (performance expectancy, effort expectancy, and social influence), two direct determinants of actual usage of IT (intention and facilitating conditions), and four moderators of key relationships (age, gender, experience, and voluntariness). The eight theories include theory of reasoned action (Fishbein and Ajzen, 1975), technology acceptance model (TAM) (Davis, 1989), PC utilization (Thompson et al., 1991), theory of planned behavior (TPB) (Ajzen, 1991), motivational model (Davis et al., 1992), combined TAM and TPB (Taylor and Todd, 1995), innovation and diffusion theory (Rogers, 1995), and social cognitive theory (Compeau et al., 1999). The determinants of UTAUT are about utilitarian/extrinsic motivation, time and effort, and intentionality. Recognizing that UTAUT is not applicable to a consumer context, Venkatesh et al. (2012) proposed UTAUT2 to incorporate three new constructs: hedonic motivation, price value, and habit as important drivers of consumer use of mobile Internet and drop voluntariness as a moderator. While empirical support of UTAUT2 was reported, Venkatesh et al. (2012) cautioned its generalizability. In particular, our study is about Millennials as participants of SNCs. They are both providers and consumers of digital contents, not simply consumers of IT products and services. As a result, we follow Venkatesh et al.'s (2012) three steps process to develop a new model for our study: (1) identify irrelevant constructs in UTAUT2, (2) identify relevant

determinants from extant research, and (3) add new relationships. The way we develop the new model is in line with Venkatesh et al.'s (2016) recommendations for future UTAUT-related research.

2.1. UTAUT2 Adaption

UTAUT2 posits that there are seven direct determinants of consumer technology acceptance and use, namely, performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit. The effect of these direct determinants is moderated by individual differences in age, gender, and experience (Venkatesh et al., 2012). In adapting UTAUT2 to our context, the unique characteristics of Millennials help simplify the conceptualization of UTAUT2 in our model development by identifying and removing irrelevant constructs from consideration. First, Millennials associate IT with social networking, information sharing and entertainment purposes (Moore, 2012; The Nielsen Company, 2014). Their perceived values/benefits of participation in SNCs are derived from hedonic/intrinsic motivation of fun and social connectivity instead of utilitarian/extrinsic motivation of performance gains and monetary trade-offs. Furthermore, they are both providers and consumers of digital contents and not just consumers of IT products and services. This implies that performance expectancy and price value will no longer be meaningful determinants of Millennials' SNC participation intention and behavior. Second, Millennials are still in their formative stage when learning and experience can play a role in shaping their habitual behavior (Pew Research Center, 2010). Their openness to change means their technology usage behavior is neither automatic yet nor habitual. In fact, it has been speculated that Snapchat may surpass Facebook as the social media of choice for Millennials (Smith and Anderson, 2018; Plank and Shoulak, 2015). Consequently, habit is excluded as a determinant in our context. Third, Millennials are highly experienced with the use of IT and they belong to the below thirty age group. That means age and experience will not be significant individual differentiators among the Millennials. As a result, we drop performance expectancy, price value, habit, age, and experience from consideration in our model.

2.2. Extant Research on SNC Participation

We found support from extant literature in retaining four main determinants (effort expectancy, social influence, facilitating conditions, hedonic motivation) and one moderating factor (gender) from UTAUT2 in our model. Effort expectancy or perceived ease of use is defined as the degree of ease associated with technology usage and has been found to have a significant effect on SNC participation intention (Sledgianowski and Kulviwat, 2009; Wu et al., 2014). Social influence is defined as the perceived social pressure from friends and family on using a particular technology. Since participants of SNCs are affecting and being affected by their circle of influence both before and after they start interacting in SNCs, a positive relationship is found between social influence and SNC participation intention (Al-Debei et al., 2013; Kim, 2011; Lin, 2006; Pelling et al., 2009; Wu et al., 2014). Facilitating conditions refer to the extent in which resources and opportunities are available to enable technology usage. A high level of facilitating conditions is found to increase SNC participation intention (Al-Debei et al., 2013; Lin, 2006; Wu et al., 2014). Hedonic motivation or perceived enjoyment is the extent of pleasure or fun when using a technology. It has been found to be a critical antecedent of users' SNC participation intention (Basak and Calisir, 2015; Gwebu et al., 2014; Sun et al., 2014). Finally, Gefen and Ridings (2005) found that gender differences in communication determined what made a virtual community successful because

women communicated to give and get social support and affinity, as oppose to men communicated to maintain and reinforce social standing and independence. As a result, women were more likely than men to participate in a SNC for emotional support than information exchange. Therefore, gender is kept as a moderator in our model.

2.3. New Relationships Incorporated Into UTAUT2

UTAUT2 is proposed to model consumers' technology use intention and behaviors. Its emphasis is on explaining how and why consumers adopt such personal technology as mobile Internet. As mentioned earlier, our interest in this paper is about understanding Millennials' intention to participate in a SNC. It goes beyond studying Millennials' technology use as passive consumers of IT products/services to examining their knowledge-sharing and community building behaviors as active providers and users of digital contents. According to the social exchange theory (Blau, 1964) and social capital theory (Nahapiet and Ghoshal, 1998), two types of trust are pivotal in influencing individuals' knowledge-sharing behaviors – trust in technology and trust in community (Chen, 2012; Chiu et al., 2006; Chow and Chan, 2008; Fang and Chiu, 2010; Hsu and Lin, 2008; Hsu et al., 2007; Lin et al., 2009). Trust in technology refers to the trustworthiness of the technological environment where structural provisions are in place for privacy and security assurance. A trust in technology to provide proper security mechanisms (e.g., authentication, privacy protection, integrity, and reliability) is needed before a user willingly divulges personal opinions, photos, experiences, and the like on a SNC (Obal and Kunz, 2013; Gefen et al., 2003; McKnight et al., 2002). Trust in technology has been demonstrated to have a positive impact on behavioral intention in SNCs (Gwebu et al., 2014; Krasnova et al., 2010; Sledgianowski and Kulviwat, 2009; Sun et al., 2014; Wu et al., 2014).

Trust in community, on the other hand, is the tendency to rely on community participants to behave in a socially acceptable manner (e.g., refrain from opportunistic behavior, exhibit positive reciprocation, provide verified information). A trust in community that everyone behaves in such manner is crucial to establish interpersonal relationship within the SNC. It requires a faith in humanity that others act with integrity, competence, and benevolence. With such trust, one will risk becoming vulnerable and dependable on other community members (McKnight et al., 2002). Trust in community was shown to have an effect on participants' intention to give and get information through the SNC, thus affecting community building (Lin, 2006; Ridings et al., 2003). It is an important consideration for Millennials as well, as only 19% of them say people can be trusted, as opposed to 30 to 40% of generations before them (Pew Research Center, 2014). Following the significance of trust in knowledge sharing and community building, we incorporate trust in technology and trust in community into UTAUT2 as two new determinants in our model.

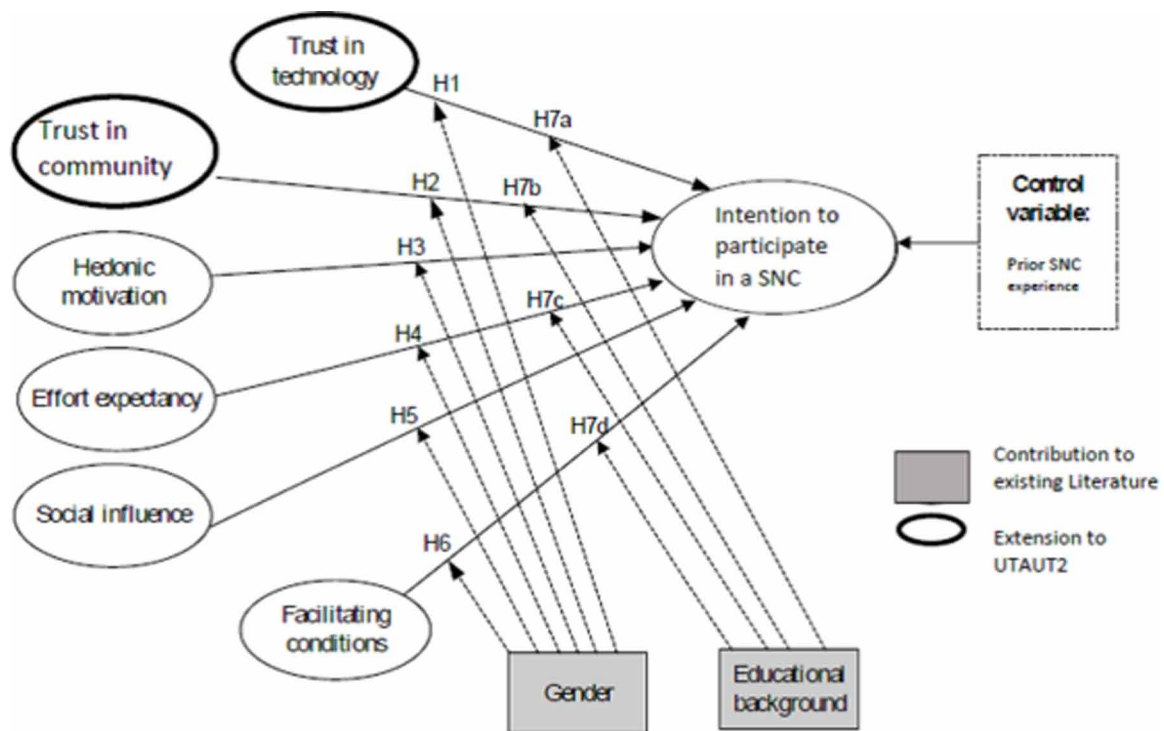
Recently, the theory of self-determination has been applied in knowledge sharing studies to underscore the importance of intrinsic motivation in driving human behaviors (Yoon and Rolland, 2012; Zhang et al., 2015). Self-determination theory posits that individuals are more inclined to perform intrinsically motivating activities that meet their psychological needs of competence, relatedness, and autonomy (Ryan and Deci, 2000). Yoon and Rolland (2012) showed that individuals' perceived competence and relatedness with a virtual community had a strong impact on their knowledge sharing behaviors in that community. More importantly, they found that familiarity with the virtual community, established through education and trainings, but not repeated interactions, was effective in raising perceptions of competence and relatedness. For example, knowing how to professionally share an article on a SNC shows one's

competence in searching and using a technical tool. On the other hand, sharing a relevant popular topic and high quality SNC content indicates one's connectivity to the latest news and happenings online, and relatedness to the community needs. We conceptualize familiarity with SNC participation through learning in our context as educational background of the Millennials. Although Millennials are avid users of technologies, their level of familiarity with SNCs can still be impacted by formal IT education and training. As a result, we add educational background as a new moderator in our model.

3. HYPOTHESIS DEVELOPMENT

Figure 1 shows the modified UTAUT2 model we propose to examine Millennials' intention to participate in a SNC.

Figure 1. Research model



Our proposed model has six main determinants – trust in technology, trust in community, effort expectancy, hedonic motivation, social influence, and facilitating conditions. The main effects of these determinants are moderated by two factors – gender and educational background. A set of seven hypotheses are developed and presented as follows.

3.1. Trust in Technology as Moderated by Gender

Trust in technology as related to SNCs, as explained earlier, is the trustworthiness of the technological environment. It can be considered as an institution-based trust belief that “the needed structural conditions are present (e.g., on the Internet) to enhance the probability of achieving a successful outcome in an endeavor” (McKnight et al., 2002, p.339). These structural conditions include technological and legal safeguards that protect users from cyber-bullies (CBC News, 2007) and cyber-predators (The Canadian Press, 2010). Prior studies show that trust in technology has a direct and positive effect on a user’s intention to participate in a SNC (Gwebu et al., 2014; Sledgianowski and Kulviwat, 2009; Sun, 2014; Wu et al., 2014). As such, SNC users who believe a site to be secure and trustworthy will be more willing to enter their personal details, photos, personal experiences, new discoveries and reviews on the site. The opposite is also true: when users feel that sites are vulnerable due to a lack of appropriate security mechanisms such as proper authentication of logon, privacy protection and code of conduct provision, they are less likely to participate. Krasnova et al. (2010) found that users’ perception of self-disclosure risk can be mitigated by their trust in the SNC provider and the availability of security and privacy control options.

Previous studies by Chaudhuri et al. (2003) and Buchan et al. (2008) on western countries and by Cho and Koh (2008) on the Asian continent suggest that trust is moderated by gender, such that men have a significantly higher level of trust in online activities than women. Women tend to be more skeptical of online activities (Rodgers and Harris, 2003) and less likely to trust and use online information resources. In contrast, men perceive a higher trustworthiness in online activities than women (Slyke et al., 2002), they are more likely to participate in online activities such as taking part in a SNC. Base on this line of reasoning, we hypothesize:

H1: The positive influence of trust in technology on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for men.

3.2. Trust in Community as Moderated by Gender

Trust in community is the tendency to rely on community participants to behave in a socially acceptable manner. It is a belief that community members will act with integrity, competence, and benevolence (McKnight et al., 2002). The predominant types of interaction for SNC users consist of sent or received messages or feedback from other participants. Users invite friends to be part of their own community through invitations. However, a user can request a connection with any other user. Although a SNC typically provides a permission function with which an individual can allow or prevent access to his or her online content (Sledgianowski and Kulviwat, 2009), it is still cumbersome to set access control to each element each time one shares contents on a SNC. Facebook, the biggest SNC site, continues to encounter photo tagging (for photo sharing) privacy issues (Mui, 2011), and privacy is a major concern for users — especially those who are unfamiliar with or neglectful of how to change the default security and privacy settings. Therefore, the posting of personal details and/or accepting friendship invitations from a person require a fundamental sense of trust regarding other SNC users. This situation can be compared to the level of trust that must exist between a user and a vendor engaging in e-commerce (Wang and Benbasat 2005), or the level of trust required between citizens and the government within an e-government website (Teo et al., 2009). Other studies on virtual communities have found that interpersonal trust significantly

influences members' intention to provide or access certain types of information (Lin, 2006; Ridings et al., 2003). As such, if users trust a SNC, they exhibit greater intention to participate.

Foubert and Sholley (1996) found that gender has a significant interaction effect on online self-disclosure. Other researchers have consistently discovered that trust is moderated by gender (Buchan et al., 2008; Chaudhuri and Gangadharn, 2003). Women tend to perceive a much higher risk than males in disclosing details of their private lives online (Mine and Rhom, 2000). They are also more concerned about privacy and disclosure of identifying information when communicating and forming relationships through a SNC than their male counterparts (Fogel and Nehmad, 2009). This is partially driven by the fact that women attempt to process information in a more comprehensive and conscientious manner than men (Kemp and Palan, 2006). As a result, women are more cautious about trusting a SNC. Following this line of argument, we hypothesize:

H2: The positive influence of trust in community on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for men.

3.3. Hedonic Motivation as Moderated by Gender

Hedonic motivation or perceived enjoyment is the extent of pleasure or fun when using a technology. Based on the general motivation theory, Davis et al. (1992), identified perceived enjoyment as a powerful intrinsic motivator for technology adoption and use. It pertains to an individual's perception of pleasure derived from engaging in an activity (Davis et al., 1992), such as using a SNC to maintain and develop interpersonal relationships. Unlike Web usage at work (Cheung et al., 2000), perceived enjoyment is certainly an important SNC participation factor for Millennials, as SNC usage is completely voluntary. Prior studies have found hedonic motivation to be a critical antecedent of users' SNC participation intention (Basak et al., 2015; Gwebu et al., 2014; Hsu and Lin, 2008; Kim et al., 2011; Sun et al., 2014).

A survey of 684 users of mobile chat services finds that enjoyment (as a hedonic motivation) is an important determinant of female users' intention to use SNCs, whereas their male counterparts are more motivated by extrinsic factors such as usefulness (Nysveen et al., 2005). SNCs are usually used for leisure purposes and this suggests that it better fits the desire for hedonic motivation among women. Therefore, we posit that:

H3: The positive influence of hedonic motivation on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women.

3.4. Effort Expectancy as Moderated by Gender

Effort expectancy or perceived ease of use refers to the degree of ease associated with participating in a SNC. Following TAM's finding that perceived ease of use is a key determinant of intention to use the technology, past research has confirmed that users have a stronger SNC participation intention if they believe that such participation is free of effort (Lin, 2006; Wu et al., 2014).

Bozionelos (1996) suggests that effort expectancy is more salient for women than men. Other studies have found that effort expectancy is a stronger determinant of individual intention for women (Venkatesh and Morris, 2000). This is because men may possess stronger technical oriented skills than women (Friessen, 1992; Trauth et al., 2003) since women conventionally "must accept that science and

technology is considered a masculine domain which can easily lead to a scrutinizing of their skills and abilities” (Wilson, 1992, p. 901). In separate studies by Liaw and Huang (2009) in Taiwan and Comber et al. (1997) in the United Kingdom, male students were found to exhibit a more positive attitude toward the use of computers than female students. As a result, we expect that:

H4: The positive influence of effort expectancy on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women.

3.5. Social Influence as Moderated by Gender

Social influence reflects the degree to which an individual believes that important others think or expect him or her to participate in a SNC. It is a construct integrating the concepts of social norm (Fishbein and Ajzen, 1975) and social factors (Thompson et al., 1991) to explain IT acceptance and use (Venkatesh et al., 2003). SNCs provide a platform for social connections among friends and other like-minded individuals to share knowledge, post comments, share photos, chat, seek information, send/receive messages, etc. It has been estimated that global social network users will increase from 1.47 billion people in 2012 to 2.55 billion people by 2017 (eMarketer, 2013). SNC sites such as Facebook, Twitter, LinkedIn and Weibo offer users a channel for friends or fans to extend their social influence across politics (Lebeaux, 2008), business (Richardson, 2008), knowledge management (Cayzer 2004), social networking and communications (Lin and Anol, 2008). Social influence, clearly, plays a role in influencing individual’s SNC participation intention (Wu et al., 2014; Al-Debei et al., 2013; Kim, 2011; Sledgianowski and Kulviwat, 2009; Lin, 2006).

Women have a higher disposition towards interpersonal relationships than men (Venkatesh and Morris, 2000; Venkatesh et al., 2000). This relational disposition tends to motivate women, more so than men, to participate in SNCs for rapport building and social connectivity reasons to maintain and strengthen existing relationships (Foster et al., 2012). Other researchers have found that social influence becomes more salient in terms of forming an intention to use new technology for women than for men (Venkatesh et al., 2000). Rhoades (1981) says that women are easier to be persuaded than men. A similar finding is reported by Carli (2001) and Bae and Lee (2011), stating that women are more easily influenced than men. Based on these findings, we posit:

H5: The positive effect of social influence on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women.

3.6. Facilitating Conditions as Moderated by Gender

Facilitating conditions refers to the degree to which an individual believes that resources and support are available to enable participations in a SNC. Facilitating conditions, including self-efficacy, resource availability, and objective factors in the environment, affect an individual’s perceptions of control over external and internal constraints on his/her behavior (Taylor and Todd, 1995; Thompson et al., 1991). Cheung et al. (2000) confirm that facilitating conditions are one of the most important factors influencing Internet usage. This is substantiated by a recent study showing that students with greater access to required resources (i.e., in the presence of facilitating conditions) spend more time using SNC sites (Hargittai, 2007). Logically, people look for support to resolve problems or difficulties in conducting

online activities. A high level of facilitating conditions is found to increase SNC participation intention (Al-Debei et al., 2013; Lin, 2006; Wu et al., 2014).

Slyke et al. (2002) indicate that women rate the complexity of Web activities higher than men and are more likely to require assistance in conducting online activities than their male counterparts. Following this line of reasoning, we hypothesize that:

H6: The positive influence of facilitating conditions on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women.

3.7. Moderating Effects of Educational Background

Educational background refers to the education and training that influence one's skills, knowledge, confidence, self-efficacy and therefore familiarity with the subject matter. As such, individuals with an IT educational background are expected to have a deep understanding of how to use technology effectively and efficiently. Gefen (2000) finds that familiarity with Web technologies builds trust in technology that promotes online purchasing intention. Similarly, Wang (2002) suggests that familiarity with IT influences one's trust in technology (or perceived credibility) of an electronic tax filing system. This in turn affects the behavioral intention to use the system. Recently, Yoon and Rolland (2012) show that individuals who are more familiar with virtual communities from education and training increase their trust of other people, thus become more active in sharing their knowledge in their virtual communities. Based on this reasoning, individuals with an IT educational background are more familiar with and more likely to trust a SNC because they have a higher level of self-efficacy and relatedness that motivate them to use the SNC, participate in online activities and interact with others in the community. As such, we hypothesize:

H7a: The positive influence of trust in technology on the intention to participate in a SNC is moderated by educational background, such that the effect is stronger for individuals with IT background.

H7b: The positive influence of trust in community on the intention to participate in a SNC is moderated by educational background, such that the effect is stronger for individuals with IT background.

Prior studies (Grant et al., 2009; Wallace and Clariana, 2005) show that individuals without an IT educational background put forth greater effort with SNCs as they perceive more cognitive efforts are required to operate the system and their self-efficacies are lower. They also tend to need help to use the system (Cowan and Jack, 2011). Following this line of argument, we propose:

H7c: The positive influence of effort expectancy on the intention to participate in a SNC is moderated by educational background, such that the effect is stronger for individuals without an IT background.

H7d: The positive influence of facilitating conditions on the intention to participate in a SNC is moderated by educational background, such that the effect is stronger for individuals without an IT background.

3.8. Control Variable

We regard familiarity and experience with SNCs as two related but distinct concepts. Familiarity with SNCs deals with the knowledge of SNCs gained through learning and interactions with them (Gefen, 2000). As such, familiarity is operationalized as educational background, as a moderator, in our model.

Experience, on the other hand, is one's extent of exposure to SNCs and is defined as the passage of time from initial SNC participation (Venkatesh et al., 2012). In order to ensure that the empirical results of this study are not caused by prior SNC experience, it is included as a control variable.

4. RESEARCH METHOD

4.1. Samples

The participants in this study are undergraduate students at a comprehensive university in Taiwan. University students are good representatives of the Millennials as they are the embodiment of a generation that grew up in the Internet age. For example, educated Millennials are more likely to be online, use SNCs, post/read digital contents, use mobile internet, and send/receive text messages (Pew Research Center, 2010). In addition, Millennials in Taiwan share comparable attitudes and behaviors as Millennials in other parts of the world (Brown, 2011). In fact, the pervasiveness of technology in the lives of Millennials has been attributed to the "global homogeneity" of this generation (Moore, 2012). The targeted SNC site is Facebook, as it is the largest and the most popular social networking site. More than 30% of their 1.4 billion monthly active visitors are from Asia-Pacific countries, as compared to 15% in the US (Plank and Tovar, 2015).

4.2. Instrument and Data Analysis Method

A survey research method was adopted for this research. The survey instrument was developed with items validated by prior research, whenever possible, and was adapted to the technologies and individuals considered in the present study. The measurements of the constructs used in this study are provided in Table 1. A paper-based survey was administered to the participating university students in the classroom. Their responses were collected after they completed the survey. The survey questions and their associated references are listed in Appendix A.

A total of 337 students took part in this study. The collected survey data were analyzed using the Partial Least Squares (PLS) method which was applied for testing similar models in the studies by Venkatesh (2008; 2003). PLS is used in this study because it is a preferred method when constructs are measured using reflective scales, and theoretical testing research in the field of SNCs is relatively small (Gefen et al., 2011). The PLS software utilized was SmartPLS (Ringle et al., 2005). The decision rules set by Jarvis et al. (2003) were used to determine whether constructs should be designated as reflective or formative (see Table 1). These decision rules involved considering the direction of causality from construct to indicators/items, interchangeability of the indicators, covariation among the indicators, and the nomological net of the construct indicators (Jarvis et al., 2003). To test the validity of reflective constructs, we examined the construct validity, discriminant validity, and internal reliability (using Cronbach's Alpha) of the constructs. To confirm the convergent and discriminant validity of the collected data, both intra-construct item correlations and inter-construct item correlations were examined (Fornell and Larcker, 1981).

Table 1. Measurement of constructs

Latent Construct	Construct Type	Sub Construct	Sub-Construct Type	Code	No. of Items	Reference
Trust in technology	Reflective	Perceptions of trust in technology	Reflective	TT1-3	3	(McKnight et al. 2002)
Trust in community	Reflective	Perceptions of trust in community	Reflective	TC1-3	3	(McKnight et al. 2002)
Hedonic Motivation	Reflective	Perceived enjoyment	Reflective	HM1-4	4	(Agarwal and Karahanna 2000; Davis et al. 1992)
Effort expectancy	Reflective	Perceived ease of use	Reflective	EE1-5	5	(Davis 1989),
Social influence	Reflective	Subjective norm	Reflective	SI1-2	2	(Ajzen 1991)
		Social factor	Reflective	SI3	1	(Thompson et al. 1991)
Facilitating conditions	Reflective	Perceived Behavioral Control	Reflective	FC1-3	3	(Ajzen 1991)
		Facilitating Conditions	Reflective	FC4	1	(Thompson et al. 1991)
Intention to participate in a SNC	Reflective	Continuance participation intention	Reflective	IP1-3	3	(Agarwal and Karahanna 2000)

Table 2. Gender and SNC experience cross-tabulation

	SNC Experience						Total
	< 1mth	1-3mths	3-6mths	6-9mths	9-12mths	>12mths	
Male	18	14	8	8	9	88	145
Female	12	11	10	4	11	108	156
Total	30	25	18	12	20	196	301

In an effort to rigorously identify the statistical significance of differences across gender groups and educational background groups and to conduct the statistical comparison of paths, the procedures suggested by Chin et al. (1996) was used in this study, similar to Keil et al. (2000) and Ahuja & Thatcher (2005). On the other hand, in evaluating the moderating effects, Kenny (2009) suggests that a complete moderation occurs when the causal effect of a predictor on an outcome variable becomes null as a moderator takes on a particular value. In addition, a discrete variable such as gender has a moderating effect on a causal relationship if "... the results are not strongly consistent within subgroups, or the results are strongly consistent but do not coincide with the overall results obtained after pooling over the subgroups" (Wermuth, 1989): p.82. The R-square statistic produced by the PLS indicates the fit of the research model in terms of explaining the variance in the sample.

5. DATA ANALYSIS AND RESULTS

5.1. Demographic Data

Among the 337 participants, the valid response rate was 89% after discounting the responses of 36 students who did not use a SNC voluntarily. Out of the remaining 301 undergraduate students, 198 of them (65.8%) were IT majors, who had taken quite a number of programming languages (such as Visual Basic, C++, Java, ASP.net), system design and analysis, database management and management information systems courses. The remaining 103 students (34.2%) were non-IT majors, who had taken only one introductory course in management information systems. A detailed cross-tabulation between gender and SNC experience is given in Table 2. Specifically, 48% were male, and 65% had more than 12 months experience using SNCs. Approximately 17% had between 3 and 12 months' experience using SNCs, and the remaining 18% had less than three months experience. It is observed in Figure 2 that the SNC participation rate among IT major students is higher than that of non-IT major students. The distributions of the male and female groups for both IT major and non-IT major undergraduate students are shown in Table 3.

Figure 2. Major and SNC experience (in months)

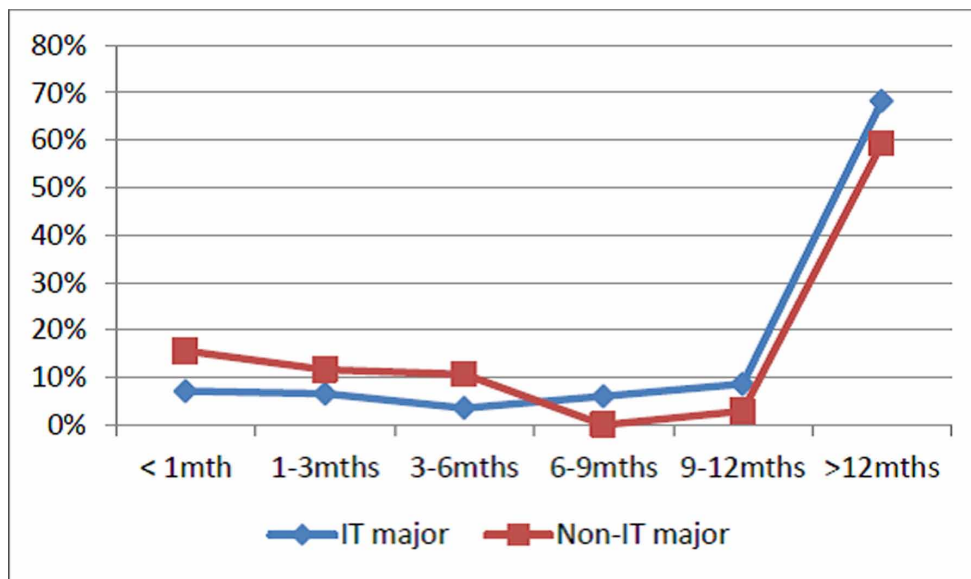


Table 3. Distribution of male and female groups

	IT Major	Non-IT Major
Male	105	40
Female	93	63
Total	198	103

5.2. The Measurement Model

To test for the problem of common method bias in the collected data, Harman's single factor test was conducted (Podsakoff et al., 2003). For this purpose, principle component factor analysis for one extracted factor and none-rotation was run using the SPSS. The result shows that the single factor explains less than 38% of the variation in sample data. Thus, the collected data does not indicate evidence of severe common method bias. Next, to further test the common method bias, the modeling of a latent common factor, as suggested in Liang et al. (2007) is carried out in SmartPLS. The results are shown in Appendix B. The average substantive variance of the indicators is 0.785, whereas the average method-based variance is 0.022. Besides, the ratio of the substantive variance to method variance is about 36:1 and most of the method factor loadings are either insignificant or less significant than the substantive factor loadings. This confirms that common method bias is unlikely to be a serious problem in this study.

Table 4. Factor loadings for the seven constructs

	Factor						
	EE	FC	HM	IP	TT	SI	TC
EE1	.644						
EE2	.741						
EE3	.777						
EE4	.605						
EE5	.781						
FC1		.797					
FC2		.731					
FC3		.892					
HM1			.542				
HM2			.711				
HM3			.701				
IP1				.802			
IP2				.820			
IP3				.789			
TT1					.865		
TT2					.866		
TT3					.909		
SI1						.882	
SI2						.803	
TC1							.557
TC2							.612
TC3							.695

EE= Effort expectancy, FC= Facilitating conditions, HM=Hedonic motivation, IP= Intention to participate in a SNC, TT= Trust in technology, SI= Social influence, TC= Trust in community

In order to confirm the convergent validity of the constructs, the factor loadings of each item on its corresponding construct were examined. Items with loadings less than 0.5 had been dropped, as shown in Table 4. As a result, items FC4, HM4, and SI3 were excluded from further path analysis. The Average Variance Extracted (AVE) for each construct is given in Table 5. All figures exceeded the 0.5 threshold suggested by Fornell and Larcker (1981). Moreover, the composite reliability values were all above 0.7, which was the internal consistency threshold recommended in the literature (Fornell and Larcker 1981; Nunnally 1978). Furthermore, discriminant validity was evident—all items loaded more heavily on their corresponding constructs than on other constructs (Table 4), and the square root of all AVEs exceeded the correlations among constructs (Table 6).

Table 5. Descriptive statistics, average variance extracted and composite reliability

Construct	Mean	Std. Dev.	AVE	Composite Reliability	Cronbach's Alpha
Trust in technology (TT)	4.066	1.344	0.872	0.953	0.927
Trust in community (TC)	4.715	1.027	0.740	0.895	0.825
Hedonic Motivation (HM)	5.112	1.062	0.788	0.918	0.866
Effort expectancy (EE)	4.914	1.031	0.648	0.901	0.865
Social influence (SI)	4.096	1.449	0.872	0.931	0.855
Facilitating conditions (FC)	4.771	1.176	0.822	0.932	0.892
Intention to participate in a SNC (IP)	4.914	1.173	0.863	0.949	0.921

Table 6. Correlation table

	TC	HM	EE	SI	TT	FC	IP
TC	0.860						
HM	0.650	0.888					
EE	0.471	0.522	0.805				
SI	0.296	0.308	0.193	0.934			
TT	0.341	0.222	0.051	0.044	0.934		
FC	0.401	0.386	0.427	0.196	0.137	0.907	
IP	0.526	0.596	0.357	0.309	0.308	0.349	0.929

Note: The square root of AVE is shown on the diagonal.

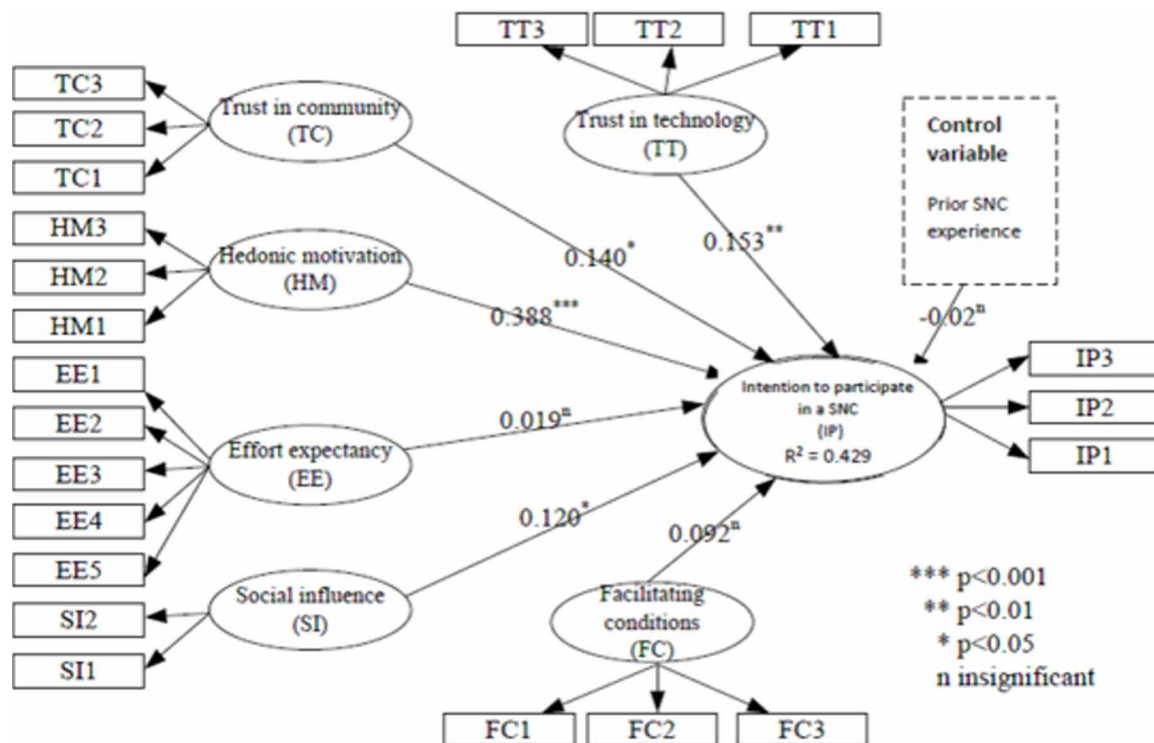
To justify for multi-group analysis, according to Sarstedt and Ringle (2010), an appropriate means of testing measurement model invariance in PLS may build on whether the measurement parameters are the same across all subgroups and whether the same construct is measured in all subgroups. The analysis in Appendix C proves that both the gender subgroups (in Appendix C) and the educational background subgroups (in Appendix C) demonstrate same and adequate construct reliability and discriminant validity within their subgroups. In addition, for analyzing the moderating effect in PLS, Carte and Russell (2003) suggest that item weights (for all constructs) showing that the two subgroups do not vary significantly in

construct score weighting are required. This requirement is met, and the results are shown in Appendix D for the gender subgroups and Appendix D for the educational background subgroups. All of the results indicate that items load and cross-load consistently across samples. Appendix D also shows convergent validity in both subgroups of gender and educational background.

5.3. The Structural Model

Based on the PLS analysis, the R-squared for the research model not including any of the moderating effects is 0.429. We found that trust in technology, trust in community, hedonic motivation, and social influence all have significant positive effects on the intention to participate in a SNC. Hedonic motivation (path coefficient = 0.388, t-value = 5.323, $p < 0.001$) is the most significant factor, followed by trust in technology (path coefficient = 0.153, t-value = 3.149, $p < 0.01$), trust in community (path coefficient = 0.140, t-value = 2.130, $p < 0.05$) and social influence (path coefficient = 0.120, t-value = 2.184, $p < 0.05$). Surprisingly, effort expectancy does not exhibit any significant effect on the intention to participate in a SNC (Figure 3). The reason may be that the hedonic factor outweighs the effort expectancy factor, or because the survey respondents do not perceive that an additional cognitive effort is required to participate in a SNC, due to the unique characteristics of early exposure to the digital world for Millennials.

Figure 3. Path analysis results for the entire sample



To justify for comparing the structural model results across the gender subgroups in a more rigorous way, *t*-statistics as suggested by Chin et al. (1996) to evaluate the differences in path coefficients across the model are computed in Appendix E. Following this, we can then make a valid comparison between the path model for the male subgroup (Figure 4-a) and the female subgroup (Figure 4-b). The result shows the significant positive influence of trust in technology (path coefficient = 0.247, *t*-value = 3.408, $p < 0.001$) and trust in community (path coefficient = 0.156, *t*-value = 1.983, $p < 0.05$) on the intention to participate in a SNC for male respondents, but not for female respondents. It appears that a complete moderation occurred. The statistical analysis for testing the significance of differences in the corresponding path coefficient between the male and female subgroups in Appendix E shows that the two path coefficients are significantly different. This suggests that the male subgroup in our sample trust in technology and social network community more than the female counterparts.

As such, H1 stating that the positive influence of trust in technology on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for men, is supported. In addition, H2, which states that the positive influence of trust in community on the intention to participate in SNC is moderated by gender, such that the effect is stronger for men, is supported. These are consistent with prior results (Lewis et al. 2008) that suggest women are more protective of their personal information, which in turn implies that women are more cautious with other people than their male counterparts are.

Both the male (path coefficient = 0.363, *t*-value = 4.185, $p < 0.001$) and female (path coefficient = 0.412, *t*-value = 3.738, $p < 0.001$) groups exhibited a significant positive influence of hedonic motivation on the intention to participate in a SNC. The path coefficient for the female subgroup is greater than the male subgroup; and this difference is statistically significant (see Appendix E). This provides the support for H3, which states that the influence of hedonic motivation on intention to participate in a SNC is moderated by gender, such that the effect is stronger for women. This result indicates that female perceives relatively more enjoyments in the participation in social networks; and this explains the reason women like SNCs (cf. (Hargittai, 2007)), and are more active in their use of SNCs compared to their male counterparts (Brenner, 2013). In contrast, the motivation for the male group to use SNCs would be something other than enjoyment – a similar situation in the use of other online systems.

Although effort expectancy seemingly has no significant influence on either the male or female subgroup in regards to their intention to participate in a SNC, the path coefficients from effort expectancy on the intention to participate in a SNC for men (path coefficient = -0.001, *t*-value = 0.016) and women (path coefficient = 0.023, *t*-value = 0.261) are significantly different from one another (*t*-value = 2.556, see Appendix E). According to Kenny (2007), the difference between the subgroups rather than the path coefficient significance determines the moderation effect. As a result, H4, which states that the positive influence of effort expectancy (i.e., perceived ease of use) on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women, is supported. This demonstrates that, to some degree, female subgroup thinks that the use of social media networks still requires a bit of related technology skill and familiarity than the male subgroup.

The results in Figures 4a and 4b indicate that social influence had no significant positive effect on the intention to participate in a SNC for both the male subgroup (path coefficient = 0.128, *t*-value = 1.620, $p > 0.05$) and the female subgroup (path coefficient = 0.123, *t*-value = 1.375, $p > 0.05$). The comparison test on the path coefficients from social influence to the intention to participate in a SNC conducted for the two subgroups (shown in Appendix E) are also found to be insignificantly different. Therefore, H5, which states that the effect of social influence on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women, is not supported. This implies that

there is no significant difference between men and women on how social influence affects their intention to participate in a SNC. So, in contrast to prior studies, our study does not support the notion that women are more easily persuaded by others than men to participate in a SNC. This finding can be due to differences in different generation group, having different social exposure and mindsets.

Facilitating conditions are found to be insignificant at $p < 0.05$ for both the male subgroup (path coefficient = 0.058, t -value = 0.667, $p > 0.05$) and female subgroup (path coefficient = 0.124, t -value = 1.488, $p > 0.05$). However, the statistical comparison test in Appendix E shows that there is a significant difference in the corresponding path coefficient between the male and female subgroups. Therefore, H6, which states that the influence of facilitating conditions on intention to participate in a SNC is moderated by gender, such that the effect is stronger for women, is supported. This finding is related to one's technology self-efficacy, i.e. when one's technology self-efficacy is low than facilitating conditions are needed to provide supports, otherwise it can cause barrier in one's intention to continue to use that technology.

Similar to the subgroup analysis involved in the gender subgroups, to justify for comparing the structural model results across the educational background subgroups in a more rigorous way, t -statistics as suggested by Chin et al. (1996) are computed to evaluate the differences in path coefficients across the models. The multi-group comparison test results, between the two subgroups of students majoring in IT and non-IT, are summarized in Table 7 (see Appendix F for details). We find that the IT major group, which has more of an IT educational background, shows a significantly stronger effect of the positive influence of trust in technology, and trust in community on participants' intention to participate in a SNC than the non-IT major subgroup. However, the t -statistics for testing the differences in the path coefficient, from trust in technology to the intention to participate in a SNC across the models, shows that there is no practical significance in the difference between the IT-major subgroup and non-IT major subgroup. Thus, H7a is partially supported and H7b is supported.

The result for H7a suggests that our survey respondents, regardless of their IT educational background, possess an almost similar level of trust in technology. On the other hand, the result for H7b indicates that IT educational background positively influences one's perceived relatedness, belonging and trust in one's SNC. This could be that trust is transferred from trust in IT/SNC to trust in community (Ng 2013).

Although the t -values are not significant (in Table 7) for the paths from effort expectancy and facilitating conditions on the intention to participate in a SNC, the non-IT major subgroup shows a stronger negative effect of effort expectancy (path coefficient = -0.122) as well as a stronger positive effect of facilitation conditions (path coefficient = 0.121) on the intention to participate in a SNC, as compared to the IT major group (path coefficient = 0.110 and path coefficient = 0.092, respectively). In comparing the significance of differences in the corresponding two path coefficients, the multi-group comparisons based on the parametric approach in Table 7 indicate that these two path coefficients are significantly different between the IT major and non-IT major subgroups. Thus, H7c is partially supported and H7d is supported. In general, the non-IT major group shows a stronger effect of the positive influence of facilitating conditions on the intention to participate in a SNC than the IT major group. This is because the availability of facilitating conditions can serve as a stimulus in case one (e.g., the non-IT major group) faces difficulties in using the technology.

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Figure 4. (a) Path analysis results for male group; (b) Path analysis results for female group

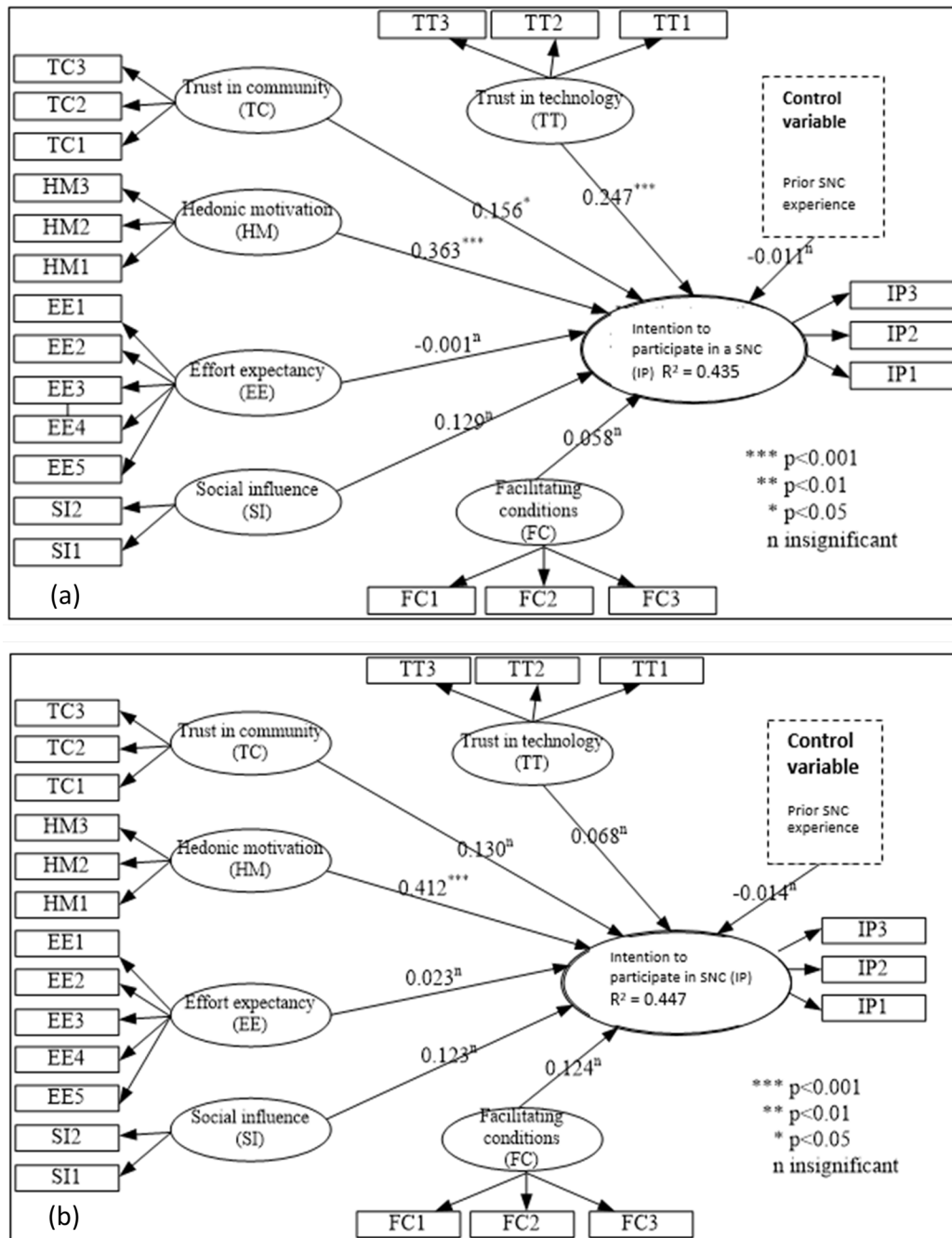


Table 7. PLS results - moderating effect of educational background

	IT Major		Non-IT Major		Statistical Comparison of Path Coefficients ^A
	β	T-Value	β	T-Value	T-Value
Trust in technology (TT)	0.164**	2.857	0.157	1.815	0.827
Trust in community (TC)	0.168*	2.334	0.064	0.634	10.238***
Hedonic Motivation (HM)	0.305***	3.495	0.534***	4.925	-19.820***
Effort expectancy (EP)	0.110	1.422	-0.122	1.532	24.400***
Social influence (SI)	0.161*	2.568	0.049	0.594	13.206***
Facilitating conditions (FC)	0.092	1.246	0.130	1.191	-3.595***
Experience	-0.055	0.930	0.051	0.803	
R-square	0.437		0.469		

*p < .05; **p < .01; ***p < .001; A – see Appendix F for details

6. DISCUSSION

In this study, hedonic motivation, trust in technology, trust in community, and social influence are demonstrated to be significant factors in influencing Millennials' intention to participate in a SNC, with hedonic motivation exhibiting the most impact. This is consistent with the results of Gwebu et al. (2014), and Sledgianowski et al. (2009). As such, website designers looking to improve a SNC should consider incorporating enjoyable entertainment applications and interesting user interfaces to maintain and increase the popularity and attractiveness of the SNC. They should also implement privacy and security mechanisms to ensure the trustworthiness of their sites. In addition, ways to increase participants' relatedness by promoting trust and bonding among one another while bridging ties with new participants should be considered.

Our results concerning the influence of effort expectancy on users' intention to participate in a SNC differ from prior studies (Lin, 2006; Sledgianowski and Kulviwat, 2009; Wu et al., 2014) since we do not find this factor to be significant. As the Millennial generation becomes more IT literate and access to the Internet becomes more widespread, the impact of effort expectancy on IT or online systems adoption will continue to diminish over time. Interestingly, in the absence of hedonic motivation, effort expectancy does become a significant determinant of the intention to participate in a SNC, which suggests that a lack of enjoyable applications leads users to focus greater attention on perceived ease of use of the system for social interaction and communication.

A summary of the tested hypotheses is presented in Table 8. Gender exhibits a moderating effect on the intention to participate in a SNC through trust in technology, trust in community, hedonic motivation, effort expectancy and facilitating conditions. However, contrary to previous studies, the impact of social influence is not moderated by gender. This finding is in line with the observation that both male and female Millennials place less trust in people and are less influenced by those who are unrelated to and/or unassociated with them (Pew Research Center, 2014). Furthermore, while men and women may have different goals in participating in a SNC, they are under no obligation to participate in a community that does not meet their needs, no matter who is in that community.

Educational background, operationalized as IT background (as seen in Tables 8), was found to play an important role in moderating the main effect of trust in community, hedonic motivation, effort expectancy, social influence and facilitating conditions. For students who are non-IT majors, social influence has no impact on their behavioral intention to participate in a SNC. We also observe that the negative effects of effort expectancy on the intention to participate in a SNC are indeed stronger for the non-IT major male group than the IT major male group, and likewise for the non-IT major female group versus the IT major female group. The majority of the hypotheses related to the moderator of educational background (as listed in Table 8) is proved to be significant. This indicates that one's choice of major is an important factor that influences behavioral intention to participate in a SNC through factors such as trust in community, facilitating conditions, and effort expectancy.

Table 8. Summary of tests of hypotheses and results

Hypothesis	Test Result
H1: The positive influence of trust in technology on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for men.	Supported
H2: The positive influence of trust in community on intention to participate in a SNC is moderated by gender, such that the effect is stronger for men.	Supported
H3: The positive influence of hedonic motivation on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women.	Supported
H4: The positive influence of effort expectancy on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women.	Supported
H5: The positive effect of social influence on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women.	Not Supported
H6: The positive influence of facilitating conditions on the intention to participate in a SNC is moderated by gender, such that the effect is stronger for women.	Supported
H7a: The positive influence of trust in technology on the intention to participate in a SNC is moderated by educational background, such that the effect is stronger for individuals with IT background.	Partially Supported*
H7b: The positive influence of trust in community on the intention to participate in a SNC is moderated by educational background, such that the effect is stronger for individuals with IT background.	Supported
H7c: The positive influence of effort expectancy on the intention to participate in a SNC is moderated by educational background, such that the effect is stronger for individuals without IT background.	Partially Supported**
H7d: The positive influence of facilitating conditions on the intention to participate in a SNC is moderated by educational background, such that the effect is stronger for individuals without IT background.	Supported

* The positive influence of trust in technology on the intention to participate in a SNC is stronger for individuals with IT educational background; but this relationship is not practically significantly moderated by educational background.

**The positive effect of effort expectancy on the intention to participate in a SNC has not been found to be stronger for individuals without IT training.

7. CONCLUSION

7.1. Theoretical Implications

This study adapts UTAUT2 model to explain Millennials' intention to participate in a SNC by integrating the underlying eight theories of UTAUT with social exchange, social capital, and self-determination theories from psychology. Our resultant model has six determinants (*hedonic motivation, trust in com-*

munity, trust in technology, effort expectancy, social influence, and facilitating conditions) and two moderators (*gender and educational background*). We provide a better understanding of Millennials' intention to participate in a SNC from an intrinsic motivation of enjoyment and relatedness perspective. This implies that Millennials will participate in a SNC as long as their innate psychological need of pleasure and the desire to be connected to others are met.

7.2. Implications for SNC Service Providers

SNC sites that provide interesting and enjoyable applications are better able to retain and/or increase Millennials' loyalty, and can better manage relationships with these tech savvy users. However, satisfying all Millennials is difficult because of their individual differences. Findings of our study show that individual differences pertaining to gender and IT educational background impose different requirements and standards for facilitating conditions, effort expectancy, trust in technology and trust in community. SNC service providers can consider the feasibility of providing Millennials with customized and dynamic SNC content and functionality tailored to their individual differences. For example, chat support, Q&A forum, or SNC training can be offered to women and individuals with non-IT background to increase their trust in technology, trust in community, facilitating conditions, and effort expectancy. SNC service providers can also develop more mechanisms to improve SNC security and privacy protection to ensure women Millennials feel safe and comfortable in the SNC environment. Trust is an important issue with social networking especially for the future development of social commerce. By properly establishing and maintaining site standards, and by promoting SNC familiarity through education and training, trust in technology and community can be elevated across all Millennials to ensure their SNC participations.

7.3. Implications for Online Advertising

Consumers in general and Millennials in particular are accessing new and existing types of online media, such as SNC, more frequently and for longer periods of time. Enterprises recently allocate greater percentages of their marketing budgets to this channel due to its relatively low costs and its pervasiveness. Although there are research and market reports indicating that many users of Facebook and other SNCs remain dissatisfied with privacy levels (Xu et al., 2013), frequent website changes, and increases in commercialization and advertising (Gaudin, 2010), this does not necessarily mean that online advertising does not have its place within SNCs. The issue simply relates to how and who to target with what types of advertisements.

The findings from this research help to answer these questions. A better understanding of the characteristics and preferences of Millennials enables advertisers to provide target advertising more efficiently, deliver the right content to the right audience, as well as develop a platform for brand management. For example, e-marketers can focus more on advertising male-oriented products as male Millennials have more trust in technology and communities than females. In addition, knowing women Millennials' SNC participations are more intrinsically motivated than men, advertising to women should be more than expressing a brand message. It should provide a platform of two-way communication between women and the brand for relationship building, feedback and/or review solicitation, and electronic word-of-mouth viral marketing (IBM 2012; Tadena 2015).

7.4. Limitations and Future Study

This study focuses on Millennial users of Facebook in Taiwan. As such, the results discussed are only applicable to other SNCs with similar purposes, contents, and user groups. In addition, this study excludes performance expectancy from the research model as Millennials associate IT primarily for fun and enjoyment instead of work-related activities. Some studies, however suggest that perceived usefulness has a significant influence on users' intention to use SNCs (Al-Debei, 2013; Lin and Lu, 2011; Shin, 2010; Wu, 2014) and different countries also present different motivators and barriers for using SNCs (see Chang and Zhu, 2011; Kim et al., 2011). Thus, further studies may examine other motivations behind using a SNC such as the performance expectancy factor especially if job-related SNCs are examined.

Different types of SNCs such as Snapchat (a photo sharing site), Twitter (a microblogging site), LinkedIn (a SNC for professional occupations) and Research Gate (a SNC for researchers and scientists) require additional studies focusing on a different set of factors such as credibility of a user profile, reliability of the data provided, reciprocity/shared values among members, and cultural differences. Moreover, in light of the low R-square value, further study is needed to examine additional factors that may be significant in influencing SNC participations, potentially including webpage design, website navigation style (cf. Nathan and Yeow, 2011), and the impact of online advertising.

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An Examination of Factors That Influence Social Networking Community Participation Among Millennials

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APPENDIX A

Table 9. Survey items and associated reference

Construct	Items	Ref.
Trust in technology	1. The Internet has enough safeguards to make me feel comfortable using it. 2. I feel assured that legal and technological structures adequately protect me from problems on the Internet. 3. I feel confident that the encryption and other technological advances on the Internet make it safe for me to transact (i.e., socialize with others) there.	(McKnight et al., 2002)
Trust in community	1. I feel fine interacting with the SNC since it fulfills my needs of interaction efficiently. 2. I always feel confident that I can rely on the responses and feedback from the SNC when I interact with them. 3. I am comfortable relying on the contents of any discussion topic from the SNC.	(McKnight et al., 2002)
Hedonic motivation	1. The actual process of participating in a SNC is pleasant. 2. I have fun participating in a SNC. 3. Participating in a SNC bores me. 4. I enjoy participating in a SNC.	(Agarwal and Karahanna 2000; Davis et al., 1992)
Effort expectancy	Perceived ease of use 1. Learning to operate the system would be easy for me. 2. I would find it easy to get the system to do what I want it to do. 3. I would find the system easy to use. 4. Using Facebook involves too much time doing mechanical operations (e.g. data input). (reversed scale) 5. It takes too long to learn how to use Facebook to make it worth the effort. (reversed scale)	(Davis, 1989)
Social influence	Subjective Norm 1. My friends think that I should use the system. 2. My classmates think that I should use the system.	(Ajzen, 1991)
	Social Factors 3. I use the system because of a proportion of my classmates use it.	(Thompson et al., 1991)
Facilitating conditions	Perceived Behavioral (Control) 1. I have control over using the system. 2. I have the resources necessary to use the system. 3. I have the knowledge necessary to use the system.	(Ajzen, 1991)
	Facilitating Conditions 4. Specialized instruction concerning the system was available to me.	(Thompson et al., 1991)
Intention to participate in a SNC	1. I intend to participate in a SNC in the future. 2. I expect my use of the SNC to continue in the future. 3. I plan to use the SNC in the future.	(Agarwal and Karahanna, 2000)

APPENDIX B

Table 10. Common method bias analysis

Construct	Indicator	Substantive Factor Loading (R1)	R1-Square	Method Factor Loading (R2)	R2-Square
Facilitating conditions	FC1	0.904***	0.818	0.099	0.010
	FC2	0.895***	0.802	0.117	0.014
	FC3	0.920***	0.847	0.076	0.006
Intention to participate in a SNC	IP1	0.938***	0.879	0.088	0.008
	IP2	0.927***	0.860	0.095	0.009
	IP3	0.922***	0.851	0.097	0.009
Hedonic Motivation	HM1	0.864***	0.747	0.117	0.014
	HM2	0.908***	0.825	0.139*	0.019
	HM3	0.891***	0.794	0.203***	0.041
Effort expectancy	EE1	0.793***	0.629	0.077	0.006
	EE2	0.837***	0.700	0.051	0.003
	EE3	0.837***	0.701	0.145*	0.021
	EE4	0.729***	0.531	0.438***	0.192
	EE5	0.835***	0.696	0.280	0.078
Social influence	SI1	0.932***	0.868	0.029	0.001
	SI2	0.938***	0.879	0.059	0.004
Trust in community	TC1	0.855***	0.731	0.163**	0.026
	TC2	0.872***	0.760	0.174**	0.030
	TC3	0.854***	0.730	0.034	0.001
Trust in technology	TT1	0.933***	0.870	0.020	0.000
	TT2	0.922***	0.850	0.003	0.000
	TT3	0.947***	0.897	0.007	0.000
	Average	0.884	0.785	0.114	0.022

*p < .05; **p < .01; ***p < .001

APPENDIX C

Table 11. Composite reliabilities and discriminant validity for the two gender and educational background subgroups

3-1: The Gender Subgroups																
	Male Subgroup								Female Subgroup							
	CR	Correlation of Constructs							CR	Correlation of Constructs						
		1	2	3	4	5	6	7		1	2	3	4	5	6	7
1. EE	0.90	0.80							0.90	0.81						
2. FC	0.93	0.43	0.90						0.93	0.42	0.91					
3. IP	0.94	0.31	0.28	0.92					0.96	0.40	0.41	0.94				
4. HM	0.90	0.49	0.36	0.58	0.87				0.93	0.56	0.42	0.62	0.91			
5. SI	0.93	0.21	0.16	0.24	0.23	0.93			0.93	0.18	0.22	0.37	0.37	0.93		
6. TC	0.90	0.46	0.37	0.51	0.63	0.16	0.86		0.90	0.49	0.43	0.55	0.67	0.40	0.86	
7. TT	0.96	0.06	0.05	0.40	0.27	-0.04	0.34	0.95	0.94	0.05	0.22	0.23	0.17	0.14	0.35	0.92
3-2: The Educational Background Subgroups																
	IT Major Subgroup								Non-IT Major Subgroup							
	CR	Correlation of constructs							CR	Correlation of constructs						
		1	2	3	4	5	6	7		1	2	3	4	5	6	7
1. EE	0.89	0.79							0.92	0.83						
2. FC	0.92	0.44	0.89						0.95	0.41	0.93					
3. IP	0.95	0.42	0.33	0.93					0.95	0.27	0.43	0.92				
4. HM	0.90	0.55	0.34	0.57	0.87				0.95	0.52	0.51	0.64	0.92			
5. SI	0.93	0.15	0.14	0.31	0.25	0.93			0.93	0.28	0.35	0.29	0.36	0.93		
6. TC	0.89	0.47	0.33	0.53	0.64	0.24	0.94		0.90	0.48	0.52	0.52	0.68	0.37	0.87	
7. TT	0.95	0.02	0.10	0.29	0.18	0.02	0.27	0.94	0.95	0.12	0.23	0.36	0.30	0.08	0.47	0.93

EE=Effort expectancy, FC= Facilitating conditions, IP= Intention to participate in a SNC, HM= Hedonic motivation, SI= Social influence, TC= Trust in community, TT=Trust in technology.CR= Composite reliability, Note: Diagonal is the square-root of the construct's AVE. For adequate discriminate validity, diagonal elements should be greater than corresponding off-diagonal elements

APPENDIX D

Table 12. Item weights and cross loadings for the two gender subgroups

	Male Subgroup							Female Subgroup						
	EE	FC	IP	HM	SI	TC	TT	EE	FC	IP	HM	SI	TC	TT
EE1	0.77							0.84						
EE2	0.85							0.89						
EE3	0.87							0.83						
EE4	0.69							0.66						
EE5	0.81							0.82						
FC1	0.39	0.92						0.44	0.93					
FC2	0.41	0.88						0.35	0.88					
FC3	0.36	0.91						0.33	0.91					
IP1	0.37	0.28	0.93					0.41	0.36	0.95				
IP2	0.26	0.23	0.93					0.31	0.37	0.93				
IP3	0.23	0.25	0.89					0.38	0.41	0.94				
HM1	0.47	0.39	0.53	0.88				0.49	0.31	0.52	0.85			
HM2	0.39	0.28	0.51	0.88				0.54	0.43	0.60	0.95			
HM3	0.43	0.25	0.45	0.85				0.50	0.41	0.57	0.92			
SI1	0.22	0.13	0.17	0.17	0.90			0.16	0.17	0.33	0.32	0.93		
SI2	0.18	0.17	0.26	0.25	0.96			0.18	0.24	0.36	0.37	0.94		
TC1	0.43	0.38	0.46	0.59	0.17	0.86		0.47	0.41	0.53	0.64	0.36	0.89	
TC2	0.40	0.32	0.49	0.58	0.16	0.89		0.38	0.36	0.44	0.58	0.39	0.87	
TC3	0.35	0.23	0.35	0.45	0.07	0.83		0.40	0.35	0.44	0.50	0.28	0.83	
TT1	0.07	0.03	0.38	0.24	-0.06	0.33	0.94	0.04	0.21	0.19	0.17	0.14	0.30	0.90
TT2	0.00	0.03	0.33	0.22	-0.06	0.25	0.94	0.07	0.18	0.24	0.15	0.14	0.31	0.92
TT3	0.09	0.09	0.42	0.31	0.00	0.37	0.97	0.03	0.23	0.20	0.15	0.10	0.36	0.92

EE=Effort expectancy, FC= Facilitating conditions, IP= Intention to participate in a SNC, HM= Hedonic motivation, SI= Social influence, TC= Trust in community, TT=Trust in technology. Note: Bold are the item weights showing that the two subgroups do not vary significantly in construct score weighting (Carter and Russell 2003).

APPENDIX E

Table 13. Item weights and cross loadings for the two educational background subgroups

	IT Major Subgroup							Non-IT Major Subgroup						
	EE	FC	IP	HM	SI	TC	TT	EE	FC	IP	HM	SI	TC	TT
EE1	0.78							0.86						
EE2	0.89							0.82						
EE3	0.82							0.89						
EE4	0.62							0.78						
EE5	0.82							0.81						
FC1	0.42	0.92						0.44	0.94					
FC2	0.41	0.85						0.34	0.93					
FC3	0.35	0.91						0.34	0.91					
IP1	0.46	0.32	0.94					0.29	0.38	0.95				
IP2	0.33	0.27	0.92					0.23	0.42	0.94				
IP3	0.37	0.33	0.93					0.23	0.39	0.88				
HM1	0.54	0.33	0.51	0.86				0.44	0.45	0.52	0.88			
HM2	0.45	0.30	0.50	0.88				0.50	0.48	0.65	0.96			
HM3	0.44	0.24	0.46	0.86				0.51	0.49	0.61	0.93			
SI1	0.12	0.15	0.27	0.21	0.93			0.32	0.21	0.19	0.28	0.89		
SI2	0.15	0.11	0.31	0.26	0.94			0.23	0.39	0.32	0.37	0.96		
TC1	0.44	0.34	0.50	0.63	0.18	0.87		0.49	0.48	0.50	0.61	0.42	0.89	
TC2	0.38	0.31	0.46	0.55	0.24	0.87		0.40	0.40	0.47	0.64	0.36	0.90	
TC3	0.40	0.19	0.40	0.46	0.20	0.83		0.35	0.48	0.39	0.50	0.15	0.82	
TT1	0.02	0.08	0.26	0.16	0.02	0.27	0.93	0.11	0.20	0.34	0.30	0.07	0.42	0.93
TT2	0.01	0.08	0.29	0.17	0.06	0.24	0.93	0.08	0.17	0.28	0.21	0.01	0.36	0.92
TT3	0.03	0.11	0.26	0.18	-0.01	0.27	0.95	0.13	0.26	0.38	0.32	0.12	0.53	0.94

EE=Effort expectancy, FC= Facilitating conditions, IP= Intention to participate in a SNC, HM= Hedonic motivation, SI= Social influence, TC= Trust in community, TT=Trust in technology. Note: Bold are the item weights showing that the two subgroups do not vary significantly in construct score weighting (Carte and Russell 2003).

APPENDIX F

Table 14. Model summary – Statistical comparison of paths for the two gender subgroups

Construct	Male (N1=145, R1-Squared=0.435)			Female (N2=156, R-Squared=0.447)			Statistical Comparison of Paths ^A
	Std. Path Coefficient	T-Value	Std. Error	Std. Path Coefficient	T-Value	Std. Error	T-Value
Trust in technology -> Intention to participate in a SNC	0.247***	3.408	0.073	0.068	0.865	0.079	20.459***
Trust in community -> Intention to participate in a SNC	0.156*	1.983	0.078	0.130	1.255	0.104	2.391*
Hedonic motivation -> Intention to participate in a SNC	0.363***	4.185	0.087	0.412***	3.738	0.110	-4.270***
Effort expectancy -> Intention to participate in a SNC	-0.001	0.016	0.074	0.023	0.261	0.087	-2.556*
Social influence -> Intention to participate in a SNC	0.128	1.620	0.079	0.123	1.375	0.089	0.542
Facilitating conditions -> Intention to participate in a SNC	0.058	0.667	0.087	0.124	1.488	0.083	-6.714***

*=0.10 significance **= 0.05 significance, ***= 0.001 significance

^AThe statistical comparison of paths was carried out using the following procedure as suggested by Chin et al. (1996) and applied by Keil et al. (2000) and Ahuja & Thatcher (2005):

$$S_{\text{pooled}} = \sqrt{\left[\frac{(N_1 - 1)}{(N_1 + N_2 - 2)} \times SE_1^2 + \left[\frac{(N_2 - 1)}{(N_1 + N_2 - 2)} \right] \times SE_2^2 \right]}$$

$$t = (PC_1 - PC_2) / [S_{\text{pooled}} \times \sqrt{(1/N_1 + 1/N_2)}]$$

APPENDIX G

Table 15. Model summary – Statistical comparison of paths for the two educational background subgroups

Construct	IT Major (N1=198, R1-Squared=0.437)			Non-IT Major (N2=103, R-Squared=0.469)			Statistical Comparison of Paths ^A
	Std. Path Coefficient	T-Value	Std. Error	Std. Path Coefficient	T-Value	Std. Error	T-Value
Trust in technology -> Intention to participate in a SNC	0.164**	2.857	0.057	0.157	1.815	0.086	0.827
Trust in community -> Intention to participate in a SNC	0.168*	2.334	0.072	0.064	0.634	0.101	10.238***
Hedonic motivation -> Intention to participate in a SNC	0.305***	3.495	0.087	0.534	4.925	0.108	-19.820***
Effort expectancy -> Intention to participate in a SNC	0.110	1.422	0.078	-0.122	1.532	0.079	24.400***
Social influence -> Intention to participate in a SNC	0.161*	2.568	0.063	0.049	0.594	0.082	13.206***
Facilitating conditions -> Intention to participate in a SNC	0.092	1.246	0.074	0.130	1.191	0.109	-3.595***

*= 0.10 significance **= 0.05 significance, ***= 0.001 significance

^AThe statistical comparison of paths was carried out using the following procedure as suggested by Chin et al. (1996) and as shown in Appendix F.

Chapter 16

Identity Design and Identities Exhibited in Social Networks: A Review Based on Instagram Influencers

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ABSTRACT

Identity emerges as a flexible, multidimensional, variable, and slippery concept that cannot be defined through the processes of discussion and understanding. The new construction area of this concept, which is regarded as a process constructed on the social plane, is the social networking platforms. This is because these platforms are the most common communication environments where people and their lifestyles are presented to the outside world, in addition to the cheap and rapid satisfaction of their needs for information and entertainment. Face-to-face communication and language practices are not sufficient enough in the identity presentation anymore. Individuals choose to design and update their identities through social networks and to perform an image-based identity manifestation. This chapter examines how identity was established and manifested through social networks, and analyzes the identities the popular people in these networks designed and exhibited.

INTRODUCTION

As of 2019, 4.3 billion people are Internet users, while 3.4 billion people (about 45% of the world's population) are social media users (*Global Overview Report* <https://p.widencdn.net/kqy7ii/Digital2019-Report-en>). Even this statistic alone will suffice to determine the position and importance of social media today. These platforms, which have been integrated into everyday life with the information age, have been easily accepted by masses. Even though they do not have a long history, they have been adopted in a short period of time. Every area of social life, from politics to social movements, from entertainment to education, has been influenced by the Internet and social networks.

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Social Media and Social Networks

Social networking sites are applications that provide information and interaction to users through network technologies (Boyd and Ellison, 2007). In the Merriam-Webster dictionary, social media is defined as “forms of electronic communication (such as websites for social networking and microblogging) through which users create online communities to share information, ideas, personal messages, and other content (such as videos).” According to Mayfield, it is a new type of online media where a high level of sharing occurs and has the following properties (Mayfield, 2008: 5):

- **Participants:** Support and encourage individuals to contribute to the content and provide feedback.
- **Openness:** Social media platforms are open to feedback, they actively allow information sharing, and users can make comments there.
- **Conversation:** They allow bi-directional communication.
- **Community:** They pave the way for the formation of communities in a very short period of time.
- **Connectedness:** They allow links to be created to other pages and media related to topics that interest users.

Unlike traditional media, social media has its own characteristics. These can be summarized as the *determination of the content by the user, lack of time and space limitations, being in an interactive structure and the fact that users are independent of any publisher* (Erkul, 2009: 3). Social networks are the big living spaces within the small “worlds” that people create. People interacting in the Internet environment create a small world of their own. The small-world phenomenon was first discovered by sociologist Stanley Milgram in a mail experiment in 1967. Milgram has proposed a theory claiming that everyone in the world is no more than 6 people away from each other, and he has tested it. According to the classification with six degrees that emerged in the experiment, a person can reach someone he does not know through a maximum of 5 people. Being inspired by this experiment, the first social networking site on the Internet has been called “SixDegrees” (Patch, 2004, p. 4 as cited in Onat ve Alikılıç, 2008, pp. 1116–1117).

Popularity, Popular Culture and Social Media

The etymology of the term “popular” can be traced back to the terms “*populace, population, public, and publication*” (Batmaz, 2006, p. 19). The term, which meant “public belonging to the people” in the late medieval period, is used to mean “*loved or chosen by many people*” in the linguistic sense nowadays (Erdoğan & Alemdar, 2005, p. 9). Williams also described the concept as “highly admired by many people and something consciously done to gain appreciation” (Storey, 2009, p. 6). Popular culture is the whole of beliefs, practices and norms that are embraced and shared by a broad circle of people — that is, by almost everyone, if not everyone (Schudson, 1999, p. 169). The middle class, which has changed and thrived through urbanization, has become the strongest bearer of popular culture (Storey, 2009, p. 13). The popular culture, which Rowe (1996, p. 20) considers a leisure practice, prioritizes the elements of entertainment and curiosity. Today, most modern media have also become an entertainment tool, and public events constitute a very insignificant part of media content. Therefore, media has become the primary means in manifesting popular cultural events (Curran, 1997, p. 146).

McQuail has stated that popular cultural content is reflected by the media and that this content is again formatted through the media (McQuail, 1994, p. 40). Popular culture, which is easily accessible to everyone, is unavoidably caught by the radar of the media because of this characteristic of it (Çağan, 2003, p. 77). Social media environments are easily accessible, just like the popular culture, in addition to having an interactive structure. Therefore, a strong flow of information occurs through these environments. Many virtual cultural environments ranging from entertainment to consumption preferences emerge, and popular cultural elements are displayed on this ground created by social networks (Karaduman, 2017, p. 12). Social media, which gathers millions of people in a room, has become a social, cultural and industrial form, not just a technological tool. Social media environments have now evolved into an administrative communication tool that shows, presents and evaluates “what is popular, what is popularized and what is intended to be made popular” (Erdoğan, 2004, p. 15).

Identity, Social Identity and Social Media

Hall defines identity as designs of belonging — continuously established, undertaken and owned by the discourses, conditions and experiences — which are used to address the need for identification and are also formed by different cultural elements (Binark, 2001, p. 75). While the identity phenomenon in the pre-modern period was a concept that was unquestionable and unnegotiable, this situation has changed with modernism, and the concept of identity has become something that is personal, mobile, and open to change and innovation (Karaduman, 2010, p. 2890). According to Kellner, the features of the modern identity are as follows (Kellner, 2001, pp. 195–196):

- The identity has been drawn into the social context and become linked to the “other.” And thus, its boundaries have been expanded.
- It has evolved into a selectable, producible and reproducible form.
- In this selection and production process, social norms, social roles and expectations have settled in the position of a reference center.
- Identities now realize that they are in a position to change at any time.

With the “other” becoming prevalent in the identification of identities in the modern period, certain theories concerning the social aspect of identity have been proposed. Names such as Tajfel and Turner (1976, 1978, 1988) have proposed the social identity theory. Goffman emphasized the identities displayed through daily life. Brewer has proposed that two basic human motives — the need to be unique and the necessity of belonging — are decisive in the formation of social identity, and said that individuals’ inclusion and differentiation needs are thus met (Padilla & Perez, 2003, p. 43). Depending on the place of identity on the social plane, individuals distinguish themselves from other groups to raise their positive social judgments and their collective self-esteem. Individuals and groups who do not have satisfactory social identities will try to re-establish/acquire positive identification through “*mobility, assimilation, creativity or competition*” (Jenkins, 2016, pp. 125–126). Goffman has conceptualized this situation as elements such as the highlighting of social category in interpersonal interactions, as well as the image/face that they offer based on their social status. According to Goffman, the role of a person in the relationship with others will be perceived as an image in the mind of the opposite party (Bilgin, 2007, p. 13). Goffman concentrates on the concept of “self” and explains how the person reviews and presents himself by updating himself in the event that he encounters the other. He explains to which means the

person refers to by using the concept of “self-presentation”. The strategy the person develops when making this presentation is bi-directional. On the one hand, he shapes the impressions he desires to give; on the other, he chooses to conceal the impressions that he dislikes and avoids. This situation is described as impression management. This bi-directionality in the presentation of the self is hidden in Goffman’s definition of the dual self. According to him, the consensual self — the self that is formed as a result of the practices of both the performer and the observer during an interaction — and the player self implicitly coexist in each individual. This is because the moment an individual gets in touch with another, he actually goes on a stage in front of the other and interacts with the other by transferring some things in this scene, and by covering some things over some other things (Bayad, 2016, p. 83).

With postmodernism, the concept of identity would evolve once again. In the construction of post-modern identity, where unruliness and indeterminateness get to be dominant, slipperiness will prevail and the antecedent paradigm of the modern era, “the other,” will be replaced by concepts such as originality, uncertainty, diversity, complexity and relativism (Karaduman, 2010, p. 2894). Bauman, questioning the causes of the need to obtain identity, claims it to be the reason to get rid of the annoying discomfort of the uncertainty of “neither this nor that.” This is because the modern social statutes where belongingness is resolved are now inadequate in resolving this need. However, in today’s mobility, it also points to the difficulty of identifying someone with something. The identity, described as “a clock to be removed when needed” by Weber, is constructed on the move, planned to be short term and is short-lived, again according to him (Bauman, 2017, p. 38–43).

Social media networks provide the person with a continuous identity development process through the opportunity for global communication and continuity that they offer (Bakıroğlu, 2013, p. 1049). According to Schroeder (1994, pp. 524–525), virtuality circulates the desire of people who wish to re-express themselves/express themselves by renewing.

With online social networks which have evolved with the advancement of communication technologies, the issue of time and space has disappeared, and the room for maneuver has expanded. In these networks, which are open 7/24, people open their everyday lives to the outside world — in every situation they find opportunity — and reflect/build their identities. Individuality that Niedzviecki (2011, p. 18) describes as new conformism sits on a central plane through social networking environments. Again, according to Niedzviecki, the awareness of being individual will be noticeable by being followed by others and by receiving comments (Niedzviecki, 2010, p. 37). Social networks are platforms where an individual escapes from his own reality, finds the freedom to act as he wants to, and experiences his virtual “self” as he desires. He overcomes the negative aspects of his self and the shortcomings he has felt in socialization by using the virtual self he creates and gets away from his true self by being captivated by this virtual reality. Thus, feelings of satisfaction and pleasure are experienced intensely (Akmeşe & Deniz, 2017, p. 28). Goffman’s dramaturgical approach was also employed for virtual identities in social media environments. Virtual environments correspond to Goffman’s metaphor of the scenes where the self is expressed by wearing a mask (Bayad, 2016, p. 90).

Online social networks allow people to design and consume multiple identities instantaneously. Identities produced on digital platforms are the identities that are intended to be presented to others and have a socially-desirable characteristic. These identities, which cannot fully be exploited in real life, still do not mean that they are not real, and can have a reality effect on the perception of both the identity creator and the person seeing this creation. Identity, which is already a complex concept in the incarnated world, becomes even more complex in the online field (Akgül & Pazarbaşı, 2018, pp. 17–19).

THE STUDY

Purpose and Method

The main objective in this study was to examine the identity exhibitions of the people who were popular in social media environments and analyze how they manifested their identities. In the study, two people who were the most popular and had the greatest number of followers in the Instagram environment were selected for analysis. The reason why Instagram was preferred was primarily for the users of this platform to attach importance to visuality. In addition to this, Instagram is among the popular social networking sites. It was established in 2010 and was soon accepted. The first reason why the application is so popular is that it makes photos look more beautiful through its 11 photo filters. Moreover, users have the opportunity to instantly, practically and quickly share on other social networks the photos they share on Instagram (<https://www.brandingturkiye.com/instagram-tarihi-instagram-nedir-nasil-kullanilir-ne-ise-yarar/>).

According to TRACKALYTICS data in April 2019, the people who ranked first and second can be seen in Table 1.

Table 1: The accounts of influencers on instagram with the greatest number of followers

Instagram Account of the Influencer	Number of Followers
Cristiano Ronaldo	160,096,599
Ariana Grande	150,042,569

Source: <https://www.trackalytics.com/the-most-followed-instagram-profiles/page/1/>

This study was centered on Goffman's impression management theory, and netnographic analysis was chosen as the method. Communication ethnography, whose area of study is the daily life of individuals (Kartarı, 2017, p. 216), aims to observe cultural value patterns by receiving supporting from anthropology and to interpret the specific codes of a culture within that culture (Özüdoğru, 2014, p. 266). The adaptation of ethnographic research techniques to online environments is called netnography. Netnographic analysis has recently been used frequently and has become a popular method especially in studies related to social networks (Mansell et al., 2015, p. 292). This method, developed by Kozinets in the 1990s, is a qualitative and interpretative research methodology (Jupp, 2006, p. 193), ensuring both that research environments are examined in more natural forms, as well as reaching richer content (Kozinets, 2002, p. 62; Langer & Beckman, 2005, p. 200).

Findings and Analysis

When the Instagram account of Cristiano Ronaldo, who ranked first in terms of the number of followers, was examined, it was possible to say that he usually shared posts that put forward his "sportsman" identity. The state of "accessible status" (Giddens, 2012, p. 181), which the individual gains by his own efforts, is evident in the posts of C. Ronaldo. C. Ronaldo reflects his sportsmanship as his prominent social identity. He has also strengthened his identity with competitive, ambitious and dominant roles

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(Fougère & Moulettes, 2007, p. 17), which coincides with Hofstede's masculinity dimension of the cultural structure. This pronounced image is related to the social context one belongs to. C. Ronaldo perceives to be/feels to be belonging to the football player class and perceived so by those who watch the show. On the other hand, a new type of identity is emerging, with the submission of stationary social structures to today's post modernity. This identity typology, defined by Funk (2007, pp. 7, 12) as a "post-modern self-oriented" personality, has become more prominent at the point of shaping the thinking and action forms of people under the influence of their living conditions and living spaces (İlhan, 2013, p. 240). Again, according to Funk, this personality type is based on a powerful "self" (Funk, 2007, pp. 55–56). The next phase of this construction is the desire and necessity to create a unique and sparkling myth of "self". The individual who cannot fulfill this need and cannot resolve the necessity will not be able to wriggle oneself out of being modern and reach post modernity. The only functional weapon of the person who wants to sculpt his own myth is his visibility. This is because "what is visible is good, and what is good is visible" and in today's world, which Debord described as the society of the spectacle, of course the laws of the show will be decisive (Debord, 1996, p. 16). A person who wants to reach satisfaction by placing his self in the center will present demonstrations supported by his biological and physical characteristics.

Figure 1. His social identity (His modern identity)



Identities exhibited on social media platforms may not always overlap with reality. Posts on personal accounts prioritize the satisfaction of psychological needs such as appreciation, recognition and being noticed. In other words, there may be a mismatch between the image that the person has and the image he wants to reach. However, the identity that a person reveals to his social environment can also be undistorted, reflecting every moment of his life as it is (Sabuncuoğlu, 2015, p. 373).

Another social identity that Cristiano Ronaldo exhibited on stage is having a high-income level, meaning his being “rich.” As a status symbol, wealth stands out in the posts of the Instagram influencer. Wealth as a social identity is shared voluntarily and overlaps with reality — considering that he is at the top of the list of sportsmen who earn the most money.

It was to strengthen the self-esteem with these posts where tangible assets were exhibited, and it was aimed to be noticed. Another reason why individuals seek a social identity is to raise self-esteem and get self-respect. According to Scitovsky, it is sometimes not sufficient for an individual to desire to become a member of a particular group. What become a priority in a consumption-centered world is what people have, not who they are (Odabaşı, 1999, p. 95). Tangible assets are assessed according to a social structure that prioritizes power and prestige rather than the necessities that meet vital needs (Sabuncuoğlu, 2015, p. 371). Baudrillard has also stated that the primary purpose of today’s people is to pursue the existence through vanity and wealth (Baudrillard, 1997, pp. 193–194). When we take into account that consumption is a way of life, it is possible to say that consumers’ search for “drawing attention” is a fundamental need for consumption. This pursuit will be resolved by the exposition of brands and products on virtually any platform (Clark et al., 2007, p. 46, Gökaliler et al., 2011, p. 38). Virtual platforms are the largest of these exhibition halls, and these environments offer an unlimited space for people to show and prove their social identities to the environment (Sözen, 1991, p. 94), liberalizing them at the point of creating exciting identities (Denizci, 2009, p. 59).

Figure 2. His self-oriented identity (His post-modern identity) Sportsman Strong sportsman/invincibility “myth”



Another person who has the highest number of followers on Instagram is the singer and actress Ariana Grande. The first notable feature of the shares of Ariana Grande is that they are the photographs that reflect beauty, aesthetic and physical attraction. These posts triggered by the motivation for appreciation originate from women’s feeling that they are under surveillance and that this process becomes a situation that encircles them (Oğuz, 2010: 184). As a matter of fact, according to Berger, a woman’s perception of her own existence is complemented by someone else’s sense of appreciation of her (Berger, 1990, pp.

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46–47). With these shares of her where visual appeal is idealized, A. Grande aims to put her own self into a cognitive comparison process in order to be placed in the category of beautiful/attractive women in the minds of others. In this context, Bocock also highlights that the practice of creating identity through an image and the body is not a simple reflex of consumption, but a process in which desires are embedded (Bocock, 1997, p. 107). Berger conceptualizes this situation through “being watched” (Berger, 1990, p. 447):

Men are however they behave, and women are however they appear. Men watch women. Women watch their being watched. This does not only determine the relationship between men and women, but also the relationship between women and themselves. The observer inside a woman is a male, but the observed is a female. So, the woman turns herself into an object — especially a visual object —, something to be spectated.

When the significance of being watched is combined with the ideal of being beautiful and impeccable, the woman who creates her own mirror and her own myth will internalize being a goddess and put it on stage. If we cite Goffman’s (2018, p. 65) quote from Simone de Beauvoir: “... *even the least sophisticated of women does not present herself to observers anymore after she gets dressed. She is a tool that implies a character such as a painting, a sculpture, or an actor on a stage, that is, a character that she represents but not there. What satisfies her is to identify with something that is unreal, unchanging, and perfect such as a novel hero, a portrait or a bust; she strives to identify with this figure, and thereby, to see herself to have stabilized and be legitimized in her own glory.*”

Figure 3. His social identity (his modern identity) rich



Figure 4. His self-oriented identity (post-modern identity) ultra-rich/unreachable myth



Figure 5. Her social identity (her modern identity) being an animal lover



In virtual platforms, the fact that motivations such as desire, being watched and being noticed have become attractive is because these platforms have an untouchable and fictional nature. It is almost impossible to get disappointed in this fictionality. The demonstration scene that is suitable for the irresistible appeal of the satisfaction of desires, the fulfillment of being noticed, and the watching (being watched) is these network environments (Robins, 2013, pp. 40–41).

On Ariana Grande's Instagram posts, we also see pictures taken with animals. Based on this fact, it is possible to say that she has adopted to be an "animal lover" as a social identity and that she is sensitive

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to animal rights. Grande, who has also preferred veganism, said in an interview related to this topic, “*I am a person who believes in herbal nutrition that prolongs life and will make you a happier person.*” The “exaggeration effect,” which is one of the main proposals of social identity theory directly coincides with this situation. It is an undeniable fact that vegan nutrition is essential for health, but the debate continues in the field of medicine as to whether it is the only criterion. Grande has glorified the perception practices of her group when making comparisons between the social group where she belonged/ she had the sense of belonging and other groups, as well as favoring her ingroup. Additionally, Grande’s preferring and staging of the animal-lover identity is also related to the elements of compassion, mercy and grace, which are regarded as indicators of the feminine culture.

Figure 6. Her self-oriented identity) her post modern identity) beauty attraction/goddess myth



DISCUSSION AND CONCLUSION

When we carry out a general assessment of the posts of the two people that are popular on Instagram, it is possible to say the following:

- The “sportsman” and “rich” identities that the male influencer chose and exhibited as an identity overlap with the elements of the masculine culture. He tried to prove that he was stronger in nature based on his sportsman identity, and demonstrated his personality that was defiant and aspired to succeed. His family man identity represents masculinity that protects and envelopes. It was seen that he had a desire to be noticed, based on his posts that revealed he had a high-income level.
- The “animal-lover” identity, which was preferred by the female influencer, contains elements such as mercy, soft compassion and mercy, which are the characteristics of the feminine culture.

- In the Instagram posts of both influencers, there was virtually no room for the universal spaces that became symbols and brands. In our opinion, the reason for this situation is due to the photography-based nature of Instagram. As mentioned in Lacan's mirror stage metaphor, the pleasure of seeing and being seen is primarily experienced by the individual himself. (Gündüz et al., 2018, p. 1873). Therefore, the ultimate urge on the basis of the posts is to lure the eyes and attract attention by being attracted to peeking/being peeked.
- Apart from the identities that we analyzed in the Instagram profiles of the both people, we also found posts where they presented their different identities, but these occupied a very small space in the showcase. Goffman suggests that this is due to the assumption that the personality that is reflected covers everything about the person reflecting it because the routine that is staged is perceived to be the only routine or the most important routine (Goffman, 2018, p. 56). According to VanDijk, with the emergence of online media, direct experience has been replaced by mediated perception. Thus, an iconic and symbol-based perception form has emerged, and experiencing has been replaced by witnessing (VanDijk, 2006, p. 212). When we look from this angle, the posts, which are indicative of the performance identities — that the people who were the subjects of this study prioritized and ranked first — will also be perceived as a holistic reality in the minds of those who watch the scene.
- The posts of the both people were based on self-centered personal content. The subject, rising with post modernism, has come to be both a watchable and observable entity synchronously with the emergence of social networks, and a structure that everyone is watching everyone else has risen (Uluç & Yarıç, 2017, p. 91). What is really important is to demonstrate performances to be applauded while being aware that you are being watched, as well as designing what role to play by watching.
- When we remember that the elements that trigger identity is the need to be unique and to belong to, it is possible to say that the male identity reflects the uniqueness side and the female reflects the belongingness side.

Table 2. Male influencer and female influencer features

MALE INFLUENCER	FEMALE INFLUENCER
Masculine characteristic	Feminine characteristic
Being unique	Being attractive
Desire to be noticed	Desire to draw attention
Defiance of the body	Attractiveness of the body
The myth of invincibility and God	The myth of beauty and Goddess

The reference point for designing both personal and social identities involves psychological motivations such as appreciation, approval and strengthening of self. In essence, there is no major difference between online environment and offline in the construction of identity. The binary structure of identity, based on the self and the internal-external dynamics, is in place but has just transformed into a new form. Users regenerate their offline selves on online platforms, but do not include all of their offline identities in this construction process. Only the appropriate portions of the offline identity, which has

many different sorts of content, are manifested. Although it is a matter of debate to reach an induction such as that personal or social identities are to be established with gender codes and that male users will feed on masculine and female users will feed on feminine codes, what is not to be discussed is the fact that “performances” will continue to be exhibited (Morva, 2014, p. 238). Social networks are like black holes that instantly pull every object in their orbit towards them and swallow it with the power of gravity they create. Just as the theory suggests that if an object swallowed by a black hole will not be lost but is assumed to change its dimension, social media environments also have people experience a similar metaphorical situation. The perception/interpretation skills and self-esteem of the person who goes under the influence of social networks will also be transformed — just as black holes change the structure of substances through their force of gravity that is almost infinite. From the moment any person enters social networks, he becomes subject to a mental and cognitive transformation whether he shares any posts or not. The first phenomenon to be influenced by this transformation is the self. This is because the self, that is, the selfhood, is the first station of new quests. The mind that internalizes virtuality will also virtualize the self, and the order of social networks will begin to function.

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KEY TERMS AND DEFINITIONS

Identity: It is a collection of signs, qualities and features that show what a person is as a social being.

Instagram: Instagram, a photo sharing application created by the endeavors of two entrepreneurs at the end of 2010, mainly enables the sharing of photos in mobile devices on social networks.

Masculinity and Femininity: Express roles imposed on genders.

Popular Culture: It can be defined as a type of culture that is based on the pleasures of ordinary people, not a trained elite.

Popularity: It is the state or condition of being liked, admired, or supported by many people.

Postmodern Identities: Postmodernism always envisions how to live if it is felt rather than pre-determined strict rules. Postmodernism considers diversity and differences in identity and diversified identities oppose the monopoly of meta-narrative and teachings.

Self-Presentation: Presenting himself/herself in a way that leaves the desired image in accordance with socially and culturally accepted norms of action and behavior.

Social Media: is an online network that publishes and publishes its own content. Social media is actively used by many people and institutions. In this way, quick access is easier, users can view the contents, articles, news, thoughts, daily events, photos by social media through social media.

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Chapter 17

Blogger Mothers as a Transmediatic Narration: An Examination on Transmediatic Narration Used by Blogger Mothers

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ABSTRACT

Individuals are facing message bombardments from many tools. In such a process, trying to reach individuals at any moment using different tools is important for the effectiveness of communication. This requirement led to a new process called transmedia. The transmedia storytelling, which is carried out in order to ensure that the messages planned to be transmitted in transmedia are even more effective, is one of the heavy-duty practices of this new process. This study was carried out in order to reveal how blogger mothers used transmedia storytelling practices, the difference of this use from traditional motherhood, and the role of transmedia storytelling practices in changing form of motherhood. In the study, blogger mothers were found to use transmedia storytelling practices heavily in order to influence their followers. It was also concluded that blogger mothers play the roles of heroines, friends, and dynamic and assistant heroines.

INTRODUCTION

Today, we are in the era of social media in which human relationships depend on digital communication, keyboards and networks. We prefer texting to talking; we prefer to sign in to meeting people; we prefer to watch the smartphone screen to looking around. We just have to look at the “news wall” of our preferred social network in order to know what’s happening around us. The real social life is being replaced by the experience of social network and if we know everything about the present day on one side, we know almost nothing about the past on the other side (Dusi etc., 2017, p. 65).

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This change and difference that has occurred compared to the past has led to the emergence of new processes in many areas of society. Individuals forming society have also had to adapt to this change or have voluntarily participated in this change. This alteration and innovation including many sectors has led to changes in motherhood roles, in maternal practices, or in content of traditional motherhood. “Blogger mothers”, which is a new and creative application form of today, and their followers have emerged with this change.

Blogger mothers share their experiences and knowledge about motherhood to future mothers who are their followers or counselee. This sharing leads to the evolution of traditional motherhood actions of followers in modern direction. In other words, it is now possible for future mothers to ask about motherhood to blogger mothers instead of their mothers, who have already experienced motherhood before and even have given birth and raised them, and to apply advices they have posted through blogs. Therefore, this situation opens a door to alteration of the traditional forms of motherhood.

There are a number of underlying reasons why blogger mothers are so influential on their followers. One of the reasons for this is that social media tools are influencing followers by becoming stronger with transmedia applications and storytelling methods. In other words, the stories that blogger mothers will create on their blogs are important. The fact that they are not only included in blog environment but also in other social media tools reaching to followers also supports this increase in importance. The powerful aspects of each of these different tools make it possible for followers to be influenced, thus enabling the blogger to make the desired changes.

This study was revealed based on the idea that social media provides innovative and creative environments for users and content producers. In this regard, the opportunities provided by social media were tried to be examined in the context of new generation motherhood. In this context, 15 active mother blogs followed most in Turkey were examined.

NEW MEDIA, SOCIAL MEDIA AND CREATIVITY

In the last quarter of twentieth century, the digital revolution in information systems and information technologies has made itself evident. Due to these changes, there have been serious differences compared to the past. In addition, new regulations and changes in many areas have been realized with this revolution (Yilmaz, 2011, p. 138).

The change and development in information and communication technologies which has led to relevant digital revolution, has provided an opportunity for different communication methods to emerge. These changes have been resulted with the effects that can be immediately felt in social structures. Nowadays, the new media phenomenon that focuses on digital usage and has the principles of openness, interactivity and innovative connection has become a part of modern human life (Turina etc., 2015, p.174-175; Kocyigit, 2015, p. 331).

Innovations provided with the new media to users include concepts such as Presence, Modification, User-generated content and Social participation. When these concepts are examined, it is seen that ‘presence’ is the state in which users exist effectively in the environment through their profiles, identities or avatars. If the individual shows an effective presence, it is also expected from him/her to perform actions such as realizing the interaction among the most basic features of the new media, producing content and participating in produced contents. The concept of modification means the fact that an individual move notifications received from both his/her own profile and others, to a new dimension by differentiating

them. The fact that the user creates shares in which the content is specified by him/herself, in web environment, according to his/her wishes, indicates a user-active structure, not a sender-active structure. On the other hand, social participation reflects the active role of the user and overall activity that the user has undertaken and developed during the whole process, and it means being in an interaction with others (Baran & Ata, 2013, p. 195).

This process has also opened the way for the emergence of media tools, called social media, created by members of society using new communication technologies. The social media, the whole new communication channels, has brought many innovations and differences that were previously unavailable, to the individual and social life. Mayfield (2008, p. 5) lists the characteristics of social media that provide these innovations as follows:

- **Participation:** It generates courage in everyone involved in social media to contribute to feedback and communication.
- **Openness:** Many social media tools are open for participation and feedback. These tools encourage ranking, commenting, and sharing of information. There may occasionally be obstacles for shares and content reliability is provided through password.
- **Conversation:** The content is a broadcast activity that is transmitted to a viewer by a broadcaster in traditional media, however social media has a structure that allows better two-way communication.
- **Community:** Social media allows an opportunity to communicate effectively and quickly. Thus, for example, communities can share their favorite photos, a political theme, or a favorite television program.
- **Connectedness:** Many types of social media are developing by linking to other sites, resources, or people.

Social media has provided a communication infrastructure that will allow individuals to create their own creative features with these features and technological infrastructure. In other words, individuals are free than ever before to reveal their creative characteristics in the era of social media. Creativity, which can be used freely with social media, is a concept about producing new and useful ideas on products, applications, services, or procedures that are generally both new and potentially useful for the organization (Sigala & Chalkiti, 2015, p. 48). Besides this, creativity expresses the behavior of revealing new and rare things (ideas, emotions, actions, products or services, etc.) different from traditional ones. Especially today, creativity is considered in the context of technological development and progress.

As a result of these technological developments and progresses, the differences in communication area have made social media more visible. In this regard, it can be said that social media infrastructure and social media tools are considerably creative.

The anchor point of social media is the people who use them and their social interactions. The creative aspects of social media are communication, connections, convergence, competition, cooperation, community and creative class (Iasimone & Solla, 2013, p. 303). There are three dimensions of social media. The first one is the “media dimension”, which is interpreted as a tool by which communication is transferred to groups or people. The second is the “technology dimension”, which is caused by the fact that the infrastructure is created with certain technologies and by using the latest technological infrastructure, and the third dimension is the “user dimension”. This dimension can be defined as “the content of the various media types produced by consumer, the end user”.

In user dimension, the concept of creative effort formed as a result of common actions of each participant is encountered. It can be said about the creative effort that: “A certain creative effort must be made in the creation of content or in the creation of new content from existing work. In other words, the user must add a value to the content. This creative effort can also be demonstrated through business associations and team work. It can be explained as “Taking a section from any television program and uploading it to a website on the internet does not mean creating user-generated content” (Keskin & Bas, 2015, p. 54). Therefore, social media obtains the power or feature of the creativity from the union of individuals. In other saying, a collective mind and a series of shares have turned social media into a creative channel.

In other words, social media which operates as the ideal communication tool of today (Aktan & Cakmak, 2015, p. 162), is considered as a force supporting creativity since it has an imperialist nature (Killian & McManus, 2015, p. 540), allows millions of people to hear each other’s voices (Alikilic, 2011, p.14), has a feature guiding social demands of large masses (Vural & Bat, 2010, p. 3349), includes wide features such as ease of use (Kasemsap, 2015, p. 153), freedom provided to the user (Aktan & Ozüpek, 2015, p. 202). Through these relevant features, social media not only supports individuals in creation, but also has many applications and tools opening the way for creativity. Blogs are among these tools.

BLOG AS A SOCIAL MEDIA TOOL

Blog, which is a combination of the English “Web” and “Log” words (Kathpalia & See, 2016, p. 26), is the best-known and almost the most developed tool among social media tools (Herring etc., 2004, 2010, p. 1; Zarrela, 2010, p.9). The blog, a type of Web 2.0 technology, is a website that allows users (bloggers) to publish posts viewed in reverse chronological order (Ifinedo, 2017, p. 189). “Blog entries combine the ability to enter links and comments on texts, graphics, videos and other web pages. Some blogs address specific art forms such as art (picture diary), photo (photo diary), video (vlog), music (MP3 blog) and audio (podcasting)” (Zeiser, 2015, p. 66).

Bloggging has become a popular media that allows people to express themselves, share information, and communicate with each other. Blogs have shown a very rapid increase in numbers recently. This high level growth of blogs can be partially explained by a number of factors such as ease of publication and free hosting services (for example blogspot.com, livejournal.com, and others). Moreover, all these factors have contributed on a large scale to the reduction of costs in the creation and maintenance of spam blogs (or splogs), and this has opened the way for the growth (Zhu, Sun & Choi, 2011, p. 246).

The blogs, which have been thought not to attract great attention during the establishment stage, now have the power to create an agenda (Sezer & Sert, 2013, p. 66). The key transformation has occurred on the significant increase in the number of weblog readers with the growth of the online media (Greer & Pan, 2015, p. 594). Individuals enjoy sharing their own ideas, experiences, positive and negative comments with others (Li & Du, 2017, p. 52). This is perhaps the most important reason for the development of blogs.

Blogs are heavily used and have a strong influence. The main reasons for this can be listed as follows (Mavnacioglu, 2011, p. 26-27):

- Blogs can be created in a very short time compared to websites.
- Blogs can be organized for different sectors and different purposes.

Blogger Mothers as a Transmediatic Narration

- They can be updated.
- They are usually prepared at no cost or at very low cost.
- There is no need of a large technical information to create blogs like in the creation of websites.
- It is an environment that can be easily formed by every individual who is an internet user.
- The level of interaction is high in accordance with the general characteristics of social media tools.
- They are easily created as an electronic mail account.
- They allow users to transfer and share their experiences, suggestions, requests and complaints.
- Experiential marketing and word of mouth marketing tendencies of internet users are developed by considering opinions and comments of others on the internet before shopping, and blogs allow this process.
- The fact that corporations and brands have noticed the significance of blogs and the fact that blogs have become one of the channels used in communication with the target audience increases the importance of blogs.
- It allows to create categories according to users' hobbies and interests.
- It ensures the sharing of information, suggestions and experiences in the same environment. It is used as a new channel in corporate and in-house communication.

Blogs have four unique features that are social nature, links suggested by blogger to followers (blog-roll), trackbacks and cultural ethos (Pang & Goh, 2016, p. 505).

Blogs have become globally popular tools used by practitioners (for example, business, politics, and education) from different areas to create and share knowledge (Ifinedo, 2017, p. 189). In other words, "Blogs have spread in many areas in a short time after they emerged because of their features such as low cost, ease of use and access, free access and free of inspection. They have been begun to be used in a wide range, from individual hobby blogs to corporate promotional blogs, from educational institutions to political campaigns and civil society campaigns" (Ozudogru, 2014, p. 42).

Reaching potential target audiences through the traditional media has been a difficult process and has been actualized in the form of one-way communications (Magno, 2017, p. 142). Blogs, on the other hand, have led to differences in corporate and individual users' communication methods as a powerful tool of two-way communications (Zarrela, 2010, p. 9). This has resulted in the rapid growth of blogs, the large number of usage, the large number of individual and corporate contributions.

Types of Blogs

Blogs are used as a tool to obtain news and information with the number of users increasing each passing day. Blogs offer hundreds of different options for every topic coming to mind such as technology, politics, sports, entertainment, gossip, new trends, fashion, health (Dilmen, 2014, p. 118)

Blogs can be published in various types, depending on usage or users. These blogs can be listed as follows (Mayfield, 2008, p.17):

- **Personal Blogs:** These are blogs focused on hobbies or personal interests. Participants in personal blogs with heavy use are beginning to share information, hobbies, and experiences with others.
- **Political Blogs:** Blogs are written about politics especially in America, and increasingly in the UK. Blogs, which are frequently perceived as a response to media tendency, are the places where analyses of topics are made.

- **Business Blogs:** Today, many professionals and businesses have blogs. These blogs allow businesses to communicate less formally than traditional newsletters, brochures and press products. For individuals in business, a blog can be an effective way of building a network consisted of individuals who are of the same mind, and building up an own rising profile.
- **Thematic Blogs:** They are original content blogs based on a specific theme, topic or a sector. Topics may have a variety of content, such as marketing, communication, entertainment, cars in these blogs. It is observed that thematic bloggers are relevant sector specialists or people who are engaged in similar work with the theme of the blog.
- **Blogs Sponsored by Publishers:** This type of blog is a type of publication that is started by traditional media, meeting readers in addition to existing publications. It is seen that publishers and media organizations pioneer such blogs.
- **Corporate Blogs:** The fact that a group of company employees and executives write articles on behalf of the organization forms the basic principle of corporate blogs. In corporate blogs, first-hand information is transferred to the target audience and feedback can be received from the first hand.

In addition to these blogs there are also types of blogs known as community blogs (Ahumbeyeva & Taalaybekkizi, 2017):

- **Community Blogs:** They are blogs that have a membership system and consist of posts written by these members. Many of these blogs use blog software on their own servers. Historically, they maintain a cultural heritage formed in Live Journal.

STORYTELLING AND NARRATIVE CHARACTERS

Ensuring the impressiveness when story is transferred to target audiences also depends on the characteristics of the characters in the story, and the ability to make an impressive presentation. The fact that followers find out what they are looking for in narrative characters involved in the story, and the ability of the character to direct followers are important for the success of the story.

Narrative character types can be arranged in various forms. "First of these arrangements based on prioritizing the character is as main character(s), secondary character(s), individual(s) who plays (play) the minor role(s), respectively. The other arrangement is based on relative positions of the characters to each other. This arrangement is formed on the difference of the relations between the character A and B, between A and C and between B and C from each other. At the same time, forming pairwise groups such as wife/husband, friend/enemy, and mother/daughter or forming triple groups, such as wife/husband/lover, mother/father/child is another method. In addition, characters can be classified in political, social and occupational groups, in solidarity associations such as love, family, professional organizations, in competition groups emerging in love and business life, and in opposing groups like women/men, single/married and young/old. Besides these general groupings, there are also conceptualizations specific to narrative theorists. This approach dwells on two groups of characters: flat character and round character. The flat character is static and does not change within the story. The round character changes within the story. According to the dialectical narrative model, the axis character and the opposing character play a dominant role. There are also seven character types, including the villain, the dispatcher, the hero,

the donor, the helper, the princess, and the false hero besides these differentiations. Apart from these typologies, there is also another differentiation made as confidant character, foil character and chorus character “(Yilmaz, 2014, p. 68-69).

In transmedia storytelling, it can be said that these characters adopted an expression and made efforts to reach their followers with these kinds of characters. This reveals the fact that the character that is the subject of the story can be better understood or the fact that the effectiveness of the story can be increased through the identification of the follower with the character.

BLOGGER MOTHERS AND TRANSMEDIA STORYTELLING

Bloggers write related messages based on relevant events on the internet, and blog service providers keep these messages. The most important feature of the publications is the fact that a group of people who have similar interests and discuss issues of mutual concerns, get together to start a discussion and share their ideas with each other (Chen, 2017, p. 1299). Mother blogs, an example of thematic blogs, refer to a type of blog created by a blogger mother who wants to share her ideas, integratedly with other mothers or future mothers.

In this mother blogs, blogger mothers reveal the ideas they want to share with their followers by a story in order to ensure effectiveness. Nowadays, blogger mothers get followers through other tools of social media and provide storytelling to those followers through other social media tools, thus trying to spread the effect over a wider area. At this point, the transmedia storytelling emerges.

The term of transmedia storytelling has been suggested by Henry Jenkins with the idea that “each tool makes its own contribution to the emergence of the story” (Gronstedt & Ramos, 2014, p. 5). Transmedia refers to the process in an interactive structure which is created with the story that is added to the narrations formed by a content that exceeds a series of media tools, and in which the audience actively participates (Graves, 2015, p. 38).

According to Jenkins (2006, p. 93), transmedia storytelling develops and strengthens through the contribution of different media tools to the story that is created. For example, a story appears in the cinema, but it can be expanded through television, novels or comics, and can be explored through a play.

The purpose of the transmedia storytelling system is to create a fun alternative for writing-based historical contents. Indeed, because of the importance of visual documents and the need to draw attention of new generations, the system aims to create an innovative form using modern communication technologies (Dusi etc., 2017, p. 67).

In other words, transmedia aiming to divide a story into small pieces spread out multiple channels allows the consumers or followers to move from one channel to another following the pieces. This movement, along with the pattern of the story, does not adversely affect the flow of the story, contrarily ensures that the followers are included in the flow. Thus, followers discover a different direction of the story in every channel they follow and become more willing to be involved in the story. In reality, the story is created by the participants themselves. For example, by the guidance and notifications in advertising message of a brand on television, the audience can also visit the social media tools of that brand, from there to a video sharing site or to a verbal narrative platform such as Ekşi Sözlük. Through this, the audience is able to expand the campaign with their own contribution in any channel (Dönmez & Guler, 2016, p. 157).

It is necessary to present a consistent and combined experience across all platforms where the story is used according to the properties of each platform in a transmedia storytelling process. It is important for each item to operate by its own conditions. However, it is necessary to add something to the story for a larger experience. In other words, giving people something to do while bringing them together is a matter to consider in terms of their experiences. In fact, the design of a transmedia project is built in order to combine social networks, geographical locations and game dynamics in virtual and real dimensions (Ferreira, 2015, p. 22).

Jenkins (2007) has made some explanations about the properties of this type in his report, “Transmedia Storytelling 101”. Accordingly, transmedia storytelling has the following properties:

- Transmedia storytelling represents a process in which all elements of a fiction are systematically dispersed into multiple distribution channels in order to create a unified and coordinated entertainment experience.
- Transmedia storytelling reflects the economics of media consolidation or what industry observers call “synergy”. In other words, media organizations wish to expand transmedia storytelling horizontally.
- It is a matter that narratives created by transmedia storytelling is based on a complex fictional world composed of many characters related with each other and stories of these characters, rather than individual characters or a certain event pattern.
- In transmedia storytelling, attachments can have different functions.
- Transmedia storytelling can include works for platforms that encourage the participation of different consumer groups in the story.
- Ideally, each episode should be accessible by its own conditions, even if it makes a unique contribution to the narrative system as a whole.
- Since transmedia storytelling requires a high level of cooperation between different media areas spread by the story, it is often seen that successive projects are shaped by a single artist or a person during the propagation of the story in all channels they are transferred, or that different units within a single company cooperate at advanced level.
- Transmedia storytelling is the ideal esthetic form for a collective intelligence era.
- Transmediatic narration does not only disseminate information, but it also presents a number of roles and purposes to consumers in order to be included in their daily lives.
- It can be said that transmedia storytelling texts have an encyclopedic texture.

Transmedia storytelling is different from “multimedia” programs in which the user clicks the same screen to experience video, text and interactivity. In transmedia, various forms of media not only repeat the same story in different forms, but also expand the story with its different elements. The story creates a broadcast that can be enjoyed in both its own and comprehensive way in connection with the story by the power of each tool (Gronstedt & Ramos, 2014, p. 5).

METHODOLOGY

In this study, the best 15 “Mother Blogs” in Turkey were examined. The mother blogs discussed were evaluated based on the ranking at “<http://1baba1bebe.com/blog/en-iyi-15-anne-blogger.html>”. Accord-

ingly, mother blogs examined were arrayed as <http://blogcuanne.com/>, <http://www.slingomom.com/>, <http://markaanne.com/>, <http://alternatifanne.com/>, <http://www.melinasmom.com/>, <http://guncelanne.com/>, <https://www.obiranne.net/>, <http://www.balyanaginhikayesi.com/>, <http://deli-anne.com/>, <http://www.annekaz.com/>, <http://www.ozgekopuz.com/>, <http://gezentianne.com/>, <http://momsblognote.com/>, <http://kokoshanne.com/>, <http://keyifbebesi.com/>, respectively.

It was aimed to reveal the development process of how mother blogs have used the social media as a creative channel providing opportunities through their own life stories and practices; as well as to determine how blogs have given the creative ideas in areas such as motherhood, child care, life, fashion, to the followers of the blog. Besides, it was also aimed to reveal whether there were transmedia storytelling elements in relevant blogs.

The data were obtained by using content analysis and netnography method in the study. The content analysis method analyzes the contents of communication tools at a specific location and time. Moreover, the analysis is made “objectively, systematically and quantitatively” (Severin and Tankard, 1994, p. 41).

In addition, “the increasing use of the internet reveals the need to adapt ethnographic research techniques to virtual environment in order to interpret the behavior of consumers who are increasingly involved in the virtual environment. In this direction, a new research method has been developed that examines the consumer behavior in virtual communities. The method which has a participatory approach to the investigation of online culture and communities is mentioned by names such as “cyber ethnography”, “cyber anthropology”, “digital ethnography”, “online ethnography”, “virtual ethnography”. However, while these terms are mostly used by sociologists and other researchers, the method is called “netnography” in marketing research. Netnography is the adapted form of the ethnography method to the complexity of today’s computer-based social world. While the data are collected through face to face and cultural interactions in ethnography, the data are collected by online communication in netnography” (Ozbölük & Dursun, 2015, p. 232).

While creating the design of the research, the study conducted by Teke (2014), called “A Netnographic Analysis on the Transformation of Motherhood: Blogger Mothers”, was benefited (Teke, 2014, p. 34).

In addition, the blogs discussed were evaluated in the framework of transmedia storytelling and social media tools that have been used by bloggers were investigated. Whether the topics discussed in blogs were included in social media tools of bloggers was also included in the research. Moreover, the information of whether followers have participated in the topics about motherhood in social media tools created by bloggers, was included in investigated topics.

Findings and Comments

The mother blogs mentioned above were examined and the data obtained were tried to be assigned to various thematic categories.

Numeric Data Related to Mother Blogs

The contents of the mother blogs that were discussed were tried to be revealed by content analysis method. For this purpose, the numeric data of blogs are presented in tabular form after the coding scheme created (see Table 1).

Table 1. Social media tools used by bloggers

Name of Blog	Social Media Tool Used					
	Facebook	Twitter	Instagram	Google+	Pinterest	YouTube
blogcuanne	+	+	-	-	-	-
slingomom	+	+	+	+	+	+
markaanne	+	+	+	+	-	+
alternatifanne	+	+	+	+	-	-
melinasmom	+	+	+	-	-	-
guncelanne	+	+	+	+	-	+
obiranne	+	-	+	+	-	-
balyanaginhikayesi	+	+	+	+	+	+
deli-anne	+	+	-	-	--	
annekaz	+	+	+	-	-	+
ozgekopuz	+	+	-	-	+	-
gezentianne	+	+	+	-	-	-
momsblognote	+	+	+	-	+	-
kokoshanne	+	+	+	+	+	+
keyifbebesi	+	+	+	-	+	+

As a result of the examination, it was determined that the mother blogs discussed actively used other social media tools besides the blog. These social media tools can be listed as Facebook, Twitter, Instagram, Google+, Pinterest and YouTube. As a result of the examination, the blogs called “slingomom”, “balyanaginhikayesi” and “kokoshanne” seem to use all these social media tools. Additionally, it is understood that the blogs called “markaane”, “guncelanne” and “keyifbebesi” use five of the social media tools listed. On the other hand, “blogcuanne”, “deli-anne”, “ozgekopuz” and “gezentianne” blogs are the blogs having the fewest social media tools. Findings reveal that blogger mothers have opportunity to use transmedia (see Table 2).

Another examination of the blogs discussed was about the number of followers on social media tools used by bloggers. According to the results obtained, the highest number followers on Facebook belong to “annekaz” blog with 202,134 followers. Blogs with following highest number of followers on Facebook are “guncelanne” with 87,401 followers, “blogcuanne” with 64,729 followers, “ozgekopuz” with 35,911 followers and “momsblognote” with 35,045 followers. The lowest numbers of followers on Facebook belong to “gezentianne” with 3,487 followers, “markaane” with 3,931 followers, and “balyanaginhikayesi” with 6,868 followers.

The most followed blogs on Twitter are “blogcuanne” with 24,700 followers, “slingomom” with 8,847 followers and “alternatifanne” with 8,481 followers. The lowest numbers of followers on Twitter belong to “deli-anne” with 4 followers and “keyifbebesi” with 52 followers.

It is revealed that the highest numbers of followers on Instagram belonged to “guncelanne” with 119,000 followers, “blogcuanne” with 106,000 followers, “kokoshanne” with 98,000 followers, and “gezentianne” with 95,000 followers, respectively. On the other hand, it is understood that the fewest numbers of followers belong to “obiranne” with 1,769 followers, “keyifbebesi” with 5,812 followers and “markaanne” with 5,943 followers.

Table 2. Number of followers of social media tools that belong to bloggers

Name of Blog	Number of Followers of Social Media Tools					
	Facebook	Twitter	Instagram	Google+	Pinterest	YouTube
blogcuanne	64.729	24,700	106.000	-	-	-
slingomom	7.703	8.847	49.900	20.260	1.033	247
markaanne	3.931	6.120	5.943	370	-	-
alternatifanne	18.147	8.481	8.440	Not Active	-	-
melinasmom	19.547	3.525	7.988	-	-	-
guncelanne	87.401	5.717	119.000	194	-	14
obiranne	1.043	-	1.769	1.033	-	-
balyanaginhikayesi	6.868	4.234	24.800	Not Active	165	376
deli-anne	7.793	4	-	-	-	-
annekaz	202.134	1.948	26.500	-	-	563
ozgekopuz	35.911	3.912	-	-	-	-
gezentianne	3.487	2.386	95.400	-	-	-
momsblognote	35.045	2.600	49.800	-	256	-
kokoshanne	5.563	4.195	98.000	532	127	3.138
keyifbebesi	12.421	52	5.812	-	478	48

On Google+, the highest number of followers is reached with 20,260 followers on the blog called “slingomom”, and the fewest number of followers is reached with 194 followers on the blog called “guncelanne”. On Pinterest, the blog with the highest number of users is “slingomom” with 1,033 followers, whereas the blog with the lowest number of followers among the users is “kokoshanne” with 127 followers. On YouTube, the situation is positive for “kokoshanne” with 3,138 followers. On the other hand, the number of followers has a negative tendency towards “guncelanne” with 14 followers.

Findings on Innovation and Creativity in Social Media

In child development, family has a very important role, along with other environmental factors. It is generally focused on the role of mother in child’s life while it is focused on the role and importance of the family in the development of child. In Turkish society, as in Western societies, mother is the only one who is responsible for the care and education of the child in the majority of families. Especially in the infancy period, which covers the first year of life, the mother who meets all needs of the child is the one who provides all the stimuli that will develop the child (Tezel, 2007, p.767).

Motherhood has undergone various changes over time as a social area. It is clear that it is not necessary to undertake in-depth investigations to observe these changes. Contrarily, this change can be observed even with a simple observation. The difference between the viewpoints of motherhood between today’s mothers and their mothers, methods of raising children, how a child is desired to be raised, and the expectation of society from mother and child can be revealed by this simple observation (Teke, 2014, p. 36).

The concept of “social media and innovation”, which also constitutes the main topic of the study, becomes clear after this review in a form creating a clear perception. In other words, blogger mothers,

who are the writers of the blogs covered, also benefit from their blogs in terms of personal development and angles such as success, income, new job, career, recognition.

From this point of view, it is very important that how and in what way blogger mothers present themselves to their followers. The way blogger mothers introduce themselves on the “About” tab in order to demonstrate this difference, summarizes the situation.

In other saying, these sections are where we can get clues about the way blogger mothers introduce themselves and about their identity designs. Blogger mothers seem to prioritize their personal careers as well as their children who are the reasons for starting a blog. Blogger mothers also express their happiness in their marriages and their children in this section.

For example, blogger mother Elif Doğan tells her story as “Blogger Mother Elif Doğan was born in Mersin. She was graduated from Çankaya Primary School, from which her father was graduated, and from Tarsus American College, from which her uncle was graduated... Even though she was willing to be a teacher, she preferred the quite popular department, department of business, at that time and entered Marmara University... She did not obtain her business license caressively, moreover, she earned a master’s degree in business from Baltimore University with the idea of “Maybe I will be an academician”. She did not take lessons from this and applied to doctoral program on business. Fortunately, she was rejected and decided to change her way, saying, “I have never liked the business department anyway”... For about five years she worked in various NGOs in America ... “; while another blogger mother Özge Kopuz tells her story as “I could not imagine that I could live the greatest happiness by being the mother of Yade, Asım and Mira, while dreaming myself as a successful young woman of assertive trials since my childhood years... I was eligible to attend Marmara University Faculty of Law as a person who believed in the necessity of working determinedly to achieve her life goals. After a long time studies for midterms and final exams, I was graduated as a lawyer. After a year-long American adventure, when I met new innovations and discovered a new world, I got married with my husband, Ziya, whom I had a great admiration, and opened my own law office... We decided to open a different page with a baby in our life while I was living with the beauty of life...” “gezentianne” blog writer, Özlem Demir gives clues about her career saying “I was graduated from Boğaziçi University, Department of Mechanical Engineering. I have spent 15 years working in a software development department of a bank, and I have visited 46 countries and 162 cities with my husband before and after children, I said goodbye to corporate life in 2015, and I am continuing to travel... “. On the other hand, “kokoshanne” blog writer Meltem Bicioğlu gives details about career saying “After graduation in Turkey and two years of London adventure, I found a job in Turkey, I set in my way, just at that moment I fell in love with my husband who was here for vacation coming from America and moved to San Francisco. I have been trained in digital marketing and project management for 2 years... “.

According to the career clues given by the bloggers mothers who are owners of the blogs covered, in the “About” tab, it is understood that they are composed of highly educated people with different educational backgrounds, who are active in different occupational groups and who have life and work experience abroad. This can be considered as an outcome of the blogger’s personal satisfaction element, it may also be a stimulant for career planning of individuals who follow the blog. At the same time, this situation also encourages followers who are active in different fields, to make new professions or applications that can be made internet-based like blogging.

Blogger mothers are individuals who evaluate and use the innovations in alternative professions and interests by their blogs. Blogger mothers, who do not just have the opportunity to write a blog in social media have an active lifestyle, unlike traditional motherhood. In other words, it seems easier for

blogger mothers to deal with different things. Blog writer mothers covered have opportunity to deal with income-generating and career-contributor new work such as personal consultancy (sustainable communication, personal motherhood map, social media communication, presentation communication), seminars & workshops (sustainable good parenting, being a mother in Turkish culture, how can I talk with my children to make them listen, 100% organic discipline, what does love have to do with it?, we stop grumbling, Blogger Motherhood: Advantages and Traps), alternative mother activities (we have to talk about this movie, we have to talk about this book).

When the findings are compared to traditional motherhood, there are some advantages of blogger motherhood provided for blogger mothers on creating new business, new action and new source of income. Previously, motherhood had meanings such as especially dealing with children, spending the whole time for children and exerting themselves for their children; the situation has changed in today's blogger mothers.

Blogger mothers also share some posts about education on their blogs. Blogger mothers write articles on topics such as various training methods according to their profession and the necessity of education. For example, one of the blogger mothers presents her ideas saying "We have never thought of it, moreover these concepts were too far away for us. However it is in our life now. Homeschooling, even more Unschooling ... Let's get The Learning Revolution Series started... I was thinking that which one is the right for us? Preferences can vary for every child, every society, for each parent, but for me; Is it Montessori, or Waldorf, or Reggio Emilia, or somebody else, or is the classical system the most comfortable one? The most reasonable one for me, which captivates me most was Homeschooling. But better than that: Unschooling... Of course, it's not easy for us to work with the one which captivates me. This is the reason of all pain, after all!" (deli-anne) and with these ideas she literally changes the educational system which is known and has been applied until today.

Similarly, any blogger mother can compare the education systems of different countries to find the right education system. In one of these comparisons, "gezentianne" discusses education systems in Turkey and England, saying "In England, children start school at the age of 3. It is not the 1st grade, of course. The class of children who are 3 years old is called nursesey and the one of children who are 4 years old is called reception and both groups are educated in primary school by wearing the same uniform together with 1st graders and older ones. 1st grade (Year 1, as in the English saying) starts at age 5 and children learn to read and write in the first grade, just like we do. But, compared to their peers in Turkey, they start 1st grade one year earlier."

In addition, it is also seen that blogger mothers have introduced new and creative educational concepts in addition to traditional education methods, and have organized or have been trained on these subjects. The blogger mother, "momsblognote" tells her followers that she attended the training called "Parent Coaching" with the following words: "Last week, I was on a training course that I enjoyed very much. Nowadays, parents are much more knowledgeable and equipped in every sense. This training was a great opportunity for us who are trying to approach their child in the most correct way... You can benefit from this training which will start on November, 6. Well, what is this parent coaching? It is mentoring parents to make them understand the child's frame of mind, to make them gain coping skills, and to coach them in directing children to the right disciplinary behavior. What does it do? It ensures you to understand your child's frame of mind (communication-interaction style) and it allows you to meet your child's emotional needs. There are four types of frame of mind; Successful, thinker-observer, peaceful and creative-influencing. In this training, you will learn which frame of mind your child has, how and in which conditions you should behave for that and more... "

The new, different, creative ideas and opinions that blogger mothers have introduced about education, rather than the ideas of traditional motherhood such as sending the child to the school, taking the existing curriculum as it is, completing the education within the framework of formal education methods, may lead to a change in education system, to a change in mothers' opinions about education and to an evolution of educational point of view to new social expectations.

Follower responses to blogger mothers' articles about education can be cited. For example, the follower named İlknur agrees with the ideas such as change of the educational system or education without school, indicating that "The education system we have is unfortunately suggesting that what I read is impossible for me. I have been repeating something in recent days. I say that I will not sacrifice my daughter to this education system, but I find myself studying mathematics with her two days later:(Being happy is the key word, but the education system in Turkey does not allow this, unfortunately. My 1 month-search for school has finally resulted in a school with a gastronomy workshop. I was really impressed. Administrators were the people who say that their goal is not to be a school of children waiting for the break and running away from the class, but to be a school of children saying "I wish the break was over and the course has started". I am still concerned; all these appearances can be of commercial concern and eye wash. I have never thought to change the country. But raising an unhappy child despite success, makes me think of it in recent days. I know it was long, but 15 years ago my neighbor's relative, who has grown in Germany, had made her children graduated from primary school by taking lessons at home without sending to a school in Turkey. I do not know how she did it, but I have found it strange in those years and I have accused that mother of being an asocial. Now I understand and see her purpose better. Most of the mothers would think this option if we had such a chance. I wish you the best, my 'delianne':)".

Blogger mothers attempt to make efforts to guide their followers on their blogs with different and creative ideas. Thus, they strive for both their own and their followers to meet creative ideas and to support followers for involvement in creative actions. Just like "slingomom", saying "On Pinterest, I finally started to search for projects, activities that could be made with children. I try to make some of it, and try to produce newer things by getting inspired with others. We show more attention on pine trees, ornaments and gifts when it comes to new year. Our favorite 'do it yourself' product is the gift box from the toilet paper rolls. It is very easy to make... Some are creating masterpieces with this rolls but for now it is beyond me:)"...

Or like "alternatifanne", saying "Seren, who has not been wearing any chemical-dyed clothes since the day she was born, often gets sick ... Ayşe, who can not even trust her mother with giving care to her son, learns from her doctor that Osman, her son, should start the nursery as soon as possible ... When we see such examples, we question that whether our efforts for our child is meaningless... 'Annelik Haritası' published by Yeni İnsan Publication is an awareness game that can change your definition of "Good Mother" and that will guide you to the path of Sustainable Good Maternity, which can overturn the definition of "Good Mom" in your head ... Determine your route in your map. And see how your child's problems get smaller while your child grows!"...

As can be seen, a mother blogger can send messages to her followers by developing applications such as books, seminar work, and individual work with a creative idea called "maternity map", keeping it out of traditional motherhood patterns. Thus, motherhood goes beyond the traditional forms and becomes modern, innovative and creative.

Findings About Transmedia Storytelling

Blogger mothers seem to be already far away from traditional duties of traditional mothers such as bringing a child to the world, raising, dealing with housework, washing dishes and laundering, cooking, cleaning. At this point, it is also seen that blogger mothers carry out activities that can provide communication between various brands, products or services, businesses with the target audience through their blogs. In other words, blogger mothers, have become the subjects bringing together the target audience with corporations by transmedia applications and storytelling that they have created in transmedia environments.

In this context, there are some posts drawing attention. The title of the blog post which is covered in one of these posts is given as “En Pratik Sling Türkiye’de: Lucky Supporti” (The Best Practical Sling in Turkey: Lucky Supporti). In the content of the article, there are some statements: “I have a new discovery:) You know, I love new and interesting products. Yes, I have an infant carrier. But it is not an easy product to carry around with. If necessary, it already does its job... My new discovery is one of my favorite brands I have discovered recently:) Lucky Mama is the Turkish Official Distributor of Lucky, Japan’s oldest baby carrier producer founded in 1934 ...”(keyifbebesi).

After this post shared on “keyifbebesi” blog, which was narrated as a new discovery, for example a follower named Özgecan Sancak on Facebook participated in the process, indicating “Is it possible to publish the photo that you use this product? Previously, Zuhale Kaykaç Messora posted a photo using this product while bathing her child, however, I felt like there was a danger of falling since it seemed uncomfortable without a support. It looks very simple compared to Babasling etc. derivatives. I will keep on following.”. It is also remarkable that the follower gives “I will keep on following” message.

On “kokoshanne” blog on the other hand, the content created for the Philips brand is remarkable. In this example, the blogger explains the necessity of hair dryers to her followers based on her child, sharing Alin’s choice on hair dryer with a storytelling narrative: “The hair dryer is a product we would all like to have at home. In fact, I do not really like drying my hair but I can not get rid of my neck and back pains because of my wet hair. Therefore, I never go out without drying my hair. Of course, I have a little partner:) Of course, hair of Lady Alin is first covered with cheesecloth, and excess water is eliminated, hair-drying process starts... We both relaxed now thanks to Philips ThermoProtect Ionic Hair dryer... “

On mother blogs covered in the study, not only storytelling for marketing purposes is the subject. At the same time, some stories about prenatal and post-natal periods and delivery, which are the main purposes of stories in mother blogs, one of the thematic blogs, are also the subjects, influencing followers’ ideas and attitudes about motherhood. This is the basis of the development of the influence being received from bloggers on future mothers and mothers about pregnancy and pre-pregnancy periods and about raising children after birth.

One of these stories included Ayşenur and Dağhan’s story: “I promised myself during the period, in which I was keeping a pregnancy diary, to write all my feelings while they were fresh, my birth story to get a reminder... 2016 was so full of worries, I did not spend one day that I did not feel that burden on my shoulders. I was not able to enjoy the most important moment of my life while I was being squashed under this weight ...I hope that our story would bring light to people who are about to give up... When my head was full, I could not breathe in my nose and I was so scared when I heard the sentence, “birth is coming”... I was relieved when my doctor said that “Whichever way I choose, he will be with me and do whatever it takes,” and I got nervous about giving the right decision. Everyone let me to decide and started to wait. How much would I relax if somebody would go out and say, “Well, this is the right way, keep going” ... I was just one of the billions of mothers. Nevertheless, it was the most miraculous

moments of our little world, the moment we first met and after that ... My little fighter resisting in the risky pregnancy process, my dear Dağhan... “(blogcuanne).

When the answers given to the story of Ayşenur and Dağhan are examined, it is seen that the mother candidates took lessons and courage about themselves from this sharing. For this reason, the follower named Mavi thanked to the authors of the story via the comment she made, and explained that she was positively affected by their story by saying “I’m really happy to hear about your births, and as soon as I learned that you were on therapy, I immediately looked at your pregnancy diaries. You are a ray of hope for me. 1. My transfer has resulted in a 10-week-low. After despair, I found myself in hospital again with a wish of becoming a mother 3 months later. Your story was the hope for me. Thank you so much for sharing. It is so good that you wrote it.” Likewise, another follower named Melike explained that she was impressed by the characters of the story by saying “Do not be unhappy anymore, always be happy with your son, with the people you love... Birth stories have always impressed me deeply; yours have done the same. Best regards.”

When we examine the stories created by Blogger mothers, mother candidates or mothers, it is noteworthy that very emotional and impressive narratives are realized. It can be argued that these narratives will affect people with curiosity or concerns about prenatal, natal and postnatal periods; and will lead to some changes in their ideas and practices. In other words, the stories told in the blogs of the blogger mothers can be said to have a very high influence on the surrounding environment.

CONCLUSION

Change is not only observed in communication technology and tools, but also in communication patterns and models in the age of social media. These communication-based changes attract attention in many areas, from the forms of communication that individuals build in their daily lives, to professional and corporate life.

The messages generated do not reach their goals in limited space, limited time and limited form as it used to be, due to the developments occurred. Contrarily, they can be reached with a lot of media use thanks to wide range of tools of today’s social media. Efficiency of communication messages are enhanced by integrating these multimedia tools with each other and by benefitting from the specific power of each media tool via the process named transmedia applications.

With the development of transmedia applications, the methods of transmitting the message desired by fictionalizing it around a story have been realized in an extremely effective manner. Thus, the concept of transmedia storytelling comes to light.

This study was conducted to find out how blogs, which are social media tools, are used as a next generation maternity practice and to answer the question of how blogger mothers use transmedia storytelling applications. According to the data obtained from the research, it seems that the blog as a social media tool creates a creative space that can be defined as “blogger motherhood” for the new generation of mothers. It is come to light that blogger mothers put their signature on different projects with the creative substructure that blogging offers them. At the same time, it has been understood that blogger mothers used transmedia storytelling to influence their target audience, expanded their stories with other social media tools, and reached a wide follower network.

However, it has also been revealed that blogger mothers behave in a way appropriate to different character types in different stories created in blogs. It is observed that in the stories created by blogger

mothers, blogger mothers are often the main character, and occasionally they give place to other characters in their stories. In the stories created by blogger mothers, bloggers are always seen in the form of a character who is a real friend. At the same time, it seems that they reflect the dynamic character structure of blogger mothers. According to the results obtained from the research, blogger mothers also take the characteristics of heroes and supporting characters.

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KEY TERMS AND DEFINITIONS

Blog: The blog, a type of Web 2.0 technology, is a website that allows users (bloggers) to publish posts viewed in reverse chronological order.

Blogger: The blogger concept means blog writer.

Creativity: Creativity is a process based on the ability to produce products.

Mother Blogs: Mother blogs, an example of thematic blogs, refer to a type of blog created by a blogger mother who wants to share her ideas, integratedly with other mothers or future mothers.

Narration: Narration is a process based on the expression of real or designed imaginary events.

Social Media: It is the name given to online platforms where individuals interact with each other.

Transmedia Storytelling: Transmedia storytelling is the sharing and reproduction of a story in different media.

Transmediatic Characters: Transmedia characters are people used in transmedia storytelling.

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Chapter 18

A Systematic Review on Self–Construal and Social Network Sites

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ABSTRACT

The present research was conducted to systematically review existing research that examined the relationships of the aspects of self-construal and social network sites (SNS) usages. A total of 12 research articles met the inclusion criteria for the present review. The reviewed research articles mainly supported the significant relationship of the interdependent self-construal and SNS-related outcomes. The present review highlighted that the reviewed relationships differed. Some findings supported the direct effect of self-construal on SNS-related outcomes, whereas some supported the indirect effects of intervening variables on these relationships. The reviewed findings supported the influence of self-construal on cognition, emotion, and motivation. Implications of the present systematic review were discussed in the manuscript.

INTRODUCTION

Social network sites (SNS) that function to connect people (e.g. Ellison, Steinfield, & Lampe, 2007) have been tightly integrated into users' daily life. Although these online platforms were initially designed to connect people, SNS have served a range of purposes that include instant distribution of newspaper content (e.g. Ju, Jeong, & Chyi, 2014) and brand advertising (Dehghani & Tumer, 2015). This supports the multifaceted usage of SNS that stemmed from users' exploitation of the features available on these online platforms. Consistent with the intended purposes of SNS to regulate and to maintain connectedness with other users (Boyd & Ellison, 2007), research has supported that the degree of individuality and

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collectiveness is instrumental in shaping the use of SNS. For instance, the endorsement of individuality and connectedness was linked to the types of connection established through SNS (Chu & Choi, 2010; Choi, Kim, Sung, & Sohn, 2010; Ji et al., 2010; Na, Kosinski, & Stillwell, 2015). Subsequent progression revealed that the assertion of individualism and collectivism affected the underlying attitude and acceptability of SNS (Cho & Park, 2013). Consequently, this endorsement influenced the enacted communication style (Cho & Park, 2013; Park, Jun, & Lee, 2015; Qiu, Lin, Leung, 2013) and self-expression strategies on SNS (Chu & Choi, 2010; DeAndrea, Shaw, & Levine, 2010), motivations (Kim, Sohn, & Choi, 2011; Shin, 2010) and the corresponding levels of engagement on SNS (Chu & Choi, 2011; Jackson & Wang, 2013; Park et al., 2015; Vasalou, Joinson, & Courvoisier, 2010). In this stream of research, endorsement of these self-aspects is known as self-construal (Markus & Kitayama, 1991). Collectively, research findings have supported the significance of self-construal in facilitating SNS usages. Given the importance of self-construal in determining usages of online platforms, the present research aims to systematically review existing research articles that examined the relationships of the aspects of self-construal and SNS related outcomes.

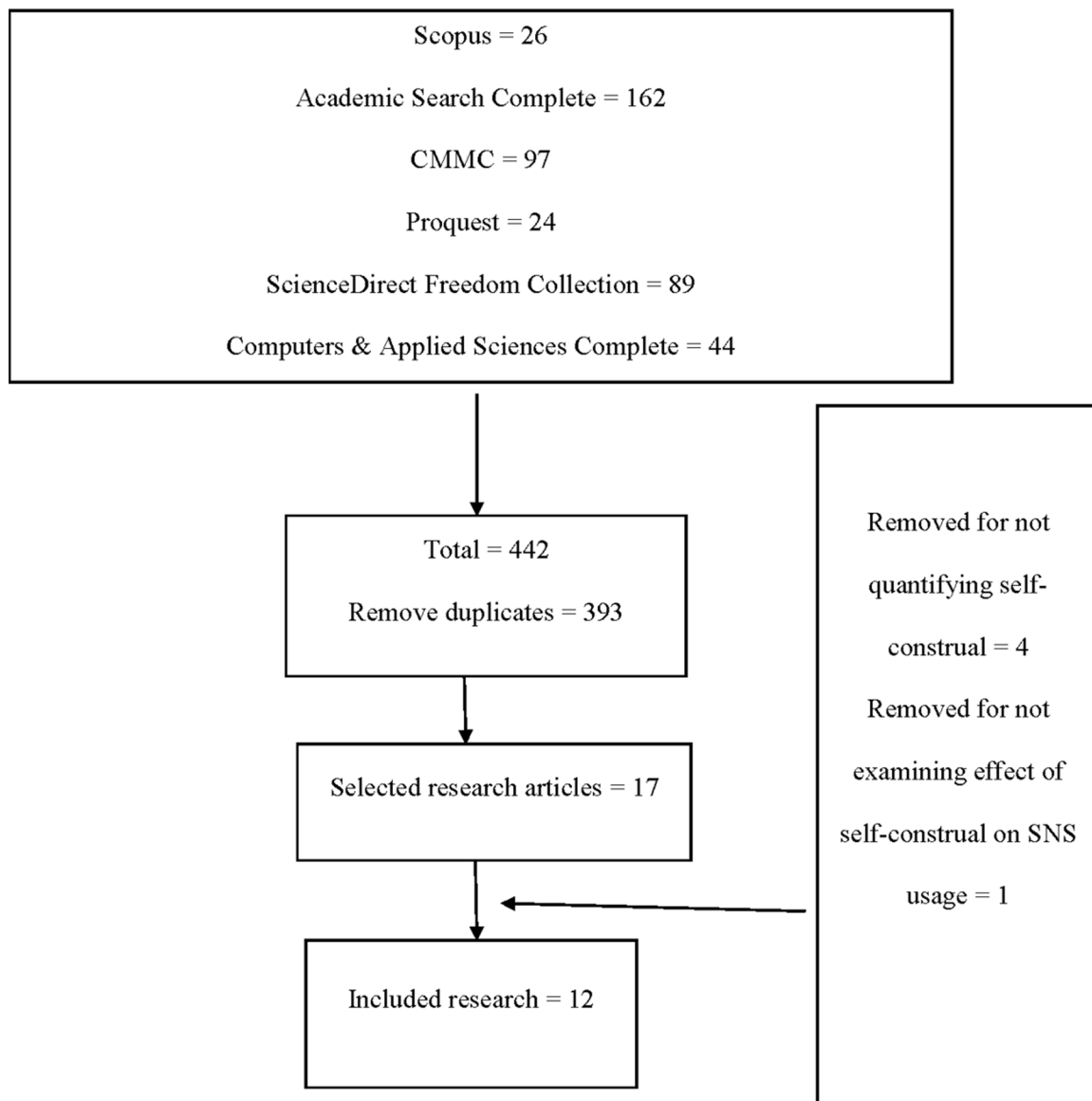
Self-construal is one of the prominent concepts in psychology (Matsumoto, 1999). It refers to the extent to which the self is defined independently of others or interdependently with others (Markus & Kitayama, 1991). The independent aspect of self is known as the independent self-construal, where the self is represented as distinct from others (Markus & Kitayama, 1991; Singelis, 1994). The interdependent aspect of self is known as the interdependent self-construal, where the self is represented as tightly connected to others (Markus & Kitayama, 1991; see also Singelis, 1994). Although these aspects were deemed as mutually exclusive, it was indicated that individuals possess both aspects of self-construal, and the expression of these aspects is dependent on situational context (Markus & Kitayama, 1991, see also Singelis, 1994, Triandis, 1989). The expression of these self-aspects is often consistent with Hofstede's (1980, 2001) cultural dimension of Individualism-Collectivism. The expression of the independent self-construal is more common in individualistic cultures, whereas the expression of the interdependent self-construal is more common in collectivistic cultures (Gudykunst et al., 1996; Markus & Kitayama, 1991; Singelis, 1994). Self-construal was theorized as individual-level of culture-based differences in perception, motivation and behaviour (Markus & Kitayama, 1991). Hence, despite the overlap, the theoretical distinction remained where the cultural dimension of Individualism-Collectivism describes the national cultures, while the aspects of self-construal reflects on individuals' endorsement of individuality and collectiveness (Cross, Hardin, & Gercek-Swing, 2011; Levine et al., 2003).

In the vast literature, self-construal has been used to account for differences in human communication, such as the endorsement of communication strategies (Kim, Shin, & Cai, 1998) and conflict styles (Oetzel, 1998). Empirical research extends the influence of self-construal on human-technology interaction, where the aspects of self-construal dictate the gratifications sought online. To illustrate, individuals with assertion of collectiveness or interdependence reported higher gaming satisfaction with avatar-based video games that promote interactivity (Park & Jin, 2009). When purchasing online products, individuals with high interdependent self-construal are less critical toward reviews written by previous customers (Sia et al., 2009). Additionally, individuals with high interdependent self-construal are less likely to purchase products online due to the absence of human interaction (Frost, Goode, & Hart, 2010). Research also supports that self-construal is conducive of technology acceptance (e.g. Choi & Totten, 2012) and usages (e.g. Hu, Zhang, & Luo, 2016). Thus, researchers have recommended to design online contents such as website design (Kim, Coyle, & Gould, 2009) and corporate pages on SNS (Tsai & Men, 2012) based on these predispositions.

A Systematic Review on Self-Constraint and Social Network Sites

In essence, self-construal is an influential psychological variable that influence human-technology interaction. The purpose of the present research is to systematically review existing research articles that examined the relationships of self-construal and SNS usages. Specifically, the present review will focus on (1) the quantification of self-construal and SNS related outcomes, and (2) the relationship of self-construal and SNS related outcomes. Recommendations from the Preferred Reporting Items for Systematic Reviews and Meta-Analysis Protocols (PRISMA-P; Shamseer et al., 2015) are used as guidelines for the present systematic review.

Figure 1. The flow of the searches and screenings



METHOD

Information Sources and Search Strategy

To identify research articles for the present review, a search was conducted with Academic Search Complete, Communication and Mass Media Complete, Scopus, ScienceDirect Freedom Collection, ProQuest databases. Reference lists of included research articles were scanned for additional relevant research articles.

All plausible combinations of the following keywords were used: “social network sites”, “social networking sites”, “social media”, “SNS”, “Facebook”, “self-construal”, “self-construals”, “independent self-construal”, “interdependent self-construal”. No constraint was imposed on the date of publication as an attempt to maximize the search results. Research articles collection was conducted on November 2018. A total of 393 research articles responded to the keywords.

Eligibility Criteria and Selection Process

For the present review, the following eligibility criteria were imposed: (1) original research articles, (2) published in English, (3) quantitative research that manipulates or measures self-construal, and (4) quantitative research that measures SNS related outcomes. Titles and abstracts of the retrieved research articles were screened according to the inclusion criteria. From the initial 393 research articles, 17 research articles were retained for full-text screening. Full-text screening supported the decision to retain 12 research. Figure 1 summarizes the flow of the searches and screenings.

Results

The present research intends to systematically review the relationships of self-construal and SNS related outcomes. A total of 12 research articles met the inclusion criteria and were included in the present review. Table 1 summarizes the characteristics of the included research articles.

Characteristics of Included Research Articles

The included research articles were mainly cross-sectional research, with 1 of the retrieved articles reported a combination of survey design and online experiment (Shim et al., 2016; Study 2), while another 1 research article declared the research as an online experiment (Lee et al., 2012). From the retrieved research articles, the earliest research dated back to 2010 (Kim et al., 2010) and the most recent research is published in 2018 (Kim & Stavrositu, 2018). Two out of the retrieved 12 research articles documented multiple investigations in a single publication (Chang, 2015; Shim et al., 2016).

The sample varied significantly across the retained research articles. Majority of the research articles reported the inclusion of university and college students as research participants, followed by adults. The reported sample size differed across the retrieved research articles. One of the research articles reported a sample of 87 participants (Lee et al., 2016), and the largest sample size reported was 900 (Chang, 2015). Gender ratio was unequal, where female participants exceeded 50% in most of the research articles.

Table 1. Characteristics of the included research articles

Author/s, (year)	Aim/s	Sample type	Country	N (female's n)	Age
Bailey & Mimoun (2016)	To investigate the effect of the interdependent self-construal on consumers' view and responses to online social networking.	University students	USA	236 (female = 46%)	75% in the age range of 18 – 24 (M_{age} and SD_{age} not specified)
*Chang (2015)	To investigate the effects of the aspects of self-construal on Facebook activities.	University students	Taiwan	Study 1 900 (female = 54.8%) Study 2 863 (female = 59.3%)	Study 1 Age range 19 – 55 (M_{age} = 22.66, SD_{age} = 4.02) Study 2 Age range 18 – 55 (M_{age} = 22.56, SD_{age} = 4.02)
Chen & Marcus (2012)	To investigate the relationships of the different modes of self-disclosure, personality, and self-construal on self-disclosure on SNS	University students	USA	463 (female = 71%)	Age range 18 – 51 (M_{age} = 20.57, SD_{age} = 4.72)
Chu et al. (2015)	To investigate the effects of the two aspects of self-construal on the usage of three social media platforms.	Young adults	USA (n = 306) China (n = 315)	621 (female = 53%)	Age range under 20 and over 21 year (M_{age} and SD_{age} not specified)
*Ferenczi et al. (2017)	To investigate the mediating effects of self-construal and narcissism on the relationships of gender and motives of Facebook usage.	Adults	USA	573 (female = 59%)	Age range not specified (M_{age} = 30.79, SD_{age} = 9.17)
Jiao et al. (2017)	To investigate the effects of the two aspects of self-construal on psychological well-being derived from SNS usage.	Adults	China	437 (female = 47.6%)	Age range 18-46 and above (M_{age} and SD_{age} not specified)
Kim et al. (2010)	To investigate the effects of self-construal on SNS usage and satisfaction	University students	USA	170 (female = 55.3%)	Age range 18 – 23 (M_{age} and SD_{age} not specified)
Kim & Stavrositu (2018)	To investigate the moderating effects of self-construal on the relationships of socially engaging/disengaging emotions on Facebook and well-being.	Adults	USA Korea	USA (n = 320, female = 51.9%) Korea (n = 336, female = 46.7%)	USA Age range not specified (M_{age} = 31.23, SD_{age} = 7.81) Korea Age range not specified (M_{age} = 31.34, SD_{age} = 8.25)
Lee et al. (2012)	To investigate the mediating effects of online community engagement self-efficacy and SNS social outcome expectations on the relationship of self-construal and consumers' electronic word of mouth (eWOM) behaviour.	College students	USA	160 (female = 61.2%)	Age range, M_{age} and SD_{age} not specified.

continues on following page

Table 1. Continued

Author/s, (year)	Aim/s	Sample type	Country	N (female's n)	Age
Lee et al. (2016)	To investigate the effect of the Autonomous-Related self-construal on different SNS usages	University students	Korea China Malaysia	Korea ($n = 113$, female = 52%) China ($n = 87$, female = 77%) Malaysia ($n = 105$, female = 77%)	Korea Age range not specified ($M_{age} = 22.27, SD_{age} = 2.18$) China Age range not specified ($M_{age} = 20.70, SD_{age} = 2.07$) Malaysia Age range not specified ($M_{age} = 23.22, SD_{age} = 2.59$)
Long & Zhang (2014)	To investigate the effects of self-construal on the motives and concerns behind SNS use	Adults	Japan British	Japan ($n = 134$, female = 58%) British ($n = 109$, female = 75%)	Japan Age range 16-63 ($M_{age} = 30.42, SD_{age} = 10.56$) British Age range 16-57, ($M_{age} = 22.40, SD_{age} = 7.34$)
*Shim et al. (2016)	To investigate the effects of self-construal and public self-consciousness on positive self-presentation on SNS	College students	Korea	Study 1 ($n = 137$, female = 65%) Study 2 ($n = 120$, female = 53%)	Study 1 Age range 19 - 27 ($M_{age} = 22.77, SD_{age} = 1.79$) Study 2 Age range 20 - 32 ($M_{age} = 23.70, SD_{age} = 2.95$)

The included research articles reported cross-cultural comparisons. There were attempts to examine differences between Western and Asian samples (Chu et al., 2015; Kim & Stavrositu, 2018; Long & Zhang, 2014). One research article uniquely examine differences amongst three Asian countries (Lee et al., 2016).

Appraisal

Consistent with PRISMA-P guidelines (Shamseer et al., 2015), each research article was assessed for risk of bias using NHLBI quality assessment tool (National Heart, Lung, and Blood Institute, 2014). Majority of the research articles have stated clear research objective or research aim, and have utilized suitable measures of self-construal. However, most research articles adapted existing scales to gauge SNS related outcomes without proper screening on their psychometrics. Further screening revealed that gender distribution was unequal for most of the retained research articles. Additionally, there was no clear age restriction for most of the retained research articles. Together, these factors may confound the results. Two online experiments were conducted, where the two aspects of self-construal were manipulated with Trafimow et al.'s (1991) priming procedures (Lee et al., 2012; Shim et al., 2016; Study 2). From these two online experiments, only one reported randomization of the priming conditions (Shim et al., 2016). Both online experiments reported that manipulation check was conducted to ensure the priming was successful. In sum, majority of the retained research articles received poor rating, while only a few received fair rating. Research articles that received a fair rating are distinguished with an asterisk symbol in Table 1.

Self-Construal Measures and Indicators

Table 2 summarizes the measures and procedures used in each respective research articles. The common measure for self-construal is the Self-Construal Scale (Singelis, 1994). However, this measure was utilized inconsistently. From the retained research articles, some utilized the entire scale, whereas some focused on the subscale. In addition, some researchers reduced the items without justification and proper screening on the psychometrics. A research computed the score difference between the subscales for the independent self and the interdependent self to create an index, which higher score indicating for greater orientation towards the independent aspect (Chang, 2015). Other research articles reported the use of other scales to measure the independent and interdependent aspects of self-construal, such as the 4 items from Wagner's (1995) research, the Schwartz's Value Inventory (1992), and the Owe's (2013) self-construal scale from an unpublished thesis. Relatedly, two research articles (Lee et al., 2012; Shim et al., 2016) primed the aspects of self-construal with the procedures outlined by Trafimow et al. (1991). Other aspects of self-construal were measured, which include the relational self-construal that refers the tendency to construe oneself in terms of relationships with significant others (Cross et al., 2000) and the Autonomous-Related self-construal that refers to the balanced state of autonomous and relatedness (Kagitcibasi, 2007).

Table 2. Self-construal measures and indicators

Author/s (year)	Scale/Procedures used	Description	Further remarks
Bailey & Mimoun, 2016; Chang, 2015; Chu et al., 2015; Jiao et al., 2017; Shim et al., 2016	Self-Construal Scale (Singelis, 1994)	This scale consists of 24 items, with 12 items reflecting on the independent self and the remaining 12 reflecting on the interdependent self.	Full items were used in 2 research articles (Chang, 2015; Chu et al., 2015). The remaining research articles reported the use of the shortened scale (12 items, Shim et al., 2016; 9 items, Jiao et al., 2017). One of these articles used the interdependent subscale (Bailey & Mimoun, 2016)
Chen & Marcus (2012)	Four items from Wagner's (1995) research	This scale consists of 4 items, with higher scores indicating greater endorsement of the independent self.	
Kim et al. (2010)	Leung and Kim's (1997) self-construal scale	This scale consists of 29 items that reflect on the independent and the interdependent self-construal.	
Long & Zhang (2014)	Owe's (2013) self-construal scale	This scale consists of 35 items, reflecting on seven dimensions of Self-direction, Self-reliance, Consistency, Inclusion of others in the self, Commitment to others, and Uniqueness.	Long & Zhang (2014) reported the use of 12 items for measuring the independent self, and another 12 items to measure the interdependent self.
Kim & Stavrositu (2018)	Schwartz's Value Inventory (1992)	This scale consists of 56 items that reflect on ten broad dimensions of human values.	Kim & Stavrositu (2018) assessed the independent self with six items, and the interdependent self with another six items.
Ferenczi et al. (2017)	Relational-Interdependent Self-Construal Scale (Cross et al., 2001)	This scale consists of eleven items that reflect on the relational self-construal, which is the tendency to construe the self in relation to connectedness with significant others.	
Lee et al. (2016)	The Autonomy-Relatedness Scale (Kagitcibasi, 2007)	This scale consists of 27 items. It consists of three subscales, each formed by nine items that reflect on the Autonomous self, the Related self, and the Autonomous-Related self (balanced state of independence and interdependence).	The independence and interdependence aspects were discarded due to poor model fit across three countries. Four items from the Autonomous-Related self subscale were removed to improve the fit indices.
Lee et al. (2012); Shim et al.'s (2016) Study 2	Priming procedures used by Trafimov et al. (1991)	One of these procedures requires participants to think of the difference (independent self) and similarity (interdependent self) of themselves in comparison with their significant others. This is used in Shim et al.'s (2016) research. Another procedure requires participants to read a scenario that depicts two different endings to prime the designated self-construal. This was used in Lee et al.'s (2012) research.	Manipulation check was conducted in both research articles (Lee et al., 2012; Shim et al., 2016) by examining the mean difference between the measured independent and interdependent self.

SNS Related Outcomes

Table 3 summarizes the measured usages and aspects of SNS. These measured aspects differed across the reviewed research articles. Due to shortage of valid and reliable scales, four of the reviewed research articles composed measures to reflect on the investigated aspects of SNS (Bailey & Mimoun, 2016; Chang, 2015; Lee et al., 2016; Long & Zhang, 2014). Eight research articles adapted existing scales to reflect on the context of SNS (Chen & Marcus, 2012; Chu et al., 2015; Ferenczi et al., 2017; Jiao et al., 2017; Kim et al., 2010; Kim & Stavrositu, 2018; Lee et al., 2016; Shim et al., 2016). From one of these research articles, the adapted SNS Intensity Scale (Ellison et al., 2007) exhibited good fit indices and the factor structure was interpreted consistently across three Asian samples (Lee et al., 2016).

Secondary Outcomes

Apart from measuring the aspects of self-construal and the usages of SNS, the retrieved research articles also measured other psychological constructs. From Table 4, these secondary outcomes varied as well. These outcomes included personality traits such as narcissism and Extraversion, social orientations, motivations, materialism, active usage of microblogging and the intensity of video sharing, modesty in responding, the degree of satisfaction with life and Facebook, social outcome expectations and public self-consciousness. Most of these outcomes were used as mediators to the relationships of self-construal and the aspects of SNS.

The Relationships of Self-Construal and the Aspects of SNS

Overall, research findings supported the significant effects of the independent and interdependent self-construal on the different aspects of SNS. Table 5 summarizes the main findings. Although both aspects of self-construal were significant predictors of active SNS use, results mainly supported that the interdependent aspect was more influential than the independent aspect (Chu et al., 2015). The reviewed research articles indicated that the relationships examined differed by cultures. In an instance, the measured Autonomous-Related self-construal predicted active use of SNS positively with Malaysian sample, while the same self-construal predicted the same active use of SNS negatively with Korean sample (Lee et al., 2016). In another research article, the amount of motivations significantly predicted by the independent self-construal and the interdependent self-construal differed between British and Japan sample (Long & Zhang, 2014). Findings from these research articles supported the facilitative effect of the interdependent self-construal on the aspects of SNS (Chu et al., 2015; Long & Zhang, 2014).

However, findings indicated that the measured self-construal did not directly predict the aspects of SNS. The measured self-perceptions influence the formation and enactment of certain psychological constructs, which eventually affect the corresponding SNS usages. Two of the reviewed research articles posited the measured aspects of self-construal as mediators (Ferenczi et al., 2017; Kim & Stavrositu, 2018).

Table 3. SNS measures and indicators

Author/s (year)	Scale/s used (α)
Bailey & Mimoun (2016)	Susceptibility to social networking influence scale ($\alpha = .92$) SNS Social sharing disposition ($\alpha = .93$) Attitude towards social networking ($\alpha = .97$) Attitude towards marketers' social networking sites ($\alpha = .96$) Likelihood to recommend marketers' SNS ($\alpha = .93$)
Chang et al. (2015)	<i>Study 1</i> Time spent online and Facebook, Facebook activities (Responding to others' $\alpha = .91$, Revealing the self's $\alpha = .80$) <i>Study 2</i> Time spent online and Facebook, Facebook activities (Responding to others' $\alpha = .87$, Revealing the self's $\alpha = .93$)
Chen & Marcus (2012)	Intention to self-disclosure online ($\alpha = .63$) Amount of self-disclosure online ($\alpha = .68$) Positivity of self-disclosure online ($\alpha = .56$) Honesty of self-disclosure online ($\alpha = .39$) Control of self-disclosure online ($\alpha = .47$) Relevance of self-disclosure online ($\alpha = .32$)
Chu et al. (2015)	SNS intensity scale (Ellison et al. 2007)
Ferenczi et al. (2017)	Uses of Facebook scale (Facebook prosocial motives' $\alpha = .91$, Facebook antisocial motives' $\alpha = .91$)
Jiao et al. (2017)	Social value on SNS ($\alpha = .82$) Content value on SNS ($\alpha = .84$) Self-esteem on SNS ($\alpha = .80$) Flow on SNS ($\alpha = .84$) Social identity on SNS ($\alpha = .79$) Psychological well-being derived from SNS ($\alpha = .78$)
Kim et al. (2010)	Motivations to use Facebook (social motivations' $\alpha = .81$, nonsocial motivations' $\alpha = .79$) SNS use per week Number of friends on SNS SNS profile length
Kim & Stavrositu (2018)	Socially engaging/disengaging emotions on Facebook (Positive engagement's $\alpha = .88$, Positive disengagement's $\alpha = .89$, Negative engagement's $\alpha = .88$, Negative disengagement's $\alpha = .92$) Perceived control on Facebook ($\alpha = .78$) Perceived relationship harmony on Facebook ($\alpha = .89$)
Lee et al. (2012)	eWOM intentions on SNS ($\alpha = .90$) Online community engagement self-efficacy ($\alpha = .91$) Online brand community type (consumer and marketer generated online brand community)
Lee et al. (2016)	SNS intensity (Malaysia's $\alpha = .86$, Korea's $\alpha = .90$, China's $\alpha = .87$; Ellison et al. 2007) Activities on others' profiles checklist (Increasing contact, Malaysia's $\alpha = 0.81$, Korea's $\alpha = 0.79$, China's $\alpha = 0.94$; Updating, Malaysia's $\alpha = 0.86$, Korea's $\alpha = 0.82$, China's $\alpha = 0.87$) Contact with friends' profiles (Malaysia's $\alpha = 0.65$, Korea's $\alpha = 0.75$, China's $\alpha = 0.87$)
Long & Zhang (2014)	Online self-presentation motives (Image management, Japan's $\alpha = .83$, British's $\alpha = .86$; Self-expression, Japan's $\alpha = .75$, British's $\alpha = .88$; Maintaining privacy, Japan's $\alpha = .79$, British's $\alpha = .71$; Attention seeking, Japan's $\alpha = .90$, British's $\alpha = .57$; Modest concern, Japan's $\alpha = .75$, British's $\alpha = .60$)
Shim et al. (2016)	<i>Study 1</i> Positive self-presentation on Facebook ($\alpha = .86$) Time spent on Facebook Months of Facebook use <i>Study 2</i> Positive self-presentation on Facebook ($\alpha = .78$)

Table 4. Measures and indicators of secondary outcomes

Author/s (year)	Scale/s used (α)
Chang (2015)	<i>Study 1</i> Social orientation (Self-disclosure's $\alpha = .95$, Social responsiveness' $\alpha = .96$; adapted from Miller et al., 1983) <i>Study 2</i> Social orientation (Self-disclosure's $\alpha = .93$, Social responsiveness' $\alpha = .96$) Social goals (Motivation to belong's $\alpha = .83$; Leary et al., 2007; Motivation to be popular's $\alpha = .83$; Sanrtor et al., 2000)
Chen & Marcus (2012)	Extraversion ($\alpha = .79$; Donellan et al., 2006) Self-disclosure (Intent's $\alpha = .67$, amount's $\alpha .70$, positivity's $\alpha = .64$, honesty's $\alpha = .58$, control's $\alpha = .40$, relevance's $\alpha = .32$)
Chu et al. (2015)	Microblogging sites intensity, video sharing sites intensity (adapted from Ellison et al., 2007) Materialism (Richin & Dawson, 1992)
Ferenczi et al. (2017)	Narcissistic Personality Inventory-13 (NP-13; Gentile et al., 2013)
Kim et al. (2010)	Satisfaction towards Facebook ($\alpha = .82$)
Kim & Stavrositu (2018)	Life satisfaction ($\alpha = .89$; Diener, 1958)
Lee et al. (2012)	Social outcome expectations ($\alpha = .95$)
Long & Zhang (2014)	Narcissistic Personality Inventory (Ames et al., 2006; Japan's $\alpha = .61$, British's $\alpha = .76$) Modest Responding Scale (Whetstone et al., 2002; Japan's $\alpha = .82$, British's $\alpha = .86$)
Shim et al. (2016)	<i>Study 1</i> Public self-consciousness (Scheier & Carver, 1985; $\alpha = .87$) <i>Study 2</i> Public self-consciousness (Scheier & Carver, 1985; $\alpha = .86$)

DISCUSSION

The present research intended to systematically review the relationship of self-construal and SNS related outcomes. Twelve research articles were retrieved and retained for this purpose. To the authors' knowledge, this is the first attempt to systematically review findings on the relationships of the aspects of self-construal and SNS usages. In sum, the reviewed findings supported the significant relationship of self-construal and SNS related outcomes. In particular, the reviewed findings mainly supported the significance of the interdependent self-construal in forming the usages of SNS and other related experiences.

From the reviewed research articles, the diversity in the operationalization and quantification of self-construal is evident. Some of the retained research articles focused on the conventional independent and interdependent self-construal, while some enacted alternative forms of self-construal (Ferenczi et al., 2017; Lee et al., 2016). This demonstrates the complexity of the theoretical constructs of self-construal. Diversity of the operationalization and quantification of the aspects of self-construal hindered systematic appraisal of effect sizes derived from the retrieved research articles. From the reviewed research articles, each of the measured self-construal was treated as unidimensional construct. However, empirical evidences revealed that the aspects of self-construal were multidimensional, that the independent and the interdependent self-construal each respectively consisted of different facets (Hardin, Leong, & Bhagwat, 2004; Hardin, 2006). Measuring the facets of self-construal is vital to the advancement of the conceptual links of self-construal and SNS related aspects since these specific facets tend to produce elaborative results (Hardin, 2006). However, it is unsure if the alternative forms of self-construal, such as the relational self-construal (Cross et al., 2000), are multifaceted. This is an aspect that requires en-

suings efforts. The multifaceted perspective of self-construal imposes challenge to the manipulation of self-construal. Although the reviewed research articles supported the effectiveness of the manipulation procedures conducted by examining the differences in the measured self-construal (Lee et al., 2012; Shim et al., 2016), it is still unclear on which facets of the self-construal that has been successfully primed (see Cross et al., 2011). This might have confounded the findings and affected the subsequent interpretation of results.

Table 5. Summary of main findings

Author/s (year)	Main findings
Bailey & Mimoun (2016)	The measured attitude towards SNS and marketers' SNS profile mediated the relationship of the interdependent self-construal and the likelihood to recommend marketers' SNS profile.
Chang (2015)	The interaction orientation mediated the relationships of the interdependent self-construal and the facets of Facebook activities (responding to others, revealing the self). The subsequent research (Study 2) expanded the mediation model, where the interdependent self-construal significantly predicted the measured social goals, which in turn significantly predicted the interaction orientation that relate to the facets of Facebook activities.
Chen & Marcus (2012)	Individuals with high interdependent self-construal, but with low Extraversion, disclosed the least honest and the most audience-relevant information on SNS.
Chu et al. (2015)	The measured aspects of independent and interdependent self-construal positively predicted SNS intensity with Chinese and American users.
Ferenczi et al. (2017)	Male users tend to engage in antisocial use of Facebook due to the higher narcissistic tendencies. Female users tend to engage in prosocial use of Facebook due to their high level of relational self-construal.
Jiao et al. (2017)	The measured social values mediated the relationship of the interdependent self-construal and psychological well-being derived from SNS usage. The independent self-construal predicted content value, which in turn predicted self-esteem that led to psychological well-being.
Kim et al. (2010)	Social motivations of Facebook use mediated the relationship of the interdependent self-construal and the satisfaction with Facebook use.
Kim & Stavrositu (2018)	The experience of socially engaging emotions (both positive and negative) were positively associated with life satisfaction through high level of interdependence. The experience of positive disengaging emotions was positively associated with perceived control on Facebook amongst those with high level of independence.
Lee et al. (2012)	The measured community engagement self-efficacy and their social outcome expectations mediated the relationship of the interdependent self-construal and the consumers' eWOM behavioral intentions.
Lee et al. (2016)	The Autonomous-Related self-construal predicted SNS intensity positively for Malaysians, while negatively predicted SNS intensity for Koreans.
Long & Zhang (2014)	<i>British sample</i> The interdependent self-construal positively predict SNS motivations to manage image, to maintain privacy, to seek attention, and the concern for modesty. Analysis also revealed that the independent self-construal negatively predicted the same motivations. <i>Japanese sample</i> The interdependent self-construal positively predicted the SNS motivations to concern for modesty, to maintain privacy. The independent self-construal negatively predicted SNS motivations to ensure modesty, to manage image, and to maintain privacy.
Shim et al. (2016)	Public self-consciousness weakened the negative association between interdependent self-construal and positive self-presentation.

Similarly, systematic appraisal of the effect sizes is hindered by the diversity in the operationalization and quantification of SNS related outcomes. Some of the scales used to gauge SNS related outcomes were adapted directly from existing psychological scales, such as psychological well-being on SNS (Jiao et al., 2017) that was based on the construct of psychological well-being outlined by Diener et al. (2009). This has raised a concern on the validity of the measured construct. It is unclear if the existing constructs can be interpreted similarly in the context of SNS. Moreover, there is no clear theoretical or conceptual rationale for these adaptations. Although the FIS (Ellison et al., 2007) is a common scale used among the reviewed research articles (Chu et al., 2015; Lee et al., 2016), there is a lack of evidence to support its validity in measuring SNS engagement (Sigerson & Cheng, 2018). This indicates that the development of scales to gauge SNS related outcomes is still progressing. While it poses limitation to research, it indicates for new research opportunity.

The reviewed relationships differed, where some research articles posited the direct influence of self-construal on SNS related outcomes, whereas some findings unveiled the indirect effect of intervening variables on these relationship. These findings supported that the aspects of self-construal are the sources of cognitive consequences, affective consequences, and motivational consequences that eventually predict tangible behaviours such as SNS usages (Markus & Kitayama, 1991; see also Cross et al., 2011).

The two main cognitive consequences of self-construal are attention to the context or a designated relationship, and the information processing styles (Cross et al., 2011). The reviewed research articles mainly focused on the attentional aspects, which include the attentiveness and willingness to self-disclose (Chang, 2015), the degree of Extraversion (Chen & Marcus, 2012), social value elicited by SNS use (Jiao et al., 2017), and public self-consciousness (Shim et al., 2016). One research article focused on information processing style, which includes the users' self-efficacy to engage online community (Lee et al., 2012). The source of these aspects was the interdependent self-construal, which is consistent with the conceptualization of the heightened self-consciousness amongst individuals with high levels of interdependent self-construal in social setting (Markus & Kitayama, 1991). For the independent self-construal, the content value of SNS, which refers to the perceived benefit gained from SNS usage, determined its relationship with self-esteem that eventually predicted psychological well-being derived from SNS usage (Jiao et al., 2017). This finding posits that individuals with high independent self-construal exploit SNS to enhance their psychological well-being (Jiao et al., 2017), which is in accordance to the conceptualization of the independent self-construal, where social interaction is deemed as a mean to strategically position the self (Markus & Kitayama, 1991).

From the retrieved research articles, only a few investigated the relationships of self-construal and the affective aspects of SNS. The reviewed research articles posited the indirect effect of the measured attitudinal aspect of SNS on the relationship of the interdependent self-construal and the likelihood to recommend marketers' SNS profile (Bailey & Mimoun, 2016). This implicates that self-construal predict certain patterns of SNS usage by influencing users' emotional state, which is consistent with how self-construal was conceptualized to induce emotion (Markus & Kitayama, 1991). Another research posited that self-construal mediated the effects of the experience of engaging and disengaging emotions on life satisfaction. The experience of positive and negative socially engaging emotions predicted greater life satisfaction, mediated by the interdependent self-construal (Kim & Stavrositu, 2018). From the same research article, the experience of positive disengaging emotions positively predicted perceived control on Facebook, mediated by the independent self-construal (Kim & Stavrositu, 2018). These findings supported that emotion can alter behavioural outcomes by stimulating the corresponding self-construal (Markus & Kitayama, 1991).

Lastly, self-construal was theorized to affect individuals' motivations, where individuals with high levels of interdependent self-construal are expected to have salient social motives than those with high levels of independent self-construal (Cross et al., 2011; Markus & Kitayama, 1991). A research article supported the significant relationships of the aspects of self-construal and motivations to use SNS (Long & Zhang, 2014). The independent and interdependent self-construal predicted the motivations in coherent fashion, suggesting for the consistent effects of these self aspects on motivations. The subsequent research article supported the mediating effect of social motivation of Facebook use on the relationship of interdependent self-construal and satisfaction with Facebook (Kim et al., 2010). Additionally, the measured relational self-construal mediated the relationship of gender and the motives of SNS use. Specifically, female users tend to endorse this aspect of self-construal, which contribute to the prosocial use of Facebook (Ferenczi et al., 2017). This finding supports that females emphasize connectedness with their significant others (Cross et al., 2000; Cross et al., 2002), and thus, utilize SNS to consolidate the connection.

From this review, existing findings mainly supported the significance of the interdependent self-construal in predicting SNS related outcomes, justified by the connectedness of SNS (e.g. Ellison et al., 2007) that appeal to users with high levels of this aspect of self. Despite the connectedness of SNS, the independent self-construal that assert on uniqueness and competitiveness (Markus & Kitayama, 1991) can be conceptually linked to SNS usage. The vast literature has supported the link of SNS usage and narcissism (e.g. Buffardi & Campbell, 2008), which is a trait that has been conceptually link with the independent self-construal (Konrath, Bushman, & Grove, 2009). This supports the potential link of the independent self-construal and SNS related outcomes. Despite the connectedness of SNS, individuals with high levels of independent self-construal may benefit from using SNS (Jiao et al., 2017), potentially at the cost of other users due to their self-centredness (Ferenczi et al., 2017). Given that the antisocial usage is contradicting the connectedness of SNS (e.g. Ellison et al., 2007), this could a sign of pathological usage of SNS. In this light, recent findings have supported that narcissism is instrumental to the development of maladaptive features of SNS usage, such as problematic use of SNS (Kircaburun, Demetrovics, & Tosuntaş, 2018; Kircaburun, Jonason, & Griffiths, 2018) and SNS addiction (Andreassen, Pallesen, & Griffiths, 2017; Casale, Fioravanti, & Rugai, 2016). Due to the theoretical overlap of the independent self-construal and narcissism (Konrath et al., 2009), there is a possibility for the independent aspect of the self to facilitate similar problematic aspects of SNS. To illustrate, users that endorsed the independent aspect of the self are actively seeking social affirmation from the features on SNS, which eventually led to satisfaction on these online platforms (Jiao et al., 2017). The tendency to seek affirmation through SNS is similar to narcissistic users (Mehdizadeh, 2010). In this light, there is a clear support that the independent self-construal is a risk factor for maladaptive usages of SNS.

A few practical implications can be derived from this review. The reviewed findings supported that self-construal influence different psychological domains in eliciting the corresponding SNS usages. Therefore, instead of focusing on specific psychological domains that are deemed as impetuses of SNS usages, such as motivations to use SNS (e.g. Long & Zhang, 2014), practising psychologists have the alternative to focus on users' self-construal. Alteration of users' self-construal has the potential to induce changes in the corresponding psychological domains such as emotional state and motivations that directed SNS related outcomes. This can be applicable to managing problematic use of SNS that has been conceptually linked to the independent self-construal. Additionally, results suggested that corporates or business owners can enhance popularity of the maintained SNS profiles by exploiting features on these online platforms to promote climate that appeal to users (Bailey & Mimoun, 2016; Lee et al., 2012). The

increased visibility will grant advantages to corporates and business owners to compete in the competitive market. Results supported the effect of the primed self-construal on the usages of SNS (Lee et al., 2012; Shim et al., 2016). This implicates that future research should consider the method of priming for certain psychological tendencies, such as the affective experience towards another's misfortune (Porter, Bhanwer, Woodworth, & Black, 2014), to investigate their effects on SNS usages. This will stimulate initiatives to design experiments, instead of correlational research that is incapable of eliciting causality.

A few limitations are notable in the present review. As an attempt to ensure quality of the reviewed findings, only peer-reviewed research articles were included. This has excluded other materials such as conference proceedings and doctoral dissertations, posing a severe limit on the materials available for the present review. Additionally, there is a lack of standardization in the reviewed research variables of self-construal and SNS related outcomes. Given the small amount of research articles available, it was not feasible to standardize these research variables as this will further reduce the amount of research articles available for review. However, these shortcomings reflect on the growing state of the literature. It is highly recommended for future researchers to replicate similar review with focused SNS related outcomes.

To conclude, the present systematic review has provided a novel elaboration on the relationships of the aspects of self-construal and SNS related outcomes. Despite the inconsistent conceptualization of self-construal and SNS related outcomes, the present systematic review supported the significance of self-construal in predicting SNS related outcomes. Future research is needed to address the methodological flaws identified in the present systematic review.

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Chapter 19

Depressive Person Detection using Social Asian Elephants' (SAE) Algorithm over Twitter Posts

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ABSTRACT

With the advent of the web and the explosion of data sources such as opinion sites, blogs and microblogs appeared the need to analyze millions of posts, tweets or opinions in order to find out what thinks the net surfers. The idea was to produce a new algorithm inspired by the social life of Asian elephants to detect a person in depressive situation through the analysis of twitter social network. The proposal algorithm gives better performance compared to data mining and bioinspired techniques such as naive Bayes, decision tree, heart lungs algorithm, social cockroach's algorithm.

INTRODUCTION AND PROBLEMATIC

Depression is an under-diagnosed disease, too often underestimated and yet widespread. It is as common as other major chronic conditions such as cardiovascular disease or diabetes, as evidenced by the fact that more than 20 million of persons each year live a major depressive situation.

According to the World Health Organization (WHO), approximately 11% of people suffer from major depression in their life. It affects young people aged of 15 to 24 years old. According to the WHO, by 2020, depression will become the second leading cause of disability worldwide, after cardiovascular disease. In very simple terms, it can be said that depression results in some way from an imbalance in brain chemistry. When a person is in depression, his body and mind send him warning signals to tell him that something is wrong. Listening to these signals we can provide a quicker diagnosis and put in place remedial measures (Finegold et al., 2013).

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For example, being sad after losing a loved one or having a feeling of failure in case of problems at work is normal. But when these states of mind return each day for no particular reason or persist for a long time even with an identifiable cause, it can be a depression. Depression is actually a chronic disease, meeting specific diagnostic criteria. In addition to sadness, the depressed person maintains negative and devaluing thoughts: "I am really bad," "I will never succeed", "I hate who I am." She feels worthless and has trouble projecting herself into the future. She no longer has interest in previously popular activities. It is unclear what are the causes of depression, but it is likely a complex disease involving many factors related to heredity, biology, life events, and environment and habits of life.

In recent years, we are in a digital world where information is available in large quantities and in various forms. 80% of this mass of information was in textual form. For this reason, we need specific tools to access sentiments and meanings hidden in these data, in order to reduce human intervention.

The sentiment analysis is an automatic process of written and spoken discourses by bringing out the different opinions expressed on a specific subject such as a brand, a news or a product. The importance of this paradigm is presented in several areas, namely policy, marketing, reputation management ...ect. It is a part of a broader area of study called NLP for Natural Language Processing with objective is to render a computer program understanding the codes of human language. The content of this chapter discusses the elaboration of new algorithms by the social life of Asian elephants to the problem of detecting depressed person by decision analysis of tweets.

The general structure of the paper will be as follows: we start with a state of the art for presenting the essential works in this topic, after we go on with a section detailing our approach and proposed components then an experimental and comparative study will be carried out for presenting the best results obtained. Finally, we will finish with a conclusion and describing some lines of thought that remain open and that we want to share them with you.

Stat of the Art

The work of Hatzivassiloglou and McKeown in 1997 consists in using the coordinating conjunctions present between a word already classified and an unclassified word, followed by the contributions of researcher Nasukawa and his team in 2003 who proposed a new method for extracting associated concepts from segments and summing the orientations of the opinion vocabulary present in the same segment (Chauan et al., 2017).

In the same year, researchers Yu and Hatzivassiloglou (2003) used the probability of ranking a word to measure the strength of the orientation of the named entities. In 2006, researchers Kanayama and Nasukawa (2006) as well as Ding and Liu in 2008 proposed, for their part, a learning-based approach that uses the coordination conjunctions present between a word already classified and a word unclassified.

The approaches of Pang et al introduced in 2002, and that of Charton and Acuna-Agost published in 2007 consist of classifying the texts according to a global polarity (positive, negative and neutral). These methods were optimized by Wilson and his research team in 2005. However, the difficulty lies in the constitution of these corpora of learning, which is a manual process to perform for each area studied. Finally, Vernier and his team (2009), have relied on a method of detection and categorization of the evaluations locally expressed in a corpus of multi-domain blogs. The second Dictionary-based Approach has had a lot of work. In 2015, Rosenthal and his team built General Inquiry which contains 3596 words labeled positive or negative. In Nakov and al work published in 2016, they use only adjectives for the detection of opinions. They manually build a list of adjectives they use to predict sentence

direction and use WordNet to populate the list with synonyms and antonyms of polarity-known adjectives (Mishra et al., 2018).

PROPOSED APPROACH

The Social Life of ASIAN Elephant

Generally, elephants live in family group led by the oldest and experiment female, which coordinate the movements of the herd. She is the matriarch, big sister, mother, aunt, grandmother or great aunt for all group members. The matriarch has the knowledge of the group; she knows the migratory routes, the pace of seasons and important places to find water and vegetation. Herds can be divided temporarily to search for water sources or food while maintaining contact (Poole, 1999).

The Friendships and Communication

The elephants communicate between them directly and discreetly up to 10 KM of distance with an inaudible infrasound for us that are emitted by regular contractions of the muscles of the vocal organ. They are able to hear and emit infrasound which is transmitted over very long distances (less than 20Hz) that our ears do not perceive. Sometimes we look at elephants may seem solitary but they are certainly in communication with others without that we see them or hear them (Bates, 2007). Experiments have shown that elephants have knowledge of individual identities and they are able to recognize and keeps track of their family members (Bates, 2008). They will join the contact calls made by their friends (family member or former group) and especially if the caller elephant has a high index of association with the group. By cons, when elephants hearing appeals from an unknown contact (by elephants where there are no ties of friendship between them) their spatial cohesion increased and they withdrew from the area.

Foraging

The organization of the social life of elephants has a practical advantage: at times when resources are scarce, in case of drought, for example, the links are tightened and friends (group member) distant approach. Some provide the best seats around water points expelling unfamiliar elephants that are in these places.

For us, this tissue of complex relations represents a real social network, which requires important cognitive abilities such as: discussions at long distance by infrasound (very low sounds that propagate away) play an important role in maintaining friendships and also the memory of these giants which is an essential tool for remembering the services rendered or trouble caused by their cronies (McComb et al., 2001). Each elephant in a drought situation search the water points and follows the choice of its congeners. Each elephant when it finds water points it sends signals to inform their friends of the place of water. The elephants retain strong links between them also after a separation of more than one year.

The Scenario

A scenario that summarizes the social phenomenon of Asian elephants in search of food or water points in case of drought is: Initially, a set of elephants are looking for a water point in the space randomly. Elephants do not know where is the water point but they know exactly how far away is and the positions of their elephant friends, then the question that arises: what is the strategy followed to find the water in good conditions? The best solution is to follow the elephants having best position relative to the water point with which have a strong bond of friendship thus to follow the laws of the matriarch who guide the direction of the group.

Passage from Natural to Artificial

This part is dedicated to the passage of the natural life of social Asian elephants to artificial life as shown in Table 1.

Table 1. Passage from social life to artificial life of social Asian elephants' algorithm

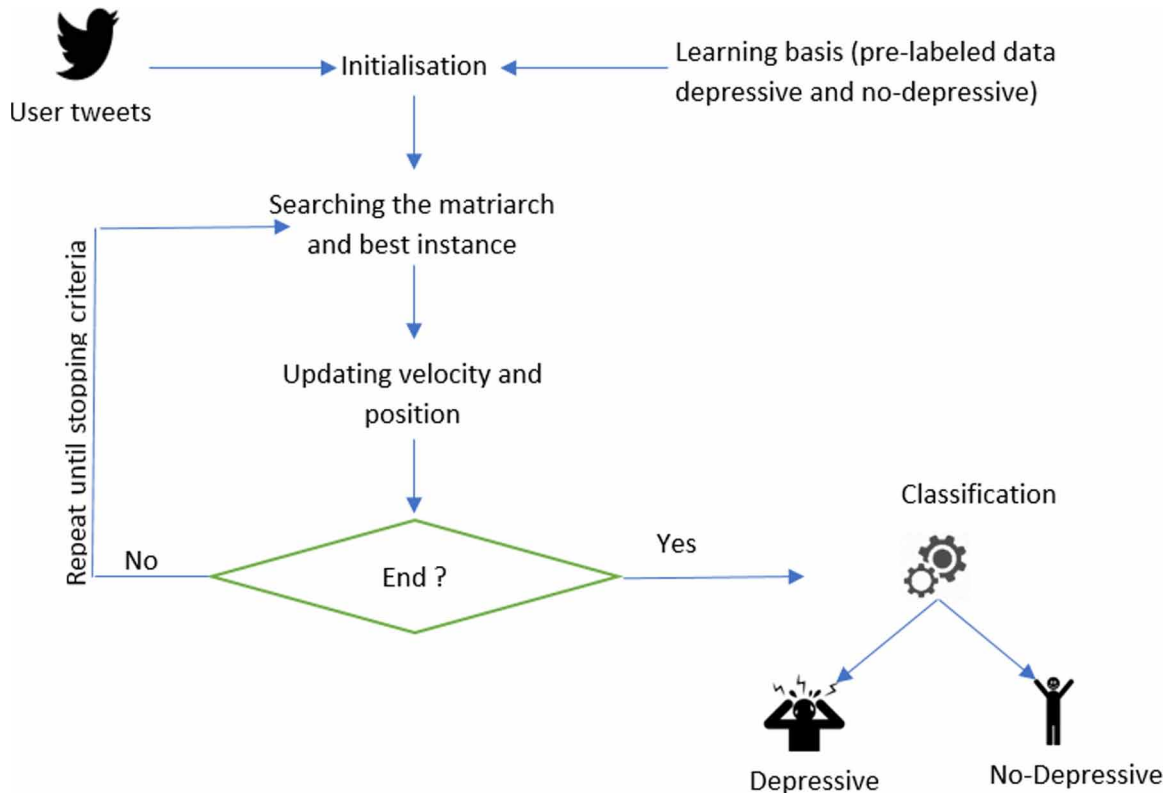
Naturel	Artificial
An elephant joins the water point found by his family group	Each user is classified in the most appropriate class (depressive or non-depressive)
Suppose the case where there are only two water points in the search space	Two classes (depressive and non-depressive)
Environment	Search space (twitter)
Elephant	Twitter user
Group of elephants	The user's tweets (corpus)
Matriarch (oldest female)	Represents the message of the person with the highest score in the learning base
Best individual of each elephant group (initialization)	For each class it is the Person who has the best correlation with the centroid (barycenter)
Best individual (in process)	Best fitness function
Friendship link between elephant i and the best individual	α : link between each user and the best individual of each class (depressive or non-depressive)
Friendship link between the elephant I and the matriarch	β : link between each user and the matriarch of each class (depressive or non-depressive)
Communication between the elephant and the best individual	$ ME_T^g - E_T^i $
Communication between the elephant i and the matriarch	$ PE_T^g - E_T^i $

THE ARTIFICIAL LIFE OF SOCIAL ASIAN ELEPHANTS' (SAE) ALGORITHM

We have imitated the social life of Asian elephants and their water points search phenomenon in case of drought to formulate a new algorithm to detect depressive person by analyzing twitter network.

In our problem we have two classes depressive and no-depressive. The user status will be transformed to vectors. Each user with a velocity V is classified according to a fitness function based on his experience, the experiences of other users, the friendship relation that exists with the users of each class and the directives received by the matriarch of each class. The input of the algorithm is a set of twitter users' vectors (corpus), divided into two parts the learning basis and the test basis. The general process is detailed in Figure 1 and the stages of its operation are discussed later:

Figure 1. General architecture of social Asian elephants (SEA) algorithm for depressive person detection



I.A.1. Initialisation

I.A.1. Initially, the position E_0^i and the velocity V_0^i of each user relative to each class g are calculated by the next equations (1) et (2):

$$VE_0^i = score(i) \quad (1)$$

$$E_0^i(g) = \text{the linear correlation between instance } i \text{ and the centroid of class } g \quad (2)$$

- $VE_0^i(g)$: The initial movement velocity of the user i .
- $E_0^i(g)$: The initial position of the instance t relative to the class g .

- $Score(i)$: The weights sum of the component's user vector i .

For the classification of a new instance (of the test database) the following process is launched:

Matriarch

We are looking for the matriarch of each class (depressive or no-depressive) that is the user with the highest score (the elephant female, the oldest and the most experienced).

$$Mt(g) = (\max(score(i)))g \quad (3)$$

- $Mt(g)$: The matriarch user at time t in class g .
- $(\max(score(i)))g$: the user that has the highest score in the class g .

Velocity

The movement velocity of each user changes from time t to $t + 1$ by the equation (4):

$$VE_{T+1}^i(g) = \frac{VE_T^i}{\alpha(|ME_T^g - E_T^i|) + \beta(|PE_T^g - E_T^i|)} \quad (4)$$

- VE_T^i : The movement velocity of the user i at time t relative to the class g .
- ME_T^g : The position of the best user at time t in class g (initially it is the closest user to the centroid of the class).
- E_T^i : The position of user i at time t relative to the class g .
- PE_T^g : The position of the matriarch of the class g at the time t .
- α : the friendship relation between the best user and the user i .
- β : the friendship relation between the matriarch and the user i .

The Position (Fitness Function)

This step calculates the new position of each user relative to each class through the equation (5):

$$E_{t+1}^i(g) = E_t^i(g) + VE_{t+1}^i(g) \quad (5)$$

- $E_t^i(g)$: position or fitness function of user i at time T in class g .
- g : has two values depressive or no-depressive.
- $VE_{t+1}^i(g)$: velocity of user i at time $T + 1$ in class g

Evaluation (Classification): Each user is classified in the class (depressive or no-depressive) with the lowest fitness function.

Update: After each iteration the parameters of the algorithm are updated. The same process will be repeated until stopping criterion (number of iteration).

Procedure

The next pseudo code summarizes the functioning of the social elephant algorithm for the detection of depressive people in twitter network.

Social elephants algorithm.

```

1: Elephant: twitter user
2: input:
3:     - corpus (learning basis, test basis)
4:     - Initialisation  $(E_{T=0}^i, V_{T=0}^i)$ 
5:  $T \leftarrow 0$ 
7: while not CD do
8:     for each tweets user to be classified do
9:         for each class  $g$  do
10:            calculate
11:             $Mt(g) = (\max(score(i)))g$ 
12:            find best user ME: with smaller position E
13:            
$$VE_{T+1}^i(g) = \frac{VE_T^i}{\alpha(|ME_T^g - E_T^i|) + \beta(|PE_T^g - E_T^i|)}$$

14:            
$$E_{t+1}^i(g) = E_t^i(g) + VE_{t+1}^i(g)$$

15:        end for
16:         $L'instance(i) \leftarrow$  the class with the smallest fitness func-
tion
17:    end for
18:    update (ME, M, V)
19:     $T \leftarrow T + 1$ 
20: end while
21: output: the class of each user from the test basis.

```

Vectorization of tweets: for the vectorization of user tweets we use: i) text cleaning by eliminating special characters and numbers. ii) transforming tweets to a set of terms using bag of words, stemming or n-gram characters. ii) coding using TF (Term Frequency) or TF * IDF (term frequency * inversed document frequency).

TWEETS2011 CORPUS (TWEETS)

In our experiments we used the Tweets2011 corpus that was used in information retrieval famous competition called TREC 201. This specialized body built to keywords. The authors of this corpus have used the API to retrieve Twitter4J 649 tweets where they used keywords (politics, cinema, sport, music, war, science). After TREC in 2012 these tweets were classified in two class (depressive tweet, tweet not depressed) (McCreadlie et al., 2012). The following table 2 summarizes the classification of tweets.

Depressive Person Detection using Social Asian Elephants' (SAE) Algorithm over Twitter Posts

Table 2. General statistical dataset Tweets2011

Category	Depressed	not depressed
Cinema	85	62
Policy	49	33
War	64	13
Sport	33	58
Music	119	56
Science	19	58

Validation Measures

The evaluation measures used to evaluate our algorithms are different and each measurement has a usage objective as shown in the following parts.

Confusion Matrix

Table 3 shows the confusion matrix.

Table 3. Confusion matrix

Contingency Matrix		Expert judgment	
		Real	False
Judgment of the algorithm	Real	VP_i	FP_i
	False	FN_i	VN_i
True positive (TP):	The number of instances assigned to a category properly (depressive).		
Negative real (VN):	The number of instances correctly assigned to the class not depressive. (Who does not have to be assigned to a category, and have not been)		
False Positive (FP)	The number of non-depressive and bodies that have been attributed to the depressive class. (Instances attributed to wrong categories)		
false negative (FN):	The number of depressive instances and have been assigned to the class not depressive. (Which should have been assigned to a category but who did not)		

The Tweets Correctly Analyzed

The percentage of people-ranked (as depressive and not-depressive).

Analyzed tweets:

The percentage of misclassified individuals (such as depressive and not-depressive).

kappa Static (K): Assessing the extent of agreement between two or more assessors is common in social sciences, behavioral and medical. Both evaluators are the algorithm and the actual class of the example. Consistency between the two evaluators bed is in the confusion matrix. The value of K is always between -1 and 1.

- $K = 1$ if the algorithms and expert judgment are the same.

- $K = -1$ if the algorithms and expert judgment are completely different.

$$K = \frac{P_0 - P_c}{1 - P_c}$$

- P_0 : Number of people rank well

$$P_c = \frac{\sum_i A_i * R_i}{total^2}$$

- Total: total number of instances in the dataset.
- A_i : Sum of the line items i confusion matrix.
- R_i : Sum of columns in row i of the confusion matrix.

Precision (P): The accuracy measures the ability of an algorithm to return only those depressive. It represents the ratio between the number of individuals correctly classified by the algorithm in the depressive class relative to the total number of people classified by the algorithm in the depressive class.

$$P = \frac{VP_i}{VP_i + FP_i}$$

Recall (R): The recall measures the ability of our system to return-ranked institutions. It represents the ratio between the number of instances correctly classified by our system in depressive class relative to the total number of documents actually in class c.

$$R = \frac{VP_i}{VP_i + FN_i}$$

f-measure: Used to group in a single number the performance of the algorithm. It is based on the results of the recall and precision.

$$F = \frac{2 * R * P}{R + P}$$

RESULTS AND DISCUSSION

In order to validate the quality of our proposal we have applied an experimental protocol by varying:

- Text representation methods.
- We set the parameters Alpha = 1 and beta = 1.

- Number of iteration.

with objective is to identify the sensitive parameters, we have fixed in each test one parameters and varying the others. We calculate the f-measure, entropy, recall precision kappa static. The best results are illustrated in the following tables.

NB: The boxes colored in blue represent the best results and the boxes colored in red represent the bad results.

Result with Variation of Text Representation

As a result of the different languages that exist in the world, finding the best message representation technique is a very important task. In this part, we set each time the technique of representation of text (N-grams-characters with N of 2 to 5 and bag of words) and we vary the other parameters. The results are shown in the table 4 and figures 2 and 3.

Table 4. The results of analysis using the Asian elephant's algorithm for detecting depressive person in twitter with variation of representation techniques

		Evaluation measures							
		Precision	Recall	f-measure	TS (%)	TE (%)	static kappa	Confusion matrix	
Text representation techniques	Bag of words	0. 724	0. 699	0.7	67.79%	32.21%	0354	258	98
								111	182
	Stemming	0. 786	0617	0.6913	68.72%	31.28%	0386	228	62
								141	218
	2-gram characters	0.819	0.7235	0.769	75.19%	24.81%	0.5038	267	59
								102	221
	3-gram characters	0.86	0.764	0811	79.81	20.19	0.596	282	44
								87	236
	4-gram characters	0.918	0.791	0.854	84.12%	15.86%	0688	292	26
								77	254
	5-gram characters	0844	0.764	0802	78.58	21.42	0.56	282	52
								87	228

By observing the table and the previous figures we found that the technique N-grams characters (the blue boxes) allows to obtain the best results compared to the representation bag of words with a $F = 0.85$, $TS = 84\%$ and $kappa\ static = 0.68$. A discussion and interpretation of the different results is detailed below:

The n-gram representation is tolerant to the problems of copy-and-paste technology and especially when copying a tweet from a PDF document, a Word document or from a web page.

Figure 2. Number of tweets depressive and not-depressive obtained by the Asian elephants algorithm classified by categories

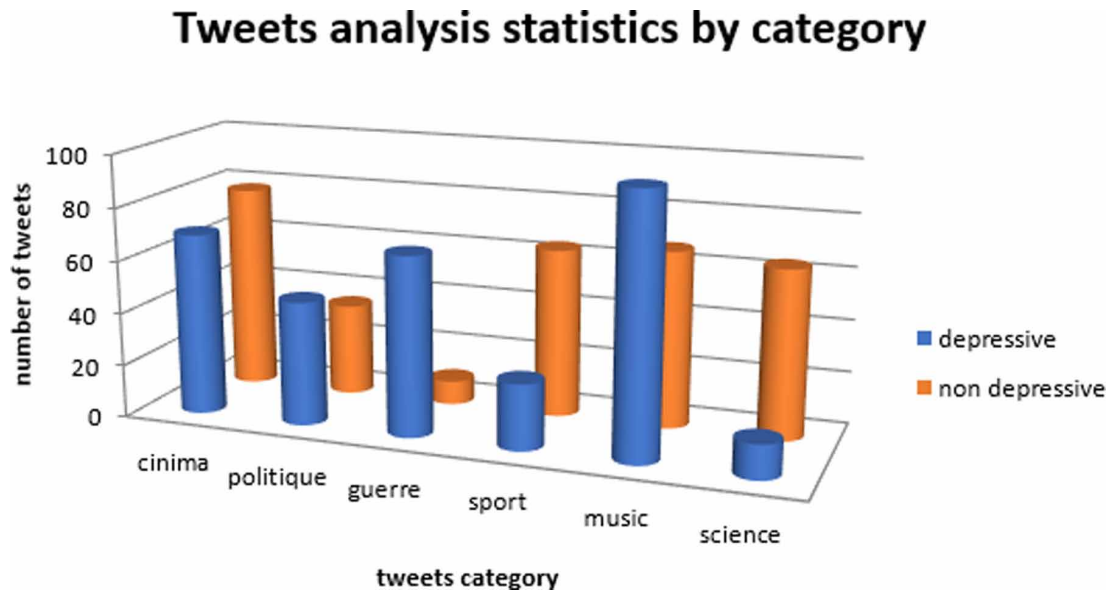
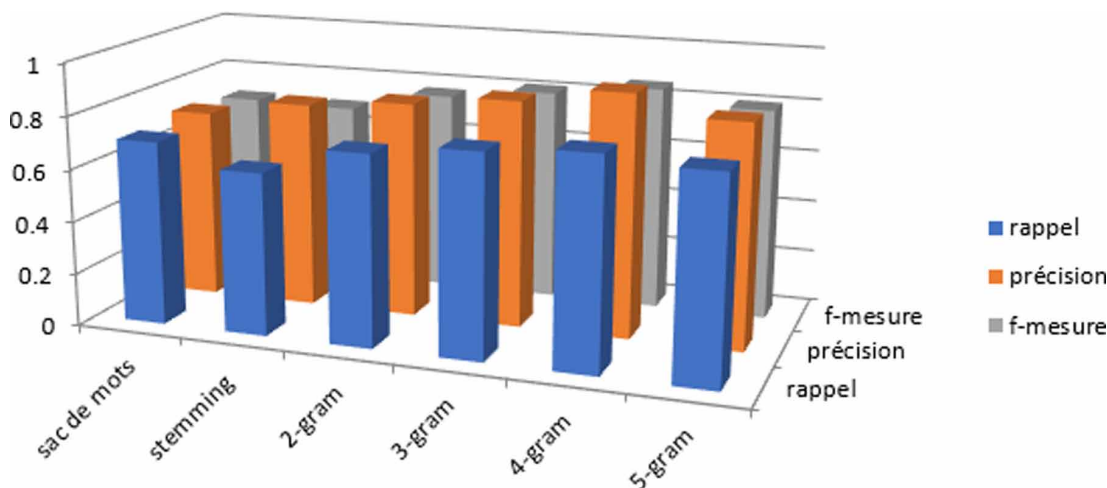


Figure 3. Comparison of text representation techniques results using the Asian elephants algorithm



- Some characters of the copied words will be imperfect for example, it is possible that the word “text-mining” is copying “text-ining”. A word bag method will have trouble recognizing that it is the word “mining” whereas the technique N-grams characters takes into account other N-grams like ‘ini’, nin and ing to recognize the word. It can also detect compound words such as “united state” or “data mining”, but the word bag method ignores them.
- The bag of word technique requires a semantic and syntactic treatment to remove the ambiguity related to the words and sentences, which is not the case in our work where we have not applied linguistic treatment on the texts because the computer implementation of these procedures is rela-

- tively cumbersome. On the other hand, the N-grams technique is independent to the language and makes it possible to treat the tweets of the users in their raw states
- the major drawback of the stemming technique is the loss of complete information on the terms since it is not based on powerful linguistic constraints, which can lead to an amplification of noise and semantic confusions by grouping under the same root words of different meanings. Like the lexical root “port” which groups in the same set the verb “to wear” and the name “port” whereas semantically are very distinct. On the other hand, the technique n-grams is perfectly adapted for texts coming from noisy source and it can lead us to obtain free the roots of the words. For example, the words advance, advance, advance, and advancement automatically have much in common when considered as sets of N-grams. Another advantage is its ability to work with both short and long documents.
 - The representation N-grams is dependent on a parameter N and the question which arises: What is the value of N optimal? Analyzing the returned results, we find that $N = 4$ has spawned the production of relevant terms to allow the Asian elephants algorithm to differentiate between depressive tweets and not-depressive tweets.

Results with variation of iteration number:

Table 5 and Figures 4 and 5 summarize the influence of the parameter iteration number in the obtained results.

The results clearly show that the stopping criterion is a sensitive parameter because the quality of results of the social elephant algorithm change with the variation of the iterations number. The analysis in Table 6 revealed the following observations:

Table 5. The analysis results using the Asian elephants' algorithm and variation of distance measures

		Validation Measures							
		Precision	Recall	f-measure	TS (%)	TE (%)	static kappa	Confusion matrix	
Distances measures	10	0.74	0.59	0.654	65.48%	34.52%	0313	221	76
								148	204
	40	0.918	0.791	0.854	84.12%	15.86%	0688	292	26
								77	254
	80	0.781	0715	0.745	72.41%	27.59%	0.45	264	74
								105	206
	120	0.7217	0674	0.699	66.71	33.29	0347	249	96
								120	184

Figure 4. The results of analysis using the asian elephants algorithm for detecting depressive person in twitter with variation of iterations number

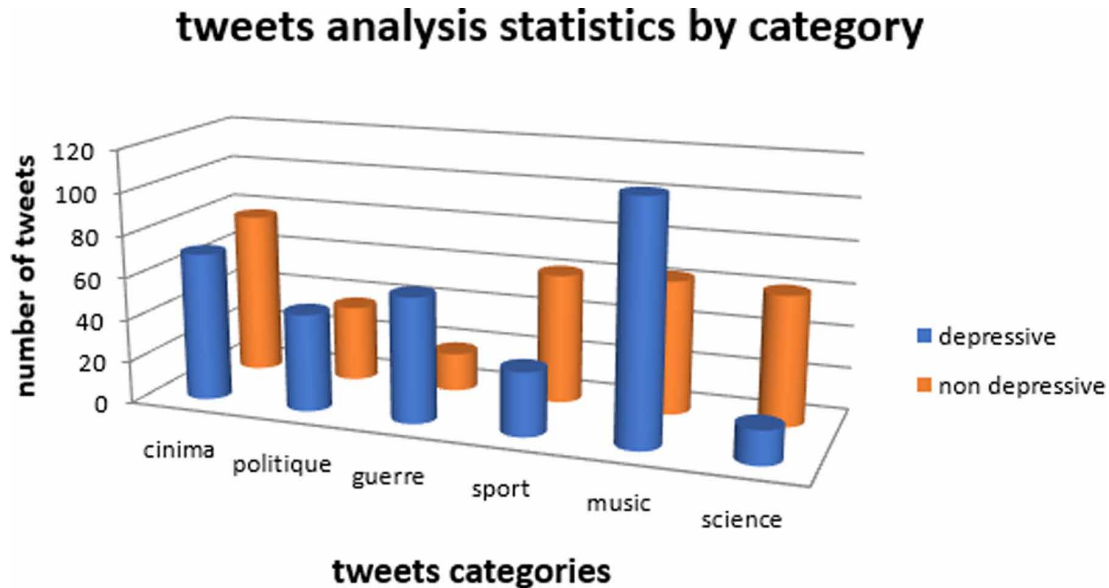
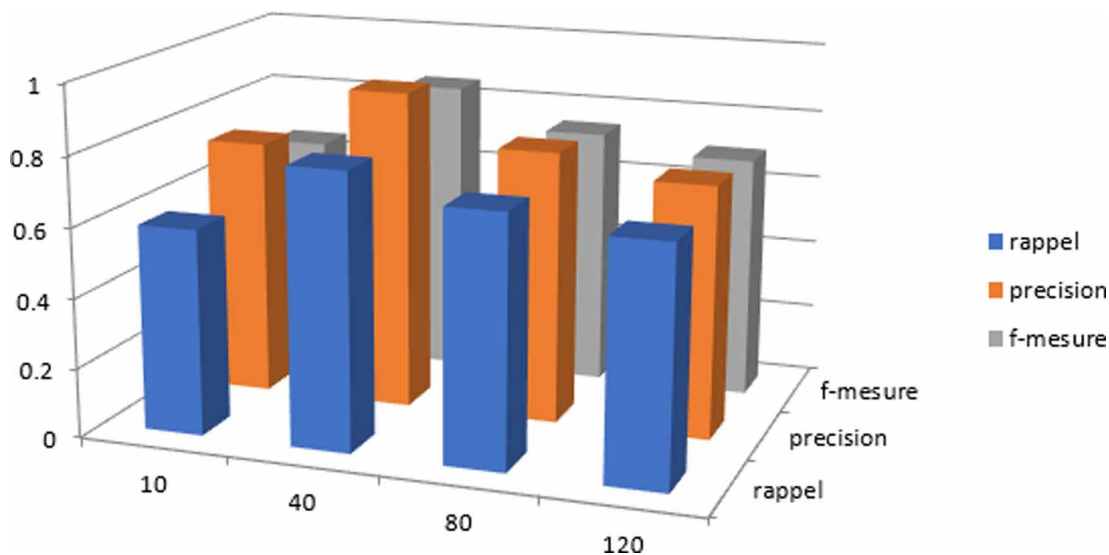


Figure 5. Comparison of distance measurements using Asian elephants



Comparative Study

in order to reference the results of our algorithm we conducted a comparative study with classical techniques (naive bayes, decision tree, KNearest Neighbor) and with bioinspired techniques integrated in the EBIRI tool (machine heart lungs and social cockroaches algorithm (Bouarara et al., 2015)).

Table 6. Comparison results of the social elephant algorithm with other algorithms that exist in the literature for the problem of depressive person detection

		Valuation Measures							
		Precision	Recall	f-measure	TS (%)	Recall (%)	static kappa	Contingency Matrix	
Algorithms	Naive bayes	0.781	0715	0745	72.41%	27.59%	0.45	264	74
								105	206
	Decision tree	0608	0.51	0558	53.62%	46.48%	0.09	190	122
								179	158
	Asian elephants algorithm	0918	0791	0854	84.12%	15.86%	0688	292	26
								77	254
	Algorithm cockroaches	0.92	0.74	0.82	82.43	17.57	0.65	276	21
								93	259
	Heart lung machine	0.88	0.82	0848	84.28	15.72	0.68	306	39
								63	241

The results of this part validate our originally set goal where our algorithm is better than the like algorithms and gives the same performance as the algorithm because our proposal is based on the principle that the solution needs to improve from iteration to another through the intelligence of the group.

CONCLUSION

detecting depressed people is a very difficult task because the feelings of people are not stable and can change from one minute to another and especially based on information shared in virtual world (tweeter). According to our results we notice that Asian elephant's algorithm gives better performances compared to others classical and bioinspired algorithms.

Finally, we propose that Social network owners must add an option to analyze the status of each user to say that a person is in a normal or depressive situation by suggesting those users to:

- Consult a doctor or psychologist because There are many effective treatment modalities against depression, including medications (eg. antidepressants) and psychotherapy.
- Get as much information as possible about depression and how it is treated. This will allow you to understand what is happening to you and make informed decisions.
- Adopt a healthy lifestyle and Work less if necessary, avoid sources of unnecessary stress, allow yourself hours of rest and sleep, and eat well are all measures that can help you get back on your feet quickly.

Future Works

We will apply the algorithm to the problem of suspicious person detection, spam filtering, DNA classification, information retrieval, sentiment analysis in video, plagiarism detection, and all classification problem supervised or unsupervised.

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Chapter 20

Users Holding Accounts on Multiple Online Social Networks: An Extended Conceptual Model of the Portable User Profile

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ABSTRACT

The last decade has seen an increasing number of online social network (OSN) users. As they grew more and more popular over the years, OSNs became also more and more profitable. Indeed, users share a considerable amount of personal information on these sites, both intentionally and unintentionally. And thanks to this enormous user base, social networks are able to generate recommendations, attract numerous advertisers, and sell data to companies. This situation has sparked a lot of interest in the research community. Indeed, users grow more uncomfortable with the idea that they do not have full control over their own data. The lack of control can even be amplified when a user holds an account on various OSNs. The data she shares is then spread over multiple platforms. This chapter addresses the notion of portable profile, which could help users to gain more control or more awareness of the data collected about her. In this chapter, the authors discuss the advantages and drawbacks of a portable profile. Secondly, they propose a conceptual model for the data in this unified profile.

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INTRODUCTION

An area of the Web 2.0 gaining increasing success globally is the Online Social Network (OSN), or Social Networking Site (SNS). OSN refers to, according to Ellison et al. (2007):

Web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site."

The last decade has seen an increasing number of OSN users. These systems allow their users to interact with one another. Users set up an account, state relationships with other users, and are then able to communicate with each other, and share content. The most popular OSNs, such as Facebook, Twitter, or LinkedIn count hundreds of millions of members, that is, of users who have registered and thereby can use the features of these OSNs.

The first social network site was introduced in 1997. Called SixDegrees.com, it allowed its members to create a profile, list their Friends and, later to view others' friends lists (Ellison et al., 2007). As they grew more and more popular over the years, OSNs became also more and more profitable. Users share a considerable amount of personal information on these sites, both intentionally and unintentionally. And thanks to this enormous user base, OSNs are able to generate recommendations; attract numerous advertisers; and sell data to interested third parties.

This situation has led to the users' growing reluctance to share information. Users are uncomfortable with the idea that they do not have full control over their own data. In response, most current OSNs offer the possibility to their members to manage their privacy settings; allowing them to control who sees what about them and the content that they shared.

The increasing popularity of the OSN, and the questionable use of the data by the OSN have led to considerable interest in the research community. Many authors, for instance, have addressed the privacy and trust issues (Dwyer et al., 2007; Strater & Lipford, 2008; Madejski et al., 2011).

A way to increase the user trust in OSNs could be the introduction of a portable profile. It would be portable, in the sense that if a user registers on OSN A, she would be able to carry over the content of her profile to OSN B, and choose which of that data and content would appear on OSN B. The portable profile would offer more transparency to users, as they would know what data in some sense defines them on an OSN. This topic about the introduction of an integrated profile has also been mentioned in the literature (Heckmann et al., 2005; Berkovsky et al., 2008; Abel et al., 2011; Kapsammer et al., 2012).

This paper has two objectives and corresponding contributions. Firstly, we aim at listing the advantages and drawbacks of a portable profile, from the perspective of the user and from the perspective of the OSN. We will identify these benefits and limitations via an example. Secondly, we find the content for the portable user profile by looking at the content of user profiles on various existing OSNs, and from there propose a preliminary conceptual model of the portable user profile.

The rest of this article is organized as follows. Related work is introduced in Section 2. In Section 3, we discuss the motivations for a Portable User Profile (PUP). The proposed conceptual model for PUP is presented in Section 4. Finally, we discuss the results and conclude the paper in Sections 5 and 6 respectively.

LITERATURE REVIEW

Online Social Networks

Various aspects of OSNs have been studied. For example, there are studies focusing on the properties of the graph induced by connections between users. Some of the analyzed OSNs include: Flickr, YouTube, LiveJournal and Orkut (Mislove et al., 2007); MySpace and Orkut (Ahn et al., 2007); Sina blogs and Xiaonei SNS, two large Chinese online social networks (Fu et al., 2008); Flickr and Yahoo! 360 (Kumar et al., 2010); and Twitter (Kwak et al., 2010).. For an example of findings, consider Mislove et al. (2008), who found that various OSNs, despite their different purposes, share a number of similar structural features, namely: highly skewed degree distribution, a small diameter, and significant local.

The reasons why people want to use an OSN have also been examined in the literature. Various authors have studied the reasons motivating teenagers (Livingstone, 2008), college students (Park et al., 2009) or young adults (Subrahmanyam et al., 2008) to use an OSN. These reasons range from satisfying a “*friend*” and connection needs to having an additional source of information (Raacke & Bonds-Raacke, 2008; Subrahmanyam et al., 2008).

The privacy issue was examined by several authors. They include the study of privacy on Facebook (Strater & Lipford, 2008; Madejski et al., 2011); as well as the comparison of trust and privacy issues on Facebook and MySpace (Dwyer et al., 2007).

Specific social networks were also studied in more details: MySpace (Caverlee & Webb, 2008); Facebook (Lampe et al., 2006; Pempek et al., 2009); YouTube (Lange, 2007); and Massively Multiplayer Online Games (MMOGs) (Ducheneaut et al., 2006).

User Profile

In the area of OSNs, the topic of the user profile has been researched. Some authors have proposed approaches to compare the profiles of two users, more specifically to measure the distance between two user profiles in an OSN (Rezaee et al., 2012). The similarity between users has been measured based on the information on their Orkut profile (Singh & Tomar, 2009); the correlation between the similarity of two aNobbi (an OSN for book lovers) users’ profile and the link between these two users (Aiello et al., 2010). Mislove et al. (2010) also explored the possibility to infer the attributes of some users in an OSN, given the attributes of some users in the same OSN. Our work here is different from these because we are trying to define a generic profile, that would fit any type of OSNs. The cited works here compare user profiles based on their content. We are trying to identify this content before being able to compare two profiles or to execute any kind of manipulations on the user profile.

Other authors have carried out sociological studies based on the user profile. Some researchers studied the popularity of users. More specifically, Lampe et al. (2007) studied the role played by elements of a Facebook user profile in the creation of online connections. They discovered that the more fields a user populates in her profile; the more friends she will have. The factors determining the profile popularity in a professional social network were also examined (Strufe, 2010). Utz (2010) studied how the perceived popularity, communal orientation, and social attractiveness of a user on an OSN (here Hyves) are influenced by the user’s extraversion, the extraversion of the user’s friends, and the number of friends a user has. Utz et al. (2011) examined the effects of OSN use on romantic relationships. Dunbar et al. (2015) used Facebook and Twitter profiles to create ego-centric social networks. The authors discovered that

the structure of OSN mirrors those in the face-to-face networks. Our work here is different from these because we are not interested in the sociological aspect of the user profile. Sociological aspects can have an influence and we investigated that in another work (Bouraga et al., 2015), where we identified factors that can have an influence on the perceived relevance of content. However, for the definition of a generic profile, we are not interested in that area.

The type of information users share on their profile was evaluated by several authors: Nosko et al. (2010) examined the kinds of information Facebook users shared on their profile; Emmanuel et al. (2013) examined the type of information users share on their profile, depending on the context of the social network (the dating OSN and the professional OSN). Silfverberg et al. (2011) explored the effort members of Last.fm (an OSN dedicated to music preferences) invest in the process of maintaining their profile (they called this process “profile work”); that is in the process of controlling their “self-presentation”. Chen et al. (2014) modeled profile privacy settings from a game theoretic perspective. Their model shows that users choose for the highest possible privacy if they encounter any risk, regardless of any incentive for profile disclosure. Our work presents some similarities with the cited works here, because the latter identify the types of information shared by users on their profile. However, the difference between the existing work and our work lies in the generality of the models. The cited works define the types of information in a specific context (the information shared on the Facebook profile, the information shared depending on the context of the OSN, the information shared in the context of self-presentation, and in the context of privacy settings management). However, in this paper, we aim to identify generic attributes of a user profile.

Various authors examined the link between the information users share on their profile and the threats they can face as an OSN user. Given the amount of personal information shared on OSN, users are vulnerable to “social engineering attacks”. Alim et al. (2011) proposed an automated approach to extract profile data in order to assess the vulnerability of the user. Kontaxis et al. (2011) developed a tool to automatically detect social network profile cloning. Also, My3, a “privacy-aware decentralized OSN”, was proposed, enabling its users to have “full access control on their data” (Narendula et al., 2011). Fire et al. (2014) reviewed various threats OSN users can face, such as fake profile or face recognition, and proposed solutions to address these threats, such as fake or cloned profile detection. Before conducting further analysis, this paper aims at the definition of a generic profile. Thus, we are not interested, for now, in the threats a user faces when sharing certain types of information.

Authors are aware that people hold an account on different OSNs. Therefrom, various solutions were proposed to identify the same user on different OSNs. Examples include Nie et al. (2016) who introduced the Dynamic Core Interests Mapping (DCIM) algorithm to match the same user on various OSNs; and Ma et al. (2017) who proposed a solution called MapMe based on both the user profile as well as the user relationship network structures. Komamizu et al. (2017) identified the same users who were both on Github and Stackoverflow. And Zhou et al. (2016) proposed the FRUI algorithm based on friend relationship. The purpose of this article is different from these studies because we are not interested in identifying the same user with a different OSN profiles, rather we want to propose a conceptual model that will gather all the information shared by the user on these various OSNs.

Finally, several researchers have examined the interest of integrating data from various OSN profiles into one user profile. Zhang et al. (2014a, 2014b) addressed the linkage of people having a profile on different OSNs. The difficulty lies in the fact that people may have different usernames on different OSNs. The difference between their work and ours is the motivation behind it. Zhang et al. aimed for a holistic understanding of the OSN user; while we aim to propose a conceptual model of a portable user

profile. Heckmann et al. (2005) introduced “GUMO - the General User Model Ontology”. The authors used OWL as ontology language to represent “the user model terms and their interrelationships”. The motivation for their work is similar to ours, that is, the authors sought “the simplification for exchanging user model data between different user-adaptive systems”. However, our work is different from GUMO with regard to two elements. First, we focus here on the OSNs, while GUMO has a larger scope and is meant for intelligent semantic web environments. Secondly, Heckmann et al. developed their ontology for the benefits of the systems; while we take into account the user perspective. Berkovsky et al. (2008) proposed an approach to import and integrate data from several remote RSs to enhance the efficiency of another RS. The recommendations are more accurate thanks to more complete user profiles. The authors call the process of importing and integrating data “the mediating process”. More specifically, they define the latter as “mediation of user models is a process of importing the user modeling data collected by other (remote) recommender systems, integrating them and generating an integrated user model for a specific goal within a specific context” (Berkovsky et al., 2008). Abel et al. (2011) examined cross-system user modeling strategies, consisting of the following building blocks: source of user data, semantic enrichment, and weighting scheme. The authors, then, evaluate the strategies’ “performance in generating valuable profiles in the context of tag and resource recommendation in Flickr, Twitter, and Delicious”. Kapsammer et al. (2012) proposed a “semi-automatic approach to derive social network schemas from social network data”. Their process consists of four phases, namely: data extraction, schema extraction, transformation, and integration.

MOTIVATION FOR CENTRALIZED PROFILE

Throughout this Section, we will look at a hypothetical user who is using Facebook, LinkedIn, and Pinterest. We chose these three OSNs because they have different purposes, and the PUP should not be specific to the kind of OSN. Facebook and LinkedIn are network-oriented, that is they put the emphasis on the relationships between users. However, they still differ in purposes. The former is used by people who want to connect with friends; while the latter is used for business contacts. Pinterest is of the knowledge-sharing type, that is the focus is on the content sharing, instead of the relationships (Guo et al., 2009).

To use all three OSNs under the same offline identity, the user has to fill in the same information at all three OSNs, such as name, email, location, gender, profile picture, an “About you” section, and so on. Facebook and LinkedIn also offer the user to share the following elements: her occupation (the school she attends or attended), the job(s) she has (had); her skills (Facebook communicates the languages the user can speak, while LinkedIn introduces the users qualifications, summary, areas of expertise); her interests.

On all three OSNs, the user has to find friends and/or other users to follow. The more active a user is on a social network, the more she can get out of it. The network effect is that the more friends you have, the more valuable the experience can be.

Currently, business models of OSNs aim to make profit by (i) allowing companies to post targeted ads, based on user data; and (ii) selling data about usage to companies. It follows that OSNs do not have incentives to integrate their user data and provide the users with a portable and accessible profile. On the contrary, OSNs are incentivized to keep all the data they gather about their users for themselves, since these data constitute the product they sell to advertisers. Several OSNs allow some connections with other OSNs, to sign in, to share post, and/or find friends. For instance, users of Facebook and LinkedIn can share post across networks, that is they can post simultaneously on both OSNs; also Facebook users

can sign in and find friends more easily on Pinterest with their Facebook account. However, this form of collaboration already impairs the collection of user data by social networks; as evidenced by Yahoo's decision in March 2014 to discard the use of Facebook and Google to sign in and log into Yahoo services.

Benefits of a Portable User Profile

Several authors in the literature have already put forward some benefits of an “integrated” profile, such as: an enriched user profile (Abel et al., 2010), and improved quality of the recommendations (Berkovsky et al., 2008; Abel et al., 2011; Kapsammer et al., 2012).

Abel et al. (2010) argue that a profile aggregation can lead to an enriched user profile. An aggregated profile offers “significantly more information about the users than individual service profiles can provide”. Profile aggregation can be used to improve incomplete profiles. Thus, the user could fill in her profile only once but the information will still be present in every site she uses.

Example 1: Without the PUP: The user has to enter all her personal information on every OSN that she wants to use, here Facebook, Pinterest, and LinkedIn. All three OSNs require an email address and a profile picture. Facebook and Pinterest ask for the name of the user, and offer an “About you” space. Without an integrated or portable profile, the user has to repeatedly provide the same information. Also, the user has to create links on the three OSNs. If she has friends who use the same OSNs as her, she has to create relationships with them on all three OSNs.

Example 2: With the PUP: With a portable profile, the user could share her personal information only once, whether it is on Facebook, Pinterest, or LinkedIn; and this information will be reused by the other OSNs. The user could fill in several fields in her Facebook profile, and this information could then be used by LinkedIn or Pinterest to complete the same user's profile. As far as the connections between users are concerned, it would be easier to find friends on different OSNs. For instance, assume that the user is friends with A on Facebook. A decides to set up an account on LinkedIn. Because all the information about the user is stored in an integrated profile, including the links the user has on all the OSNs, the user and A could automatically be linked on LinkedIn. This assumes that the PUP includes the data on relationships the user has on other OSNs.

The PUP leads to another advantage, namely the improved quality of the recommendations (Berkovsky et al., 2008; Abel et al., 2011; Kapsammer et al., 2012).

Because of the enhanced information, the cold start problem is avoided; that is the recommendation algorithms could avoid suffering from data sparsity (Adomavicius & Tuzhilin, 2005). The most common recommendation techniques rely on a large amount of data to generate recommendations. The accuracy of the recommendation depends, thus, on the given data. If the user is new and/or is not active, the recommendations she gets will most likely be of poor quality.

Example 3: Without the PUP: The accuracy of the recommendation varies across OSN. Depending on the activity of the user, the recommendation will be more or less accurate. If the user is very active on Facebook, the recommendations she will get will likely be of high quality. The OSN will make friend suggestions, or will suggest pages to like that correspond to the user profile. However, if the user barely spends any time on Pinterest, then the OSN will probably struggle with the generation of qualitative “pin” (post on Pinterest) or “pinner” (user of Pinterest) recommendations.

Example 4: With the PUP: The accuracy of the recommendation is stable across OSNs. The quality of the recommendations will not depend on the activity of the user on the particular OSN. The user could be more active on Facebook, but it will not impair the quality of the recommendations generated by Pinterest or LinkedIn. The Facebook activity will be stored in the integrated profile and the other OSNs will take advantage of this information to produce recommendations to that user. Furthermore, even if the user were equally active on Facebook and Pinterest, the information gathered by the OSNs would be different. Hence, a portable profile would allow OSNs to have complementary information at their disposal.

A portable profile could also directly benefit the user. The latter would have access to the data OSNs have gathered about her, both explicit data (that is, data the user has explicitly shared with the OSN), and implicit data (that is, data about the user activity). The user could then control and manage the elements present in her integrated profile. This situation could help users accept the recommendations she gets, and it could make the suggestions of items less intrusive.

Example 5: Without the PUP: The user only has control over the data she gives explicitly. The user manages what she posts on Facebook, what she shares on LinkedIn, and what she “pins” on Pinterest. The user can also control the links she creates on all these OSNs. However, the user cannot exactly know what the OSNs gather about her. The user cannot know where the recommendations she gets come from; which could render the latter a little bit intrusive.

Example 6: With the PUP: The user can have control over the data she gives explicitly and the data gathered by the OSNs. The user can manage her activity on Facebook, and can decide if this activity can be used by LinkedIn. The user can figure out why she was recommended a particular job on LinkedIn, or why she was given this particular friend suggestion on Facebook.

Limitations of a Portable User Profile

Abel et al. (2010) identified a “risk of intertwining user profiles, namely that users who deliberately leave out some fields when filling their Twitter profile might not be aware that the corresponding information can be gathered from other sources”. A unified profile implies unified information across OSN. Users cannot decide to share more on a OSN, and cannot keep information from being used by a specific OSN.

Example 7: Without the PUP: The user can decide to share more information on a particular OSN. She can decide to be more active on Facebook, for instance; and she does not want LinkedIn or Pinterest to have as many information at their disposal. She can use different profile pictures, or usernames for each OSN. Also, she can decide on the links she wants to create depending on the OSN. She can agree to a friend request on Facebook from a colleague, but she can decide not to share a Pinterest account with that colleague.

Example 8: With the PUP: If the user cannot control which part of the PUP is carried over between OSNs, then she cannot choose which information she wants to share on which OSN. The user has to be more careful about the information she posts on Facebook, because that information can then be used by LinkedIn or Pinterest. For instance, if the user accepts the friend request on Facebook from her colleague; then, if they are both on Pinterest, the link could be automatically created in that OSN. The user cannot separate or compartmentalize her online activity.

Another important issue related to the portable profile is related to privacy. Users post large amount of personal information online. But in a way, the user has more control over what is known about her by each OSN, when she has separate profiles. Indeed, with a portable profile, more information can be discovered by the OSNs. Inferences could be made more accurate because they are based on data coming from various sources. The user is thus more “vulnerable to social engineering attacks” (Alim et al., 2011).

Example 9: Without the PUP: As mentioned above, the user can decide which information she posts on which OSN. We will take the example of the horoscope and the age: “if the age and horoscope signs are present on a profile then it is possible to guess when the birthday is” (Alim et al., 2011). The user can have a board on Pinterest with her horoscope sign, and she can mention her age on Facebook. But the user can decide to keep her exact birthday private. Because the information about her sign, and her age are mentioned on different OSNs, it will be difficult to infer her birth date.

Example 10: With the PUP: The user is more vulnerable; she has less control over what can be known/discovered about her. Indeed, even if she posts her age only on Facebook, and her horoscope sign on Pinterest; that information will be present on the integrated profile. The latter can then be used to infer more personal information about the user, and in our example her exact birthday can be discovered.

PORTABLE USER PROFILE CONCEPTUAL MODEL

Data Used in Facebook, LinkedIn, and Pinterest

Before proposing the PUP conceptual model, we will identify the information that the user gives to the OSNs considered here, namely Facebook, LinkedIn, and Pinterest. We can distinguish three categories of data used by OSNs: the profile data, the relationships information, and the posts. The profile category includes the following pieces of information: her login information, her identity, her occupation, her beliefs, information about her family, her skills, her interests, and a text about herself. Then, the relationships the user creates with other users can also be part of the user profile. These relationships can be categorized in one of two groups: unidirectional relationships, or bidirectional relationships. The former type of relationships is unreciprocated, that is a user likes, or subscribes to a fan page; or follows another user. The latter type of relationships is reciprocated. A friend request is sent by a user to another user, who has to accept or deny the friend request. If she confirms it, then the relationship is created. Otherwise, no link exists between the two users. The third category of profile data is the posts shared by the user, that is the texts, comments, like/repost, tags, media, messages and groups. Those data are not directly and consciously given by the user; rather the OSN gathers this information for every user.

Facebook allows its users to login with their email or phone. It asks the users about their name, birth-date, gender, address, phone number, school, job, family, religious and political views, languages they can speak, favorite quotation, interests, and asks for a profile picture; Facebook also offers an “About you” section. The OSN supports both types of relationships. The user can send and accept/ deny a friend request; and she can also like a page about an artist, a public person, or a company. Facebook supports various types of posts, and hence gathers information about the following user activity: status, notes and links posted by the user; comments on status, or media; like/share; tag of friends on status or media; photos and videos; messages; and groups created or joined by the user.

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LinkedIn users can login with their email address. The OSN asks them about their name, title, location, and a profile picture. The OSN also asks about the industry the user works in, and her experience, her qualifications, summary, specialties, specific skills and areas of expertise; her interests; and her personal details and advice for contacting her. LinkedIn supports both types of relationships. Users can ask other users to connect with them; and users can also follow companies' page. LinkedIn can gather information about the activity of the users, that is, their summary, recommendations; comments; like/share; the connections they tag on status: photos and videos; message; and groups.

Pinterest allows their users to login with their email address or their Facebook, Google, or Twitter account. Pinterest asks for less information than the other two OSNs. Indeed, pinners are asked to provide their name, location, website, gender, and profile picture; and they can also fill in an "About you" section. The relationships in Pinterest are unidirectional. Users follow other users; they do not have to send a friend request to have access to other user's profiles. Pinterest gathers information about the pins posted by users; the comments; the like/repin; tag; photos and videos; messages; and group boards.

This discussion is summarized in Tables 1 and 2.

Table 1. Data Used in Facebook, LinkedIn, and Pinterest - Part 1

	Login	Identity	Occupation	Family/ Beliefs
Facebook	Email, phone	Demographics, picture	School(s), Job(s)	Family, Religious, Political
LinkedIn	Email	Demographics, picture	Industry, Experience	/
Pinterest	Email	Demographics, picture	/	/

Table 2. Data Used in Facebook, LinkedIn, and Pinterest - Part 2

	Skills	Interests	Else	Relationships	Post
Facebook	Languages	V	About me	Bidirectional and Unidirectional	V
LinkedIn	Summary, Expertise	V	Personal details, Contact me	Bidirectional and Unidirectional	V
Pinterest	/	/	About you	Unidirectional	V

Structure of the Data

The user profile is composed of two main categories of data: "Explicit" and "Implicit" data. The first category, the explicit data are the data the user intentionally and directly gives the OSN. The user is fully aware that she gives away that information. That category can be further classified in two groups: the "Profile Information" data and the "Relationships Information" data. The former group consists of: the login information; the identity of the user; her occupation; her beliefs; her skills; her hobbies; and information taking the form of an "About you" section. The latter group, that is the relationships data, consists of information about the links the user creates with other users. In that group, we can find both the bidirectional relationships and the unidirectional relationships.

Thus, two subclasses belong to the class “Explicit” data: Profile and Relationships. Both subclasses can be further specialized. For each subclass, we will identify: (i) the classes specializing the subclass; (ii) the attributes of these classes with their cardinality and their type; and (ii) the potential constraint(s).

We will start by the Profile Information subclass:

- Login information
 - Attributes
 - Email address [0..1], string
 - Phone number [0..1], number
 - Password [1..1], string
 - Constraint
 - The user has at least one value for the email address or the phone number
- Identity, specialized into
 - Identification – Attributes:
- First name [1..1], string
- Last name [1..1], string
- Birthday [0..1], date
- Gender [0..1], string
- Mother language [0..1], string
- Ethnicity [0..1], string
 - Location – Attributes:
- Street [0..1], string
- Home number [0..1], string
- City [0..1], string
- Country [0..1], string
- Time zone [1..1], string
 - Relationship status – Attributes:
- Status [1..1], enumerate: Single, In a relationship, Engaged, Married, In a civil union, In a domestic partnership, In an open relationship, It’s complicated, Separated, Divorced, Widowed
- Start date [1..1], date
- End date [0..1], date
- Partner ID [0..1], integer
 - Phone number – Attributes:
- Type [0..1], enumerate: Mobile, Home, Work, Fax
- Number [1..1], number
 - Profile picture – Attributes:
- Photo ID [1..1], integer
- Size [1..1], integer
 - Website – Attributes:
- URL [1..1], string
- Description [0..1], string
 - Occupation information – Attributes:
- Type [0..1], enumerate: School, Job, Industry

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- Name [1..1], string
 - Family members – Attributes:
- ID of the family member [1..1], integer
- Relationship [1..1], string
 - Beliefs information – Attributes:
- Type [0..1], enumerate: Religious, Political
- Belief [1..1], string
 - Skills information – Attributes:
- Type [0..1], enumerate: Foreign languages, Qualifications/ Specialties, Area of expertise/Special skills
- Skill [1..1], string
 - Hobbies information – Attributes:
- Type [0..1], enumerate: Interests, Kind of music, Kind of movies, Favorite quote
- Hobby [1..1], string
 - Presentation information – Attributes:
- Type [1..1], enumerate: About you/Describe yourself/ Biography, Advice for contacting me
- Presentation [1..1], string

We will now turn to the Relationship class:

- Unidirectional
 - Attribute
 - ID of the followed user [1..1], integer
- Bidirectional
 - Attributes
 - ID of the friend [1..1], integer
 - Sender of the friend request [1..1], boolean

The second main category is the “Implicit” data, that is the data the user unintentionally gives to the OSN. Similar to the first category, the implicit data can be broken down into two classes, namely the “Posts”, and the “Activity”. In the posts, one can find all the elements shared by the user with her friends/contacts. This group contains the following elements: text, comment, like/repost, tag, media, message, and group. The activity group consists of the browsing and searching activity conducted by the user when she looks through the OSN.

Similar to the Explicit data, we will go through each concept of the Implicit class, and we will detail the attributes, the attributes’ cardinalities, their type, and the potential constraints.

We will start with the Posts class:

- Text information
 - Attributes
 - Text ID [1..1], integer
 - Type [1..1], enumerate: Status, Moods, Quotes, Links, Notes
 - Text [1..1], string

- Comments information
 - Attributes
 - Comment ID [1..1], integer
 - Type [1..1], enumerate: On a profile information, On a text, On a media, On a relationship status
 - Comment [1..1], string
- Like/Repost information
 - Attributes
 - Like/Repost ID [1..1], integer
 - Type [1..1], enumerate: Like a text, Repost a text, Like a media, Repost a media
- Tag information
 - Attributes
 - Tag ID [1..1], integer
 - Type [1..1], enumerate: A friend on a media, A friend on a text, A media, A text
 - Tag [1..1], string
- Media information
 - Attributes
 - Media ID [1..1], integer
 - Type [1..1], enumerate: Photo, Video, Gif
 - Name [1..1], string
 - Size [1..1], integer
- Message information
 - Attributes
 - Message ID [1..1], integer
 - Type [1..1], enumerate: Public message, Private message, Instant chat
 - Content [1..1], string
 - Sender ID [1..1], integer
 - Recipient ID [1..*], integer
 - Constraint
 - A message can be commented, liked, or reblogged if it is of the type “Public message”
- Group information
 - Attributes
 - Group ID [1..1], integer
 - Name of the group [1..1], string
 - Date joined [1..1], date
 - Creator of the group ID [1..1], integer

We will now turn to the Activity class:

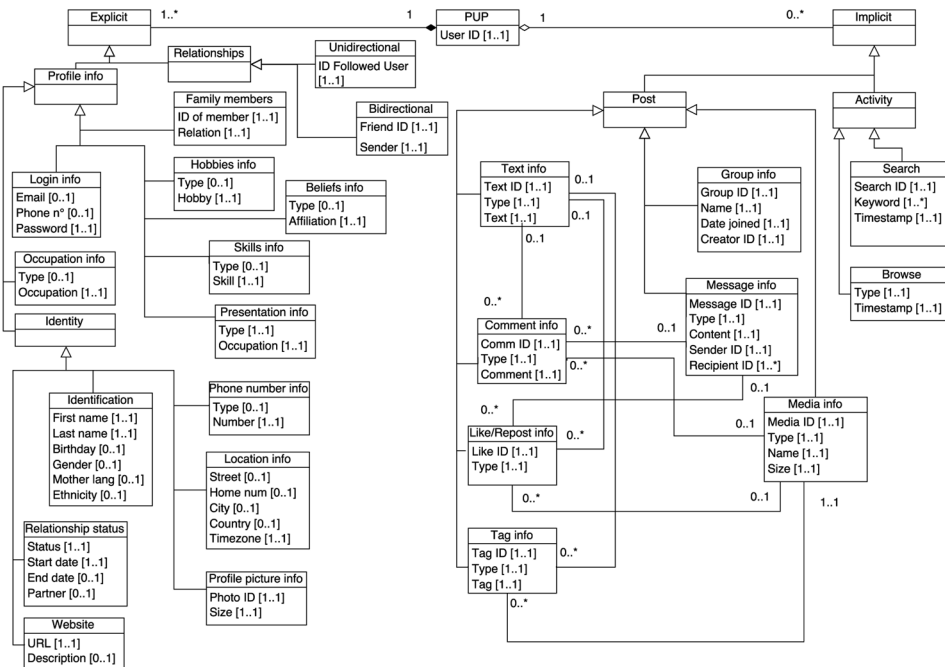
- Browse information
 - Attributes
 - Type [1..1], enumerate: User, Media, Text, Comment, Like/ Repost, Tag, Group, Message
 - Timestamp [1..1], date

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- Search information
 - Attributes
 - Search ID [1..1], integer
 - Keyword [1..*], string
 - Timestamp [1..1], date

We classified the Profile and the Relationships information in the Explicit category, and we classified the Posts information in the Implicit category for two reasons. Firstly, we believe that the user has to give her profile information, and has to create relationships online, create links with other users before using the OSN. She expects her information to be used by the OSN. However, the posts, and the activity represent the user actually using the OSN; the user may not be aware of the OSN using this type of information. The user shares posts with her friends, and not directly with the OSN. Secondly, today, when the concept of Profile is mentioned, people visualize only the Explicit class; while the OSN takes advantage of both the Explicit and the Implicit classes. By representing the conceptual model with both categories, we can give the user more control and more awareness over her data, that is over the data gathered by the OSN and not only the data explicitly given by the user. The Portable User Profile conceptual model is represented as a UML Class Diagram, in Figure 1.

Figure 1. The Portable User Profile conceptual model



DISUCSSION

Many OSN features allow the user to share content about herself, both directly and indirectly. Directly, by giving, for example, her birth date, marital status, and so on. Indirectly, by performing actions which suggest her preferences; for example, “liking” some specific content on Facebook gives indications about which topics and other users that user may be interested in. The availability of such, so to speak personal content, has led to concerns about, and research on trust and privacy (Dwyer et al., 2007; Strater et al., 2008; Madejski et al., 2011).

It is not possible, we believe, to study OSN features and content without paying particular attention to personal content. Why? Because we expect users to consider more important that personal content over other, and features for manipulating (sharing, hiding, removing, for example) that personal content over those focusing on other, impersonal content. In (Bouraga et al., 2015)], we studied the importance of content for OSN users, generated by other OSN users. More specifically, we address the following question: “How relevant is it to user X to know about some specific event type generated by user Y?”. This question can be rephrased into: “How relevant is to user X to know about some specific content in the PUP of a user Y?”

In order to understand how personal content influences users’ perception of relevance of other content and features on OSNs, in this paper we have proposed a definition of the personal content, in the form of a conceptual model of the Portable User Profile (PUP). The PUP of a user lists the types of data, and relationships between these types of data, which most well-known OSNs tend to collect. It is portable, in the sense that if it were possible for a user to carry over her personal content from one OSN to another, then the PUP includes data, which it would be relevant to carry over. Put another way, the PUP represents all the information that the user has shared across multiple OSNs.

Also, we believe that the conceptual model is scalable. It is not specific to one particular OSN nor a specific type of OSNs (for instance, for knowledge-sharing OSNs or network-oriented OSNs). If a new OSN arises, it should not be a problem to take into account the information it gathers, we should be able to find a mapping between its features and the proposed class diagram. And it can be easily extended if OSNs propose new features and therefrom, new types of personal content arise. More specifically, the PUP can be updated by adding a class to the conceptual model, accompanied by the potential relationships with other classes.

As mentioned in Section 3, the existence of a Portable User Profile has its benefits as well as its limitations. We will discuss the PUP conceptual model in light of these advantages and limitations.

Firstly, the PUP conceptual model enables the representation and the common understanding of the structure of the data/information in the user profile. The user can share her information only once, and this information will take the form of the conceptual model. Also, if the user is more active on a OSN, for instance, if she uses Facebook daily while she only checks her LinkedIn account once a week; the user can leverage her Facebook activity and take advantage of it on LinkedIn.

The distinction between the explicit and the implicit data is also made clear by the conceptual model: what is implied by “explicit data”? What is implied by “implicit data”? The user can have more control over her information, because she knows what is exactly tracked when she is on the OSN.

However, risks remain. What the user cannot control are the new inferences the OSNs can make (which are not represented in the PUP). The user can identify where the information come from, but cannot control the information that is leveraged from all the various sources. Also, the user cannot choose to share more information on an OSN, and less on another. She cannot hide data from one OSN.

The information at the disposal of the OSN is uniform. The PUP conceptual model does not erase the limitations of an integrated profile, but it makes the user more aware of those risks.

We will now discuss the recommendation topic, in light of the PUP conceptual model. The quality of the recommendations depends on the information it is based on, both in terms of quality and quantity.

Adomavicius & Tuzhilin (2005) distinguish between three recommendation techniques that a Recommendation System (RS) can use, each of which present several shortcomings:

1. Collaborative Filtering (CF), where “the user is recommended items that people with similar tastes and preferences liked in the past”;
 - a. New user problem: the RS has to learn the user’s preferences in order to make reliable recommendations
 - b. New item problem: an item has to be rated by a significant amount of users before it can be recommended
 - c. The “grey sheep” problem: a user can be classified in more than one group of users
 - d. Sparsity: both users and ratings sparsity can cause problems for the generation of accurate recommendations
2. Content-Based (CB), where “the user is recommended items similar to the ones the user preferred in the past”;
 - a. Limited content analysis: a sufficient set of features per item is required in order to produce recommendations
 - b. Over-specialization: the set of recommended items will be very homogeneous
 - c. New user problem
3. Hybrid, which is a combination of CF and CB.

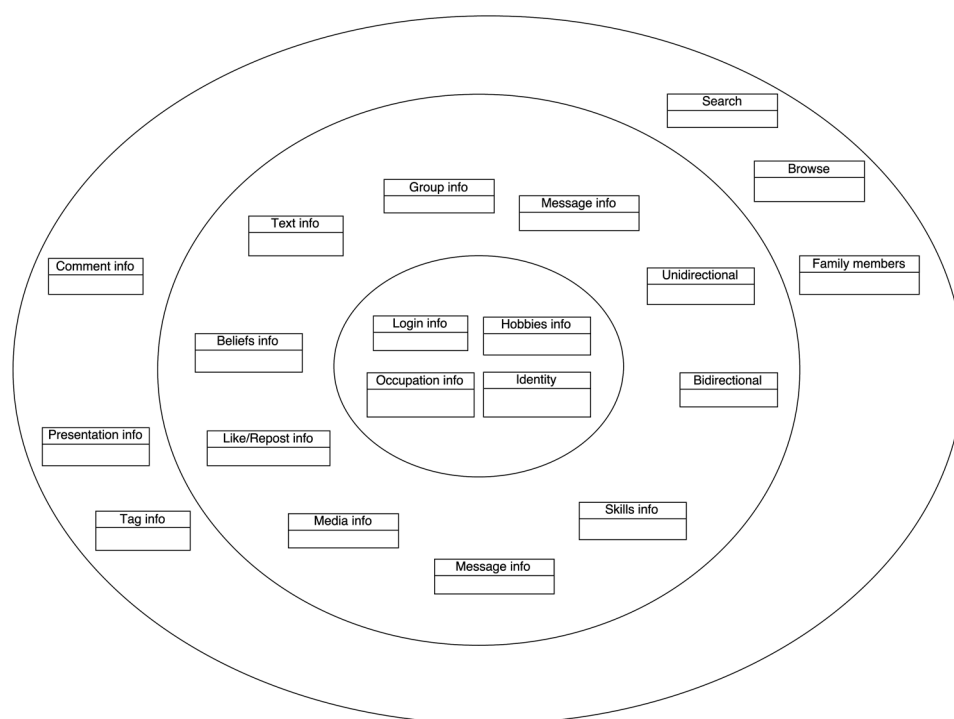
A RS could also generate recommendations based on rules. In (Bouraga et al., 2015), we proposed rules for relevant recommendations. We surveyed students of the University of Namur, and based on their preferences, we proposed decision trees for relevant recommendations.

Thus, the more information the RS can use, the more accurate it will be; whether the RS uses CF, a CB, a hybrid, or rules. The information has to be varied as well, and it has to be of good quality. The recommendation will be the most accurate if the user shares all the classes of information found in the PUP conceptual model. More specifically, if she shares her profile information, if she creates relationships online, and if she is active on the OSN that is, if the OSN can gather lots of implicit data. To the contrary, if the user shares only the minimum amount of data, that is her profile information, she will most likely get imprecise recommendations. This discussion is represented in Figure 2. The quality of the recommendation increases as we move towards the external layers. The inner circle depicts the core information we believe is needed to generate recommendations; while the outer circle represents the optional information.

CONCLUSION

In this paper, we proposed the “Portable User Profile” (PUP) conceptual model. This model is meant to gather all the data/information a user shares on every OSN she uses. The PUP should be accessible by both the user, and the OSN.

Figure 2. The PUP conceptual model and the quality of recommendations



Before introducing the conceptual model, we first discussed the advantages and limitations of such a profile. An integrated profile is richer in terms of information than a single OSN account, and this enriched profile probably leads to better, more accurate recommendations. Also, the user could have access to all the information the OSNs gather about her; and thus the user could have more control over her own data. Nevertheless, with an integrated profile the user cannot choose an OSN where she would be more active, where she would share more information. She is forced to be equally exposed on every OSN she uses. This situation also renders the user more vulnerable. Our PUP conceptual model is composed of two main classes: Explicit and Implicit data. Each of these classes can be specialized into two classes: Profile and Relationship data; and Posts and Activity data respectively. Those four classes are specialized into several other classes. We represented this conceptual model as a UML Class diagram.

The main limitation of this work consists in its research-oriented/ hypothetical nature. We have not validated the proposal. Also, we only took into account three different OSNs; even though, these three different OSNs are different in their approach and objectives. Considering other OSNs would be interesting in order to validate or revise our PUP conceptual model. Another limitation is that we did not consider the information resulting from inference by the OSN or from the collection of information from other sources.

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Chapter 21

At the Mercy of Facebook: A Meta-Analysis on Impact of Social Networking Sites, Teen Brain on Teenage Pregnancies

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ABSTRACT

This chapter is a meta-analysis of teen brain research and social media technology such as Facebook that could result in spiraling rates of teenage pregnancy. The author discusses contemporary theories of brain circuitry including teen brain structure and function as one of the plausible reasons for rising teenage pregnancy rates. The author argues that the challenge is to control the quality and influence of Facebook on teen behaviors, actions, and decisions to minimize the growing influence of social networking sites. In the conclusive section of the chapter, the author focuses on the expansion and extension of instructional and non-instructional physical activities, exergames, and active video games strategies to control the quality and influence of Facebook content by presenting research that advocates use of such activities and games within the Facebook interface. The author ends the chapter by mapping a future research direction of cross-cultural empirical investigation. The author wraps the chapter with a summative conclusion.

INTRODUCTION

“Time and motivation are finite resources... time and motivation spent on social networking sites such as Facebook usually comes at the expense of other activities,” stated Wendy Cousins, a researcher at the University of Ulster in the UK. In a recent online survey of 350 high school students and undergraduates, Cousins found that teens spent more than 65% of the day posting and sharing their own pictures’, messaging someone, viewing profiles of each other, and commenting on each other’s social status. Time that should have spent doing homework, researching future career options, engaging in community activities, talking with friends and family in person, and playing a game (Nauert, 2015). The survey

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sought to investigate the motivation of daily addictive use of Facebook by teens. Cousins stated that teens experienced a 'high' and a sense of excitement, social approval and thrill when they viewed a 'like' on their Facebook site (Nauert, 2015). The compulsion to replicate the sensation and thrill stated Cousins was one of the chief distinguishing features of teen behavior. Consequences such as becoming pregnant while still in school; engaging in risky behaviors of drinking and drug addiction, pornography do not seem to hold any value (Nauert, 2015). A similar trend has been sweeping across US as Facebook usage was recorded at 73% among teens i.e. adolescents under age of 19 (Madden, Lenhart, Cortesi, Gasser, Duggan, Smith, & Beaton, 2013). According to National Center of Health Statistics [NCHS] researchers, this increase impacted rates of teenage pregnancy significantly with 71.5% teen pregnancies for every 1000 teen girls between ages of 13-19 in 2017 (Landry, Turner, Vyas, & Wood, 2017). Teen girls were more prone to posting and sharing pictures; engaging in risky behavior to experience a 'high' thrill of excitement (Landry et al., 2017). NCHS researchers established a tenuous but direct link between increase in Facebook usage and teenage pregnancy rates with 25% increase in states of Arizona, New Mexico, Nevada, and Texas in 2017 (Madden et al., 2013). More than 26 US states clocked in high rates of teenage pregnancy with more than 72 live birth for every 1000 teen girls aged 15 (Landry et al., 2017). This increase was found to be positively significantly correlated i.e. 49.4% increase in sexual behavior leading to teenage pregnancy due to increased Facebook usage in terms of time and quality i.e. teens were spending maximum time on Facebook posting, sharing provocative pictures, sexting, and real-time sexual activity (Landry et al., 2017). Social networking sites such as Facebook propelled and influenced teens to engage in risky behaviors of gambling, sexual activity whilst in school, sexting, pornographic behavior, and teenage pregnancy (Geidd, 2013).

The chapter, written from a US perspective, maps out how excessive usage in terms of time and misplaced motivation of Facebook leads to irresponsible, harmful and/or risky behavior and action that could result in teenage pregnancy. The author charts an extensive literature review of prevalence of social networking sites focusing primarily on Facebook; theoretical perspectives discussing contemporary neurobiological theories that show why teens use Facebook despite its harmful effects; and plausible methods of controlling the quality and usage of Facebook time and motivation as a means to shape usage of Facebook to control and minimize consequences of teen pregnancy. In her conclusion, the author reiterates her argument that the theoretical meta analyses serves as a foundational launchpad to initiate and further empirical research.

BACKGROUND

The Internet, iPads, Google, Facebook, Instagram, Twitter, Snapchat... have successfully invaded and dominated 20th century society. Youth are sharing more of their personal information on social networking sites than in the past (Gao, 2015). Statistics released by NCHS on teenage attitude, behavior, and action reveal this gradual progression of digital technology over human society (Madden et al, 2013). More than 95% of all people, adult and teenage including adolescents and senior citizens used the Internet and one social networking site almost daily (Lenhart, 2015). In her research, Lenhart stated that usage of the Internet, cell phones, and various social networking sites began as early as ten years in school children and peaked during teenage years at ages ranging from 13-17 (Lenhart, 2015). In 2010, US teens spent an average of 8.5 hours daily interacting with social media technology be it Facebook,

Google, iPad, tablets, or Twitter (Rideout, Foehr, & Roberts, 2010). This number increased to 11.5 hours in 2013 (Geidd, 2013).

In 2015, more than 71% of teens spent an average of 15.8 hours on social media sites or apps (Lenhart, 2015). More than 66% of teens used Facebook, 13% used Instagram, 13% used Google+, and 3% used Snapchat (Lenhart, 2015). The 2010 data from the Kaiser Foundation online survey showed that teens belonging to ages of 13-15 spent more than two-thirds of their day surfing, viewing Facebook posts, following someone on Twitter, chatting with someone online, or commenting on an online pinup board post (Rideout, Foehr, & Roberts, 2010). The researchers stated that these daily consumption habits of teens were extremely beneficial to the digital industry that was inventing new social networking sites and optimizing search engines everyday (Rideout et al., 2010). Researchers at the Pew Research Center said that the number of teens consuming these various digital technology avenues would only increase, and ultimately implode by 2020 (Lenhart, 2015, Gao, 2015).

Teen girls tended to dominate social media with older teens using Facebook to express their social dating skills, friendship requests, identity creation, impression management, and development of self-esteem (Dunne, Lawler, & Rowley, 2010). These reasons for using social networking sites and the Internet have not changed. In her report, Lenhart said teen girls ranging in ages of 15-17 used Facebook 20% more than younger teen girls (Lenhart, 2015). On an average 71% of teen girls used Facebook daily. Teen girls aged 15 used Facebook to create impressions of *'being cool'* and *'popular on the dating scene'* (Gao, 2015, Lenhart, 2015). Each Facebook user had an average of 145 'friends' (Lenhart, 2015). Facebook posts were viewed as a medium to attract and befriend strangers through provocative textual or visual descriptions (Gao, 2015). Older teen girls tended to spend more time, nearly 15%, enhancing their profiles and befriending, inviting persons of the opposite gender to view and comment on their profiles (Geidd, 2013). This trend of posting photographs and pictures of self-doing daily activities in provocative *'cool'* clothing was also identified as the primary reason behind the prevalent use of online pinboard sites such as Pinterest and Polyvore (Lenhart, 2015). Research statistics showed that older teen girls belonging to ages 15-17 used online pinboard sites, namely Pinterest 33% more than young teen girls (Lenhart, 2015). In contrast, only 11% of teen boys used Pinterest. Again, older teen girls ranging in ages of 1 teen behavior 5-17 used online discussion boards such as Reddit and Digg to chat and comment on posted Pinterest or Facebook posted images (Lenhart, 2015). More than 17% of older teen girls constituted major and active consumers of Reddit and Digg online discussion boards (Lenhart, 2015). More than 47% of teen girls use video connections such as Skype, Ovoo, Facetime and Omegle to talk with each other. Older teen girls aged 16 are touted as being more enthusiastic and eager to spend their study time video chatting and calling 'friends' (Lenhart, 2015).

Similarly, older teen girls used the social application of Instagram at an average frequency of 60% (Lenhart, 2015). The social application was primarily used to post and share photographs with each other (Lenhart, 2015). The average typical Instagram user had over 150 followers who shared, commented, and encouraged each other's behavior and action (Lenhart, 2015). The trend of video and photo sharing social application was expanded with the advent of Snapchat. More than 47% of older teen girls used Snapchat to share videos of people, places, and events they liked with each other (Lenhart, 2015). Twitter was another social application that had garnered a niche audience among teen girls (Lenhart, 2015). A third i.e. 33% of female teens used Twitter to develop a network of friends and 'followers' (Lenhart, 2015). Older girl teens used Twitter daily accounting for 49% of its consumers, compared to younger female teens in ages 13 and 14 who used Twitter 31% and 28% respectively (Lenhart, 2015). Vine and Google + were identified as popular social communication applications used mostly by older teen girls

to post and share photos (Lenhart, 2015). Vine was used by 27% of older teen girls as a photo and video sharing platform as compared to 20% of older teen boys (Lenhart, 2015). Tumblr was a microblogging social application used by 23% of older teen girls ranging in ages from 15-17, as compared to 5% of older boy teen users (Lenhart, 2015). Tumblr was primarily used by older teen girls to share visual posts of themselves or others. Older teen girls would usually minimize Pinterest images to share on Tumblr and post them on Twitter and Facebook to generate likes, dislikes, and 'followers' (Lenhart, 2015). Tumblr, thus, was used in conjunction with other social networking applications to enhance self-image, garner friendships and become popular (Lenhart, 2015).

Current survey data at the Pew Research Center showed that more than 57% of female teens used more than one social networking site or website to establish friendships, enhance self-image, and create interest about self among members of opposite gender (Lenhart, 2015, Gao, 2015). This introductory section sets the stage highlighting the widespread dominance of all kinds of digital social technology among teen girls. In the next section, the author focuses and traces the reasons behind the emergence and popularity of social networking sites.

Phenomenon of Social Networking Sites

Social networking sites (SNS) such as Facebook, Instagram, and Snapchat were defined as web-based devices that allowed individuals to:

1. Construct and develop a public or semi-public profile within a bounded system
2. Articulate, usually in written format, a list of users with whom they shared a connection. Such approved users were identified as friends on the SNS.
3. View and navigate through their friend list as well as view and share friend networks posted by others (Boyd & Ellison, 2007).

The main feature of SNS was their emphasis on 'networking.' All SNS were primarily social relationship sites that fostered sharing of experiences, memories, communication, behavior, and action (Haythornthwaite, 2005). SNSs were developed and based on the premise of relationship creation and maintenance, either with members of an existing known social circle, or connecting users with people who shared similar attitudes and interests (Boyd & Ellison, 2007). SNSs were defined as "*explicit representation of the relationship between individuals and groups in a community*" (Finn, Ding, Zhou, & Joshi, 2005, p. 419). The SNS community could be real or virtual (Finn et al., 2005). Raacke and colleague elaborated on this concept and explained that SNS were public virtual spaces or platforms where individuals from various levels and sectors of society could interact and share ideas, experiences, and interests with each other (Raacke & Bonds-Raacke, 2008).

The foundational characteristic of SNSs was their ability to allow and enable users to create a profile of themselves (Sunden, 2003). Profiles were described as individualized informative descriptions that usually included visuals, messages, and a list of friends. After logging into a SNS such as Facebook, users had to complete a questionnaire (Sunden, 2003). The completed questionnaire that included descriptors of age, location, interests and an 'about me' section was used to generate a basic profile. The profile could be enhanced with visual descriptors of photographs of the user in various poses (Sunden, 2003). Profile pages were unique allowing the user "*to type themselves into being*" (Sunden, 2003, p. 3). Each member was encouraged to upload a personal photograph of self and share a range of varied

At the Mercy of Facebook

information such as where they went to school, favorite movie stars, music they liked, information about family, hobbies, and interests. A Facebook user or member had the autonomy and control to share and regulate the content typed into their profile (Sunden, 2003). Users could manipulate information and photographs to show themselves in a favorable, positive, and attractive light (Boyd, 2007). According to recent longitudinal surveys conducted on teens aged 14-17 years, 92% of teens shared their real name on their profile, while 91% posted profile pictures. (Madden, Lenhart, Cortesi, Gasser, Duggan, Smith, & Beaton, 2013, Lenhart, 2015). The survey results as depicted in Table 1, showed that 71% of the users felt comfortable sharing their physical address, while 73% shared their contact information on their profiles (Madden et al., 2013; Lenhart, 2015). Focus group results also showed that older teen girls felt excited and eager to post and share photos of themselves in a towel (Lenhart, 2015).

Table 1. % of Users posting certain profile characteristics on SNS

Profile Characteristic	% of Users
Posted their real name	92%
Posted their photo	91%
Posted their interests, hobbies	84%
Posted their birth date	82%
Posted their school name	71%
Posted the city/ town they currently lived	71%
Posted their real relationship status	62%
Posted their email address	53%
Posted videos of themselves in private poses [in towel]	24%
Posted cell phone number	20%

Source: (Madden, M., Lenhart, A., Cortesi, S., Gasser, U., Duggan, M., Smith, A., & Beaton, M. (2013). Teens, Social Media, and Privacy. <http://pewinternet.org/Reports/2013/Teens-Social-Media-And-Privacy.aspx>).

After joining a SNS and creating their profile, users were prompted to identify people they wanted to interact with within the system. These interactions were described as virtual relationships (Boyd & Ellison, 2007). The identified individuals were known as ‘friends’; ‘contacts’ or fans’ depending on the SNS. An example would be Facebook where a user had the autonomy to identify more than 145 ‘friends.’ It was not necessary for a user to recognize and know his or her users (Boyd & Ellison, 2007). A user could merely initiate contact and identify someone as a ‘friend’ based on recent posts and messages on Facebook (Boyd & Ellison, 2007). Consequently, a user could have a list of ‘friends’ who he or she had never met and chatted with face-to-face. Most SNSs were developed on the security and privacy feature of bi-directional confirmation of ‘friends’ or ‘followers.’ This kind of dual confirmation meant that an individual could only join a user’s ‘friends’ list if the latter confirmed the friendship request, and vice versa (Boyd & Ellison, 2007). This type of bi-directional confirmation ensured that users had only approved and desired ‘friends.’ Another integral and crucial component of all SNS was the public display of user established connections or ‘friends’ (Boyd & Ellison, 2007). This compromised security negating the former feature of bi-directional confirmation allowing any individual with access to log in to Facebook or any SNS to view the user’s information and profile. However, advanced security issues

allowed users to choose between public and private access. This kind of advanced security protocols allowed user control over their information and communication with ‘friends’ (Dunne et al., 2010). Older teen girls were more at ease, more than 25% than their male counterparts, in making their profiles public for general navigation and consumption (Lenhart, 2015).

On an average, a user could have ten recognizable friends on a SNS. These friends were identified as the user’s classmates; neighbors; family members, or relatives. The bottom line was that these ten friends were people the user knew on a personal or professional basis (Fraser & Dutta, 2008). The remaining 130-140 people on a user’s ‘friends’ list were virtual and not known to the user. This meant that SNS allowed users to establish contact and relationships with a virtual community of people (Fraser & Dutta, 2008). A user did not have to know the ‘friend’ on a personal basis. Users could have initiated friendship requests by viewing and ‘liking’ their profile in the public space on a SNS. Hence, SNS provided the means to establish large networks of ‘friends’ or ‘followers.’ A user in USA could have 50 ‘friends’ in China—people the user had never seen in his or her personal or professional life (Fraser & Dutta, 2008). Older teen girls had large networks of ‘friends’ as compared to younger female teens (Madden et al., 2013; Lenhart, 2015). In their path breaking report titled, *‘Teens, Social Media, and Privacy’* published for the Pew Research Center, Madden and colleagues noted that older teen girls usually maintained two Facebook accounts – one for the family and one for members of the opposite gender (Madden et al., 2013). The report also stated that older teen girls held multiple SNS accounts to maintain their privacy and *‘not to tell their parents everything’* (Madden et. al, 2013). According to the report, 98% of Facebook users were friends with male family members and friends (Madden et al., 2013). The researchers further explained that such Facebook accounts were kept separate from accounts for female friends (Madden et al., 2013). As shown in table 2 below, 33% of teen Facebook users were ‘friends’ with people whom they had never met (Madden et. al, 2013). According to table 2, 70% of older teen girl Facebook users were ‘friends’ with their parents (Madden et al., 2013).

Table 2. Type of “friends” by older teen girl Facebook users

% distribution of Facebook users	Type of “friends”
98%	People they know from school
91%	Members of their extended family
89%	People going to a different school
76%	Siblings
70%	Parents
33%	People they have never met
30%	Teachers & Coaches
30%	Celebrities, Musicians, Athletes

Source: (Madden, M., Lenhart, A., Cortesi, S., Gasser, U., Duggan, M., Smith, A., & Beaton, M. (2013). *Teens, Social Media, and Privacy*. <http://pewinternet.org/Reports/2013/Teens-Social-Media-And-Privacy.aspx>).

MAIN FOCUS OF THE CHAPTER

Issues, Controversies, Problems

The number of friends was found to be directly and significantly linked to level of sociability, openness, and friendliness of a user (Dunne et al., 2010). In his pioneering research, Dunbar explained this phenomenon with help of human psychology (Dunbar, 1996; Geidd, 2013). The human brain was designed as a social cognitive intuitive brain (Dunbar, 1996). Beginning with the Roman Empire to the number of people on a holiday card list; building, developing social contacts for survival has been a basic primal human instinct (Dunbar, 1996; Geidd, 2013). Humans, thus, had a social perspective combined with survival instinct that compelled them to have many contacts or friends from various corners of society (Dunbar, 1996). This ensured that a person could survive in any kind of environment and society (Dunbar, 1993). Dunbar studied the social communicative and relationship patterns of more than 38 primate species. His data analyses showed that human species needed to have a minimum number of 150 contacts or relationships (Dunbar, 1996; Geidd, 2013). This number of 150 known as 'Dunbar's number' formed the basis of having many friends on a SNS in contemporary society (Geidd, 2013). Twitter users had around 145 followers, while Facebook averaged more than 130. A wider circle of friends on such SNS's also ensured that the teen had less personal knowledge of all 'friends' and was exposing herself to harmful pornographic views publicly (Geidd, 2013).

Researchers from the Pew Research Center stated that Facebook users could shape their profiles to attract members of the opposite gender (Lenhart, 2015). Girl users were more prone to misusing this user control feature by posting pictures of themselves in provocative clothing engaging in risky behaviors of smoking, and gambling (Geidd, 2013). Thus, SNS helped in identity creation and performance, impression management, and enhancement of self-esteem (Fraser & Dutta, 2008; Rubin, 2002). In an exploratory research study using semi-structured interviews, researchers Dunne and colleagues found that teens formed the major consumers of Facebook, which was identified as 'the' popular SNS (Dunne et al., 2010; Spicer & Taehrreport, 2008; Cook & Kaiser, 2004). Teen girls were the predominant drivers of Facebook, 45% more than their male counterparts (Spicer & Taherreport, 2008). The researchers hypothesized that this discrepancy could be attributed to gender and societal bias issues such as girls tended to gossip, communicate more, and engage in widespread activities and hobbies (Spicer & Taherreport, 2008). These teen girls posted positive photographs as well photographs that tended to show them in a favorable light to attract 'friends' of the opposite gender (Dunne et al., 2010). Focus group results revealed that teen girls used Facebook to create and maintain positive and friendly images. They shared experiences and personal stories that revealed their empathetic, sensitive, and fun-loving nature, making their posts and profiles appealing, attractive, and 'cool' to the male member of Facebook (Dunne et al., 2010: 52). Facebook was an extension of offline social interactions- a way to amass many friends, gain social approval and status, and project a positive image to the external world (Madden et al., 2013; Dunne et al. 2010).

A participant aged 14 remarked that "it was a good way of talking to boys and becoming friends with them ... saying things without feeling embarrassed or stupid" (Dunne et al., 2010, p. 52).

Results and analyses showed that teen girls posted "cool photos in trendy clothes showing good skin to show how attractive they are..." (Dunne et al., 2010, p. 52).

A participant aged 15 revealed, "you need to pretend on your profile... be something you are not... the more cool you appear... the more likes you get..." (Dunne et al., 2010, p. 53).

The same participant later stated that the prime objective of Facebook posts was to get maximum number of likes (Dunne et al., 2010). Only five-six percent of the teen girls interviewed said that they used Facebook to meet new people and communicate meaningfully about studies, career choices, and school (Dunne et al., 2010). Peer acceptance, social dating, enhanced self-esteem was also identified as some of the uses of Facebook (Dunne et al., 2010). The researchers felt that teen girls tended to use Facebook more than teen boys as their needs and wants were being steadily fulfilled by Facebook (Dunne et al., 2010). Teen girls could befriend anyone on SNS, exchange ‘meetup’ requests and photos of themselves (Dunne et al., 2010). Basing their research analyses on previous SNS research conducted in 2007 and 1994, the researchers hinted strongly at a uses and gratifications theory (O’Donohoe, 1994; Boyd, 2007; Dunne et al. 2010). The uses and gratifications (U and G) theory holds that people engaged with activities, technologies, and events that satisfied their needs and wants for an extended period (O’Donohoe, 1994). U and G theorists were interested in studying and researching those mediums or avenues that attract and hold audiences to their folds (O’Donohoe, 1994). Boyd translated the U and G theory to SNSs and said that SNS such as Facebook was popular and continued to maintain a strong foothold as it satisfied certain needs and wants of teen girls (Boyd, 2007). The following table lists some of the reported uses and gratifications as reported by participants in the research study.

Table 3. List of U and G of teen girls on Facebook

Uses: Gratifications Sought	Gratifications Obtained
Communication	Portraying one ideal image
Interacting with boys	Social dating
Being friendly	Peer Acceptance
Identity creation and management	Relationship maintenance, enhanced self-esteem
Entertainment, escapism, alleviation of Boredom	Safety from embarrassment and rejection

Source: (Dunne, Lawlor, M. A., & Rowley, J. (2010). Young people’s use of online social networking sites: A uses and gratifications perspective. *Journal of Research in Interactive Marketing*. 4 (1), 46-58).

According to the gratifications listed in Table 3, teen girls used Facebook primarily to portray an ideal or positive image and to attract boys for perusal of dating relationships. The anonymity as well as the ease of access afforded by such SNSs could also be another reason behind the regular use of Facebook. The researchers further argued that use of Facebook to develop dating relationships by teens could influence and act as a strong motivator of irresponsible sexual behavior leading to teenage pregnancy (Dunne et al., 2010).

In the following section, exploration and discussion of contemporary neurobiological perspectives explain why teens are compelled to log onto Facebook all the time and engage in risky behaviors and decisions of casual sex and drinking with no fear or care of consequences.

Theoretical Perspectives

In his seminal paper '*Digital Revolution and the Adolescent Brain Evolution*,' renowned M.D. and pioneer of teen brain imaging studies, Dr. Geidd stated that the human teen brain was an active, growing, and adaptive organ (Geidd, 2013). The human teen brain was characterized by key features of:

1. Plasticity or adaptability. Dr. Geidd described the teen brain as remarkably adaptive and flexible to the forces and demands of nature and society such as adapting to different motor and cognitive functions, peer pressure and acceptance, and responding to emotional crises (Geidd, 2013).
2. Increased risk-taking and consequent poor decision-making
3. Increased sensation seeking (Geidd, 2013).

These three characteristics of the developing teen brain combined with the U and G theory make teens highly vulnerable to poor decisions such as casual sex, negative thrills such as drug addiction, and wrongful behavior such as crime and becoming pregnant. The teen brain was described in a constant state of flux wherein growth occurred not in size but structure and depth (Geidd, 2013). Brain growth usually peaked at ages 12 in girls and 14 in boys. Teen brain grew more dense, structured and more social (Geidd, 2013).

Researchers at the UCLA'S Ahmanson-Lovelace Brain Mapping Center stated that teens experienced less cognitive control leading to poor response inhibition (Wolpert, 2016). The researchers conducted a controlled experiment on a random sample of 32 teens aged 13-18, and informed them of their exposure and participation in a small sized SNS, similar to Facebook and Instagram (Wolpert, 2016). The teens saw 148 photographs on a computer screen for 12 minutes out of which 40 photographs were of themselves in various poses and clothes. The study had three conditions of (a) neutral photographs of people engaging in neutral behaviors of reading, walking, and wearing neutral clothing such as pant suits, (b) risky photos showing risky behaviors of frowning, drinking, engaging in casual sex, and wearing provocative clothing such as a two-piece swim suit, and (c) positive photos displaying positive behaviors of smiling, hugging, and wearing positive clothing of dresses and business suits. Brain activity was mapped and analyzed using magnetic resonance imaging (MRI) technique at the three levels.

Lead researcher, Lauren Sherman of the UCLA center reported that the first level of results analyzed showed that all teens responded positively by clicking 'yes' to their own photographs (Wolpert, 2016). This number grew dramatically to encompass the entire sample when teens saw that their photos had generated maximum number of likes. The inverse also occurred as teens responded negatively by clicking 'no' to photos of themselves that had garnered least number of likes (Wolpert, 2016). The reason for this visible behavior was the brain reward circuitry center, known as nucleus accumbens that housed the straitum. Sherman stated that when teens saw a substantial number of likes, they were compelled to respond positively and click 'yes.' But this compulsion slowed when the teens saw photos with least number of likes (Wolpert, 2016). Sherman noted that the nucleus accumbens was known as the 'master planner' that shaped teen behavior and action in the long run. This meant that teen positive behavior of smiling, hugging, participation in community events was due to peaked activity in the brain's master planner (Wolpert, 2016). Activation in the straitum was also strong when risky photos were viewed (Wolpert, 2016). However, little or no activation in the stratium was reported when teens viewed neutral photographs.

The second level of results showed that teens were less likely to click on neutral photos (Wolpert, 2016). Teen brains experienced minimal or less activation in brain regions of dorsal anterior cingulate cortex, bilateral prefrontal cortex, and the lateral parietal cortices (Wolpert, 2016). These three brain regions were responsible for teen cognitive control and response inhibition. Thus, these brain regions were not activated when all teens were exposed to neutral photos (Wolpert, 2016). Teen behavior had no adverse effect when exposed to neutral photos. But, according to MRI scans, these three brain regions reported little or no activation when exposed to the third condition of risky photos (Wolpert, 2016). Sherman stated that at first, level three results meant that teen behavior was not impacted by risky visuals, and this boded well for visual attention (Wolpert, 2016). But detailed analyses of the results showed that minimal or no activation in these brain regions was bad and worrying. When a teen viewed a risky photo in a two-piece swim suit, he or she experienced less cognitive control and reduced response inhibition. Sherman also stated that the three brain regions of the dorsal, prefrontal, and parietal cortex controlled decision-making and consequent actions (Wolpert, 2016). When the teen experienced poor or no response inhibition he or she felt 'compelled' to engage in poor decision-making and indulge in risky behaviors of casual sex without caring for the consequences i.e. becoming pregnant while in school (Wolpert, 2016).

In another similar neuro-imaging study, Young stated that the number of likes or approvals on a SNS such as Facebook increased activation in the brain reward circuitry center (Young, 2017). In the UCLA study, this brain reward circuitry center had been previously identified as being directly correlated to positive, neutral, and risky imagery (Wolpert, 2016; Young, 2017). This strong positive activation also increased the reward trigger in the teen brain (Young, 2017). For instance, if a teen experienced a reward of appreciation on viewing positive imagery and consequently liking and engaging in that positive behavior; the teen would always engage in the positive behavior to keep getting the reward. Reward could embrace many attitudes, actions and behaviors such as social acceptance to support, encouragement and monetary or physical comforts. A teen will be more prone to 'like' and engage in positive imagery of participating in class, eating at the table if such behavior or imagery begets a reward such as good grades, recognition as being academically superior, and appreciation (Young, 2017). On the other side, the inverse also holds true. Propensity to engage in risky behavior increases when such behavior and consequent poor decisions and actions are rewarded (Young, 2017). Teens will be compelled to 'like' risky imagery and behavior and engage in it if they feel such risky behavior is rewarded. For instance, a teen will be more likely to 'like' and engage in casual sex if they envisage a reward in such behavior like being popular with members of the opposite gender. Another example could be when pregnant teens get acceptance and support for their behavior and decision from their school, family and community it simply increases and cements their resolve and conviction of wrongful behavior and decision.

Activation in the brain reward circuitry center also increases the level of the neurotransmitter of dopamine (Geidd, 2013). In his earlier study of video games and addiction, Geidd stated that teens played video games to seek thrills and sensations (Geidd, 2013). Later, he applied the same concept to the issue of teens using SNS. He said that when teens saw risky photos, their brain reward circuitry was activated causing the level of dopamine to peak (Geidd, 2013). This dopamine peak led to profound changes in behavior and cognitive thought such as loss of control and continuation of the risky behavior (Geidd, 2013). This dopamine increase was viewed as a reward as it released 'feel good' and sensation-seeking hormones in the body (Geidd, 2013). Teens viewed and engaged in risky behavior to experience the dopamine rush and seek thrills and sensations (Geidd, 2013).

These neurobiological perspectives when combined with the growing prevalence and influence of SNS's could account for teenage pregnancy (Center for Disease Control [CDC], 2015). Teen girls were

compelled to engage in risky behaviors and display thrill and/or sensation seeking attitudes and actions to satisfy brain development processes (CDC, 2015). The challenge, therefore, was to control and influence the quality of SNS impacting teens in contemporary society. According to the Pew Research Center, the control and influence of such SNS's could mitigate their impact on teen behavior and action (Lenhart, 2015, Gao, 2015). In the following section, the author discusses possible ways to restrict the quantity of teen SNS exposure.

SOLUTIONS AND RECOMMENDATIONS

In the *Pew Internet and American Life Project report*, Andersen and colleagues stated that to control the adverse consequences of teen compulsion and addiction to Facebook, and consequently also reduce the rate of teenage pregnancy, schools had to compete with the dopaminergic system of the teen brain (Anderson & Rainie, 2012; Geidd, 2013). Schools and other educational institutions had to ensure that non-instructional physical as well as instructional activities provided teens with equivalent levels of sensation and thrills to produce pleasurable rewards (Geidd, 2013). Continuity of a pleasurable reward system would divert teens from posting, viewing, and engaging in risky behaviors and poor decisions (Geidd, 2013). This meant that instructional and non-instructional activities had to surpass the threshold of dopamine level produced by addictive Facebook (Geidd, 2013).

Non-instructional physical activities meant bodily movement of any type and could also include jumping rope, sport, game, climbing stairs, and group activities of raking leaves, carrying books to a classroom (Castelli, Glowacki, Barcelona, Calvert, & Hwang, 2015). Such physical activities reduced stress, enhanced self-esteem, and social acceptance (Castelli et al., 2015). When teens experienced these external attitudinal changes of social acceptance, self-efficacy, and the consequent reward of popularity and social appreciation; they were more prone to replicate these actions or activities to produce the rewarding behavior. More time and effort spent on instructional and non-instructional physical activities improved cognitive functioning, reduced stress, and the urge to engage in risky behaviors of drinking, gambling, casual sex, and bullying (Castelli et al., 2015). The researchers also suggested competitive team sports and club activities where teens collaborated and communicated with each other in person to discover, invent, develop, publish, or achieve a mutually acceptable and satisfying outcome (Castelli et al., 2015). The occurrence and prevalence of such actions and consequent behaviors would lead teens to spend less time on Facebook. Young and colleagues stated that non-instructional physical activities included after-school programs of playing in a school band, participating in a group club (Young et al., 2017). Such physical activities spurred cognitive and emotional brain growth as the activities required planning, coordination, flexibility, and maturity (Young et al., 2017). Thus, the activities not only led to cognitive functional growth but also enabled teens to distinguish between positive and negative risky behavior. Emotional maturity made it possible for the teen to empathize and be sensitive to other people, situations, and feelings and in the process empowering them to make balanced decisions based on knowledge, and not on thrills and sensations.

Currently, 91% of high schools, and 77% of middle schools offered and conducted physical activity clubs and exercises (Edwards, Bocarro, & Kanters, 2013). In a report released by the Institute of Medicine (IOM), six key guidelines were issued for adoption of instructional and non-instructional activities into mainstream curriculum (Cooper, Greenberg, Castelli, Barton, Martin, Morrow, 2016). According to IOM report stated that time spent in physical activity would reduce but not eliminate time spent on

SNS such as Facebook (Cooper et al., 2016). IOM researchers argued that time spent on Facebook was an innate function of the teen brain and would gradually lose its potency as these teens evolved into adults (Cooper et al., 2016). The six guidelines were coined in the first guideline of a systems approach. A systems approach, as stated in the report and explained by the preceding guidelines, meant that the issue of physical activity should be included in all aspects of the school curriculum (Cooper et al., 2016). Physical activity was to be designated as a key subject as Science and Math. Physical activities could include active commute before school, physical education, physical activity classroom breaks, recess during school, active commute from school, intramurals, and extramural sports (Cooper et al., 2016). The six guidelines in the IOM report were:

1. A systems and whole-school approach to physical activity.
2. The inclusion of instructional and non-instructional activities in school policy decisions.
3. Physical education and consequent activity to be an integral core subject in school curriculum
4. Regular monitoring and evaluation of all school based instructional and non-instructional physical activities by state and federal agencies.
5. Provision to empower and equip all school teachers with knowledge and skills about importance and value of physical activity.
6. Access to physical activity programs by all school-going children (Cooper et al., 2016).

However, more than 82% of schools in US have not implemented these guidelines and even cut funding to develop physical activity programs (Cooper et al., 2016). Schools including administrators and teachers should understand that physical activity programs provide students with mental stimulation and perhaps trigger high dopamine levels satisfying sensation and thrill urges in teens and adolescents (Cooper et al., 2016). Revised National Physical Plan initiatives launched in 2015 to meet the challenges of the IOM guidelines called for a stricter practical application of the guidelines (Cooper et al., 2016). The aim of the revised national physical plan initiatives was to increase and enhance physical education activities and curricula across all schools (Cooper et al., 2016). In a meeting in Washington in December 2015, the National Physical Plan Initiatives Board stated that growth of instructional and non-instructional physical activities could focus student time and motivation to situations and people on the ground and not on Facebook (Cooper et al., 2016). The revised national physical plan initiatives were:

1. Provision of high quality physical activity programs at all levels in all schools.
2. Implementation of instructional and non-instructional physical activity programs in all schools.
3. Implementation of physically based instructional and non-instructional after school programs such as book clubs and team sports
4. Professional and scientific organizations should advocate and sponsor physical activity programs at school and college level (Cooper et al., 2016).

Schools should utilize Facebook to control its addictive influence on teens (CDC, 2015). Facebook posts and messages about challenging physical activity such as team sports and marches should be shared to pique interest and participation (CDC, 2015). Facebook posts could also include positive and neutral photos to elicit positive or no responses. Facebook messages could also be used to disseminate information about the complexity of the activity and inciting teens to respond and perhaps visit the physical activity site on ground.

Another viable option could be the usage of exergames on social networking sites to divert teens from risky behaviors and consequent poor decisions to online physical activity (Staiano & Calvert, 2011). Exergames originally were developed to enhance videogames to have fun and challenging elements that would increase levels of brain activity causing feelings of excitement and pleasure (Peng, Jhi-Hsuan, & Crouse, 2011). This increase in brain activity was identified as the spike in dopamine levels that led to creation of rewards such as pleasure, achievement, and goodwill (Peng et. al, 2011). However, this dopamine spike was due to positive imagery and behavior and not due to risky imagery or behavior. Researchers stated that perhaps exergames could be posted as links on Facebook inviting teens to click on them. Such behavior would reduce and perhaps divert teens towards acceptable and positive beneficial physical activity from the comfort of their SNS (Rudella & Butz, 2015). Teens would spend their time and energy exergaming instead of developing profiles and viewing harmful pictures (Rudella & Butz, 2015). Online exergames that could be posted as links on SNS or mobile apps satisfied the compelling teen brain function to log onto Facebook and connect with people. Exergames could be dance, sports, recreation, social activism, community engagement, and academic exercises. The *Nintendo Wii Sports Boxing* game enabled physical activity as players used their attention, spatial, and visual skills (Fogel, Miltenberger, Graves, & Koehler, 2012). A user clicked the exergame link on the SNS and participated in the boxing game (Fogel et al., 2012). The player could participate individually or collaborate, network with other players to form opposing teams (Fogel et al., 2012). Players had to be quick, with flexible hand-eye coordination utilizing their cognitive and critical thinking skills (Fogel et al., 2012). The exergame was challenging spurring the player or team to achieve more and more hereby leading to a dopamine rush and consequent activation in the brain reward circuitry center (Fogel et al, 2012). Another interactive exergame was *XaviX* that was played in two different formats. The former was the traditional method of purchasing a XaviX port and connecting to a television (Rudella & Butz, 2015). The latter method involved using appropriate links on SNS to participate and play the game. The link would then allow the user to log into the system and choose, subscribe, or purchase a game such as bowling, baseball, golf, J-MAT i.e. running, music and circuit, power boxing, and tennis (Rudella & Butz, 2015). All the games within *XaviX* were designed to generate enjoyment, camaraderie, mental stimulation, and social connectedness among the players (Rudella & Butz, 2015). *XaviX* games not only increased physical endurance and muscular strength, but also increased cerebral circulation, increased neurotransmitter availability and enhanced neurobiological systems centered around the brain reward circuitry (Rudella & Butz, 2015). Playing *XaviX* games also increased the executive control function and skills of the teen brain enabling them to choose appropriate positive behaviors and decisions (Rudella & Butz, 2015).

In another dance exergame called *In the Groove*, originally designed for third and fourth graders; it was found that more than 85% of older girl teens who clicked on the appropriate link to play the game had positive self-esteem (Staiano, Terry, Watson, Scanlon, Abraham, & Calvert, 2011). More than 94% of the players stated that they had no time to check their Facebook profiles and view their 'likes and 'dislikes' (Staiano et al., 2011). In the exergame of the *Nintendo Wii sports series*, players collaborated, competed, or communicated with each other through their avatars (Rudella & Butz, 2015). The exergame had many physical activities requiring them to be played by two or more than four players. Creation of avatars, and networking among different players increased level of social competence thereby directly impacting self-efficacy levels (Rudella & Butz, 2015). Contemporary exergames could be incorporated into the classroom thus advancing the national physical plan guidelines of a comprehensive systems approach.

In a recent research study involving a purposeful sample of teens ranging in ages 13-18, mobile apps such as smart phones were used to design and develop games with SNSs interfaces (Blackman, Zoellner, You, & Eastabrooks, 2016). In their qualitative exploratory study design using focus groups and interviews, the researchers developed a game that met the expectations of the teens as well as their parents (Blackman et al., 2016). The results generated from the study's three focus groups suggested games that had components of texting, messaging, flirting, challenge, and music. Participants stated that music was an effective means to attract and sustain attention—

music calms me down

music is so relaxing

you can listen to it anytime... anywhere (Blackman et al., 2016).

Parents, on the other hand, were concerned with aspects of privacy, accessibility, and monitoring. More than 70% of parents in their focus groups said that they would welcome mobile app games that could be monitored (Blackman et al., 2016). The results in totality segregated the game type into four major categories of (a) recreation, (b) sports with sub-categories of competitive, and cooperative (Blackman et al., 2016). Recreational games such as dance could be competitive or cooperative in nature, and vice-versa.

As shown in Table 4, recreational and sport games were both competitive and cooperative. The categories primarily involved the fostering of social and cognitive skills that challenged players to excel and achieve (Blackman et al., 2016). Winning a game earned participant points that were posted onto their Facebook profiles. Thus, a high score indicated a favorable and positive impression on a Facebook profile (Blackman et al., 2016). This meant that a player was likely to get more 'likes' if he or she participated, played, and scored highly in the game (Blackman et al., 2016). Thus, a higher score produced more 'likes' leading to acceptance of positive game behavior such as achievement, competition, and sportsmanship (Blackman et al., 2016). The study also highlighted the presence and usage of intrinsic motivation as the main reason for engaging in the game. Participants did not feel the need for external motivators of voiceovers or animated agents (Blackman et al., 2016). Intrinsic motivation of high scores propelled teens to engage in gaming behavior of recreation, sports, competition, and cooperation (Blackman, et al., 2016). Intrinsic motivation coupled with high scores led teens to spikes in dopamine levels and an inclination to sustain this elevated level of dopamine at all time. This meant an active and continuous engagement with these mobile app games at all time. This would effectively cut in to time to be spent on Facebook (Blackman et al., 2016).

In a Public Health article on the use of active gaming as a strategy to occupy the time spent on Facebook by teens and adolescents, researchers Barnett and colleagues stated that active videogames had to imitate and assimilate the functionality and process of the Facebook system (Barnett, Bangay, McKenzie, & Ridgers, 2013). Active videogames (AVG) had to be pervasive, continuous, persuasive, challenging, exciting, accumulative, inclusive, and easily accessible to all (Barnett et al., 2013). AVG encouraged physical, social, and higher cognitive functioning wherein users had to exercise their observation, critical and creative thinking, and analytical skills (Barnett et al., 2013). AVG captured and sustained user interest over an extended period (Barnett et al., 2013). AVGs could be accessed by teens and adolescents belonging to low and high socio-economic status. The former accessed AVG on their smartphones with Facebook interface (Kumar, 2013; Barnett et al., 2013). Smartphone AVGs had overlaying synthetic

Table 4. Game types selected by focus groups

GAME	RECREATION	TYPE
Cheer Mania	Similar to dance but cheerleading moves instead	Cooperative
Deer Hunter	Simulates deer hunting	Competitive
Musical Freeze tag	Run around and hide while music plays from the phone and when it stops, everyone has to freeze or stop where they are. The “it” person can see on the phone where the “un-it” persons are and tag them Run around and hide while music plays from the phone and when it stops, everyone has to freeze or stop where they are. The “it” person can see on the phone where the “un-it” persons are and tag them	Competitive
Obstacle Course	Virtual obstacle course where the player jumps, runs and dodges obstacles	Competitive
ZADAT Tag	Music plays when person is tagged or if in the dark, phone lights up. - Team or Individual tag. Music plays when person is tagged or if in the dark, phone lights up.	Cooperative/ Competitive
Funky Chicken	- You can be different colored chickens and you do the funky chicken dance to the funky chicken song	Cooperative
Exercise Twister & Dance	Different types of music are played. The faster you move, the faster the tempo of the music is, the more points you get	Cooperative
Dancing Game	A series of dance moves are displayed and the player has to recreate the moves. Scores are given in points or a letter grade based on accuracy of the dance moves	Competitive
Color Hunt	Pick a color. Use the camera phone to take pictures of the things that are the same color as the selected color.	Cooperative
Whack-a-mole	Select a mole. Different moles stick their head out of the ground hole. You get points when you whack your selected mole	Competitive
SPORTS		
Track/Field	Simulates events done during track like hurdles, discus, running	Competitive
Volleyball	Simulates a volleyball game	Competitive/ Cooperative
Basketball for Dummies	Move around and shoot baskets. More than one basket; Baskets move further away or side to side	Competitive
Softball Mania	Play softball by pitching or if on offense hit the ball and run around bases.	Competitive/ Cooperative
Football/Basketball/NASCAR	Simulates real-life conditions of these activities	Competitive/ Cooperative

Source: (Blackman, C. A. K., Zoellner, J. You, W., & Estabrooks, P.A. (2016). Developing mobile apps for physical activity in low socioeconomic status for youth. *Journal of Mobile Technology in Medicine*. 5 (1), 33-44).

visual content above images of the real world (Kumar, 2013). This kind of augmented reality AVGs were mentally challenging and emotionally satisfying for the teen (Barnett et al., 2013). Augmented reality also included reference images as posters or cards enabling users to navigate through the game. Digital content relative to the reference cards was also displayed urging the player to make sense of the AVG (Kumar, 2013). Thus, augmented reality AVG also shaped teen motivation and perseverance from developing negative or risky imagery to active hands on learning (Barnett et al., 2013). Players had to tap into learnt declarative and procedural knowledge schemas to compete successfully and win. An example of an augmented reality AVG was *'Rolling Dead'* where players had to stake their claim and control a robotic ball through a carnage of digitally overlaid zombies.

The key was using Facebook to make teens participate in such games and physical activities. The challenge lay in not controlling teen addiction to Facebook but using it to influence their motivation, sensation and thrills to a positive level that do not lead to poor decision-making.

FUTURE RESEARCH DIRECTIONS

The author presented a narrow micro perspective on a topical global issue of Facebook and teen age pregnancy linkage. The author outlined the tenuous link between Facebook time and teenage pregnancy rates through theoretical meta-analyses and sparse empirical research. However negligible empirical but strong theoretical research needs to be balanced to provide a comprehensive holistic global outlook. The balance between theory and empirical research would also enable a scholarly-practitioner thrust enabling further debate and discussion on issues of SNS subjects and teen pregnancy challenges. Further, the chapter must embody a macro perspective to make the issue of SNS and teenage pregnancy relevant, topical, current, and global. The thrust of empirical research and study has to shift from the US and European nations to countries such as China, Australia, and Malaysia to become cross-cultural. Issues of prevalence and growth of SNS, type of SNS, and purpose of SNS including the range of users needs to be researched and documented through longitudinal surveys, focus groups exercises, and qualitative case studies. A SNS dashboard needs to be constructed that would house all this data and research enabling causal analysis and correlational research with local teenage pregnancy data. The research would also enable identification and development of methods to combat the influence of SNS on teenage pregnancy. Further it would also allow academicians and research practitioners to compare SNS and teenage pregnancy rates between different countries, and focus on a common cause such as culture, race, or gender, and solution driving use of SNS and consequent impact on teenage pregnancy. Some issues that could be investigated include the underlying influence of culture and gender on use of SNS.

CONCLUSION

The chapter endeavored to strengthen the link between Facebook usage and teenage pregnancy rates and show that an increase in Facebook time impacted teenage pregnancy. The author based her analyses on a robust foundation of theoretical meta-analyses research. The chapter could be divided into three main sections of background as evidenced by the exhaustive literature review discussing the varied use of Facebook and other social networks by teens, and a description and analysis of Facebook. Chapter analysis also reflected on the reasons for the usage of Facebook, namely the Uses and Gratifications (U

and G) theory. Neurobiological research highlighted the fact that teens were driven to use Facebook, view and post risky imagery and engage in risky behavior of casual sex, and take poor decisions such as becoming a teen mother. But research also focused on the undeniable truth that Facebook systems could not be controlled. In the third section of her chapter, the author dwelt on this issue of quality control of Facebook. The author mapped out the need and benefits of diverse instructional and non-instructional physical activities including exergames and active video gaming. The bottom line was to combine physical activity and video games within Facebook systems. This meant that even though teens continued to spend time on Facebook, they did it for a different reason i.e. of playing a game. Teens continued to experience a dopamine rush and spike but instead for risky imagery the spike occurred for a positive reason with consequent positive rewards. Hence, the compulsion to view, post, engage in risky behaviors of casual sex, and make poor decisions of becoming a mother while still in school were reduced but not eliminated. However, presence of overwhelming theoretical research does not satisfy a scholarly-practitioner perspective of tangible physical research evidence combined with theory. National and international empirical evidence is needed to support the tenuous link between Facebook usage and teenage pregnancy rates.

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KEY TERMS AND DEFINITIONS

Brain Plasticity: The brain's ability to change throughout life. The human brain has the amazing ability to reorganize itself by forming new connections between brain cells.

Dopamine: A neurotransmitter, a chemical responsible for sending messages between the brain and different nerve cells of the body. It affects bodily functions, such as movement, memory, sleep, mood, pleasurable reward, behavior, and cognition.

Dorsal Cortex: A component of the prefrontal cortex of the brain of humans and non-human primates. It is one of the most recently evolved parts of the human brain. It undergoes a prolonged period of maturation which lasts until adulthood.

Nucleus Accumbens: A critical component of the basal forebrain controlling major neurotransmitter levels, reward circuits or neurons, and basic human functions of hunger and sex.

Parietal Cortex: One of the four major lobes of the cerebral cortex in the brain of all mammals. It controls sensation, perception, and cognition.

Prefrontal Cortex: The gray matter of the anterior part of the frontal lobe of the brain that is highly developed in humans and plays a role in the regulation of complex cognitive, emotional, and behavioral functioning.

Social Networking Site: A website that enables users to create public profiles within that web site and form relationships with other users of the same web site who access their profile.

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Section 3

Tools and Technologies

Chapter 22

Collaborative Social Networks: Effect of User Motivation, Cognition, and Behavior on User Participation

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ABSTRACT

This article investigates the relationships between the motivation, cognition, and behavior of knowledge management. It analyzes university students preparing to share content on the Tamshui Humanities Knowledge Collaboration System (hereafter referred to as the Tamshui Wiki) to determine whether different participation motivation dimensions (community motivation and personal motivation) affected their knowledge management cognition and behavior. The stimulus–organism–response theory is adopted to assess the relationships between several intrinsic cognition (knowledge management and community reputation) and behavior (attention, interest, action, and share) dimensions. A total of 364 valid samples are collected. Correlation analysis and regression analysis are adopted for statistical calculation. Findings reveal that the participation willingness and community motivation of the students had a greater effect on their knowledge management cognition than personal motivation. Frequent users of Wikipedia were approving of knowledge collaboration and able to link cognition with behavior.

1. INTRODUCTION

Wikipedia contains vast amounts of user-generated content and comprehensive knowledge management structures (Parameswaran & Whinston, 2007). The platform aims to promote knowledge management through continuous user contribution (Koh et al. 2007; Farzan & Brusilovsky 2011; Butler 2001). User participation is voluntary. Researchers agree that participatory media or Wikipedia can build communities of knowledge as an intermediary to generate positive interactions between users and participatory media (Larson & Watson, 2011). In this process, the contents and the format of communication are critical (Barwise & Meehan, 2010; Wang, Jiao, Abrahams, Fan, & Zhang, 2013), for example, content co-creation and content involvement (Clark & Melancon, 2013; Goh, Heng, & Lin, 2013) or media envi-

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ronment (distinction of content, value delivery and opportunity development) and platform requirements (Larson & Watson, 2011; Khajeheian, Esmaeilkhoo, & Yousefikhah, 2012). Salamzadeh considered the co-working space and the short creation period for shortening of the learning curve by start-up accelerators (Salamzadeh & Markovic, 2018).

Regretfully, previous studies on knowledge management largely focused on evaluating management efficacy or validating user experiences (Parboteeah, Valacich, & Wells, 2009). To the authors' knowledge, no case studies have evaluated user cognition and behavior based on their participation motivations, and none have independently validated or discussed the knowledge management systems of educational institutions (Jiang, Chan, Tan, & Chua, 2010). Therefore, this study selected the Tamshui Humanities Knowledge Collaboration System (hereafter referred to as the "Tamshui Wiki") as the research sample and users' motivations for participating in knowledge management as the research variables in order to analyze users' pre-participation intrinsic cognition and behavioral responses. The findings of this study serve as a reference for improvement efforts of participatory media management. Several suggestions are also made concerning community and team recognition and contribution.

The Tamshui Wiki was established on 13th September 2013 to consolidate information on Tamshui, including local features, history, culture, customs, lifestyle, travel and tourism, and attractions. The system comprises four major segments, namely history, events, names, and records. The system was co-created by university students and local scholars. The purpose of the system is to motivate students in voluntarily participating in cultural and historical knowledge creation and to share and impart local knowledge. In this study, a questionnaire survey and statistical analysis were used for comprehensive validation and analysis of results. This was employed to investigate the relationships between the motivations, cognitions, and behaviors of Tamshui Wiki users. The study endeavored to determine users' motivations for participating in knowledge management prior to content creation and the possible effects of intrinsic cognition and overt behaviors on users' motivations. Findings indicated that students developed a high regard for knowledge and organization on the platform prior to participation, validating the feasibility of using Tamshui Wiki as a means to motivate students in participating in knowledge management.

This study wanted to solve three research problems. First, a group of university students with experience of knowledge collaboration was surveyed to examine their perceptions and behaviors concerning humanities knowledge collaboration system. In addition to analyzing their basic understanding of knowledge management, the study also validated the effects of participation motivation on user cognition. Second, although extant literature has undoubtedly expanded our understanding of user motivation (Nambisan & Baron, 2007), the study aimed to provide more concrete definitions and elucidate the demands and views of university students without knowledge management experience, thereby effectively improving educational institutions, highlighting the significance of humanities knowledge collaboration systems, and demonstrating improper operations (Kaysers & Eul, 2018). Third, an extensive evaluation of users' experiences with using knowledge management systems was performed to formulate approaches to reinforce their participatory willingness, help students effectively gain community recognition, and prompt them to willingly and actively participate in knowledge contribution (Kohler, Fueller, Matzler, & Stieger, 2011). The proposed framework can be effectively implemented into relevant educational institutions to maximize benefits by merging higher education and knowledge creation/management.

Section 2 briefly discusses participation motivation, knowledge management, community reputation, stimulus–organism–response (SOR) theory, and attention–interest–search–action–share (AISAS) theory. In Section 3, a number of hypotheses are proposed to evaluate the relationships between motivation, cognition, and behavior. Sections 4 and 5 explain the research procedures and perform data analysis.

Finally, results are discussed and conclusions are drawn, and several suggestions are made on how to use the proposed model, thereby adding professional value to knowledge collaboration systems.

2. THEORETICAL BACKGROUND

2.1. Participation Motivation of Wikipedia

Wikipedia is an online collaborative editing website that transcends conventional knowledge transfer, replication, and storage (Lee, Lee & Kang, 2005). Many studies on knowledge contribution have shown that motivation directly affects users' attitude in participating in knowledge contribution (He & Wei, 2009). Motivation can be analyzed in two dimensions, namely community motivation and personal motivation (Yang & Lai, 2011; Peddibhotla & Subramani, 2007). Wikipedia users are a group who actively establish and maintain common interests. They identify with the community and enhance their sense of belonging through knowledge sharing and member interaction. Walther (1996) analyzed Wikipedia and found that the commitment of community members stimulated the participatory willingness of other users (Walther, 1996). Compared to other social media platforms, such as Twitter and Facebook, Wikipedia has a greater emphasis on knowledge contribution and sharing, rather than serving as a channel for expressing personal emotions. Wikipedia is also not suited for circulating news or posting comments. Therefore, Wikipedia operates on the collective contributions and efforts of knowledgeable strangers or like-minded groups (Bock & Kim, 2001; Bock et al., 2005). Therefore, users' experiences or perceptions of a community, including speculation and personal experiences also influence user participation motivation (Oreg & Nov, 2008; Prasarnphanich & Wagner, 2009).

In previous studies on personal participation motivation, common factors for motivation include users' habits and satisfaction. Yan and Davison (2013) mentioned that Wikipedia adopts two strategies, specifically, initial sharing and continued sharing strategies (Yan & Davison, 2013). Factors that affect initial sharing strategies include tangible, extrinsic rewards or satisfaction, such as money or status. Those that affect continued sharing strategies are intangible, including social norms and social connections. Lerner and Tirole (2002) found that extrinsic rewards trigger greater satisfaction than do intrinsic rewards (Lerner & Tirole, 2002). These rewards include skills and learning (Lakhani & Von Hippel, 2003), as well as the acquisition of professional or useful knowledge (Lakhani & Wolf, 2005; Wasko & Faraj, 2005). Intrinsic satisfaction is correlated to a sense of achievement (Bryant, Forte & Bruckman, 2005), interest and enjoyment (Torvalds & Diamond, 2001), reciprocal relationships, fulfillment of duties and responsibilities (Ryan & Deci, 2000), and satisfying others' needs. These factors are all intrinsic motivations (Wasko & Faraj, 2005).

Community motivation comprises many dimensions, including cultural characteristics, management and support, and structural reinforcement (Wang & Noe, 2010). Among the various dimensions, the most widely discussed dimension is subjective norms and co-working space (Nejati, Salamzadeh, & Salamzadeh, 2011; Salamzadeh & Markovic, 2018). Drucker (2001) mentioned that to enhance the value of knowledge (Drucker, 2001), it should be expanded and used as the key resource to foster organization competitiveness (Cho, Chen & Chung, 2010). The transfer of information and experiences triggers the exchange of knowledge in communities or organizations and promotes member interactions (Lin, Hung & Chen, 2009).

First, users' community (Nov, Naaman & Ye, 2010), and personal participation motivations were surveyed (Koh & Kim, 2003; Wasko & Faraj, 2005; Cho et al., 2010). Then, users' understanding of knowledge management and community reputation are investigated (Spinellis & Louridas, 2008; Biswas, Hussain & O'Donnell, 2009; Miller & Lacznia, 2011). Finally, users' behavioral responses were measured based on the dimensions of attention, interest, action, and share (Hall, 1924; Davis, Bagozzi & Warshaw, 1992; Wasko & Faraj, 2005). Therefore, users' participation motivation and intrinsic cognition undoubtedly have an interactive relationship.

2.2. Knowledge Management and Community Reputation

Knowledge management can be defined as the transfer of assets or the sharing of knowledge (Prasarnphanich & Wagner, 2009). Knowledge is the conversion of information into tangible and intangible assets (Stvilia et al., 2008). Chen et al. (2006) developed an empirical model and proposed a set of criteria concerning users' perceptions of knowledge sharing to explain different cognitive relationships during the conversion process (Chen et al., 2006). Martz and Shepherd (2003) asserted that knowledge transfer could be achieved through demonstration and education, helping people gain a better understanding of knowledge management (Martz & Shepherd, 2003). Matsumoto et al. (2009) analyzed the knowledge consolidation of a group of experts and found that the management of different platforms helped users gain a better understanding of management (Matsumoto et al., 2009). Knowledge management encourages knowledge association and motivates users to immerse themselves directly and indirectly into the community (Forte, Larco & Bruckman, 2009). This is extremely beneficial for knowledge integration within the community. Therefore, various tools (Hou & Li, 2011; Mason, 2005) and empirical models for managing knowledge have emerged in recent years (Dixon, 2000; Housel & Bell, 2001).

Nambisan and Nambisan (2008) asserted that community participation motivation is achieved through the co-creation of community members (Nambisan & Nambisan, 2008). Therefore, managing vast amounts of knowledge is a challenge for communities. Utilizing the professional consensus within communities to garner member recognition and trust (Schroeder & Wagner, 2012) is possibly the single most important factor in knowledge management (Chiu et al., 2006). If successful, the reputation of the community can automatically generate professional recognition and trust. Zeithaml (1988) defined store reputation as a type of image recognition that affects customers' interest in the store and their purchase intentions (Zeithaml, 1988). Community reputation refers to the overall evaluation of people within and outside the community (Bergami & Bagozzi, 2000). This type of reputation is based on users' perceptions. Bhattacharya et al. (1995) found that members are more willing to trust and recognize communities that strive to establish a positive reputation (Bhattacharya, Rao & Glynn, 1995). A professional and trustworthy community image also enhances users' satisfaction (Arazy et al., 2011). These findings remind us not to underestimate the importance of community reputation in community knowledge management (Carillo & Okoli, 2011; Arazy, Yeo & Nov, 2013). Anderson et al. (2007) found that organizations and communities affect the behaviors and performance of their members, consequently promoting different intrinsic cognition and overt behaviors (Anderson, Winett & Wojcik, 2007). Therefore, the study endeavored to examine the cognitive effects of knowledge management and community reputation and to explore relationships between the intrinsic cognition and overt behaviors of users of knowledge collaboration systems.

2.3. Relationship Between Intrinsic Cognition and Overt Behavior

The SOR model used in environmental psychology is applied to analyze the effects of environmental stimuli (S) on users' emotions and cognition (O) and how stimuli trigger or influence users' behavioral responses (R) (Mehrabian & Russell, 1974). Emotional responses refer to the emotional and cognitive states of consumers, including cognition, experience, and evaluation (Jiang et al., 2010; Parboteeah et al., 2009). Nambisan provided an empirical framework for a virtual environment, including pragmatic experience, social experience, available experience, and entertainment experience (Nambisan & Baron, 2009). Kohler et al. explained the motivation of users to participate in information creation. Combined with the interactive advantages of the virtual environment, users gain cognitive benefits, community integration benefits, personal integration benefits, and also enjoy these benefits. Kohler et al. also validated the importance of pragmatic experience, social experience, and pleasure experience, and explained that the level of pleasure included mental stimulation, recreation, and a pleasant experience (Kohler et al., 2011; Nambisan & Baron, 2007).

In addition, this study used the AISAS model to analyze behavior. The AISAS model was introduced by American marketing expert Mr. Samuel Roland Hall in the 1920s (Hall, 1924). He used the model to evaluate consumers' psychological processes. The model is now widely used to examine consumer behaviors, namely "attention", "interest", "search", "action", and "share", in the age of the Internet (Davis, Bagozzi & Warshaw, 1992). Users are more likely to form a proactive attitude towards an enterprise when they support the products or services of the enterprise. Conversely, they exhibit a reserved attitude when they question the enterprise's products and services (Sumita & Isogai, 2009). Therefore, the model measures the behavioral responses of the users analyzed in this study, namely "attention", "interest", "action", and "share". The attention and interest dimensions of the model entail the attraction of users. Then, through action and sharing, users meet and interact with like-minded individuals (Wasko & Faraj, 2005). Therefore, these four dimensions can be adopted as observation variables to measure users' overt behavior.

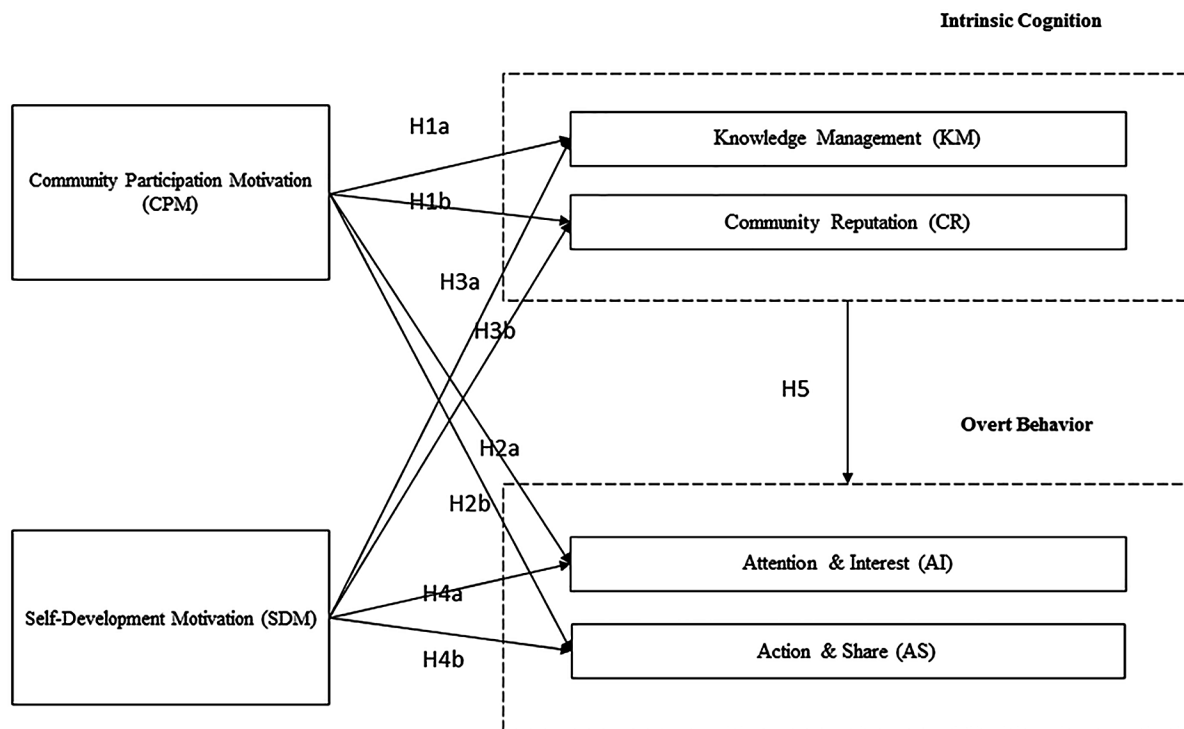
3. RESEARCH MODEL AND HYPOTHESES

This study developed a research model to analyze participation motivation, intrinsic cognition, and overt behavior.

3.1. Effects of Community Motivation on Intrinsic Cognition and Overt Behavior

This study proposes a number of hypotheses concerning knowledge management and community reputation to test intrinsic cognition. The content on Wikipedia is entirely established and edited by users. The website encourages users with the relevant knowledge to contribute to the website, such as using various themes to enhance the meaning and enjoyment of knowledge management (Abrahams et al., 2012). Skyrme and Amidon (1999) verified that the knowledge establishment process in communities reinforced knowledge management (Skyrme & Amidon, 1999). Alsadhan et al. (2008) developed a knowledge management process based on the factors of acceptance and application (Alsadhan, Zairi & Keoy, 2008). Mas-Machuca and Martínez (2012) adopted enterprises as research samples to test knowledge management strategies, technical literacy, and cultural standards. These studies validated that, with the

Figure 1. Research model.



use of appropriate technologies (Mas-Machuca & Martínez Costa, 2012), knowledge effectively improves management effectiveness. Knowledge and management must satisfy community requirements in order to reinforce users' cognition of the management system (Figure 1).

The cognitive establishment of community professionalism and trust relies on the strengthening and reconstruction of community reputation. Empirical results of previous studies have validated the importance of trust in community management (Ridings, Gefen & Arinze, 2002). Consequently, professionalism is based on trust and the establishment of trustworthy attitudes and behaviors (Misztal, 1996). From the perspective of the community, trust symbolizes the confidence that users have in the community and its members and the belief that their personal and community interests are not at risk (Tsai, Huang & Chiu, 2012). Nahapiet and Ghoshal (1998) validated that when a high level of trust was present in communities, members were more willing to participate, interact, and collaborate (Nahapiet & Ghoshal, 1998).

Based on empirical results, Erez (1990) proposed that professionalism and trust are the fundamental elements of social reciprocity (Erez, 1990). When members are willing to help other members resolve their problems, they are confident that they will receive assistance from others when they are in need. In other words, community members' concerns of being exploited decrease concurrently with an increase in trust between community members (Tsai & Ghoshal, 1998), and their willingness to contribute to the community and share with others increases (Ring & Van de Ven, 1992). Communities that value professionalism and trust enhance the willingness of their members to engage in knowledge contribution (Chang & Chuang, 2011). Therefore, this study hypothesizes that community participation motivation is correlated to the users' identity with knowledge management and community reputation:

H1a: Community participation motivation is correlated to the intrinsic cognition of knowledge management (knowledge and management).

H1b: Community participation motivation is correlated to the intrinsic cognition of community reputation (professionalism and trust).

This study analyzed overt behavior based on the attention, interest, action, and share dimensions of the AISAS model. Motivation affects both user cognition and overt behaviors. For example, communities that value innovation generally encourage their members to share (Bakker et al., 2006). Conversely, overly competitive communities may induce a negative perception of knowledge sharing, damaging team spirit (Schepers & Van Den Berg, 2007) and dampening participatory willingness within the community. Darr et al. (1995) and Reagans et al. (2005) asserted that learning from knowledge management processes and encouraging cooperation between members, knowledge contribution, and even productivity, within communities can be enhanced (Darr, Argote & Epple, 1995; Reagans, Argote & Brooks, 2005). Taylor and Wright (2004) reported that the learning culture of communities affected knowledge contribution behavior (Taylor & Wright, 2004). Therefore, this study hypothesizes that participation motivation affects users' attention, interest, action, and sharing behaviors:

H2a: Community participation motivation is correlated to users' overt behaviors of attention and interest.

H2b: Community participation motivation is correlated to users' overt behaviors of action and sharing.

3.2. Effects of Personal Motivation on Intrinsic Cognition and Overt Behavior

Knowledge management stimulates people's willingness to share their knowledge with strangers and continue to participate and share (Chiu et al., 2006). Members impart their knowledge to other members through sharing (Senge, 1997; Chang & Chuang, 2011). Therefore, knowledge management and sharing can be viewed as using the exchange of information between members to help others acquire knowledge. In addition to the aforementioned influences of the community, users' personal habits also lead to differences in the understanding of knowledge management. Common personal participation motivation factors include the exercise and understanding of knowledge ownership, perceived personal gain, and establishment of community trust. Solely observing personal participation motivation, Lin found that personal supportive attitude had a positive influence on the extent and quality of knowledge contribution (Lin, Fan & Chau, 2014). The reciprocity between members also influences other members. Therefore, this study hypothesizes that users' personal motivation affects their knowledge and community cognition:

H3a: Personal participation motivation is correlated to the intrinsic cognition of knowledge management (knowledge and management).

H3b: Personal participation motivation is correlated to the intrinsic cognition of community reputation (professionalism and trust).

Users with positive attitudes and strong curiosity generally prefer to actively partake in knowledge contribution. Cabrera and Cabrera (2005) found that people with an open attitude or strong curiosity were more likely to exchange their views with others and generate interest (Cabrera & Cabrera, 2005). Similarly, people that are confident in imparting knowledge are more willing to voluntarily contribute knowledge to society. Social exchange theory categorizes individual perceptions into perceived welfare

and perceived cost: perceived welfare refers to intrinsic motivations, such as reward, respect, reputation, and incentive, while perceived cost refers to emotional investment (Wang & Noe, 2010). Social exchange prompts a sense of belonging, personal obligation, gratitude, trust, and loyalty.

Previous studies also found a correlation between knowledge management and the willingness to share. Jabr et al. (2014) found that the sense of presence affected knowledge contribution behavior and participation (Jabr et al., 2014). Therefore, users opt to frequently participate in their communities and contribute knowledge to maintain a strong sense of presence within the community (Chen, 2007). The theory of reasoned action indicated that people are more willing to contribute when they feel needed (Bock et al., 2005). Coincidentally, it is the exact opposite for monetary remuneration, suggesting that the benefits acquired from social exchange cannot entirely be measured through physical exchange. From the perspective of personal psychology, users largely anticipate receiving an expected return (Clary et al., 1998), engage in learning or practicing a skill (Bonaccorsi & Rossi, 2003), achieving knowledge sharing (Lakhani & Von Hippel, 2003), or co-managing a project for their participation (Nov & Ye, 2008). Generating interesting behavioral responses helps members in a community to get to know one another (Hakansson & Ford, 2002). Complex knowledge transactions generate member interactions and help members acquire or exchange knowledge. Therefore, this study hypothesizes that users' personal participation motivation affects their overt behavior:

H4a: Personal participation motivation is correlated to overt behavior (attention and interest).

H4b: Personal participation motivation is correlated to overt behavior (action and share).

3.3. Effects of Intrinsic Cognition on Overt Behavior

The use of emotional elements, such as care, understanding, and empathy, can often be seen on enterprise-operated social media (Liang, Ho, Li, & Turban, 2011) to trigger users' support and reinforce corporate image (Schau, Muñiz Jr., & Arnould, 2009)). Many studies have analyzed and validated the effects of emotional responses on users' cognition and behavior. These effects include stimulating user interaction or expanding the influence of social networks (Liang & Turban, 2011; Ren et al., 2012). Positive cognition, such as corporate satisfaction, trust, and brand awareness (Wang, Hernandez, & Minor, 2010; Wells, Parboteeah, & Valacich, 2011), can be used to help users accurately evaluate an organization and enhance marketing performance (Wang, Hernandez, & Minor, 2010; Wells, Parboteeah, & Valacich, 2011).

Referencing the behavioral responses of the AISAS model, this study categorized the four behavior dimensions into two stages. Attention and interest were categorized into the early stage, and action and share were categorized into the late stage. The attention and interest dimensions focus on attracting like-minded users. In addition, users with similar preferences also attract one another (Hall, 1924). The action and share dimensions focus on user exchange (Sumita & Isogai, 2009). The action and share dimensions affect users' pre-participation interest. Users are typically hesitant and exchange opinions with others before making decisions (Kankanhalli et al., 2005). Therefore, this study hypothesizes that users' intrinsic cognition affects the dimensions of attention, interest, action, and share:

H5a: Intrinsic cognition of knowledge management (knowledge and management) is correlated to users' overt behavior (attention and interest).

H5b: Intrinsic cognition of knowledge management (knowledge and management) is correlated to users' overt behavior (action and share).

H5c: Intrinsic cognition of community reputation (professionalism and trust) is correlated to users' overt behavior (attention and interest).

H5d: Intrinsic cognition of community reputation (professionalism and trust) is correlated to overt behavior (action and share).

4. RESEARCH METHODOLOGY

To ensure content validity, this study consolidated research theories based on the three variables (Nam-bisan & Baron, 2009): participation motivation (community and personal)(Koh & Kim, 2003; Wasko & Faraj, 2005; Cho et al., 2010; Nov, Naaman & Ye, 2010), intrinsic cognition (knowledge management and community reputation)(Spinellis & Louridas, 2008; Biswas et al., 2009; Cho et al., 2010; Miller & Lacznia, 2011), and overt behavior (attention, interest, action, and share)(Mehrabian & Russell, 1974a; Davis et al., 1992; Hall, 1924; Wasko & Faraj, 2005). The survey period was between 10th and 15th April 2017. Written and online questionnaires served as the media for collecting data on the university students who were invited to partake in the content creation of the Tamshui Wiki. A total of 372 questionnaires were administered, and 364 valid questionnaires were collected. Among the valid recipients, 27% were men, and 73% were women; 125 were first-year university students, 153 were second-year university students, and 86 were third-year university students. The questionnaires were used to determine whether the recipients' participation motivation affected their knowledge collaboration cognition and behavior before they participated in knowledge management and creation (Table 1).

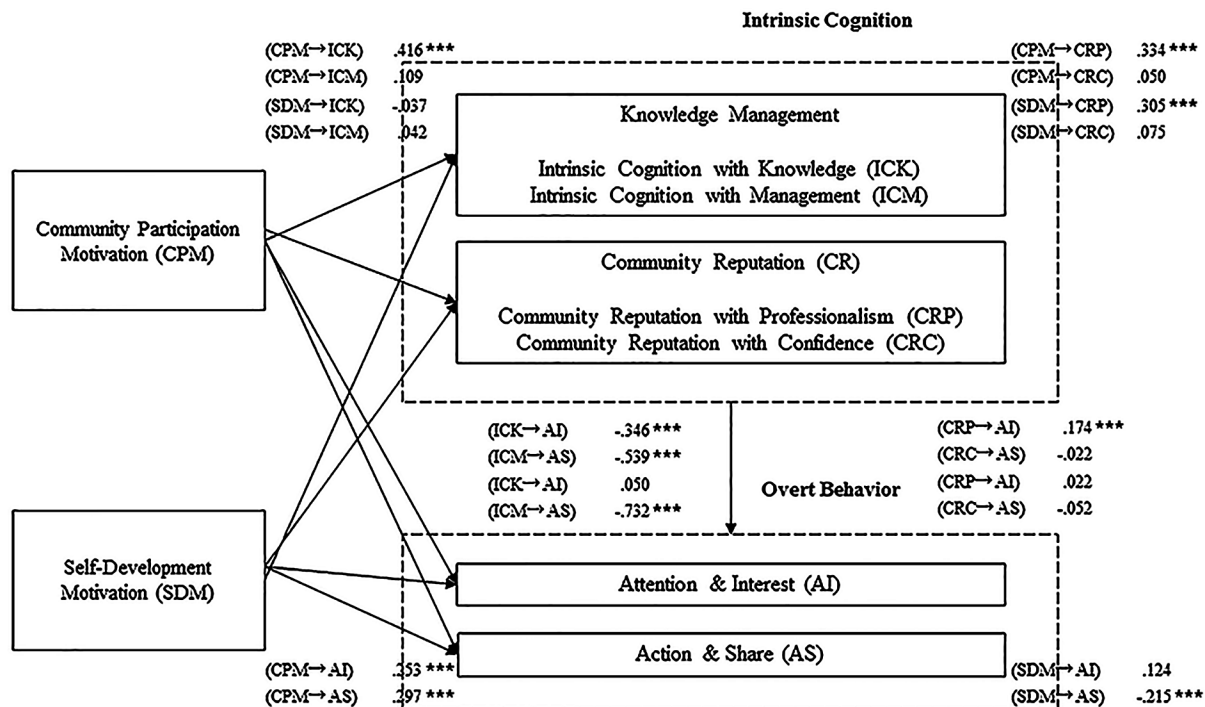
5. DATA ANALYSES AND RESULTS

5.1. Reliability and Validity

We performed a factor analysis and a reliability analysis to evaluate the reliability and validity of the data. The Cronbach's α values for intrinsic cognition of knowledge management (knowledge), intrinsic cognition of knowledge management (management), intrinsic cognition of community reputation (professionalism), intrinsic cognition of community reputation (trust), overt behavior (attention and interest), and overt behavior (action and share) were 0.745, 0.793, 0.852, 0.767, 0.919, and 0.914, respectively (Table 2).

Indicating that the data is appropriate factor analysis (Kaiser, 1974). The factor load is close to or higher than 0.7, indicating good convergence and discriminant validity (Chin, 1998). Two statistical analyses, namely simple correlation analysis and linear regression analysis, are performed in this study. First, simple correlation analysis can show the degree of correlation between variables. The value is mainly related to the Pearson correlation coefficient. This part of the study analyzed and compared the relationships between the variables. Second, the use of regression analysis was employed for further evaluation. It was found that the load of the main variable was significant at the $P < 0.001$ level, and that no commonly used factor load was significant. In addition, this study conducted multiple tests to examine the correlation between independent variables. A Variance Inflation Factor (VIF) exceeding 10 indicates multiple collinearity problems. In this study, the value of VIF is exclusively lower than 10, indicating that there was no multicollinearity.

Figure 2. The results of the research model: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.



5.2. Hypothesis Testing

This study formulated five hypotheses based on the participation motivation, intrinsic cognition, and overt behavior concerning humanities knowledge collaboration systems (Figure 2). For H1a, the β -values for intrinsic cognition (knowledge) and intrinsic cognition (management) were 0.416 ($p < 0.001$) and 0.109, respectively. For H1b, the β -values for intrinsic cognition (knowledge) and intrinsic cognition (management) were 0.334 ($p < 0.001$) and 0.05. These results validate that community motivation affected the intrinsic cognition of knowledge and the intrinsic cognition of management. For H2a, the β -value for overt behavior (attention and interest) was 0.254 ($p < 0.001$). For H2b, the β -value for overt behavior (action and share) was 0.297 ($p < 0.001$). These results validate that community motivation affected the overt behavior dimensions of attention, interest, action, and share.

For H3a, the β -values for intrinsic cognition (knowledge) and intrinsic cognition (management) were -0.037 and 0.042 . For H3b, the β -values for intrinsic cognition (professionalism) and intrinsic cognition (trust) were 0.306 ($p < 0.001$) and 0.075 . These results validate that personal motivation significantly affected knowledge cognition, but failed to affect the other cognition dimensions. For H4a, the β -value for overt behavior (attention and interest) was 0.124 . For H4b, the β -value for overt behavior (action and share) was -0.215 ($p < 0.001$). These results validate that when users became more familiar with the Tamshui Wikipedia, the effects of personal motivation on users' actions and sharing became stronger.

For H5a, the β -values for the effects of intrinsic cognition (knowledge) on overt behavior (attention and interest) and overt behavior (action and share) were -0.346 ($p < 0.001$) and -0.539 ($p < 0.001$), respectively. The β -values for the effects of intrinsic cognition (management) on overt behavior (atten-

tion and interest) and overt behavior (action and share) were 0.05 and -0.732 ($p < 0.001$), respectively. These results validate that intrinsic cognition (knowledge and management) affected users' overt behavior dimensions of attention, interest, action, and share. For H5b, the β -values for the effects of intrinsic cognition (professionalism) on overt behavior (attention and interest) and overt behavior (action and share) were 0.174 ($p < 0.001$) and -0.022 , respectively. The β -values for the effects of intrinsic cognition (trust) on overt behavior (attention and interest) and overt behavior (action and share) were 0.022 and -0.052 , respectively. These results validated that the intrinsic cognition (professionalism) of community reputation generated users' attention and interest. However, frequent users of the Tamshui Wikipedia should be more familiar with the sharing of knowledge.

5.3. Discussion of Findings

Interesting findings were revealed in this study. Results showed that the effects of pre-participation community motivation were stronger than personal motivation in Tamshui Wiki users. Users with increased knowledge management cognition typically had increased considerations, which influenced their willingness to share knowledge (Table 3).

For H1, results showed a moderate correlation between community motivation and knowledge management cognition. Specifically, community motivation positively affected knowledge management cognition (H1b) and community reputation cognition (H1b). This hypothesis confirmed that community motivation of knowledge collaboration systems influences member cognition. Members that are more familiar with the community tend to have a higher value for the professionalism of the content in the system (Miller & Lacznia, 2011). Therefore, educational institutions that aspire to foster community recognition through knowledge management can aim to enhance the professional image of the community (Chevalier & Mayzlin, 2006) and users' appreciation of the knowledge collaboration system.

For H2, results showed a moderate correlation between community motivation and users' behavioral responses. Specifically, community motivation positively affected overt behavior (attention and interest; H2a) and overt behavior (action and share; H2b). These findings demonstrate that the Tamshui Wiki promotes community concepts successfully. Even students that have not yet participated in knowledge management held a positive regard towards the platform, exhibiting interest and attention. The essential aspects of establishing a successful collaboration platform are to validate whether the correct community concepts are delivered and whether effective member relationships have been established before promoting knowledge management (Clemons, Gao & Hitt, 2006).

For H3, results showed a low correlation between personal motivation and community reputation cognition. Specifically, personal motivation positively affected intrinsic cognition (professionalism), suggesting that frequent users of the Tamshui Wikipedia generated a higher affirmation towards the collaboration system and acknowledgment of the professionalism and support provided by the platform (Mudambi & Schuff, 2010).

For H4, results showed a moderate correlation between personal motivation and users' behavioral responses. Specifically, personal motivation negatively affected overt behavior (action and share), suggesting that the personal motivation of frequent users of the Tamshui Wikipedia negatively impacted their perception of other users. In other words, although frequent users of the Tamshui Wikipedia may acknowledge content quality, they also acknowledge the inadequacies in content management and promotion of the Tamshui Wikipedia (Agarwal & Karahanna, 2000), causing them to form a reserved attitude toward content promotion on collaboration systems.

For H5, results showed that intrinsic cognition (knowledge) negatively influenced overt behavior (attention and interest) and overt behavior (action and share; H5a); intrinsic cognition (management) negatively influenced overt behavior (action and share; H5b); and intrinsic cognition (professionalism) negatively influenced overt behavior (attention and interest). These results suggest that, in the Tamshui Wiki, users with increased knowledge management cognition are more aware of the internal management and application functions of the platform (La Ferle & Choi, 2005). That is, although they accept the knowledge and the community (Davis, Bagozzi & Warshaw, 1992), they maintained a reserved attitude towards publicity and sharing. They were fully aware that collaboration systems are not effective tools for propaganda and exposure (Wang & Zhang, 2012). In this context, managers should flexibly utilize different social platform functions to complement the inadequacies in management and interaction of the Tamshui Wikipedia.

6. CONCLUSION

6.1. Research Implications and Findings

Users typically have different motives for participating in different knowledge collaboration systems (Wasko & Faraj, 2005), leading to differences in intrinsic cognition and overt behavior. Previous studies on user experiences have identified three common characteristics of user experiences. First, user experiences transcend simple tool orientations and working space (Salamzadeh & Markovic, 2018); second, user emotions must be taken into account (Law, Roto, Hassenzahl, Vermeeren, & Kort, 2009); and third, user experiences and user subjective norms are factors that should be considered together, the subjective norms significantly influenced ecological intentions and behaviour (Nejati et al., 2011). These observations prompted research into a magnitude of variables, including emotions, experiences, enjoyment, and aesthetics (Hassenzahl & Tractinsky, 2006; Hassenzahl & Roto, 2007).

These observations are consistent with the argument proposed in this study that brand identity and emotional behaviors are stimuli. Information not only connects users (Muniz Jr. & O'Guinn, 2001), but also consolidates user needs (Nambisan & Baron, 2009). Previous studies repeatedly emphasized the effects of emotions and behaviors in user experiences (Pullman & Gross, 2004), such as how to proactively stimulate users' perceptions and emotions and enhance their revisitation and repurchase intentions (Koufaris, 2002), or how to enhance user loyalty and maintain positive relations (Pullman & Gross, 2004). The theoretical contributions of this study expanded on the aforementioned studies, emphasizing that brand identity and user habits have a complementation effect on user experiences (Pine & Gilmore, 1999).

Furthermore, these findings showed that community motivation effectively promoted member participation and reinforced their pre-participation knowledge management and acceptance of community reputation. Personal motivation is more applicable to the exploitation of users' reliance on Wikipedia to increase management and cross-platform promotion (Sumita & Isogai, 2009). Members with a sound understanding of knowledge management are more likely to identify with community reputation when they acknowledge the professionalism of the collaboration system (Koh & Kim, 2003). Hence, for communities aspiring to establish knowledge management systems, managers should focus on reinforcing knowledge management and community reputation cognition (Meng & Agarwal, 2007).

These two dimensions significantly and positively affect the management and trust of knowledge management systems. Management training should be provided to members who are unfamiliar with

the Tamshui Wikipedia, such as university students (Fallis, 2008; Lim, 2009; Okoli et al., 2014). When members trust the professionalism of the community, and to maintain and strengthen the modified community pattern (Khajeheian et al., 2012), platform usability and usefulness become the motivating factors for sharing knowledge (Wasko & Faraj, 2005). Therefore, managers should endeavor to enhance the application value of knowledge collaboration systems according to different knowledge requirements during the system development stage.

This study primarily evaluated the users of the Tamshui Wiki. It made the following research contributions to the field of knowledge management: First, it categorized users' knowledge management dimensions into community motivation. The pre-participation motivation requirements of knowledge management uncovered in this study served as variables for analyzing knowledge management. Second, it referenced the SOR and AISAS theories to extensively investigate the correlation between intrinsic cognition and overt behavior. Empirical results showed that community reputation had an immense influence on knowledge management cognition. Third, it examined users' definitions and perceptions of pre-participation knowledge management. Amidst the trend of social media diversification, it is imperative that knowledge management be reinforced by integrating knowledge sharing and knowledge promotion. Managers should consider how to maximize platform categories, particularly for university students who frequently use Wikipedia, facilitating the promotion and dissemination of humanities knowledge (Agarwal & Karahanna, 2000).

Finally, it evaluated the feasibility of integrating educational institutions and knowledge management. The purpose of the Tamshui Wiki is not only to accumulate and impart local humanities knowledge, but also to enhance the contribution and development of humanities knowledge of educational institutions by encouraging collaboration between university students and local scholars. The findings of this study demonstrate that community reputation is a significant factor affecting knowledge management (Davis, Bagozzi & Warshaw, 1992) and highlighted the necessity of strengthening community cognition (Kaysers & Eul, 2018). The findings of this study can serve as a reference for educational institutions in their efforts to promote knowledge management.

6.2. Limitations and Recommendations

Based on the limitations of this study, three suggestions are made for future research. First, the effects of the content of a collaboration system on cognition and behavior were not analyzed. Future researchers can consider evaluating the different messages that exist in knowledge management systems (Cho et al., 2010), such as the effects of text, image, and video content on user emotions and behavior or how to adjust content based on user demand to enhance their willingness to actively share and promote content.

Second, different knowledge collaboration platforms can be developed using the proposed theoretical model or by analyzing the effectiveness of knowledge management in different educational institutions (Nov, Naaman & Ye, 2010). These efforts can enhance members' understanding of knowledge contribution and knowledge sharing (Spinellis & Louridas, 2008) and the visibility of humanities collaborative content creation in educational institutions (Biswas, Hussain & O'Donnell, 2009).

Finally, this study only analyzed the Tamshui Wiki to target single-system performance. Therefore, the findings of this study may not be reproducible to all user demands. Therefore, it is suggested that future studies adjust the variables of user motivation, cognition, and behavior to determine collaborative relationships across all collaboration systems.

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Chapter 23

Delete, Delete, Hang-Up: On Social Media

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ABSTRACT

Whereas most members of social media are enthusiastically exercising their legal right to express themselves freely, some seem unwilling or incapable of assessing the high risk of disclosing information about their most private thoughts, interests, opinions, work, and health status, particularly in times of psychological distress or personal tragedy. This chapter updates criminal activity associated with frequent use of social media. Some believe that the conceptual elasticity of the term “cyberbullying” has been used to push for a tougher crime agenda, while obscuring tragedy of the suicides in Canadian federal parliamentary debates.

A COALITION OF THE WILLING

Social networks like *Instagram* (Facebook Inc, 2020), *Facebook* (Facebook Inc, 2020), *Twitter* (Twitter, 2020), *Tumblr* (Automattic, 2020), *SnapChat* (SnapChat Inc, 2020), and others (Mann, 2009), are in fact, *global villages* (McLuhan, 1962) or at least, *town squares* (Zuckerberg, 2019), where the young and not so young eagerly share their opinions and personal data. These young and not so young comprise a coalition of the willing.

The *Canadian Charter of Rights and Freedoms* is complicit in providing platforms for the willing. Section 2 is a collection of fundamental freedoms - of expression, of religion, of thought, of belief, of peaceful assembly and of association. “Everyone has the freedom of thought, belief, opinion and expression, including freedom of the press and other media of communication” (Charter, 1982, at S2). Similar language appears in a much older document, “Everyone has the right to freedom of opinion and expression; to hold opinions without interference, and to seek, receive and impart information and ideas through any media and regardless of frontiers” (UDHR, 1948, at 19).

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So what's the problem? The problem is that many seem unwilling or incapable of assessing the high risk of disclosing information about their most private thoughts, interests, opinions, work and health status on social media, particularly in times of psychological distress or personal tragedy. It's a form of *non compos mentis* and is no argument for breach of confidence, which begs the question, why do they do it? The answer, according to Danah Boyd (2006) is to provide their personal data with 'context, context context':

- To be nice to people that they hardly know (like the folks in their classes)
- To keep face with people that they know but don't care for
- As a way of acknowledging someone they think is interesting
- To look cool because that link has status
- To keep up with someone's posts, bulletins or other such bits
- To circumnavigate the privacy problem that they were forced to use by their parents
- As a substitute for bookmarking or 'favouriting'
- It's easier to say yes than no when they're not sure

When you know the effects of a medium, you can take steps to shape those effects, or restrict them (McLuhan, 1978), because ignoring or forgetting to read critical information in communication media may eventually cause harm, an act of omission that denotes *actus reus* or acting badly without thinking (Mann, 2009). Frequent users of social media invariably ignore or forget to read important feedback and instruction presented in text and other visual displays regardless of their intended function, even when they are explicitly told to do so (Mann, 2015, p.496; Mann, 2009, p.5). The consequence is tacit agreement to release personal data and preferences to third parties that effectively absolves those parties and the Internet Service Provider of any liability stated in the license (Mann, 2009). It's not just social media however, but *any* media with instructional or informational text (Alessi & Trollip, 2001; Edwards, 2005; Huff & Finholt, 1994; Pettersson, 1990; Ragsdale, 1988; Reinking, 1987; Wah, 2008).

Two years after Jonathan Abrams submitted an application to the U.S. Patent and Trademark Office for *Friendster*, "a system, method, and apparatus for connecting users in an online computer system based on their relationships within social networks" (OUT-LAW News, 2006), there was no shortage of social media in which to share personal information and opinions. It soon became clear however, that hands-off legislation, toothless policy statements, unknowing parents, uncaring participants, and unwilling social network intermediaries had helped to cause impersonation, denigration, sexual and aggressive solicitation, and cyberbullying to children and youth who were active users of social media (Mann, 2009). Years later, the situation is still serious - serious because the user-generated content displayed on-screen is still destroying users' lives; serious too, because of the volume of users at risk from posting their content, without intervention by the social network intermediary. The changing social interactions that this technology brought about, has out-paced our values and attitudes, an anthropological condition known as *cultural lag* (Mann, 1993).

"IS YOUR LIFE JUST WORTH ONE PHOTO?"

More than 250 people across the world have died in the pursuit of the perfect selfie since 2011 (Schetzer, 2019). The majority of these "killfies" were caused either by drowning, being hit by a car or train, or

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from falling from a great height. All around the world, selfie and photo deaths have increased (Baker, 2017). In 2011, Tom Ryaboi dangled his feet over the edge of a tall building in Toronto and took a picture straight down, figure 1. He posted it on Flickr, Reddit, and 500px. The picture became a viral hit.

*Figure 1. Tom Ryaboi's selfie of his feet dangling over the edge of a tall building in Toronto.
Image: Tom Ryaboi, 2011.*



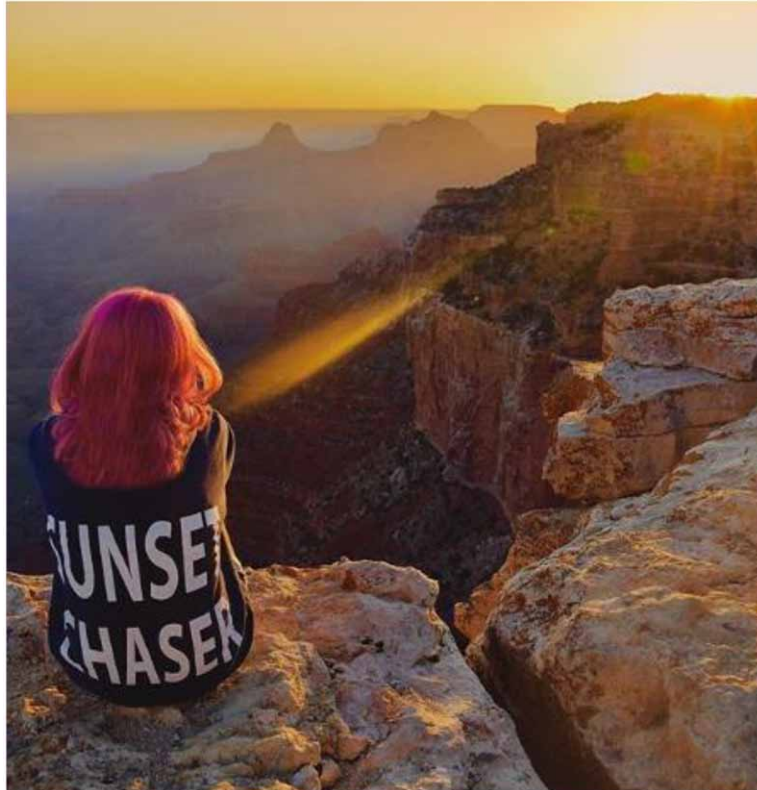
After that event, a new generation of Instagrammers, YouTubers, and members of other social networks began to cultivate the craft of risking life and limb to post heart-pounding pictures and videos of dangerous stunts. Risk-taking social media photography deaths and injuries roughly tripled in number from the beginning of 2014 to the end of 2015, according to a media analysis conducted by medical researchers in Turkey (Dokur Petekkaya & Karadağ, 2018).

A subculture has emerged in the past eight years of people who seek out death-defying situations; they do it for the likes, followers, and adulation of fans on social media. Figure 2 shows an Instagram post of Meenakshi sitting on the edge of a rock over the Grand Canyon taken by her husband Vishnu. The caption, read, “A lot of us, including yours truly, is a fan of daredevilry attempts of standing at the edge of cliffs and skyscrapers. Is our life just worth one photo?” Months later, they would both be dead. They were killed from an 800-foot fall at Yosemite National Park, an accident that occurred while they were on the edge of a cliff and taking pictures for their Instagram account (Elgan, 2019).

“I HOPE I AM DEAD WHEN U GET HOME”

So said Courtney Brown, 17, in a text to her mother, moments before her parents found her hanging in the basement (Scott, 2015). Emily McNamara, 14, hanged herself in the garage of their family home after being bullied online and at school. Rehtaeh Parsons, 17, attempted suicide by hanging herself, which put her in a coma and ended eventually the decision to switch-off her life support. Her death was attributed to online distribution of photos of an alleged gang rape that occurred 17 months prior to her suicide.

Figure 2. A posting to an Instagram account showing a photo of Meenakshi Moorthy taken by her husband Vishnu. Months later, they would both be dead from a fall (Elgan, 2019). Image: Vishnu Moorthy, 28 March 2018.



Amanda Todd, 15, posted a video on YouTube before she took her own life that described how she had been tormented by persistent bullying online (Leung & Bascaramurty, 2012). Jenna Bowers-Bryanton, 15, killed herself after being bullied and cyberbullied by her peers at school and on social media (CBC News, 2011). Todd Loik, 15, committed suicide because students hounded him. His phone files had pages of taunts and abuse. Jamie Hubley, 15, son of Ottawa City Councillor Allan Hubley, had been suffering from depression and died after months of suicidal musings on his blog and social-media. He left a suicide note on his blog site, “It’s so hard, I’m sorry, I can’t take it anymore” (Edwards, 2011). This is a sample of suicides of youths bullied by peers on social media (Weisblott, 2011). The connection between social media and suicide is most prevalent among youths, a group with both a high suicide rate and dominance on sites such as Facebook, Twitter, and Instagram (Coyle, 2014).

CYBERBULLYING

Although contemptible, there is still no consensus on a clear and working definition of “cyberbullying”, in either the scholarly, or the criminal context (Arntfield, 2015). By all accounts, “cyberbullying” is an omnibus term comprising several possible criminal offenses, not all relevant in every case. The conceptual

elasticity of cyberbullying has been used to push for a tougher crime agenda, while obscuring tragedy of the suicides in Canadian federal parliamentary debates (Bailey, 2014).

Bill C-13

Bill C-13 came into force in Canada on March 10, 2015 impacting domestic and international criminal search powers. *Bill C-13 the Protecting Canadians from Online Crime Act*, ostensibly aimed at prosecuting cyberbullying, more accurately increased new police powers – especially warrantless search of members’ personal files held by the Internet Service Provider. Most of Bill C-13 was about lawful access, not defeating cyberbullying. However, increasing police powers was not necessary since Canada already had rules to deal with cyberbullying. Bill-13 and Bill S-4 were *ex post facto* laws, and as such, would do nothing for the many thousands of teenagers and their parents who were experiencing cruelty from their peers. One possible solution would have been to repeal Bill-13 or at least modify it. Another solution would have been to recommend educational initiatives for coping with social media.

Privacy Commissioner Daniel Therrien characterized Bill C-13 as going well beyond cyber-intimidation (OpenMedia, 2015). It grants immunity to telecom providers who disclose private information about their customers to law enforcement without a warrant. The Bill also makes it far easier for government to obtain deeply revealing metadata on targets, based merely on suspicion. Despite being promoted as an anti-cyberbullying bill, C-13 could in fact make things worse for teens online by undermining their right to privacy.

Under Bill C-13, a wide range of government officials and public officers could access Canadians’ personal information without their knowledge or consent. The officers obtaining that information without a warrant could be anyone from a local Police Officer, a Tax Agent, a Justice of the Peace, a CSIS Agent, or even the Mayor (Ling, 2014). Whereas Bill C-13 provided these officials with substantial power over your information, it left the targets of such surveillance with little by way of legal recourse, not least because they are not even informed that their privacy has been breached.

This kind of overreach by government isn’t unique. The UK’s *Investigatory Powers Act 2016* (aka Snoopers’ Charter), which gives vast spying powers to virtually all public bodies, has caused numerous controversies over the last decade — including a 2008 incident where it came to light that Dorset City Council was using state surveillance powers to snoop on the families of children that they suspected were attending the wrong schools (Investigatory Powers Act 2016). Provisions in the Act permits police and intelligence agencies to carry out targeted equipment interference, that is, hacking into computers or devices to access their data and bulk equipment interference for national security matters related to foreign investigations. Material derived from equipment interference can then be used in evidence. Catching online bullying, in all its forms, shouldn’t require government overreach.

CYBERBULLYING AND THE CRIMINAL CODE

On their website entitled *Cyberbullying and the Non-Consensual Distribution of Intimate Images*, the Department of Justice (DOJ) compiled a list of twelve Criminal Code offences that the DOJ says “may apply to instances of cyberbullying” (Department of Justice Canada, 2017):

S 163.1 Child pornography

S 319 Inciting Hatred
S 264 Criminal Harassment
S 261.1 Uttering Threats
S 423(1) Intimidation
S 403 Identity Fraud
S 346 (S)extortion
S 372 False Messages, Indecent or Harassing Telephone Calls
S 241. Counselling Suicide
S 298-301. Defamatory Libel
S 430(1.1) Mischief In Relation To Data
S 342.1 Unauthorized Use Of a Computer

S 163.1 Child Pornography

According to the Department of Justice Canada, child pornography is a criminal offence that appears to fit cyberbullying behaviors. Child pornography, as defined by s. 163.1(1) of the Criminal Code, is inherently harmful to children and to society. The harm exists independently of dissemination or of any risk of dissemination and flows from the existence of the pornographic representations, which on their own violate the dignity and equality rights of children (*R. v. Sharpe, 2001*). Section 163.1 (1) defines *child pornography* as: A photographic, film, video or other visual representation, whether or not it was made by electronic or mechanical means, that shows a person who is or is depicted as being under the age of eighteen years and is engaged in or is depicted as engaged in explicit sexual activity, or the dominant characteristic of which is the depiction, for a sexual purpose, of a sexual organ or the anal region of a person under the age of eighteen years. It is any written material, visual representation or audio recording that advocates or counsels sexual activity with a person under the age of eighteen years that would be an offence under this act. It is any written material whose dominant characteristic is the description, for a sexual purpose, of sexual activity with a person under the age of eighteen years that would be an offence under this act; or any audio recording that has as its dominant characteristic the description, presentation or representation, for a sexual purpose, of sexual activity with a person under the age of eighteen years that would be an offence under this act.

R. v. Sharpe (2001) was a constitutional rights case pitting the societal interest to regulate child pornography against the right to freedom of expression. John Sharpe was charged with two counts of possession of child pornography under s. 163.1(4) of the Criminal Code and two counts of possession of child pornography for the purposes of distribution or sale under section 163.1(3). First, the court considered the Charter under freedom of expression, and whether possession of expressive material (child pornography) was protected by right to freedom of expression in accordance with *Canadian Charter of Rights and Freedoms*, section 2(b). The crown conceded that Criminal Code prohibition of possession of child pornography had infringed freedom of expression.

Second, the court considered the Charter under the right to liberty, and whether the Criminal Code's prohibition of possession of child pornography infringed his right to liberty. Third, the court considered the scope of the definition of "child pornography" under section 163.1 of the *Criminal Code of Canada*, where "child pornography" includes visual representations that show a person who is depicted as under the age of 18 years and is engaged in explicit sexual activity, and visual representations. The dominant

characteristic is the depiction, of a sexual organ for a sexual purpose, or the anal region of a person under the age of 18 years.

Counseling Underage Sex. Child pornography that includes written material or visual representations that advocate or counsel sexual activity with a person under the age of 18, is an offence under the *Criminal Code of Canada*. Prior to his trial, the accused brought a preliminary motion challenging the constitutionality of s. 163.1(4) of the Code, alleging a violation of his constitutional guarantee of freedom of expression. The Crown conceded that section 163.1(4) had infringed section 2(b) of the *Canadian Charter of Rights and Freedoms*, but argued that the infringement was justifiable under s. 1 of the Charter.

Both the trial judge and the majority of the *British Columbia Court of Appeal* ruled that the prohibition of the simple possession of child pornography as defined under s. 163.1 of the Code was not justifiable in a free and democratic society. John Robin Sharpe was given a four-month conditional sentence for his conviction of possessing child pornography. After sentencing, Lorna Dueck with the *National Coalition of Concerned Mothers*, said that this was a “hugely symbolic case” that was a missed opportunity to protect children. A child advocacy group says the sentence made Sharpe the champion for people who want to engage in sex with children (CBC News, 2002).

S 172.1 Internet Luring

Section 172.1 Internet luring is not on the DOJ’s list but should be added. In *R. v. S.H., 2018*, Jonathan Regan, was acquitted of the offence of Internet luring. The Crown appealed the acquittal on the basis that the Trial Judge erred in his interpretation of the elements of the offence, by requiring the Crown to prove that the Respondent had the intention to commit the underlying offence of which the alleged luring was intended to facilitate. The acquittal was set aside and the matter remitted to Provincial Court for a new trial. Three elements of the offence under Section 172.1(1)(c) had been established from the previous case *R. v. Legare (2009)*:

An intentional communication by computer, with a person whom the accused knows or believes to be under 14 years of age, and for the specific purpose of facilitating the commission of the a specified offence as mentioned in Section 172.1(1)(c)

In *R. v. Dragos (2012)*, Bogdan Dragos was convicted of Internet luring, sexual interference, indecent exposure, sexual assault, invitation to sexual touching and possession of child pornography. The accused met the 13-year-old complainant on an Internet chat room site and asked her how old she was. She told him that she was 14. He never again inquired about her age notwithstanding many comments she made which should have caused him to make additional inquiries about her age, including a statement that she was in grade 9. When the complainant’s mother discovered the accused’s telephone number on her telephone bill and learned that the complainant had met the accused in a chat room, the mother called the accused, told him that the complainant was “way underage” and warned him that she would call the police if the contact persisted. The accused and the complainant continued to communicate over the Internet, and the accused arranged a clandestine meeting with the complainant at a hotel, where they engaged in various sexual acts, short of sexual intercourse. The accused was 24 years old at the time of the offences and had no criminal record. He was sentenced to a total of 23 months’ incarceration (18 months for Internet luring, four months consecutive for sexual interference, one month consecutive for possession of child pornography and one month concurrent for indecent exposure), followed by three years’ probation.

S 319. Inciting Hatred

Incitement of hatred would seem to be an obvious characteristic of the cyberbully's method of engagement; communicating statements in any public place, and inciting hatred against any identifiable group, which is likely to lead to a breach of the peace.

One example is the case *R. v. Topham* in which Mr. Topham was charged under section 319(2) with promoting hatred to the students in his high school class through his website by re-publishing materials from the Internet. Topham's lawyer noted that the circumstances of this case were different from those in *R. v. Keegstra* who similarly had been charged under section 319(2) of the Criminal Code with promoting hatred through communications to the students in his high school class. In the Keestra case, the accused, an Alberta high school teacher, was charged under section 319(2) of the Criminal Code with willfully promoting hatred against an identifiable group by communicating anti-semitic statements to his students. That court dismissed the application on the ground that section 319(2) of the Code did not violate freedom of expression as guaranteed by section 2(b) of the Canadian Charter of Rights and Freedoms. Here too, although Mr. Topham alleged to have promoted hatred through his website by re-publishing materials which were widely available on the Internet, the defence application was dismissed. "Incitement of hatred" seems to be part of a perpetrator's method of engagement for the purposes of cyberbullying.

S 264 Criminal Harassment

Section 264 of the *Criminal Code of Canada* describes "criminal harassment" as a person causing another person to fear for their safety or for the safety of someone known to them. The conduct comprises repeatedly following the person from place to place; repeatedly communicating with, either directly or indirectly; besetting or watching where the other person resides, works, carries on business; or engages in threatening conduct directed at them or any member of their family.

In *R. v. Gardner (2018)* for example, Shane Gardner plead guilty to one count of criminal harassment for sending a series of violent and chilling threats to Terry Murphy via Facebook. The threats caused Terry Murphy to fear for his safety. The Court held that general deterrence and denunciation are paramount considerations when social media is used to criminally harass another person.

S 261.1 Uttering Threats

Uttering a threat is a statement of intent to cause bodily harm or death to a person - to burn, destroy or damage real or personal property; or to kill, poison or injure an animal or bird that is the property of the person. In December 2018 for example, the entire Lord Selkirk School Division north of Winnipeg closed all 15 of its schools due to threats on social media (CBC News, 2018). The RCMP released the name of one of young perpetrators charged in connection with the threats to Selkirk-area schools. The School Division put the schools into a "hold-and-secure" status and sent email to families to alert them of their new security measures.

In January 2019, two boys aged 12 and 13, were arrested for allegedly threatening three Winnipeg schools on social media. The boys had no access to weapons, and likely didn't think they'd get caught (CBC News, 2019). Police urged parents to use the arrests as a learning opportunity to talk to their children about the effects of social media, after the anonymous online threats resulted in a \$45,000 police investigation, and heightened security at the schools.

S 423(1) Intimidation

Intimidation describes a preliminary form of cyberbullying behaviour. Intimidation is characterized in the Criminal Code as stopping another person from doing something that he or she has a lawful right to do, or uses violence or threats of violence to them or their spouse or children, or injures his or her property. Intimidation further describes persistently following that person; and hiding or depriving him or her of their property. For example, a worker alleged that she had been bullied by her co-workers both in the workplace, and through social media. The worker further alleged that her employer's failure to respond to her complaints of bullying and harassment contributed to her mental disorder. The worker filed a claim with the *British Columbia Workers' Compensation Board* for compensation for a mental disorder under that Act (1996). In her application for compensation, the worker said that she had been bullied by three co-workers. The worker described silent bullying, being ridiculed in front of her co-workers, and being threatened on a social media platform. The worker wrote that she felt humiliated, intimidated, offended, and psychologically unsafe.

The worker reported that she had informed her Manager of the co-workers' behaviours around the time that they occurred, but did not file a formal written complaint with her employer until October 2016. The worker believed that the social media posts were about her as they were posted on the same day of interactions at work. The worker felt threatened by a "punch in the throat" comment. She was humiliated, intimidated and offended. The worker felt psychologically unsafe. The Chair denied the worker's appeal finding that the worker was not entitled to compensation for a mental disorder, and that the significant stressors of online bullying and harassment did not arise out of, and in the course of, the worker's employment. Perhaps on this case, section 423 was too narrowly defined.

S 403 Identity Fraud

Not everyone thinks identity fraud or scamming, and cyberbullying, fit the same category because cases of cyber-blackmail are less prominent than cyberbullying but can have the same devastating impact on victims (Kiss, 2013). The position taken here is that cyberbullying becomes the new *modus operandi* once the victims become aware of the scam. They may harass you, intimidate you, threaten you, blackmail, or extort you.

Romance scammers fraudulently impersonate another person with intent to gain advantage for themselves, consistent with section 403 of the Criminal Code. Romance scammers take advantage of people looking for romantic partners, often through dating websites, mobile apps, or social media, by pretending to be prospective companions with intent to cause disadvantage to the person being personated or person being victimized. They play on emotional triggers to get them to send money, gifts or personal details (Scamwatch, 2019). Conversations between scammers and victims often go on for months. The con artists will find different ways to ask for money. In some cases, they pretend they are flying to see the women, but got stuck in an airport with no passport and need to ask for some quick money. In one instance a woman in Brazil took out a \$500 loan to help the man she thought she was dating (Cassidy CBC News, 2014).

For many years, scammers have been using the photos of Dr. Alec Couros and his family, to commit identity fraud, figure 3. Dr. Couros is a Professor of Educational Technology and Media at the University of Regina (Couros, 2015). Couros hears from new scam victims on a daily basis as they frequently find the "real" him through his own writings on the topic. Unfortunately, many victims find out too late,

often after they have already sent significant amounts of money to these scammers and have developed a significant emotional attachment. Complex crime that relies on a victim's capacity for love, trust, and good will for the execution of fraud (Scamwatch, 2019).

Figure 3. Romance scam showing false identity of Dr. Alec Couros, a Canadian Professor at the University of Regina.

Used by permission of Dr. Couros.



S 346. (S)extortion

Extorting sexually explicit material online, or “sextortion”, is a form of cyberbullying that uses threats, accusations, menaces or violence. *R v McFarlane* describes a case of sextortion heard in a Manitoba court (*R v McFarlane*, 2018). The complainant was a friend of a sister of the accused, Blair McFarlane.

In 2010, McFarlane (then age 19) surreptitiously video recorded the complainant (then age 17) undressing and showering when she was in the bathroom of his family home in Winnipeg. In a different relationship five years later, McFarlane decided to attempt to extort sexually explicit material from the complainant by threatening to disseminate intimate images of her. To carry out his sextortion plan, McFarlane created multiple email accounts under pseudonyms, he extracted several nude or semi-nude still images from the recording and manipulated the images using software to hide their source. He sent emails from the fake accounts with the intimate images to the complainant and her sister. The emails were menacing. The emails said that cooperation with his demands was the only way to avoid Internet publication. The complainant's sister replied to an email, asking what he wanted. McFarlane said, to start, he wanted a picture of the complainant in a bra. The complainant did not acquiesce to the demand.

The gravity of the extortion offence was serious. The judge called the crimes “cold and calculating” and imposed 18 months’ imprisonment allocated as 12 months on the extortion offence, six months concurrent on the distribution-of-an-intimate-image-without-consent offence, and six months consecutive on the voyeurism offence.

S 372. False Messages, Indecent or Harassing Telephone Calls

Cyberbullying can also include false messages, with the intent to injure or alarm someone by conveying information that they know is false. In *R. v. J.M.D* (2018). The complainant was a highly accomplished nurse who worked in a palliative care facility and taught nursing on a part time basis. Mr. J.M.D. was a single father of two teenage children. Mr. J.M.D. was charged with harassing the complainant by repeatedly text messaging her, and engaging in conduct that reasonably caused the complainant to fear for her safety. In spite of clear instruction not to contact the complainant, Mr. J.M.D. texted or e-mailed the complainant ten or more times over the course of a few days. He chided the complainant telling her that the school authorities considered her treatment of his children to be abuse. This statement was completely fabricated as on inquiries being made with the school authorities it was apparent that Mr. J.M.D. had not even spoken to the school authorities about the break up.

As expected, however, it did cause the complainant anxiety. Judge McKimm surmised that Mr. J.M.D.'s complaint had threatened the livelihood of a professional woman pregnant with her first child. Even without the earlier references to threatening her reputation or taking her child, Judge McKimm found Mr. J.M.D. guilty on both counts.

S 241. Counselling Suicide

Counseling, encouraging or assisting a person to die by suicide may be considered an extreme form of cyberbullying. Counselling suicide is an indictable offence and liable to imprisonment for a term of up to 14 years.

The Momo Challenge. Police in U.K. have issued a warning about the “Momo Challenge”, that is urging kids to commit self-harm. Figure 4 shows the bug-eyed girl with women’s breasts and chicken legs known as “Momo” that has been popping up on social media since 2018, urging kids to kill themselves, or else, “Momo’s going to kill you”.

The suicide ‘challenge’ called “Momo” has raised concern in multiple countries and is serving as a warning to parents about the dangers of your child’s media consumption. There are numerous variations. For example, while watching the British preschool animated television series *Peppa Pig*, or playing the popular video game *Fortnite*, children have encountered the Momo image with an ominous voice telling the child to take a knife to their own throat. Another version threatens their family if the challenge is not completed.

R. c. Morin, 2014. In this case, the Crown accused Jonathan Morin of counselling X to commit suicide and thereby committing an indictable offence (*R. c. Morin*, 2014). On September 27, 2012, the victim and Y were chatting on Facebook and trading insults. Y sent some excerpts from their conversation to her boyfriend, Jonathan Morin. Angry about the comments the victim had made to his girlfriend, the accused sent her a number of insults and told her that she should kill herself. Y too, suggested that the victim should hang herself. Sadly, after this interchange, the victim attempted suicide. Before this conversation on September 27, she had felt fine and had not been thinking about suicide. The dialogue she had on Facebook with Y and Jonathan Morin is what triggered her suicide attempt.

Figure 4. Screenshot of Momo, Image from Police Service of Northern Ireland in Craigavon (Facebook, 2018).



S 298-301. Defamatory Libel

Defamatory libel, under certain conditions (i.e., published online, using one or more communication technologies,) can be considered cyberbullying. A defamatory libel is a text or other media that is published to a chat room or social media site that is likely to injure the reputation of any person by exposing him to hatred, contempt or ridicule, or that is designed to insult the person of or concerning whom it is published. Concerning the mode of expression, a defamatory libel may be expressed directly or by insinuation or irony, either in words legibly marked on any substance; or by any object signifying a defamatory libel other than by words.

For example, the appellant in *R. v. Simoes, 2014* heard at the Ontario Court of Appeal was a restaurant owner. The complainant repeatedly called the appellant's restaurants to complain, and posted negative reviews on an online restaurant review site. This triggered a flurry of online postings, e-mails and letters from the appellant, the complainant and her lawyer. E-mails inviting sexual activity were sent to the complainant's employer from fake e-mail accounts set up in the complainant's name. The same sexually explicit message was posted on an adult cyber-dating website. That posting also included the complain-

ant's photo. At trial, counsel conceded that the e-mails to the complainant's employer and the posting on the cyber-dating website amounted to defamatory libel as defined in s. 298 of the Criminal Code.

CRIMINAL ACTS, BUT NOT CYBERBULLYING

Cyberbullying requires a computer or cell phone, as an instrument of a crime. Two other categories of computer-related offences have been defined by the U.S. Department of Justice (1989) however, that do not seem to constitute cyberbullying behavior or intent: the computer is the "object" of the crime (e.g., the theft of computer hardware or software); and the computer as the "subject" of the crime (viruses, worms, etc.), that incapacitate normal computer functioning)

S 430(1.1) Mischief In Relation To Data

Section 430 covers offenses in which a computer was the "subject" of the crime, where computer data was destroyed or altered, or where the transmission was obstructed, interrupted or interfered with the lawful use of computer data; or denies access to computer data to a person who is entitled to access to it. Typically, the offender will advance an attack in five phases: reconnaissance, scanning, gaining access, maintaining access, and covering tracks (Chatterjee, 2019). A Trojan Horse for example, is a malicious computer program that pretends to be a benign application. A Trojan Horse will purposefully do something to the user's computer that the user does not expect; from a variety of temporary harmful effects, to permanent damage, such as logging keystrokes to steal information passwords or credit card numbers (Wikipedia, 2019). They are distinct from viruses.

With a Trojan horse on a compromised computer, you would be able to do whatever you wanted. That computer would be as good as your own. You would own it. Now imagine that you owned 100,000 such computers, scattered all over the world, each one running and being looked after in someone's home, office, or school. Imagine that with just one command, you could tell all of these computers to do whatever you wanted (Solomon & Evron, 2006).

In the court of appeal for Ontario, in the case *United States v. Baratov*, the United States sought to prosecute Mr. Karim Baratov for conduct that corresponded to the Canadian offence of unauthorized use of a computer, contrary to s. 342.1 of the Criminal Code, R.S.C. 1985, c. C-46. He is alleged to have worked as a hacker-for-hire to gain unauthorized access to email accounts (*United States v. Baratov*, 2017). Since the offender in this case may have been more interested in the behaviours of the machine rather than the reactions of the machine owner. It should not be considered a case of intentional cyberbullying.

S 342.1 Unauthorized Use of a Computer

Unauthorized use of a computer is a criminal offence where the computer itself is *the subject*, not the instrument of a crime. Four separate offences can be identified under Section 342.1 as follows: (1) the obtaining offence, (2) the interception offence, (3) the user offence, and (4) the enabling offence. In order to trigger the application of this section, the unauthorized acts must have been committed fraudulently. It

is important to note that these two elements are cumulative and therefore must both be present in order for a court to find the accused guilty of any of the four offences mentioned above.

In *R. c. Paré*, the Court of Quebec, a police officer was charged with having acted fraudulently in obtaining computer services (*R. c. Paré, 1987*). The accused admitted to his absence of right in obtaining the services, however he denied acting fraudulently. The Court had to establish that the act was not qualified as fraudulent simply because it was not authorized. The Defendant's conduct must also have been dishonest and morally wrong. The Defendant tried to minimize the gravity of his actions by conceding that his superiors knew, and had tolerated the situation. However, the Court found his conduct to be equivalent to willful blindness, and disregard, and that his attempt to justify his use did not remove his fraudulent intentions.

A Final Word

Social media entices young and not-so-young participants to put themselves in harm's way for admiration and respect from their peers. Active members of social media ignore or forget to read critical information in privacy policies and end-user licence agreements, which constitutes acts of omission and denotes *actus reus* or acting badly without thinking. This chapter updates the criminal activity associated with frequent use of social media, and highlights twelve Criminal Code offences associated with cyberbullying behavior and offers discussion on relevant court cases testing each offense. The recommendation taken in this chapter is that the cyber-solution is in the hands of the cyber-victims, who need to "put down the mouse and step away from the computer, and no one will get hurt" (Aftab. 2016).

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Delete, Delete, Hang-Up

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Chapter 24

Facebook and the Interaction of Culture and Conflict

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ABSTRACT

The intersection of culture and conflict is relatively understudied in communication, focusing on mass-self communication and power relations and new media scholarship. Conflict and the cultural dimensions in media coverage are well documented, but with less attention to new media cultural settings, often limited to use as one-way broadcasting media or as audiencing participants in social media marketing. Potentially more interactive communication exists within a closed community, especially because Facebook has defining cultural, psychological, and psychosocial characteristics. Conflict message interactions facilitate studying the intersection of culture and conflict within a new media setting. This chapter focuses on conflict within the cultural context of Facebook closed communities, theorizes about this relationship, and tests its application.

INTRODUCTION

This chapter reviews the literature on conflict and culture, focusing on their intersection. It integrates concepts from culture and conflict to analyse their mutual influence and develops a theoretical framework for studying culture and conflict. Adopting a methodological approach to investigating and understanding the intersection between culture and conflict in interactions, this chapter presents an empirical test of this methodological framework, reports the results of studying culture and conflict, discusses the thematic results and discusses their significance and implications for theorizing and testing a model of studying culture and conflict. It concludes with a commentary on the intersection of culture and conflict within online closed communities in Facebook.

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BACKGROUND

Why Study Culture and Conflict on Facebook?

Overview

The intersection of culture and conflict is a relatively understudied area of new media communication research. Embedded within such research are paradigms of mass-self communication and power relations (Castells, 2013) and new media scholarship (Boyd & Ellison, 2008). Conflict in media coverage is well documented (Arno, 2009), but there has been less attention to conflict within a new media cultural setting or to intractable conflict (Bar-Tal, Abutbul-Selinger, & Raviv, 2014), or to imagining such communities in newer media settings (Conboy, 2006). Even when such communities exist in social media networks such as Facebook, they are often limited to being used as one-way broadcasting media, among politicians for example, without real interaction (Ross, Fountaine & Comrie, 2015) or as audience participants in social media marketing (Fisher, 2015). There is potentially more interactive communication, with resulting opportunities for the intersection of culture and conflict within a closed community, especially as research on Facebook has defining cultural (Köhl & Götzenbrucker, 2014), psychological (Anderson, Fagan, Woodnutt, & Chamorro-Premuzic, 2012) and psychosocial characteristics such as oversharing (Agger, 2015). The conflict messages in interactions among members of a community offer an opportunity to study the intersection of culture and conflict within a new media setting. This chapter focuses on conflict within the cultural context of Facebook closed communities, theorizes about this relationship and tests its application.

A SYSTEMATIC REVIEW OF THE CULTURE AND CONFLICT LITERATURE IN NEWER MEDIA SETTINGS

A systematic review of the literature derived from a search of “Facebook AND culture” published between 1978 and 2017 produced extensive results for peer-reviewed journal articles (n=19,811). Refinement of this scoping search yielded fewer, but substantially high results for peer-reviewed articles for the period 2004-2017(n=19076). Prior to the research for this chapter, extensive studies had been conducted on the definition, history, development and features of social networking sites for the period 1997-2006 (Boyd & Ellison, 2008) and a narrative review of scholarship on social support based on SNS platforms for the period 2004-2017 (Meng et al., 2017).

For the purpose of this chapter’s focus on culture and conflict on Facebook and the implications for reconceptualizing new media, it was decided to narrow the search to “Facebook AND culture AND conflict”. This refinement yielded 5,810 peer-reviewed articles from several databases such as ProQuest, Social Sciences Citation Index (Web of Science), Science Citation Index, Medline, Emerald, Informa, Taylor and Francis, Springer and JSTOR among the top 20. Further refinement led to 4,747 peer-reviewed articles. An additional refinement to include only 2004-2017 led to 4728 results. Another refinement for the period 2004-2017, focusing on studies yielded 956 results, of which there were experimental/theoretical (n=336), social networks (n=255), communication (n=70) items and social media (n=65).

A decision was made to restrict the search to “Facebook AND culture AND conflict” with filters focusing on experimental/theoretical and social network studies for the period 2007-2017. This strategy

yielded substantially fewer results (n=97). Fifty-nine (59) were directly relevant. These articles were analysed thematically and resulted in seven major emphases. These seven themes included social business/marketing potential and threats, online communities (brand love and social identity on Facebook, members' contribution of knowledge to online communities, country of origin (COO) and image, brand loyalty, social media love and the look of the Other, social media's potential for supporting virtue friendship, collaborative learning, and intergroup intractable conflict), approaches to studying social media platforms, organization members' use of social networks, comparing young users, online privacy, and social information behaviour. These seven themes are presented as findings in the fifth section based on the systematic literature review in this section.

EXPLORING AND DEFINING CONFLICT, CONFLICT MESSAGES AND INTERACTIONS IN NEWER MEDIA AND SOCIAL NETWORKING SITES

Conflict in Newer Media and Social Networking Sites

Few studies have addressed conflict within closed social media groups. Conflict in media coverage is well documented, but there has been less attention to conflict within a new media cultural setting. For example, conflict in traditional media coverage such as daily news reporting is often presented as a conflictual anthropological phenomenon (Arno, 2009). When intergroup conflict occurs over an extended period such as a generation and is unresolvable it may be described as intractable (Bar-Tal, Abutbul-Selinger, & Raviv, 2014), but there has been less attention to this phenomenon in newer media. In an alternative media setting it may be presented as contestation (Couldry & Curran, 2003), but there has been less attention to conflict in newer media environments. Similarly, while the imagining of a community of daily newspaper audiences captures the culture of such a community (Conboy, 2006), there has been less attention to imagining such communities in newer media settings. In a study of collaborative learning in the social media environment, Borstnar (2012) explored motivation, trust, and conflict among 24 students working in groups. It was theorized that an unstructured social media environment facilitates problem solving. For example, Borstnar (2012, p. 102) argued "based on the assumption that collaborative learning can be efficiently supported in a rule-free and social media unstructured environment, and that it has a positive impact on the self-organizing of the group and thus contributes to problem solving and learning."

Studying Conflict in Facebook

Borstnar's (2012) study of collaborative learning in the social media environment noted that although the effective use of ICT to support group collaboration was well-researched, there was less understanding of what happens in a less structured, rule-free and perhaps more chaotic social media environment. Borstnar (2012) investigated whether group knowledge in the group-learning process in a social media environment could be elicited. This was done by assigning 24 students to three groups and giving them tasks, conducting naturalistic observation, and measuring attitudes towards collaborative work using a questionnaire. The study's results suggested that motivation and trust were positively associated with self-management. However, increases in conflicts were associated with a decrease in formal structure and facilitation.

The rapid increase in social network sites, and their increasing popularity have brought new concerns about conflict. Will new media provide new platforms for the staging and working out of conflicts? Will new media be transformed by enduring human issues such as conflict or will they have a transformative impact on how conflict is managed? Intergroup intractable conflict occurs when groups have mutually incompatible goals which they each regard as essential to their survival (Bar-Tal, Abutbul-Selinger, & Raviv, 2014). Bar-Tal, Abutbul-Selinger, and Raviv (2014) reviewed intergenerational intractable conflicts across nationalities, states and over the course of history. They concluded that this type of conflict is often violent, and because of their long-lasting nature, the collective impact upon groups is the creation of a culture of conflict in which the conflicts are perceived to be zero-sum in nature. The question, then, for new media, is whether they can exert a new influence over the presence of intractable conflict or merely provide new arenas and tools for the perpetuation of conflict.

EXPLORING AND DEFINING CULTURE IN NEWER MEDIA AND SOCIAL NETWORKING SITES

Facebook Communities and Group Culture

Newer media not only offer opportunities to exert cultural influences and be influenced by cultural forces, but they constitute and evolve into cultures of their own. Affordances refer to the interface between the potential for action created by newer media and their tendency to predict the intensity of usage of aspects of the newer media (Kuo, Tseng, Tseng, & Lin, 2013). It is quite feasible to consider the extent to which the availability of the means to use social networks sites such as Facebook can influence the ways in which they are used and the degree to which such facilities, as afforded by these sites, actually predict user behavior.

This issue may be explored by considering what has been happening in the culture of the Facebook community of users. One way which SNS are involved is in the creation of social business and opportunities for marketing and innovation. Accordingly, there has been a call for business organizations as networks of communities interacting with clients to ensure that there is alignment between their leaders and their culture to facilitate this role for SNS.

Studying Culture in Facebook

Kuo et al.'s (2013) study investigated three social information affordances for expressive information control, privacy information control, and image information control in Facebook. The results demonstrated gender differences among users. Commenting on this outcome, the researchers noted

The results showed that the three affordances can significantly explain how Facebook's interface designs facilitate users' self-presentation activities. In addition, the findings reveal that males are more engaged in expressing information than females, while females are more involved in privacy control than males. A practical application of our study is to compare and contrast the level of affordances offered by various social network sites (SNS) like Facebook and Twitter, as well as differences in online self-presentations across cultures. Our approach can therefore be useful to investigate how SNS design features can be tailored to specific gender and culture needs (p. 635).

Thus, Kuo et al.'s (2013) study exemplifies a method for investigating the cultural dimension on Facebook.

A THEORETICAL FRAMEWORK FOR STUDYING CULTURE AND CONFLICT WITHIN AN ONLINE CLOSED COMMUNITY

Social Presence

Social presence (SP) has emerged as an area of interest related to culture and conflict in studying online closed communities such as Facebook (Rourke, Anderson, Garrison, & Archer, 2000). It consists of affective, interactive and cohesive components. The affective component is indicated by emotional expression, the use of humor, and disclosure behaviors. The interactive component is indicated by behaviors such as continuing or making links to previous conversation such as a reply to a thread, quoting from others' messages, referring explicitly to others' messages, asking questions, complimenting or expressing appreciation, and expressing agreement. The cohesive component consists of vocatives or direct ways of addressing participants by name, addressing a group using inclusive pronouns, using phatic communication and salutations that fulfil a social function, and using greetings and closures.

Conflict Messages

Conflict messages are embodied in posts among users. They may occur as elements within a post. These conflict messages may have integrative and disintegrative effects (Horton & Hunt, 1984). Participation in conflict messages could involve the creation and response to messages. Conflict messages are indicated by statements of mutually incompatible goals and are characterised by cognitive, behavioral and affective behaviors (Barki & Hartwick, 2004). These messages may be reflective of integrative and disintegrative outcomes (Horton & Hunt, 1984) and a range of conflict styles (Euwema, van der Vliet, & Bakker, 2003; Rahim, 1983). The degree and extent of participation are worth exploring. The production of conflict messages can be evident in the frequency and type of conflict style handling expressed in posts and responses to posts.

In searching the literature, the results of the search strategies, keywords such as culture and conflict were combined with Facebook and focused on experimental/theoretical studies and social network studies were reviewed for thematic patterns.

SOLUTIONS AND RECOMMENDATIONS:

Purpose, Objectives, Research Questions, and Method

This methodological approach utilises a systematic literature review to explore concepts and characteristics of culture and conflict in Facebook use among members of closed communities. The main objective is to identify patterns of concerns and research findings in relation to these variables. This approach seeks to answer the emergent research question focusing on the major themes in the literature review which

offer perspectives on reconceptualization of new media such as Facebook. Details of the method adopted were provided in the first section.

Findings

1. **Social Business/Marketing Potential and Threats Emerged as a Major Theme:** The first aspect of this theme focuses on the role of the culture within organizations that seek to benefit from the use of social media to capitalize on opportunities for capturing value in marketing and innovation, as well as operations and leadership. Thus for online communities, it is recommended that the leadership and the culture of the communities should be aligned (Kiron, Palmer, Phillips, & Kruschwitz, 2012). A potentially negative dimension to the reliance on social media is posed by threats to a brand. These threats are referred to as “collaborative brand threats” which are planned, deliberate attacks on brands by large numbers of social media users (Rauschnabel, Kammerlander, & Ivens, 2016). In this regard, research is being developed to anticipate what can signal or anticipate these attacks (triggers), how these attacks can develop momentum (amplifiers) and how brand and reputation managers can respond effectively (reaction strategies) (Rauschnabel, Kammerlander, & Ivens, 2016). These two aspects of social business have implications for how online communities think of, and use social media. The first aspect, the social business/marketing potential, helps us to think of the positive uses to which online creators and users of content might put social media, and the role of organizational culture in facilitating marketing and innovation, especially. The second aspect alerts us to the potential danger and the strategic ways in which brand management can be challenged to be more resilient and adaptive in dealing with new arenas of conflict during interactions with users within their communities. This theme reflects a focus on culture as a critical variable in studying Facebook.
2. **Online Communities:** There were several aspects of this theme, not surprisingly, owing to the presence of online communities as a keyword among 26% or roughly 1 in 4 of the 956 studies found. First, the formation and development of online communities has attracted attention among researchers. In one study (Goggins, Laffey, & Gallagher, 2011) researchers investigated the formation of patterns of interaction and the development of online group practices using six case studies. This study suggests another key role for culture as a key variable.

Second, another study (Ch'Ng, 2015) explored the formation, maintenance and disintegration of a fringe Twitter community to understand whether offline community structure applies to online communities – laboratory case using Big Data to track user-generated content to assess the significance of “particular user nodes” with centrality measures and to track “ego centralities” with time–series analysis. This method was used to determine whether online communities of this type are sustained by specific ego characteristics of users that support opposing ideologies and the creation of resilience among “desperate online users” who find ways to overcome social media limitations. This focus emphasizes both cultural and conflict variables.

Third, the role of brand love and social identity on Facebook was addressed in another study (Vernuccio, Pagani, Barbarrosa, & Pastore, 2015). This study identified the value of leveraging customers' social identity with experiences that engage them in a social-interactive manner to strengthen their emotional bond with a brand among online communities such as Facebook. Such engagement was further explored and confirmed in an experiential study (Wondwesen, 2016). This third aspect reflects a focus on culture.

Fourth, this research highlights members' contribution of knowledge to online communities (Chou, 2010). This emphasis suggests the value of taking into account individual differences, extrinsic and intrinsic motivation, and how they relate to the knowledge members might wish to contribute in building online communities. Culture is once more accentuated in this aspect of online communities. Fifth, the focus is on the role of country of origin (COO) and how that relates to image and brand loyalty when globally recognized sports teams, for example, are associated positively with brands from that country (White & Absher, 2013). Culture is again reflected in this fifth aspect. Sixth, this example relates to how our perception of how the Other judges us (based on Sartre's social communication framework) is often influential in online communities (Lopato, 2016). Culture and identity are reflected in this aspect of research on online communities. Seventh, another aspect of online community research addresses social media's potential for supporting virtue friendship based on Aristotle's work (Elder, 2014). This aspect reflects the perspective of culture and its link to philosophy. Thus, these five aspects of research on online communities (examples 3-7) reflect a focus on culture as a key variable.

The eighth aspect of this research focuses on collaborative learning (Borstnar, 2012). This focus embraces both culture and conflict as key variables. The ninth aspect of online community research explores the role of intergroup intractable conflicts and the implications for social media (Bar-Tal, Abutbul-Selinger, & Raviv, 2014), with a focus on conflict as a variable. Altogether, these nine aspects of online community research, five focusing on culture and four on both culture and conflict, suggest that this is a fertile and generative area of research. Such interest implies that a potentially useful avenue for exploring and developing reconceptualizations of new media may exist in this line of research.

3. Approaches to studying uses of social media platforms include the data on user statistics, and their motivations for using specific aspects of online platforms that focus, for example, on understudied areas such as Twitter hashtags and Facebook favorites and more "destructive" activities as unfollowing (Weller, 2016). Both culture and conflict are reflected in this theme.
4. Organizational members' use of social networks has generated debate over its value (Moqbel, Nevo & Kock, 2013). This debate can be explored by investigating the role of organizational members' use of SNS and its effect on job satisfaction, perceived organizational commitment and job performance. Similar research has been conducted in relation to supervisor-subordinate communication (Steele & Plenty, 2015) but not with a focus on the context of SNS. Moqbel, Nevo and Kock (2013) contend that SNS rather than promoting presenteeism, or being at the workplace but working below peak capacity, can foster work-life balance, and demonstrate organizational commitment. Another aspect of members' contribution of knowledge to SNS lies in concerns about employee ignorance. One study found employees' ignorance could have a negative impact on their intention to share knowledge. This results in poor decision-making and communication in organizations, and can "limit the organizational ability to repel external threats, implement innovation and manage future risks" (Israilidis, Siachou, Cooke, & Lock, 2015, p. 1109). This research focus suggests the key role of culture as a variable in studying an online community such as Facebook.
5. Another interesting research theme lies, firstly, in comparing young users of social media. In one such comparison in France social platform use and cyber bullying was investigated and the researchers' findings recommended educating young users about a positive and safe use of the Internet seriously, and providing appropriate guidance, especially for primary school children (Blaya & Fartoukh, 2016). Secondly, the adolescent perspective is taken into account in proposing a "a conceptual model of social media consumption" to help them "identify positive and negative outcomes and

the behavioral strategies of media selection and differentiation used to cope with them” (Hübner Barcelos & Vargas Rossi, 2014, p. 275). This theme reflects culture and conflict.

6. Online privacy (a component of the culture variable) is another critical research theme relating to SNS. There are two dimensions worth noting. There is a distinction between types of online privacy. In the context of online social networks (OSN), privacy between users is different from privacy between a user and a third party. Researchers explain the difference between interpersonal and third-party disclosure. In the first instance, based on symbolic interactionist accounts of privacy, “users are performing dramaturgically for an intended audience” (Heyman, De Wolf, & Pierson, 2014, p. 18). In the second instance, “third-party privacy is based on the data that represent the user in data mining and knowledge discovery processes, which ultimately manipulate users into audience commodities” (Heyman, De Wolf, & Pierson, 2014, p. 18). When these distinctions were applied to the privacy settings of Facebook, LinkedIn and Twitter the findings indicated “that users are granted more options in controlling their interpersonal information flow towards other users than third parties or service providers” (Heyman, De Wolf, & Pierson, 2014, p. 18). Related to online privacy is the issue of self-disclosure. Research on self-disclosure, (another component of the culture variable) focuses on personality factors which influence SNS users’ motivation to disclose information about themselves as well as share information (Chen, Pan, & Guo, 2016).
7. **Social Information Behavior (SIB):** Various aspects of social information behavior have been researched. Six of them are described and are linked to issues of tension; fake identities, treats and attacks; the extent of national cultural influence; photo sharing; restrictions on occupational use of social media; and benefits and dangers. They reflect the culture and conflict perspectives.
 - a. Serendipity and disruption (conflict): The rise in popularity of social media has led to its promotion as a platform for serendipity, but ironically this feature has been accompanied by disruption (Skågeby, 2012). According to Skågeby (2012), there are five prevalent tensions relating to social disruption: market logic and social logic; public and private; work and non-work; individual and collective; and IRL (In Real Life) or AFK (Away From Keyboard). These tensions reflect the conflict variable.
 - b. Fake identities, threats, attacks (conflict): Modern challenges to security are posed by the use of fake identities, threats and attacks on SNS such as Facebook (Hoehle, Zhang, & Venkatesh, 2015; Krombholz, Merkl, & Weippl, 2012). This theme reflects the conflict variable.
 - c. National culture has little effect on the relationship between usability constructs and continued intention to use mobile social media applications (Hoehle, Zhang, & Venkatesh, 2015). The culture variable is reflected in this theme.
 - d. Facebook photo sharing especially among adolescent users emerged as a popular activity on Facebook since its launch in 2005, and requires research (Malik, Dhir, & Nieminen, 2015). The culture variable is reflected in this theme.
 - e. As an example of occupational use, certified public accountants tend to never use Facebook, LinkedIn, Twitter, and chat rooms. They prefer traditional communication channels such as written documents and telephone call and electronic mail is used frequently with a few significant differences among gender, age, education level achieved, and number of employees in the firm (Rollins & Lewis, 2012). Culture is reflected in this theme.
 - f. The benefits and dangers of enjoyment of social networking sites were predicted (Turel & Serenko, 2012), but this has become an increasingly important area of research interest on new media. Culture is reflected in this theme.

Overall, these six aspects of social information behavior (SIB) reflect the underlying influence of conflict (examples 1-2) and culture (examples 3-6) on social media and SNS, and suggest six subthemes of SIB for reconceptualising new media.

FUTURE RESEARCH DIRECTIONS

Seven broad thematic areas have emerged from an analysis based on a systematic literature review of research on culture, conflict and Facebook focusing on selected studies. In some themes there are extensive subsections or subtopics associated with them, for example, online communities, and social information behaviour. These clusters suggest that these two areas have attracted much interest and perhaps reflect the most developed aspects of research. Perhaps they signal the potential significance of these themes and subtopics as areas for emphasis which may have implications for the reconceptualization of new media. Next, the implications for online communities and SIB, as two major themes, are discussed in some detail and reference is made to the other five.

In the case of online communities their formation, maintenance and dissolution can influence how new media develop and the trajectories of knowledge that are being developed. Reflection on this observation suggests that both culture and conflict exert considerable influence and are influenced by a focus on online communities on Facebook. In the case of closed communities, there are prospects for using current understandings and new knowledge to study and gain a better grasp of how such online communities are being shaped as cultural phenomena and may function as sites of mediatized conflict. These insights have relevance for users, co-creators of content, and managers and researchers studying new media. However, issues of access, privacy and ethical and practical issues related to insider research can create new, but not insurmountable challenges.

The focus on social information behaviour alerts researchers assessing and studying new media to the complexity and range of issues that have emerged. Again culture and conflict offer contextual groundings for this line of research. For example, issues relating to the potentially serendipitous and disruptive nature of new media, the related benefits and dangers of enjoying social media, and other issues such as privacy, disclosure, fake identities and threats indicate that these variables are likely to play a significant role in how new media are engaged, and are shaped, even as they shape cultural connections and conflict interactions on a platform such as Facebook, the largest SNS.

The influence of social media in changing the way persons connect or reconnect with others, entertain themselves, pursue leisure activities, shop and find jobs is recognized (Yusuf, Al-Banawi, & Rahman Al-Imam, 2014), but several challenges exist which can have implications for the reconceptualization of new media. A review and research agenda for understanding Generation Y and their use of social media (Bolton et al., 2013) acknowledged that prior research on Generation Y's social media use raised more questions than it answered. Bolton et al.'s (2013) critique of such research argued that its primary focus was on the USA and perhaps one or other country, "ignoring other regions with large and fast-growing Generation Y populations where social-media use and its determinants may differ significantly"; tended to "study students whose behaviors may change over their life cycle stages"; relied on "self-reports by different age groups to infer Generation Y's social media use"; and did "not examine the drivers and outcomes of social-media use". These reviewers noted that their paper provided a conceptual framework for considering the antecedents and consequences of Generation Y's social media usage. This chapter argues that one problematic consequence or impact relates to the use of social media in negative ways.

One particularly problematic and negative impact is that social media may be used to perpetuate and promote online threats such as cyber bullying, bullying and victimization. These practices pose risks to children and young people and more generally to persons in workplace settings. These risks include cyber bullying, privacy breaches, reputational damage and assault on personal dignity on SNS, in addition to hazards associated with geo-tagging, facial recognition techniques and the spreading of viruses using social media (Haynes & Robinson, 2015). In critiquing commonly used definitions of risk such as “a situation involving exposure to danger” or “the possibility that something unpleasant or unwelcome will happen”, Haynes and Robinson observed that these examples are “not very specific and need to be pinned down (Pearsall & Hanks, 1999, p. 1602).” Haynes and Robinson (2015, p. 97) offered this definition: “risk is defined as an uncertain event which has an adverse impact on an activity or outcome. Applied here, risk is an event of unknown probability of occurrence involving personal data on an SNS that has a negative impact on that person”. Haynes and Robinson recommended that for regulatory purposes concerned with the management and mitigation of risk, an analysis of the occurrence of risk events and their consequences can provide a basis for evaluating different regulatory approaches. This approach offers a way to reconceptualize treating with cyber bullying and bullying on SNS and via social media.

One consequence of the negative use of new media is workplace bullying. An examination of whether job satisfaction and work-related depression played a role in mediating the relationship between workplace bullying and job satisfaction, and work-related depression, play a role in mediating the relationship between workplace bullying ‘and three forms of employee performance or behaviors: task performance, individual-targeted citizenship behavior (OCB-I), and interpersonal counterproductive work behavior (CWB-P)” in a small developing Caribbean country found that “job satisfaction alone partially mediated the relationship between workplace bullying and task performance, whereas work-related depression alone partially mediated the relationship between workplace bullying and OCB-I. Both job satisfaction and work-related depression partially mediated the relationship between workplace bullying and CWB-P.” (Devonish, 2013).

Another consequence is the impact on children and youth. Using self-report survey data from over 3000 middle and high school students in a Midwest US city, Baker and Pelfrey (2016) explored the effect of experiencing the strains of traditional bullying victimization and cyber bullying victimization on adolescents’ self-reported soft drug use, hard drug use, and weapon carrying behavior among both frequent and infrequent users of social networking sites. The results indicated that cyber bullying victimization and the anticipated strain of feeling unsafe at or on the way to or from school were significantly and positively associated with the three ways of delinquent coping among both sets of social network users (Baker & Pelfrey, 2016). This finding suggests there are similar negative consequences of traditional bullying and cyber bullying via social media and confirms an earlier finding (Lampert & Donoso, 2012). Given this finding of similar negative consequences, it would be useful to explore the impact of strategies used to counteract traditional bullying when applied in new media environments. It raises the possibility of reconceptualizing new media as parallel or complementary vehicles for social support for victims.

Social support affords victims of bullying a recourse to help from family and friends in (77% of on-line cases, or about four out of five children), but the most common responses were solving the problem on one’s own (31%) or hoping the problem would go away (24%) (Livingstone, Haddon, Görzig, & Ólafsson, 2011, p. 71). Interestingly “children who experience more psychological difficulties are more likely to be victims or perpetrators of cyberbullying” (Lampert & Donoso, 2012, p. 146). Despite the acknowledged value of social support in helping bullying victims to cope, there is some inconsistency in what kind of social support is actually helpful and a lack of understanding of why there is inconsistency

(Matsunaga, 2011). Possible theoretical ways of understanding such inconsistency include learning about the extent of victims' positive appraisal, and to a lesser extent, esteem support or network support, and the gap between desired and received support. To date these issues have been studied in the context of post bullying adjustment in a retrospective (recall-based) study of four face-to-face bullying situations (collectively, physical, indirect, material harm, and online) among college students under 20 (Matsunaga, 2011), but not specifically in a separate social media or SNS context using actual *in situ* online bullying experiences. Conceivably, just as cyber bullying and bullying can occur via social media and SNS, bullied victims can also seek support from their online networks to cope with this phenomenon, but the extent to which they do so and the outcomes of such efforts are largely unknown. Some important questions for the reconceptualization of new media include developing an understanding of whether social support provided through social media has the same or different impact and variation in outcomes on bullied victims and bullies.

A third consequence of the use of social media in negative ways is found in social groups in various cultural contexts. Using multilevel analysis of data from four racial/ethnic groups, Williams and Peguero (2013) found that bullying is more frequent among blacks who are higher achievers, but is just as harmful on later achievers among all groups studied. In a study of rural African American youth, where the incidence rates for bullying, victimization and aggressive victimization paralleled other population groups, bullies are often rated as aggressive, hyperactive and manipulative, and are likely to be members of both aggressive and non-aggressive groups and popular and unpopular groups (Estell, Farmer, & Cairns, 2007). Bullies tend to use humiliation, intimidation, and terrorization to target persons and may do so repeatedly and systematically with the intention of inflicting an emotional burden on the victim, and are successful, innovative, informed and trained persons (Altinöz, et al., 2010).

An analysis of European gymnasium students' perceptions of online threats such as cyber bullying, bullying abuse, sexual harassment, revealing of personal information and the sharing of harmful content, indicated that social networks are widely used for social and leisure purposes (Žibėnienė & Brasienė, 2013). In that study, while most young persons thought that they were aware of these threats and knew how to protect themselves, they revealed information that could put them at risk such as their surnames (94.5%), uploaded photos in which their faces are visible (87.2%), identified their school (84.1%) and their real age (72.2%). More boys than girls tended to set their profiles as public and were more likely to receive abusive messages but other studies suggested girls were more likely to be targeted and to report being targeted (Lampert & Donoso, 2012; Livingstone, Haddon & Görzig, 2012). Only 1 in every 5 students would opt not to seek help if their rights were violated. A study of pre-school teachers' perceptions of online risks for EU children found similar results with 85% of the sample being concerned about the revelation of sensitive information, encountering inappropriate sexual content (13%), and cyber bullying (3%) as noted previously (Dönmez, Odabaşı, Yurdakul, Kuzu, & Girgin, 2017; Kabakçı, Odabaşı, & Çoklar, 2008; Odabaşı, Kabakçı, & Çoklar, 2007). Even when there are existing legal and regulatory frameworks the risk persists. It has been recommended that a useful approach stresses the "importance of multi-stakeholder involvement, proportionality of measures, procedural guarantees (such as transparency) and the careful combination of regulatory strategies targeted at illegal as well as harmful conduct and content risks for a balanced protection of minors in social networks" (Lievens, 2011, p. 43).

Another study, this time of Taiwanese 7th graders found that boys compared to girls were more likely to be both bullies and victims (Wei & Lee, 2014). Employing social network analysis Wegge, Vandebosch and Eggermont (2014) found that cyber bullying is a reflection of traditional bullying among adolescents in Europe, may occur mutually, and is more likely to occur in same-gender and same-class contexts.

Using secondary qualitative data, Ephraim (2013) found that children and youth aged 13-30 in Africa are the largest users of social networks. This study, having found that SNS are used in cyber bullying and violence against girls and women, proposes a culture –centered approach that stresses ethical use of these media and respect for the dignity and rights of other users. Based on an in depth survey of 25,000 children in Europe, it was found that, contrary to popular expectations, children were developing the skills to cope with and counteract bullying and sexual exploitation but certain challenges remained and some were still vulnerable (Livingstone, Haddon & Görzig, 2012).

Based on a review of the literature that showed bullying is a group process that is dependent on context (Sentse, Kiuru, Veenstra, & Salmivalli, 2014), researchers used statistical procedures and found that levels of bullying were inversely related to likability among Finnish adolescents in evaluating an anti-bullying program “in grades 7-9 (N = 9,183, M age at wave 1 = 13.96 years; 49.2% boys; M classroom size = 19.47) from 37 intervention and 30 control schools”. Higher levels of bullying were related to lower levels of likability. This effect also held in cases of lower levels of bullying and greater likability after controlling for perceived popularity and gender. Finally, higher levels of bullying predicted higher levels of likability among peers also after controlling for popularity and gender. Social network positions based on peer nominations such as being an isolate or a clique member, for example, often relates to bullying experiences (physical, verbal or relational) (Lin, Wu, Lee, Lin, & Chiang, 2014). These findings suggest that indicators such as likability, perceived popularity, and social position indices are related to social networks and bullying. Thus, if social media are employed in cyber bullying or bullying, it would be interesting to explore whether these influences are impacting social media use or whether social media use are impacting the role of these influencers. Theoretically one might posit the view that social media, when used as tools for cyber bullying and bullying, may be investigated further in the case of Facebook using likability and dislikability metrics. In this vein an interesting issue is whether the indices are related to conflict situations that exist in cyber bullying and bullying, and whether these indices could be used to anticipate, predict and better understand and manage online conflict behaviors.

An investigation into whether adolescents learn to become morally disengaged or practice self-justifying behavior as a result of socialization found that gender, bullying and perceived popularity did not moderate the influence of friends on moral disengagement over time except in early adolescence (Sijtsema, Rambaran, Caravita, & Gini, 2014). The implication of this finding is that by the time persons use social media in conflict situations cyber bullying, gender and perceived popularity may not have influential roles. Adopting a social network perspective to study cyber bullying in classroom-based friendships of young people, investigators found that more cyber bullying occurs in high closeness concentration in offline and online friendship networks but there was less cyber bullying in high global clustering settings (Heirman et al., 2015).

Changing the public behavior of a randomly selected group of social referents, who exert influence over their peers in everyday social interaction, changes their peers’ perceptions of collective norms and their harassment behavior (Paluck, Shepherd, & Smith, 2012). A follow-up study based on network analyses of peer-to-peer influence found that social referent students or students who attract more student attention can be incorporated into anti-bullying programs to spread perceptions of conflict as less socially normative among their peers (Paluck, Shepherd, & Aronow, 2016). This finding confirms an earlier suggestion by other researchers (Mouttapa, Valente, Gallaher, Rohrbach, & Unger, 2004) that when bullying and aggression prevention efforts target highly aggressive students, this may have a positive influence on their friends, in conjunction with assertiveness training in handling aggressive situations.

The other five themes, though not as evenly represented as the foregoing ones discussed, offer possibilities for identifying new areas for research exploration and growth. If the research on comparisons of users, online privacy, approaches to studying uses of social media platforms, organizational members' use of SNS, social business/marketing potential applications across the range of uses and preferences for SNS such as Facebook, appears to be less prevalent, this may signal that these five themes may not be active areas of interest or are understudied areas, or may be exciting new areas to be explored. Asking questions about the current status and future implications of these issues and why they have come to be so, pose several avenues for interrogation of new media. They offer opportunities for exploring taken for granted assumptions about these five themes and critiquing both popular wisdom and scientific inquiry on new media.

Growing interest in incivility in the US and elsewhere (Anderson, Brossard, Scheufele, Xenos, & Ladwig, 2014) is increasingly being associated with new media online discourse and rhetoric. Referring to a world characterised as increasingly volatile, uncertain, complex, and ambiguous (VUCA), International Communication Association President Peng Hwa Ang (2017) appropriated a post-Cold War term to express the view that populist sentiments are reversing the trends began almost 30 years ago in removing barriers and promoting freedom and movement. He noted the work of communication scholars, communicated powerfully, is one way of addressing the VUCA challenge by shining a light and clarifying what is not known in a VUCA world. This can be achieved, not by making issues more difficult to understand or by being unquestioning, for the people and the world they inhabit.

New media have a role to play in defining and shaping the world in which humans communicate. The challenge is to ask the right questions, critiquing assumptions, in searching for new meanings and new interpretations in reconceptualizing new media. The seven themes identified and linked to culture and conflict on Facebook, discussed earlier, offer possible avenues for further research and making sense of how new media are being reconceptualized and how they impact human communication. They also offer further exciting opportunities to understand, embrace and learn more about humanity and what makes communication, despite the presence and affordances of new media, a fundamentally human phenomenon.

CONCLUSION

This chapter explored cultural connections and conflict interactions using research conducted on Facebook. A systematic literature review spanning several databases identified, analysed and discussed seven major themes that present perspectives on the reconceptualization of new media. The emergent findings and discussion offer possibilities for better understanding, challenging and further investigating issues pertaining to culture and conflict on one SNS platform such as Facebook.

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KEY TERMS AND DEFINITIONS

Closed Community: A private group of persons who use social platforms and web-based infrastructure and service and networking or connections to create personal profiles that have restricted access.

Conflict: A situation in which at least two parties have perceived mutually incompatible goals and interests and which can be managed using strategies ranging from integrative or win-win to competitive or win-lose approaches.

Conflict Interactions: Behaviors of parties whose goals and interests are perceived to be mutually incompatible. These interactions may include cognitive (thought), behavioral (action), and affective (feeling) dimensions.

Culture: The characteristic visible and invisible ties that bind its members and which are reflected in the shared assumptions, beliefs, interests, practices, and patterns of behavior.

Facebook: A social networking site that facilitates interactivity and connectivity, immediate and instantaneous content creation and sharing, and supports user updated private and public profiles.

Intercultural Connections: Social relationships facilitated by social media platforms that allow users to match their interests and preferences based on the online profiles they create.

Social Networking Sites (SNS): A term that refers to both networks or web-based infrastructure and services, and networking or connections among users of SNS.

Social Presence: Consists of affective (feeling, emotion, humour, disclosure), interactive (connecting or linking or replying), and cohesive (forms of address, salutations, greetings, and closures fulfilling a social function) components of behavior.

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Chapter 25

Online Self-Disclosure: Opportunities for Enriching Existing Friendships

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ABSTRACT

Due to their audiovisual anonymity and asynchronicity, social media have the potential to enhance self-disclosure, and thereby facilitate closeness among existing friends. In this chapter, the author highlights findings relating to the beneficial social connectedness outcomes that can be linked to online self-disclosure, synthesizes relevant literature that addresses who reaps the most benefits from online self-disclosure, and makes suggestions to direct future research in this area. Theoretical perspectives are identified throughout the chapter that are relevant to understanding the benefits of online self-disclosure, the relation between personal characteristics as predictors of online self-disclosure, and moderating factors of the effect of online self-disclosure on social connectedness. Empirical findings support both social compensation and social enhancement perspectives.

INTRODUCTION

Learning to maintain close relationships is a central developmental task of adolescence and young adulthood. Intimate friendships have implications for psychosocial adjustment and the quality of adult relationships. A lack of close friends is associated with feelings of loneliness, alienation, depression, and low self-esteem (Baumeister & Leary, 1995; Buhrmester, 1990; Jose, Ryan, & Pryor, 2012; Marion, Laursen, Zettergren, & Bergman, 2013). Among adolescents and young adults, a key component of intimate interpersonal relationships is self-disclosure, or the sharing of personally relevant thoughts, feelings, and experiences (Bauminger, Finzi-Dottan, Chaston, & Har-Even, 2008). It is essential then to explore venues that facilitate self-disclosure among friends.

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Adolescents and young adults are increasingly turning to social media to connect with others (Davis, 2012; Reich, Subrahmanyam, & Espinoza, 2012). Social media are online platforms that allow users to create a profile about oneself, as well as connect and exchange information with other members (Boyd & Ellison, 2007; Henderson, Snyder, & Beale, 2013). Social media includes, but is not limited to, social networking sites (e.g., Facebook, Instagram, and SnapChat), instant messaging services (e.g., Facebook Messenger), text messaging, blogging sites (e.g., Twitter, and Tumblr), and multiplayer online games (e.g., Minecraft, and Fortnite) (Ryan, Allen, Gray, & McInerney, 2017). According to a Pew Research Center survey of Americans in 2018, approximately 88% of 18- to 29-year-olds indicated they use some form of social networking, and a large proportion of these social media users visit the site daily (74% of Facebook users, 82% of Snapchat users, and 81% of Instagram users) (Smith & Anderson, 2018).

Social media has the potential to enhance self-disclosure, and thus facilitate closeness among existing friends and ultimately intimacy development. In an attempt to evaluate the potential of the virtual world for positive psychosocial development, the current chapter: summarizes the findings related to the beneficial social connectedness outcomes that can be linked to social media use in general and specifically to online self-disclosure; synthesizes relevant literature that addresses who reaps the most benefits from online self-disclosure; and provides suggestions to direct future research in this area. Although the focus of the chapter is on the benefits of online self-disclosure, in order to provide an unbiased portrait of online interactions, the author also highlights some of the drawbacks of sharing personal information online in general. Finally, considerations when using social media and posting information online are discussed, which can influence users' behaviours or be included in conversations with youth by parents, educators, and clinicians.

BACKGROUND

According to the interpersonal process model of intimacy, intimacy is the product of a transactional, interpersonal process in which two fundamental components of intimacy are self-disclosure and partner responsiveness (Laurenceau, Barrett, & Pietromonaco, 1998; Reis & Patrick, 1996; Reis & Shaver, 1988). According to this perspective, intimacy develops on an interaction-by-interaction basis, where an individual discloses personally relevant information, thoughts and feelings to a partner, and receives a response, which is interpreted as the partner's understanding, validating, and caring (Reis & Patrick, 1996). Mutual disclosure leads to greater liking and feelings of closeness and contributes to healthy social development (Chan & Lee, 2014; Sprecher, Treger, Wondra, Hilaire, & Wallpe, 2013). Over time, individuals interpret and assimilate their experiences in these interactions, and form a general perception of the degree to which the friendship is intimate and meaningful (Reis, 1994). Recently, adolescents and young adults have turned to the Internet to help meet their need for self-disclosure.

When considering social media, there are numerous venues for sharing information about oneself with others, including private and public channels. Instant messaging systems provide a more private mode of communication, where messages (pictures, text, web links, and so on) are shared only with the recipient(s). On the other hand, social networking sites are a relatively public channel for which users can share information with their social network, including pictures (which can be tagged with the individual's identity), videos, web links, status updates, and a profile of the user him/herself (which may include user demographics, likes/dislikes, contact information, and educational/work information). Users also can respond to other members' posts through posting comments and/or sending a virtual like, which is

shared with the poster's social network. Information such as age, religion, political views, and sexual preference are often viewed as non-private matters among young adolescents and are commonly shared on social network profiles (Livingstone, 2008). Although users have relative control over the information shared with members, with the option of presenting a false or real self, most emerging adults present their real self (Michikyan, Dennis, & Subrahmanyam, 2015).

Although social media may be propitious for friendships, face-to-face interactions seem to be preferred when interacting with existing friends. While self-disclosure is typically greater online than offline among strangers (Antheunis, Valkenburg, & Peter, 2007; Yang, Yang, & Chiou, 2010), adolescents and young adults report greater self-disclosure with friends in person compared to online exchanges (Huang & Yang, 2013; Schiffrin, Eldeman, Falkenstein, & Stewart, 2010; Valkenburg, Sumter, & Peter, 2011). Casual exchanges online with friends (e.g., discussing homework, offline plans, jokes, interests, funny videos, and events from the day) are three times more common than intimate disclosures (e.g., personal problems, opinions, and exactly what they are feeling) (Davis, 2012). Although self-disclosure may be less frequent online compared to offline, meaningful conversations between friends do still occur online. Indeed, users turn to social media to discuss sensitive topics or personal issues individuals find hard to discuss face-to-face with friends (Schouten, Valkenburg, & Peter, 2007; Yang et al., 2010). In interviews, adolescents indicated instant messaging their personal problems with their friends (Davis, 2012).

When considering the social consequences of using social media in general, two opposing hypotheses have been formulated: the displacement hypothesis and the stimulation hypothesis (Kraut et al., 1998; Valkenburg & Peter, 2011). The displacement hypothesis states that social media hinders the quality of existing friendships because online interactions, which are considered superficial, displace time spent with friends and more meaningful interactions (Valkenburg & Peter, 2011). Prior to the turn of the century, much of the research examining outcomes associated with social media use has reported negative consequences, such as elevated levels of loneliness, social isolation, depression, and stress (Kraut et al., 1998; Nie & Erbring, 2000). In contrast, the stimulation hypothesis postulates that social media users primarily spend time online with existing friends, and that these interactions facilitate the maintenance and closeness of these relationships (Valkenburg & Peter, 2011). More recently, social media use predominantly has been associated with positive social consequences. Specifically, greater use is related to enhanced friendship quality (Blais, Craig, Pepler, & Connolly, 2008; Desjarlais & Willoughby, 2010; Subrahmanyam & Šmahel, 2011; Valkenburg & Peter, 2011), social connectedness (Bessiere, Kiesler, Kraut, & Boneva, 2008), social support (Wolak, Mitchell, & Finkelhor, 2003), number of friends (Antheunis et al., 2007), diversity of friends (Koutamanis, Vossen, Peter, & Valkenburg, 2013), and social capital (Antheunis, Schouten, & Krahmer, 2016), in addition to decreased feelings of loneliness (Deters & Mehl, 2013; Pittman & Reich, 2016).

Only a few recent studies reported negative effects of online social interaction. Some researchers suggest that already lonely and depressed individuals are drawn to the Internet rather than engagement in social media causing loneliness and depression (Amichai-Hamburger & Ben-Artzi, 2003; Caplan, 2003; Sun et al., 2005; van den Eijnden, Meerkerk, Vermulst, Spijkerman, & Engels, 2008). In contrast, it has also been argued that the time spent communicating online is related to increased loneliness because online communication is essentially a solitary activity, and although users are in contact with others, they are still physically alone (Stepanikova, Nie, & He, 2010; Turkle, 2011). And others indicate that the relation between loneliness and social media use may be related to its purpose of use. One study revealed that adolescents who actively used Facebook to compensate for poor social skills showed increases in

loneliness, whereas adolescents who used Facebook to supplement offline interactions exhibited reductions in loneliness (Teppers, Luyckx, Klimstra, & Goossens, 2014).

The shift from negative to primarily positive social consequences of social media use over the years of research can be explained by the drastic increase in Internet use for social purposes among adolescents and young adults since the initial studies. Kraut and colleagues (1998) examined social media use among first time Internet users, and thus none of the participants' existing friends were online at the time. As such, time spent chatting online with unacquainted partners detracted quality time from interactions with existing offline friends. More recently, however, much of adolescents' social media friends consist of people who they interact with in the real world (Reich et al., 2012). Adolescents today embrace social media as a tool for socialization, using it predominantly to supplement rather than replace offline interactions with friends (Valkenburg & Peter, 2011). There is consensus among researchers that the positive social outcomes associated with today's social media use is a result of self-disclosure. Therefore, the next section will focus on the benefits associated with personal disclosure via social media and consider who may benefit most from online self-disclosure.

BENEFITS OF ONLINE SELF-DISCLOSURE

Much attention has been devoted to understanding why social media is attractive for disclosing personal information. According to Valkenburg and Peter's (2009b) Internet-enhanced self-disclosure hypothesis, online communication creates a comfortable context that facilitates self-disclosure, which in turn enhances the quality of friendships. Specifically, the anonymity and asynchronization afforded by social media enhance controllability of self-disclosure. When communicating with friends, users are afforded opportunities for audiovisual anonymity, which refers to the lack or reduction of nonverbal (visual or auditory) cues conveyed (Valkenburg & Peter, 2011). Users can choose the richness of the cues they wish to convey when interacting online, including the use of static images, video-conferencing, and voice messaging. In most social platforms, users also can reflect on and revise what they type before they send their message (Walther, 2007). Even with more synchronous conversations, such as instant messaging, users are still able to pause before pressing the send button.

For the most part, online self-disclosure does enrich friendships. Empirical research shows increased online self-disclosure is related to increases regarding closeness to friends (Desjarlais & Joseph, 2017; Pornsakulvanich, Haridakis, & Rubin, 2008; Valkenburg & Peter, 2009a), perceived support (Iacovelli & Johnson, 2012), social capital (Ellison, Steinfield, & Lampe, 2007), trust, understanding, commitment (Yum & Hara, 2005), and well-being (Joseph, Desjarlais, & Herceg, 2019; Valkenburg & Peter, 2007; Valkenburg et al., 2011). Furthermore, online self-disclosure has been positively related to offline self-disclosure, which in turn was associated with enhanced quality of communication among existing friends (Desjarlais & Joseph, 2017). Although empirical evidence supports the Internet-enhanced self-disclosure hypothesis, Valkenburg and Peter (2009b) suggest that the effects of online self-disclosure may be contingent upon situational and dispositional factors. Therefore, the question arose: who reaps the greatest benefits from online self-disclosure?

Within the literature, there are two main methods to assess factors that may influence online self-disclosure effects, including identifying and testing: (a) antecedents to online self-disclosure, and (b) moderating variables in the relation between online self-disclosure and friendship quality. First, since online self-disclosure is associated with positive outcomes for users, researchers argue that identifying

characteristics of individuals who predominantly engage in online self-disclosure sheds light on whose friendships benefit the most from intimate online interactions (Valkenburg & Peter, 2009b). Within the literature, age, gender, and social competence have received much attention as predictors of online self-disclosure. In terms of age and gender, cross-sectional and longitudinal studies support that older adolescents disclose more information online compared to younger adolescents (Bonetti, Campbell & Gilmore, 2010; Bryce & Fraser, 2014), and typically girls disclose more than boys (Peter, Valkenburg, & Schouten, 2005; Punyanunt-Carter, 2006; Schouten et al., 2007; Valkenburg et al., 2011). Although these findings suggest greater benefits for both older and female adolescents, the author suggests that differences in self-disclosure are attributable to developmental differences among adolescents. In offline social situations, older adolescents disclose more personal information to friends than their younger peers (Bauminger et al., 2008; Schouten et al., 2007). In addition, adolescent girls report engaging in discussion and personal disclosure as a means of developing intimacy with their friends, whereas adolescent boys typically develop and sustain friendships through shared activities and interests (Mathur & Berndt, 2006). Since greater offline self-disclosure is associated with heightened online self-disclosure (Chiou & Wan, 2006; Schouten et al., 2007), online interactions may simply mimic offline interactions rather than being especially advantageous for older or female adolescents.

Next, the audiovisual anonymity and asynchronicity characteristics of social media can be particularly beneficial for adolescents who exhibit shyness and anxiety in offline interactions (Chan, 2011). In accordance, two opposing hypotheses were established based on differences in the relationship between social anxiety and online self-disclosure. The social compensation hypothesis postulates that a fear of evaluation may lead socially anxious individuals to turn to the Internet to communicate with peers to a greater extent than those with lower levels of social anxiety, resulting in greater positive outcomes for friendships among socially anxious users (Amichai-Hamburger, 2007; Kraut et al., 2002; Valkenburg, Peter, & Schouten, 2006). The reduced audiovisual cues associated with social media may alleviate inhibitions and shyness individuals typically experience in face-to-face interactions, and thus adolescents can more easily disclose themselves online, which enriches friendships. Indeed, people with higher levels of social anxiety were more likely to report using Facebook to compensate for personal inadequacies (Bodroža & Jovanović, 2016), perceive online communication as valuable for self-disclosure (Valkenburg & Peter, 2007; Weidman et al., 2012), and exhibit a greater decrease on average in social anxiety in online interactions (Yen et al., 2012) compared to less socially anxious peers. Similarly, introverted adolescents more frequently turned to social media to compensate for lacking social skills than extroverted individuals, and adopting this social compensation motive was associated with increased online self-disclosure (Peter et al., 2005; Schouten et al., 2007). Furthermore, people reporting higher social anxiety (Bonetti et al., 2010; Wang, Jackson, & Zhang, 2011; Weidman et al., 2012) or lower self-esteem (Hollenbaugh & Ferris, 2014) reported greater online self-disclosure.

In contrast, those who already have strong social skills may consider social-based technologies as another venue to interact with friends. The rich-get-richer (aka social enhancement) hypothesis proposes that adolescents who already have strong social skills in real life use online communication platforms as an additional method to interact with others, which provides them with additional opportunities to engage in meaningful interactions with existing friends and thereby greater social benefits than their less socially competent peers (Schouten et al., 2007; Valkenburg et al., 2006). Empirical evidence also supports this perspective. Findings from a cross-sectional survey show that increases in loneliness are related to decreases in online self-disclosure (Leung, 2002). Similarly, extroverted individuals who used social media to make connections disclosed more intimate personal information than others (Hollenbaugh

& Ferris, 2014), leading to increases in emotional, social and physical support from close online relationships (Weiqin, Campbell, Kimpton, Wozencroft, & Orel, 2016). Furthermore, longitudinal research supports a reciprocal relationship between adolescents' ability to initiate offline relationships and online self-disclosure with a close friend (Koutamanis et al., 2013). In other words, those with already strong social skills disclose more online which further strengthens their social skills.

It should be noted that some other studies have provided empirical evidence for both social compensation and enhancement perspectives, or no evidence for either perspective. For example, when considering curvilinear associations, the relationship between extroversion and frequency of leaving comments (a form of online self-disclosure) appeared as a U-shaped curve (Wang, Lv, & Zhang, 2018). This means that both low and high levels of extroversion engaged in heightened levels of self-disclosure, supporting both perspectives. On the other hand, researchers have reported no association between social anxiety and the following: Facebook self-disclosure (Green, Wilhelmsen, Wilmots, Dodd, & Quinn, 2016; Liu, Ang, & Lwin, 2013; McCord, Rodebaugh, & Levinson, 2014; Shaw, Timpano, Tran, & Joormann, 2015), number of status updates (Deters, Mehl, & Eid, 2016; Weidman & Levinson, 2015), and perceptions of Facebook social support (Indian & Grieve, 2014). Potentially, these studies may have missed important relationships by examining only linear relationships. In conclusion, there is empirical support for both the social compensation and rich-get-richer perspectives when considering antecedents for increased online self-disclosure.

Instead of examining antecedents for online self-disclosure, it has been argued that identification of whose friendships benefit most from intimate online interactions requires exploration of moderating variables (Desjarlais & Willoughby, 2010; Valkenburg & Peter, 2009b). In other words, research needs to shed light on the group of individuals for whom the relationship between online self-disclosure and closeness to friends, for example, is strongest. The few researchers who have adopted this perspective in the context of online self-disclosure have focused on people who struggle to make social connections, including social anxiety and self-esteem.

Desjarlais and Willoughby (2010) suggest that support for the social compensation hypothesis and the rich-get-richer hypothesis stems from identifying whether the positive association between social media use and friendship quality is stronger for adolescents with strong social skills (social enhancement) or are socially inept (social compensation). Therefore, they extended the frameworks of the social compensation and rich-get-richer hypotheses. In effect, the social compensation hypothesis postulates that adolescents with high levels of social anxiety who engage in online communication exhibit enriched friendships compared to their highly anxious peers who do not chat with their friends online. Conversely, the rich-get-richer hypothesis assumes that, as a result of strong social skills, less socially anxious adolescents who communicated with friends online exhibit more positive friendships compared to less socially anxious peers who engage less in online communication.

To directly test the reframed compensation and enhancement perspectives, Desjarlais and Willoughby (2010) examined whether the relation between engaging in online chat and friendship quality was dependent on social anxiety among adolescent girls and boys. Chatting online was associated with enhanced levels of friendship quality for adolescent girls, regardless of their level of social anxiety; which supported both the social compensation and rich-get-richer hypotheses. However, adolescent boys with higher levels of social anxiety reported more positive friendship quality if they engaged in online communication than if they did not, whereas, at low levels of social anxiety, engaging in online communication had no effect on friendship quality; supporting only the social compensation hypothesis (Desjarlais & Willoughby, 2010). The findings suggest that opportunities for self-disclosure benefit adolescent girls, socially anxious or

not; whereas socially anxious adolescent boys may find it especially difficult to engage in meaningful discussions with friends and thus benefit most from the comfort of communicating online.

Social media may also be especially beneficial for people with low self-esteem. Individuals with low self-esteem possess a relatively low liking for themselves and are more socially anxious and introverted than those with high self-esteem (Leary & MacDonald, 2003). Although individuals with low self-esteem desire social connection (Anthony, Wood, & Holmes, 2007), they tend to have lower quality relationships and self-disclose less than their peers with higher self-esteem (Gaucher et al., 2012; Wood, Hogle, & McClellan, 2009). Similar to those with high social anxiety, sharing thoughts and feelings online may be more comfortable and less embarrassing for those with low self-esteem.

Forest and Wood (2012) compared the relationship between online self-disclosure and social rewards between young adults with high versus low self-esteem. In one of their experiments, undergraduate Facebook users provided their 10 most recent status updates, which were rated by three external blind coders for positivity and negativity. They also indicated the number of likes and the number of different people who commented on each of the posts (which were combined as an indicator of social reward). The effect of valence of posts on social reward did depend on participants' level of self-esteem. The more positivity participants with low self-esteem expressed in their status updates, the more comments/likes they received from their Facebook friends. In contrast, participants with high self-esteem received more comments/likes from friends for their more negative updates compared to positive posts. According to Forest and Wood (2012), while friends may have been providing encouragement and support when individuals with high self-esteem seemed down, friends of users with low self-esteem may respond more for positive over negative posts in order to encourage this atypical behavior. Since likes and comments from friends and followers can indicate affirmation and support for another (Metzler & Scheithauer, 2017; Zhang, 2017), social media does have the potential to benefit adolescents with both low and high self-esteem, just in different situational contexts. However, given that negative updates are more common for people with low self-esteem, they may be less likely to reap the benefits social media has to offer in comparison to those with high self-esteem (Forest & Wood, 2012).

Empirical support for the social compensation hypothesis also emerges from research that examines whether social competence characteristics moderate the relationship between social media use in general (rather than self-disclosure specifically) and positive social outcomes. Socially anxious social media users benefit more in terms of connectedness with unfamiliar partners (Lundy & Drouin, 2016) and subjective well-being (Indian & Grieve, 2014) compared to those low in social anxiety. Young adults with lower self-esteem in particular benefit from Facebook use for the formation of casual relationships (Ellison et al., 2007; Steinfield, Ellison, & Lampe, 2008). Similarly, at low levels of social competence, more text messaging on the previous day was associated with less current day stress; whereas, there was no association between text-messaging and stress at high levels of social competence (Ruppel, Burke, Cherney, & Dinsmore, 2017).

Overall, there is mixed support for the social compensation and rich-get-richer perspectives when considering predictors of online self-disclosure. On the other hand, there is substantial support for the social compensation hypothesis when examining social competence characteristics of social media users as moderators for the relationship between online self-disclosure and social consequences. Adolescents and young adults with social anxieties or weak social skills, on average, exhibit more positive friendship quality the more they disclose personal information to friends online or compared to less socially anxious peers. Despite the increasing attention researchers have devoted to understanding the effects of

social media use in general, and for online self-disclosure specifically, social media research is still in its infancy. As such, suggestions for future research are provided in the next section.

DIRECTIONS FOR FUTURE RESEARCH

Although knowledge pertaining to the social effects of social media use has rapidly grown, there are areas that still require additional attention. First, research on the social compensation perspective primarily has focused on those who exhibit difficulties in social situations, including social anxiety, low self-esteem, and loneliness. Given the centrality of self-disclosure to friendship quality, it is plausible that the benefits of online self-disclosure may extend to anyone who has limited opportunities for intimate discussions offline. In addition to dispositional traits, stress, school commitments, work schedules, and home responsibilities also may limit opportunities young adults have to spend with their friends, and thereby strain existing friendships. Since social media is used to supplement rather than replace offline interactions with friends (Valkenburg & Peter, 2011), online self-disclosure may not only compensate for those who struggle in social situations, but also for those who struggle to find time to arrange in person interactions with friends. Future research is required to assess whether friendships are better maintained in the latter situation if individuals engage more in online self-disclosure.

Second, most support for the social compensation hypothesis has been from cross-sectional studies, and of the few longitudinal studies included most only followed participants for a year (e.g., Valkenburg et al., 2011). There is an obvious call for more longitudinal research to more fully understanding the long-term consequences of social media use for adolescents and young adults. Although empirical evidence supports that social benefits are accrued from online self-disclosure for socially anxious individuals, these benefits appear to be relatively small. For example, engaging in online chat accounted for 3% of the variance in friendship quality whereas social anxiety accounted for 16% of the variance (Desjarlais & Willoughby, 2010). However, there is the potential that benefits may accumulate over time for those with high social anxiety. Continued use of social media may provide those with high social anxiety with opportunities to make meaningful connections with friends and practice social skills they otherwise may have missed out on because of their tendency to shy away from social situations. The added self-disclosure moments may eventually lessen the gap in the quality of friendships between socially anxious and socially competent adolescents over time, through increased meaningful interactions and/or practice of social skills. Overall, online communication does influence offline social competence (Desjarlais & Joseph, 2017; Koutamanis et al., 2013), and this may be especially beneficial for those with low social competence.

On the other hand, there is concern that the control social media provides over self-disclosure could severely impact face-to-face interactions in the long-term (Turkle, 2011). Although in the short-term social media appears beneficial for friendships, heavy social media users may engage in less and less face-to-face interactions over time, which may be particularly damaging for those with already weak friendships or social skills. Using path analysis, Kim, LaRose, and Peng (2009) showed that young adults who were lonely or with deficient social skills adopted a stronger preference for online interaction, which in turn was related to compulsive or problematic Internet use. Also, problematic Internet use resulted in negative life outcomes (e.g., harming significant interpersonal relationships), which led to more loneliness. If social media use begins during pre-adolescence, then many interactions with friends will occur in a virtual space during a critical period of social development. Opportunities to develop interpersonal

competence (e.g., initiating relationships, asserting displeasure with others' actions, self-disclosure of personal information with the presence of audiovisual cues, and managing interpersonal conflict) may be impeded, which could have detrimental effects when adolescents grow up. Currently, adolescents are expressing challenges for carrying on a synchronous conversation (Turkle, 2011). Therefore, longitudinal studies are required to identify the positive and negative effects of adolescents' online self-disclosure for their adult relationships.

DRAWBACKS OF ONLINE SELF-DISCLOSURE

When considering the effects of online self-disclosure between existing friends specifically, research emphasizes opportunities for adolescents and young adults. However, considering that disclosures on social networking sites, such as Facebook or Instagram, reach beyond the user's close social network, the sharing of personal information can be risky. Therefore, the purpose of the current section is to highlight the literature regarding drawbacks to sharing personal information on social networking sites so readers have enough information to make an informed decision (or can provide advice to others) regarding what they post on public channels.

Deciding what to share on social networking sites comes with its challenges. As a consequence of the low source anonymity (i.e., information can be attributed to a specific individual) in a relatively public context consisting of multiple audiences (i.e., friends, family members, relatives, colleagues, acquaintances), social network users typically are cautious about how they present themselves (Marder, Joinson, Shankar, & Houghton, 2016). According to the 'chilling effect', because of the high surveillance on social networking sites, users carefully manage their online self to meet perceived expectations of their social network (Marwick & boyd, 2011). This often includes users holding back to avoid an undesirable impression (Marwick & boyd, 2011). Indeed, youths admit to self-censorship of posts (Das & Kramer, 2013; Xie & Kang, 2015), untagging their identify from undesirable photos uploaded and tagged by others (Lang & Barton, 2015), altering posts to impress others (Chua & Chang, 2016), and refrain altogether from certain topics of conversation (Marwick & boyd, 2011). The presence of a diverse Facebook network is related to greater online tension (Binder, Howes, & Sutcliffe, 2009), posting regret (Xie & Kang, 2015), and presenting a desirable rather than completely true portrayal of oneself (Chua & Chang, 2016). This may have negative implications for adolescents' developing self-concept (Reid, 1998).

In addition, when personal information is accessible by people or groups other than the intended audience, there is the potential and real risk of victimization. Greater disclosure increases chances of identity theft, trafficking, cyber stalking, and privacy invasion (Hasebrink, Livingstone, Haddon, & Olafsson, 2009; Li, Lin, & Wang, 2015). In one study of online bullying, 72% of adolescent respondents experienced at least one incident in the past year (Juvonen & Gross, 2008). Furthermore, one's postings can be incriminating, sometimes resulting in social or psychological risks. Posting stories about engagement in risky behaviors, including underage drinking, drug experiences, and involvement in illegal activities, can result in school suspensions or criminal charges (Peluchette & Karl, 2008). In addition, conflicts with parents (Youn, 2005), declines for job offers from employers (Schultz, Koehler, Philippe, & Coronel, 2015), and feelings of jealousy in response to ambiguous information posted by a romantic partner (Muise, Christofides, & Desmarais, 2009) have occurred from information shared on social media. Finally, users have experienced regret for posting about sensitive topics, lies, and personal secrets on social networking sites (Wang et al., 2011b), and in an attempt to rectify the situation

have deleted pictures or comments, or posted fake information (Das & Kramer, 2013). People may not think about the consequences of what they post or how the posts will be perceived by the target audience, are emotional when posting, or consider that posts may be seen by unintended audiences (Wang et al., 2011b). Therefore, while posting personal information may facilitate connections with friends, at the same time the information has the potential to be socially and psychologically damaging if used in unintended ways by unintended recipients.

RECOMMENDATIONS

In order to experience benefits associated with online connections, one must share information with friends. It is important then for users, parents, educators, clinicians, and policymakers, to consider the following to promote healthy use of social media. First, social media provides opportunities for those with low social competence to interact with friends that they may have opted out of otherwise. Youth who struggle in social situations and turn to social media can be encouraged to share information about themselves with friends through private (safer) channels in attempt to enrich social skills and intimacy development. At the same time, however, it is imperative to acknowledge the limitations of the benefits associated with online self-disclosure. The literature suggests small effects for connectedness between friends, even for those who struggle in real life social situations. And although online communication has the potential to afford users with opportunities to practice social skills (Koutamanis et al., 2013), online interactions tend to be disjointed from real life (Davis, 2012) and there is no evidence for long-term improvements in social competence. Thus, while online disclosure can facilitate social situations it not should replace key real-life socialization. Furthermore, heavy social media use can impede other areas of life that are also essential for psychosocial development, including sleep (Tavernier & Willoughby, 2014), family connection (Padilla-Walker, Coyne, & Fraser, 2012), and academic success (Jacobsen & Forste, 2011). Youths or parents can monitor social media use and set limits on times and contexts appropriate for use.

Second, considerations of the benefits associated with online self-disclosure must be paired with acknowledgement of the potential risks. Encouraging users to consider privacy settings, appropriate channels for sharing personal information (i.e., private over public channels), and thinking about the consequence about what they post prior to sharing may mitigate the risk of online self-disclosure. Adolescents and adults who are knowledgeable of the consequences of disclosing online are less likely to share personal information and more likely to protect their privacy (Christofides, Muise, & Desmarais, 2012).

CONCLUSION

Level of social competence, in itself or that which stems from social anxiety, self-esteem, or loneliness, does predict online self-disclosure as well as changes in the level of benefit experienced by users when disclosing online. People who struggle with offline interactions tend to exhibit the greatest benefits from social media use and online self-disclosure for social connections. Audiovisual anonymity and asynchronous conversation style afforded by social media appear to create a comfortable environment for those experiencing social awkwardness or discomfort. However, it should be noted that although greater benefits are observed for those struggling in social situations, online self-disclosure does not completely

dissolve differences observed in ratings of friendship quality between socially competent and socially anxious individuals. Instead, socially anxious individuals exhibit less poor friendships compared to those more socially competent when using social media. In conclusion, social media should not be perceived as the solution for those struggling with face-to-face social interactions, but rather as a potential aid that produces some short-term benefits for interpersonal relationships. This recommendation, however, is cautioned as the opportunities afforded by online disclosure for relationship development are paired with potential and real social and psychological risks when personal information is used in an unintended fashion or seen by unintended audiences.

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KEY TERMS AND DEFINITIONS

Antecedent Variable: An independent variable that precedes other independent variables in time. It comes earlier in an explanation or chain of causal links.

Asynchronicity: The exchanges of messages intermittently rather than in real-time. Delays between receiving and sending messages can occur.

Audiovisual Anonymity: A lack or reduction of nonverbal (visual or auditory) cues conveyed during a conversation with one or more partners.

Moderating Variables: A third variable that affects the strength of the relationship between two or more variables.

Online Communication: The use of social media to send messages to other users.

Online Self-Disclosure: The sharing of intimate information about the self on social media.

Self-Disclosure: The sharing of personally relevant thoughts, feelings, and experiences.

Social Media: Online platforms that permit users to create a profile, as well as connect and exchange information about oneself with other members. Examples include social networking sites, instant messaging services, blogging sites, and multiplayer online games.

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Chapter 26

Trial by Social Media: How Do You Find the Jury, Guilty or Not Guilty?

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ABSTRACT

Social media makes it easier than ever to access information and opinions associated with criminal proceedings and viewing or discussing these pre-trial could reduce juror impartiality. This study explored whether viewing social media comments influenced mock juror verdicts. Seventy-two participants formed 12 six-person 'mock juries'. All participants received information regarding a murder trial. Nine groups were exposed to social media comments, manipulated to be negative, positive or neutral towards the defendant. The remaining three groups only received trial information (control condition). Results showed that prior to group discussion, exposure to negatively-biased comments significantly increased the number of guilty verdicts, however these effects disappeared after group discussion. Therefore, although jurors may be unable to remain impartial before a trial, jury discussion can remove these prejudices, supporting previous group research. Further research is suggested where participants interact actively with social media, rather than passively viewing comments.

INTRODUCTION

The rapid growth in the use of the internet and social media have made it easier to gain access to information and opinions relating to the people involved in and the circumstances of legal proceedings. The influence of pre-trial publicity via traditional mass media has been thoroughly researched (e.g. Studebaker & Penrod, 1997), however, there is less research focusing on the influence of social media. Information is now instantly accessible and on a global scale, often making it difficult to avoid; indeed Bakhshay & Haney (2018) report on the difficulty finding jurors who have not been exposed to potentially biased extra-legal information.

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The Role of the Jury

In the UK, juries are made up of twelve individuals aged between 18 and 70 selected randomly from the electoral register and their role is to arrive at a verdict on the charge facing the defendant by considering questions of fact and applying the law to these facts (Herring, 2018). This random selection is intended to ensure that the twelve members of the jury represent a wide range of individuals in society. Every individual who is charged with a criminal offence within the European Union has the right to a fair trial by an impartial jury, under the Human Rights Act (1998). An impartial juror is free from bias and prejudice and is free from the influence of knowledge acquired outside of the courtroom (Surette, 1998). Pre-trial publicity surrounding criminal investigations can potentially destroy a defendant's rights to a fair trial and if a court decides that the jury is prejudiced due to exposure to pre-trial publicity, proceedings may be adjourned or there may be a re-trial. Jurors are instructed that they are to decide the case based solely on the evidence presented within the courtroom, and that they must not conduct any independent research or discuss the case with any other person outside of the courtroom until deliberations are complete (Judicial Conference Committee, 2012). Mock jury studies involve participants acting as jurors and are used to research aspects of the judicial system where it is not possible or ethical to conduct research using jurors involved in real trials. Although mock jury studies have contributed much to the understanding of the judicial system, they have received some criticism relating to low ecological validity (O'Connell, 1988). However, a recent review argues that they can produce valid and reliable findings (Bornstein, Golding, Neuschatz, Kimbrough, Reed, Magyarics, & Luecht, 2017).

Pre-trial Publicity: Negative and Positive

Pre-trial publicity can adversely influence the juror decision making process in both positive (pro-defendant) and negative (anti-defendant) ways (Fein, McCloskey & Tomlinson, 1997). Moran & Cutler (1991) found that the greater the amount of publicity, the greater the tendency of jurors to find the defendant guilty, regardless of whether publicity was negative or positive. The majority of research explores the effects that negative pre-trial publicity can have on juror decision making and highlights ways in which information is portrayed as anti-defendant and incriminating (Fein, Morgan, Norton & Sommers, 1997). Positive pre-trial publicity generally occurs less frequently than negative, but occurs more often in high profile cases in which the defendant is wealthy and/or well known to the public (e.g., Martha Stewart as cited in Ruva & McEvoy, 2008). Ruva (2010) found that people pay more attention to negative information compared to positive information and relate this to the negativity bias identified in social psychology (Baron & Branscombe, 2016). Steblay, Besirevic, Fulero and Jimenez-Lorente (1999) conducted a meta-analytic review of 44 empirical studies and found that participants exposed to negative pre-trial publicity were significantly more likely to give guilty verdicts compared to those not exposed to this pre-trial publicity. Additionally, Ruva, McEvoy & Bryant (2007) found that exposure to negative pre-trial publicity significantly affected the number of guilty verdicts, and also the sentence length awarded and perceptions of defendant credibility. While Ruva, Guenther & Yarbrough (2011) found that mock jurors exposed to positive pre-trial publicity were significantly more likely to vote not guilty and rate the defendant as more credible.

Jacquín & Hodges (2007) conducted mock juror research using the murder investigation of Andrea Yates, who in 2001 was found guilty of the murder of her five children. Yates was suffering from severe post-partum psychosis when she systematically drowned her five children. The researchers provided

participants with either sympathetic (positive) or unsympathetic (negative) media about the murder and found that those who were exposed to unsympathetic media were significantly more likely to convict Yates of murder, compared to those who received no media, unbiased media or sympathetic media. However, exposure to media about this high-profile case prior to the experiment could have confounded the results and also only traditional media were used, not social media.

Psychological processes related to decision-making are important to consider. It has been reported that a third of jurors consciously or subconsciously decide on a verdict before the opening arguments of a trial, and consequently this bias affects how subsequent evidence is processed (Carlson & Russo, 2001). Social psychological research has shown that first impressions of people are formed as quickly as one-tenth of a second (Willis & Todorov, 2006) suggesting that exposure to negative pre-trial publicity can lead to rapid formations of negative impressions of the defendant. Within a criminal trial, the prosecution are required to present their case against the defendant first. The defence subsequently presents any contrary evidence or provides arguments to counter the evidence presented by the prosecution. The trial concludes with the closing arguments at which point the prosecution will present after the defence have addressed the court. Cognitive psychology has demonstrated that information we receive first and last are much better remembered, compared to information presented in between these. Drawing on an understanding of these so-called 'primacy' and 'recency' effects, jurors may be able to remember more information presented at the beginning and at the conclusion of the trial, that is, the evidence and information of the prosecution.

Pre-trial social media comments are often the first sources of information available to jurors and details can be magnified by retweets and likes. The primacy effect explains that information we receive first strongly influences our views and perceptions, which can lead to a confirmation bias amongst those involved in a trial (Baron & Branscombe, 2016). A confirmation bias occurs when information consistent with a person's belief is sought, and consequently information supporting the other side of the argument is disregarded. In terms of negative pre-trial publicity, this means that information supporting the defendants' guilt is favoured over information suggesting innocence (Rassin, Eerland & Kuijpers, 2010). Ruva et al. (2011) found that jurors exposed to pre-trial publicity (both positive and negative) distorted witness testimony in the direction consistent with the pre-trial publicity bias. Hope, Memon & McGeorge (2004) found that jurors exposed to negative pre-trial publicity reported significantly higher pre-decisional distortion in support of the prosecution, resulting in an increased incidence of guilty verdicts.

Although individual jurors may succumb to memory errors and biases, research and practice shows that jury deliberation will at least partially or wholly correct these errors and biases. For example, if an individual juror mistakes pre-trial publicity as court evidence and attempts to use it during deliberations, another jury member will usually correct the error. Pritchard & Keenan (2002) found that jury deliberation resulted in a slight memory improvement, corrected errors and did not introduce distortions. However, Ruva & LeVasseur (2012) conducted a content analysis of 30 mock juror deliberations and found that exposure to pre-trial publicity influenced the interpretation and discussion of trial evidence during deliberations. They found that jurors exposed to negative pre-trial publicity were significantly more likely to discuss ambiguous trial facts in a manner that supported the prosecution. The researchers also found that jurors were either unwilling or unable to adhere to instructions forbidding them from discussing extra-legal information and that those jurors who mentioned pre-trial publicity during the deliberations were rarely corrected. These findings suggest that jury deliberations may not always correct errors and biases.

Research has also explored whether pre-trial publicity can affect jurors ability to discriminate between sources of information. This is known as source memory and is the ability to accurately attribute information to its source. Ruva and Hudak (2013) found that pre-trial publicity had significant effects on source memory judgements, with those exposed to pre-trial publicity being less accurate. Pre-trial publicity also had a significant effect on critical source memory errors (misattributing pre-trial publicity as trial information), with those exposed to negative pre-trial publicity making more of these errors. These findings suggest that jurors who have been exposed to pre-trial publicity may find it difficult to discriminate between information heard in the court room and information they have received from pre-trial publicity.

Social Media

The growth of social media poses new challenges for the criminal justice system. Social media enables users to communicate their views and opinions anonymously, or with a reduced level of identifiability. The wider diversity of views and anonymous conditions can lead to a greater level of opinion polarisation (at the extreme ends of the continuum); a phenomenon highlighted in previous online decision making research (Taylor & MacDonald, 2002). This polarising effect could potentially lead to an even greater level of pre-trial influence, as more extreme views are expressed.

Social media sites such as Facebook (now with 2250 million active users) and Twitter (with over 326 million active users) (Statista, 2019) allow individuals to post their views to a global stage and receive replies almost instantaneously, anywhere and at any time. Jurors can consult online social media sources in order to aid decision making, despite court instructions not to do this. This was demonstrated during a child abduction and sexual assault case, when a female juror was removed from the jury after posting on her Facebook page “I don’t know which way to go, so I’m holding a poll” (reported in Mastro, 2011). By searching in this way, the juror becomes at risk of ‘informational social influence’ which is the desire to be correct and possess accurate perceptions of the world (Baron & Branscombe, 2016). Other people’s actions and opinions define social reality and these are used as a source of information in order to shape our own actions and opinions. Informational social influence is a powerful source of conformity, particularly in situations in which individuals are highly uncertain about what is correct or accurate (Baron & Branscombe, 2016).

The trial of Casey Anthony has been cited by Cloud (2011) as the first murder trial of the social-media age. Anthony was suspected of involvement in her 2 year old daughter’s death when the young child’s body was found near the family home in America. By posting comments onto social networking websites, the public aired their opinions; the majority were convinced of Casey Anthony’s guilt. The prosecution sought the death penalty but the trial controversially resulted in Casey Anthony being acquitted of murder. Cloud suggested that the jurors were able to base their verdict solely on information heard within the court room and ignored the pre-trial publicity and unsubstantiated opinions. In 2012, during the investigation into the murder of Jill Meagher, Australian police issued a statement via Twitter instructing people to refrain from posting comments which could endanger the presumption of innocence. Another example where a juror had already formed views and opinions as a result of publicity on social media was shown in the case of *R v Huhne and Pryce* (BBC, 2013) where the judge was asked directly by the jury: “*Can a juror come to a verdict based on a reason that was not presented in court and has no facts or evidence to support it either from the prosecution or the defence?*” (BBC, 2013). This question resulted in the following negative comments by the judge: “*The answer to that question is firmly*

‘no’ ...that is because it would be completely contrary to the directions I have given you for anyone to return a verdict except a true verdict according to the evidence’. The jury was later dismissed by the judge and a retrial ordered.

Experimental Rationale and Hypotheses

This study explores whether biased social media comments influence mock jurors in their decision making and the following hypotheses will be tested.

- H₁:** There will be no difference in verdicts between those participants viewing neutral social media comments and those viewing no social media (the control condition).
- H₂:** Viewing negatively biased social media comments will produce more guilty verdicts, compared to verdicts given by participants viewing positive comments, neutral comments or no comments.
- H₃:** Viewing positively biased social media comments will produce more not guilty verdicts, compared to verdicts given by participants viewing negative comments, neutral comments or no comments.
- H₄:** Group discussion will reduce the impact of social media influence on juror decision making.
- H₅:** Jurors will report higher confidence in their individual verdict post-deliberation, compared to pre-deliberation.

METHODOLOGY

Design

A between-groups experimental design was used with four conditions: no social media, negative bias, positive bias and neutral. The dependent variables included: pre-discussion and post-discussion verdicts (guilty or not guilty), and confidence in decision rating (pre-discussion and post-discussion).

Participants

Seventy two participants (16 males, 56 females) aged between 18 and 33 ($M=20.43$, $SD=2.11$) and from a range of courses were recruited from a UK University via opportunistic sampling. Participants volunteered through an advertisement posted on an experimental participant software system which informed participants of the nature of the experiment, the requirements of participation, an ethics statement and the course credits available. Participants were randomly assigned to a 6-person mock jury, in one of four conditions. Gender was not controlled for and inevitably most groups contained more female members. Social media use was not controlled for; the majority of participants had an active social media account ($N=71$) of which most used daily ($N=61$).

Materials

Participants received instructions outlining how the experiment was to be conducted in an information sheet and signed an informed consent form. Individuals allocated to the control condition received instructions stating that they would be exposed to information from a real court trial regarding a murder

investigation. Participants within the experimental conditions received the same instructions however, in addition it was stated that they would receive social media comments relating to the trial.

The information relating to a murder trial was based on a real murder investigation (R v Boreman and others, 1999), however, names and events were changed for ethical reasons. Some evidence from post-mortem examinations remained in order to ensure that evidence presented to participants was realistic. This case was selected from a number of potential cases as the defendant's guilt was unclear and therefore participants would need to make their own decision based on the evidence presented to them.

Fictional social media comments (from Twitter and Facebook) were created for use within the experimental conditions. Social media comments were either positive towards the defendant, negative towards the defendant, or neutral. Spelling, grammar and punctuation errors were introduced in order to reflect real comments posted onto social media websites. Social media searches were conducted on recent murder investigations to help construct the comments.

Pre- and post-discussion questionnaires asked participants to record their individual verdicts as well as confidence in their verdict, measured on a 6-point Likert scale. The post-discussion questionnaire also collected information relating to social media use and whether participants would search social networking sites for information relating to a defendant should they become a member of a real jury. A separate answer sheet was supplied to the group after the discussion, on which to record the group verdict. A debrief form was provided on completion of the study.

Procedure

Participants were given details about the study along with a consent form, which notified them of their right to withdraw at any time during the study and that they could request the withdrawal of their data after the study. If participants agreed to participate in the experiment, the consent form was signed. Participants allocated to the control condition received a copy of the court transcript and were asked to complete a pre-discussion questionnaire. They were then asked to discuss the evidence as a mock-jury and reach a collective verdict. Participants were instructed that the verdict given should be based on the evidence heard within the courtroom and not outside of the courtroom. The mock-jury recorded their verdict on a separate answer sheet. Participants were then required to complete the post-discussion questionnaire which involved giving a second individual verdict and answering questions on social media use. Participants allocated to the experimental conditions experienced the same procedure however, they were also given social media comments about the trial, presented at the same time as the court transcript. A debrief form was given to all participants on completion of the study.

RESULTS

The verdicts given by mock-jurors prior to deliberations are shown in Table 1, which shows that 'guilty' verdicts were more frequently expressed from mock-jurors who were exposed to negatively biased social media, while 'not guilty' verdicts were more frequently expressed by mock-jurors exposed to positively biased social media. Verdicts expressed by participants in the control and neutral conditions are very similar, supporting H_1 .

Trial by Social Media

Table 1. Cross-tabulation of observed frequencies, bias of social media and the individual verdict given by mock-jurors prior to deliberations

Condition					
Verdict		No comments (Control)	Positively biased comments	Negative biased comments	Neutral comments
Guilty		5	1	8	3
Not Guilty		13	17	10	15
Total		18	18	18	18

As the data is at a categorical level a Pearson's chi-squared was conducted and this resulted in a significant difference across conditions ($\chi^2 (3, N = 72) = 8.24, p = .041, \phi = .338$, odds ratio = 13.56). The adjusted residual indicated that mock-jurors exposed to negative social media comments were significantly more likely (2.4) to produce a guilty verdict compared to mock-jurors exposed to neutral, positive or no social media, supporting H_2 . The adjusted residual also indicated that mock-jurors who were exposed to positive social media comments were significantly more likely (2.1) to produce a not guilty verdict, compared to mock-jurors exposed to negative, neutral or no social media, supporting H_3 .

Statistical tests were conducted on jurors' individual verdicts after the deliberations, in order to determine whether the biasing effects of social media remain. The frequencies of verdicts given by mock-jurors after jury deliberations are shown in Table 2 which shows that despite juror exposure to biased social media, 'not guilty' was the most frequent verdict expressed across all conditions.

Table 2. Cross-tabulation of observed frequencies, bias of social media and the individual verdict given by the mock-juror after deliberations

Condition					
Verdict		No comments (Control)	Positively biased comments	Negative biased comments	Neutral comments
Guilty		1	0	0	2
Not Guilty		17	18	18	16
Total		18	18	18	18

A Pearson's χ^2 test of mock-jurors individual verdicts after deliberations indicated no significant difference between conditions ($\chi^2 (3, N = 72) = 3.83, p = .281, \phi = .231$), supporting H_4 that the biasing effects of social media were reduced by the deliberation process. Regardless of their exposure to social media, the collective verdicts given by all groups after deliberation found the defendant 'not guilty'; also supporting H_4 .

In the post-discussion questionnaire, participants were asked whether they would conduct a social media search of a defendant if they were serving as a member of a real jury and 46% of participants ($N = 33$) reported that they would. The differences between confidence ratings pre and post jury deliberations were examined to test H_5 : that jurors will report higher confidence in their verdict post-jury

deliberations, compared to pre-jury deliberations. The results showed that confidence ratings in the verdict increased after jury deliberations (mean 4.46) compared to pre-jury deliberations (mean 3.76). A Kolmogorov-Smirnov test revealed that 'confidence in verdict' data was not normally distributed (pre-discussion: $D(72) = .213$, $p < .001$ and post-discussion: $D(72) = .225$, $p < .001$). Therefore, a Wilcoxon signed rank test of differences was conducted and the results revealed that the confidence ratings were significantly different ($W = 163$; $z = -5.198$, $p < .001$, with a strong effect size $r = .576$), supporting H_5 .

DISCUSSION

The results support all hypotheses and found that pre-trial juror exposure to biased social media influenced the verdicts given, such that exposure to negative social media significantly increased the number of 'guilty' verdicts and exposure to positive social media significantly increased the number of 'not guilty' verdicts given (H_2 and H_3). These findings are consistent with previous findings regarding the effects of pre-trial publicity on juror decision making (Fein et al, 1997; Jacquin et al, 2007; Ruva & LeVassear, 2012; Steblay et al, 1999).

The trial selected for this study was chosen as there was insufficient evidence and it was unclear whether the defendant started the fire and therefore committed murder, or whether the fire was the result of an accident. This should have therefore resulted in the defendant being found 'not guilty' of murder due to the lack of proof. The findings could reflect the process of informational social influence (Baron & Branscombe, 2016). Jurors who were unsure of a verdict may have consulted the social media comments in order to shape their own opinions in order to reach a verdict. It would be interesting therefore in future research to examine different types of trial (e.g. where there is clear evidence to support a guilty or non-guilty verdict).

The study found that following jury deliberations there was no significant difference in the verdicts given by jurors, supporting H_4 which hypothesised that the biased nature of social media comments would be reduced by the deliberation process. Subsequently, it was found that all mock-juries across all conditions reached a verdict of 'not guilty', further suggesting that the biasing effects of social media can be significantly reduced by the deliberation process. Therefore, although mock-jurors individually were affected by the social media bias, collectively they are not likely to be influenced by social media. Interestingly, despite instructions to base the verdict solely on information given within the transcript, social media was repeatedly discussed by two juries during deliberations and when discussing the final verdict. This finding is consistent with that of Ruva & LeVasseur (2012) who found that jurors were either unwilling or unable to adhere to instructions forbidding them from discussing extra-legal information. A possible explanation for this finding could be that jurors either did not fully understand the instructions given to them or that the instructions were not read carefully, rather than assuming that jurors had simply chosen to disregard the instructions. In a real criminal investigation, these instructions would be given verbally to jurors by a judge and jurors would be expected to confirm that they had understood the instructions and the consequences of breaching these instructions. Of concern, it was found that almost half of the participants reported that they would conduct a social media search on a defendant if they were serving as a juror in a real criminal trial. This is concerning for the criminal justice system where the defendants' rights to a fair trial by an impartial jury could be deemed to have been violated.

Finally, the results support H_5 (the confirmatory hypothesis), as jurors confidence in their verdicts were rated higher following jury deliberation compared to before deliberation. This finding is consistent with previous literature on the impacts of group discussion on individual decisions.

Implications of the Findings

The finding that exposure to biased social media comments has a significant influence on the verdicts given by jurors has implications for the criminal justice system. These findings suggest that jurors may be unable to remain impartial to the biasing effects that social media can have on decision making. Every individual who is charged with a criminal offence in the European Union has the right to a fair trial by an impartial jury under the Human Rights Act (1998) and a biased juror would therefore contravene these rights and potentially result in an incorrect outcome or claims for a mistrial. Biased jurors could result in the conviction of an innocent defendant and vice versa which is contrary to the aims and fundamental principles of the criminal justice system. Should the jury return a guilty verdict and a member of the defence believes that this decision was made by biased jurors then the defence are entitled to appeal the outcome of the trial. In trials where the outcome is flawed due to a biased jury, the verdict can be overturned and the defendant acquitted of an offence.

In order to protect defendants' rights, methods have been implemented in an attempt to reduce the impact of pre-trial publicity. *Voir dire* is the preliminary questioning of potential jurors by a judge to determine whether a juror has biased beliefs or opinions and is therefore unable to remain impartial. This questioning can determine whether prospective jurors have already conducted prohibited activity and whether they agree to follow the rules prohibiting any independent research regarding the case (Simpler, 2012). In the case of *R v Huhne and Pryce* (BBC, 2013), *voir dire* could potentially have identified the issues and negated the need for a retrial. Further research exploring the effectiveness of *voir dire* in reducing the bias caused by exposure to social media is required. Fein et al. (1997) found that despite instructions from the judge to disregard incriminating evidence in the form of pre-trial publicity, jurors' verdicts were significantly affected. However the researchers found that if jurors were given reason to be suspicious about why such incriminating evidence was presented to the media, their verdicts were similar to those given by jurors who were not exposed to such media. Despite finding that social media significantly influences jurors pre-discussion decisions, this study found that the biasing effects of social media disappeared after the deliberation process. Further research is needed to explore the way deliberation reduces bias amongst jurors.

Strengths and Limitations

As with other mock jury studies, there are some methodological issues regarding their ecological validity (Bornstein et al., 2017) and this study was similarly limited in group size, sample size and participant make-up. In the United Kingdom juries are comprised of 12 members, while this study used 6 member juries and group size can significantly affect decision-making. Future research needs to increase both the size of the groups and also the size of the sample. Participants were from the student population, which affects the generalisability of the findings. Keller and Weiner (2011) found that student mock jurors were more lenient in assigning guilt to murder cases, compared to community members in mock jury trials. Also, students are more likely to use social media than the general population; a higher use of social media would increase the opportunity for an individual to be exposed to and be influenced by

comments and information relating to criminal investigations posted onto social networking websites. Further research could explore jurors' perceptions of the quality of information available via social media and a variety of age groups with varied experience of social media could be included to more accurately represent the demographic composition of a real jury. In this study exposure to social media was restricted within a controlled environment, while in real criminal trials jurors may have access to a variety of posts, which may or may not be influential. Jurors could also be exposed to hundreds of posts as opposed to the ten used in this study. Further research could expose participants to a larger number and variety of social media and also ask them to interact with posts.

CONCLUSION

This study has added to the literature exploring juror decision making and pre-trial information. The findings are in line with previous research regarding negative pre-trial publicity and suggest that social media should be considered as a significant threat to juror impartiality and the legitimacy of the verdicts derived from the trial process. Further research should be conducted to explore methods to identify and manage or reduce these biases.

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Chapter 27

Classifying the Influential Individuals in Multi-Layer Social Networks

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ABSTRACT

Nowadays, social media is one of the popular modes of interaction and information diffusion. It is commonly found that the main source of information diffusion is done by some entities and such entities are also called as influencers. An influencer is an entity or individual who has the ability to influence others because of his/her relationship or connection with his/her audience. In this article, we propose a methodology to classify influencers from multi-layer social networks. A multi-layer social network is the same as a single layer social network depict that it includes multiple properties of a node and modeled them into multiple layers. The proposed methodology is a fusion of machine learning techniques (SVM, neural networks and so on) with centrality measures. We demonstrate the proposed algorithm on some real-life networks to validate the effectiveness of the approach in multi-layer systems.

INTRODUCTION

Social media is one of the fastest growing areas among users for communication and sharing information. It grows with an exponential rate due to advancement in technologies. For example, Twitter, Instagram, Facebook and so on are few social networking platforms where millions of users connected. Analysis of social networking platforms is one of the popular areas among researchers. The set of users and relationships between users are modeled in the form of a network, where each user is a node, and edge denotes the relationship (Breza & Chandrasekhar, 2019). Analyzing social network unveils diverse knowledge

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about users, their behavior and relationships (Newman, 2003). There exist several methods like centrality measures, community detection and so on, which helps in the analysis of such networks. The purpose of measuring centralities is to find the influential power of nodes in the system. There are several types of centrality measures like eigenvector, degree, betweenness and each having a different purpose, which we will discuss later in the next section. Community detection is identifying a set of nodes, which are highly connected compare to other nodes (Kuncheva & Montana, 2015).

Influential individuals are impactful users with loyal audiences, and other users tend to trust their recommendations. In social networks, Influential individuals could be highly connected and reachable nodes of the systems. For example, in social networking site Twitter, a user having a high number of followers could be marked influencer because they are trusted the source of information and their message is reachable to a large number of the audience (Watanabe & Kabashima, 2014; Mallipeddi, Kumar, Sriskandarajah, & Zhu, 2018).

Most of the existing research work for finding influential users from the social network is considering only one type of relationships between users, i.e., single layer networks are involved in the study whereas we are targeting to include multiple types of relationships between users, which is further modeled as multi-layer social networks (Domenico, Granell, Porter, & Arenas, 2018).

The primary purpose of finding such influential users is to achieve large cascades and full reachability. The high reachability is easily attaining in multi-layer systems because of the topology of the network. Identification of influential users is a crucial task, and in this paper, we propose a methodology to find such users from the multi-layer system by collaborating machine learning techniques with centrality measures and community detection (Sadri, Hasan, Ukkusuri, & Lopez, 2018).

Our proposed approach starts by computing the betweenness centrality, closeness centrality and degree centrality of each node of the multi-layer network. The purpose of finding centrality values is to check how much a node is central in the network. Next, we identify the communities in the system. Community detection helps us in the classification process when we introduce machine-learning algorithms for finding influential individuals from the system. The proposed model uses the influence capabilities of the target user and his/her friends to see how prone the friends are to getting influenced by the target user and user characteristics.

The significant benefactions of the paper are:

- We empirically try to find influential users in multi-layer networks;
- We propose a novel methodology to find influencers who can cascade information to a broad audience in a social network;
- We use some standard multi-layer network datasets for our study.

Paper Outline

In the next section, we discuss the work done in the related area of multi-layer networks, centralities and so on. In part 3, we talk our proposed approach for measuring the influential power of users, in section 4, we discuss the datasets, and at last, we enlighten the experiment results.

BACKGROUND

Influential Users in Social Networks

Measuring the influential power of a user in the social networks helps in digging out exciting findings from the systems, which are further used in many applications. For instance, influential users are a great source of information distribution. A theory related to influence is trust, and in social networks, it involves in advertisements, promotions and so on. Bacha and Zin (2018) and Cha, Haddadi, Benevenuto, and Gummadi (2010) find the influential users from the Twitter dataset from the users having a large number of followers. Shin, Xu, and Kim (2008) give different definitions of influence and depending on the application it varies. Wadhwa and Bhatia (2015, 2016) proposed an algorithm for finding the radicalization in social networks using a Markov chain algorithm and implement the same on twitter datasets. Mittal and Bhatia (2018) proposed an algorithm based on gradient descent to find anomalous users exist in multi-layer networks. Mittal and Bhatia (2017) proposed a methodology to find structural holes in multi-layer social networks. Structural holes are the nodes, which are helping to connect multiple sub-groups of the network.

Centralities and Community Detection in Multi-Layer Social Networks

Much initial research on social networks mainly focuses on community detection and centrality measurements. Newman (2004, 2001) present many algorithms used for analyzing the structural properties of the social network community detection, centrality measurements and so on. Later on, these algorithms are used to dig information about users, their behavior and so on. For example, in the social networking site, Facebook likes & replies features are marked as influence features and are used to find the influential power of a user (Lin, Wu, Chen, & Yang, 2015). Considering multiple functions at a time encourage the new form of the social network called multi-layer social networks, where each layer represents a different kind of relationship among users. Battison and Nicosia (2014) proposed algorithms for computing the communities, degree distributions, measuring centralities for multi-layer networks.

Wadhwa and Bhatia (2012, 2014) discuss social networks, community detection and classify community detection algorithms based on the usage and applications. Mittal and Bhatia (2017) proposed a methodology to see the behavior of social network in terms of community structure formed in the social network. Mittal and Bhatia (2018) analyze the different structural properties of multi-layer systems to see how multi-layer social networks are different from traditional social networks. (Mittal, & Bhatia, 2018) find prominent authors from the scientific collaboration multi-layer network by applying community detection and centrality algorithms. Huang, Shao, Wang, Buldyrev, Stanley, and Havlin (2013) and Shao, Huang, Stanley, and Havlin (2014) proposed algorithm for finding clusters in social networks and check the robustness of those clusters with other techniques.

In this paper, we are aiming to find influential individuals based on the computed instrumental score, which are calculated using centralities and machine-learning techniques. Centrality measures are one of the best ways to see the importance of nodes in networks. There exist numerous centrality algorithms such as degree, Katz, closeness, eigenvector, page rank and so on. Mittal and Bhatia (2018) proposed a new formulation for measuring the closeness centrality of nodes in multi-layer networks. Mittal and Bhatia (2018) proposed algorithms for measuring centralities in multi-layer systems using few nature-inspired

algorithms such as ant colony algorithm. Mittal and Bhatia (2019) Proposed algorithms for measuring bottleneck centrality of nodes in multi-layer networks. We discuss these algorithms in the next section.

Machine Learning Techniques

Recently, machine learning develops a great interest among researchers. In general, there are two types of machine learning techniques: supervised and unsupervised learning. Supervised learning means learning a function based on example input-output pairs where mapping of input to the output takes place Nigam (2001) and Ghani, Jones, and Rosenberg (2003) upgrade the supervised learning by considering both the input and output at the same time. Similarly, in unsupervised learning inferences are drawn from information without considering the output (Kolog, Montero, & Toivonen, 2018).

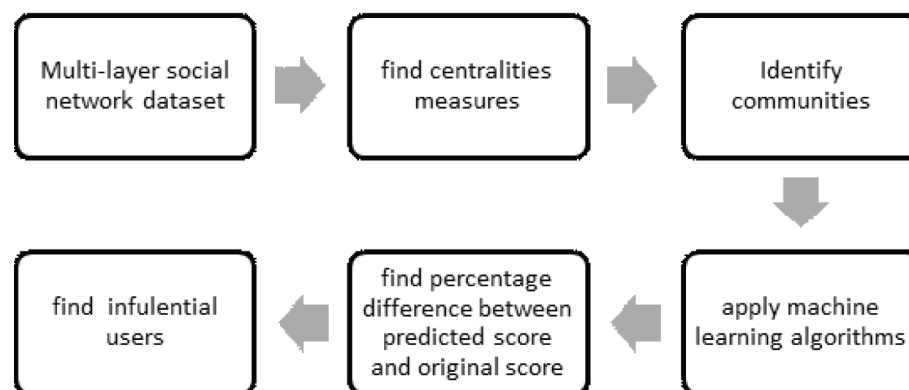
In this paper, we use supervised learning techniques like SVM classification method, Random forest method, Naive Bayes Method (Escudero, Màrquez, & Rigau, 2000) and Neural networks methods for classifying the influential users from the social networks. We discuss these methods later in the next section.

METHODOLOGY OF THE PROPOSED APPROACH

Here, we discuss the proposed approach for finding the influential users from multi-layer social networks. The proposed method starts by calculating the degree centrality, betweenness centrality, closeness centrality and bottleneck centrality for each node of the system. Next, we estimate the communities by applying the Infomap community detection algorithm defined for multi-layer networks.

Next, centralities values and communities are processed in machine learning techniques for predicting the values for all nodes. At last, to validate the proposed approach, we find the accuracy in the results using precision, recall, and f1-score methods. A brief introduction of the proposed plan is shown in Figure 1.

Figure 1. Workflow of proposed approach



Centrality Measures

As discussed earlier, centrality algorithms find the significance or status of each node in a given network. In this paper, we include the following centrality algorithms for the proposed work:

- **Degree Centrality:** Degree centrality is one of the more straightforward and popular centrality measures, which finds the score based on the connection of nodes, i.e. with how many nodes a node, is connected. It is the summation of the amount of the incoming and outgoing links of a node to other neighboring nodes (Watanabe, & Kabashima, 2014). It is formally defined as, for an undirected network N having node set X and edge set Y is given as:

$$D(x) = \deg(x)$$

In this paper, we find the influential users of the system. A user having high degree centrality means that user is quite popular in the network and can be marked as the prominent user.

- **Closeness Centrality:** In multi-layer networks, the closeness centrality of nodes is found the reachability of nodes to all other nodes (Mittal & Bhatia, 2018). In simple systems, the closeness centrality is given as the sum of the shortest paths between nodes to all other nodes (Mittal, & Bhatia, 2018):

$$CCC(i) = \gamma \frac{1}{\sum d^*(p_{i^a \rightarrow j^a})} + (1 - \gamma) \frac{1}{\sum d^*(p_{i^a \rightarrow j^b})}$$

The function $d^*(p_{i^a \rightarrow j^a})$ is the shortest path between nodes i & j of same layer and $\sum d^*(p_{i^a \rightarrow j^b})$ is the shortest path between nodes i & j of different layers. γ is a tuning parameter used for balancing the importance within the layer or across layers.

- **Bottleneck Centrality:** The Bottleneck centrality of nodes is calculated for the nodes, which are appearing in full n/4 times when all pair shortest is calculated (Mittal & Bhatia, 2019). For multi-layer networks, the formulation of bottleneck centrality is as:

$$BN_s(v) = \sum_{\substack{s, t \in V \\ s \neq t}} \left(\gamma \left(\sum_{s \neq t \neq v_\alpha \in N_m} P_{st}(v_\alpha) \right) + (1 - \gamma) \left(\sum_{s \neq t \neq v_\alpha \in N_m} P_{st}(v_\alpha) \right) \right)$$

Here, $BN(v)$ is the bottleneck centrality of node v. The function $\sum_{s \neq t \neq v_\alpha \in N_m} P_{st}(v_\alpha)$ 1 if more than $|V(T_s)|/4$ paths from node s to other nodes in T_s meet at the vertex v, otherwise $P_s(v) = 0$.

Community Detection

The term community means a sub-group of nodes having strong connections compare to other nodes of the network. Here, we use a multiplex Infomap algorithm for calculating communities in multi-layer networks (Domenico, Lancichinetti, Arenas, & Rosvall, 2015). This method partitions the system based on the interconnected topology and information flow.

Supervised Machine Learning Techniques

In this article, we use following machine learning techniques:

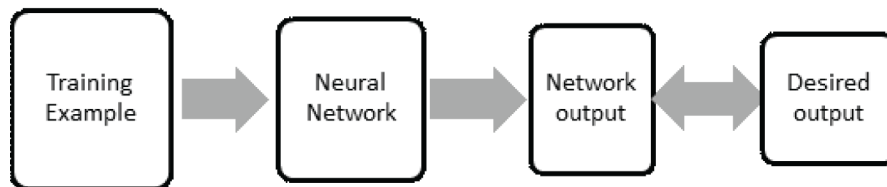
- **SVM Classification:** SVM stands for “Support Vector Machine” is a supervised machine-learning algorithm, which is, used in both classification and regression problems. In this algorithm, each data item is plot into an n-dimensional region with the value of each feature being the value of a distinct coordinate. It is a binary classifier having two classes marked as the true class or false class (Fei, & Liu, 2006);
- **Naïve Bayes:** Naive Bayes is a probabilistic technique, which follows the statistical approach to find the set of probabilistic features and express the shared probability patterns of categories (Escudero, Márquez, & Rigau, 2000). Naïve Bayes technique uses Bayes theorem to find the strong ties between the features. This technique is beneficial for large datasets and follows sophisticated classification methods. The basic formulation of this method is given as follow:

$$P(c|x) = \frac{P(x|c)P(c)}{P(x)}$$

Here, $P(c|x)$ is the posterior probability, $P(x|c)$ is the likelihood priority, $P(c)$ is the class of prior probability and the $P(x)$ is the predictor prior probability.

- **Decision Trees:** The decision tree is a sense-tagged algorithm in which the training is done for prediction (Navigli, 2009). In this algorithm, yes-no types of rules are used for classification and dividing the training dataset. In the topology of the decision tree, internal nodes are the features and edges represent feature value and leaf nodes as the sense;
- **Neural Networks:** The interconnection of artificial neurons evolves the concept of neural networks. Such networks consist of multiple hidden layers, and with the help of these layers, the input is processed. There are two types of neural network techniques: backpropagation and feedforward. In both the techniques input and expected output are used for learning. Such approaches aim to make use of input features to divide the training set into non-overlapping sets by considering the expected outputs. (Azzini, da Costa Pereira, Dragoni, & Tettamanzi, 2008).

Figure 2. Neural network algorithm basic working



Compute Influential Score

The influential score is calculated by getting the difference between the original score of the nodes with the predicted score of the nodes, i.e. before and after applying machine-learning algorithms. The nodes having value and least change in the expected value are marked as influential users. A snippet of the proposed algorithm is shown in Algorithm 1.

Algorithm 1: Classifying influential individuals in multi-layer social network

Data: Graph G

Result: iu : set of influential users

Initialization:

1. Identify communities in network
2. For each node i
3. Calculate various centrality value
4. Apply SVM, Naïve Bayes, Decision Tree, Neural Networks
5. Calculate Influential Score for each node i
6. Put high valued nodes in set iu
7. iu is the desired output.

EXPERIMENTAL RESULTS

Datasets Used

The proposed methodology is implemented on two multi-layer networks: Vickers Chan 7th-grade dataset and London transport dataset. Both the dataset consist of 3 layers and each layer describes the different relation between nodes. A brief description of both the dataset is given below:

- **Vickers Chan 7th Graders:** Vickers composes this dataset after analyzing the behavior of 29 7th grade students in a school in Victoria, Australia (Vickers, & Chan, 1981). The dataset consists of 3 layers and each layer defines the relation between students by asking the following questions:
Who do you get on within the class?
Who are your best friends in the class?
Who would you prefer to work with?

There are 29 nodes in the network out of which 1-12 are boys and rest are girls. The total numbers of edges in the network are 740, which shows the network is highly connected.

- **London Transport Dataset:** This dataset is collected from the official website of Transport for London for the year 2013. It consists of 369 nodes (each train station denotes a node of the network) and 441 edges (each route between stations denotes edge). Underground, over ground and DLR stations indicate the different layers of the system (Domenico, Solé-Ribalta, Gómez, & Arenas, 2014).

Implementation Details

The proposed methodology is implemented using the muxViz tool, Python and R programming language. In muxViz, we find degree centrality, betweenness centrality, and communities of the network (Domenico, Porter, & Arenas, 2015). Using R programming, we see the bottleneck centrality of nodes of the net. The Machine learning algorithms and performance analysis are done using python programming. We implement our proposed methodology on the system having 8GB RAM and 2.3 GHz Intel processor.

Performance Metrics

Calculating the precision, recall, and f1-score checks the performance of the proposed methodology. The precision metric finds the ratio of correctly predicted positive values with the total predicted the positive value for each node of the network. The recall metric calculates the rate of accurately predicted positive benefit to all computed values of nodes in the system. F1 Score is the weighted average of Precision and Recall, and this score takes both false positives and false negatives into account.

Results

In this section, we discuss our findings on both the multi-layer dataset after applying the proposed algorithm. In figure 3 and figure 4, we demonstrate the performance of the proposed methodology on both the datasets. We calculate the precision, recall, and f1-score individually machine-learning algorithms and estimate the variation in values of precision and recall. London Transport dataset, The neural network algorithm doesn't perform well for almost all the centrality values, whereas naïve Bayes and decision trees are the vice versa. From the performance, we can see that the choice of the machine learning algorithm is an important aspect.

We also find the accuracy for the machine learning algorithms for both the datasets to check the overall performance of each of the classification. In the table below, we conclude that the Naïve Bayes algorithm holds high accuracy and neural networks have less accuracy in results. From these results, we find that the neural network algorithm is not best suited for such applications.

At last, we compute the influence score for all the nodes of both the datasets. We found that only 20% of nodes in London transport network have less percentage of difference in the predicted vs. original score. This happens because the system is sparse. So, we mark such nodes as the influential individual of the networks and such influential stations are busiest stations and have more train traffic compare to others.

Figure 3. Precision, recall, F1-score and support metrics London transport dataset for various machine learning algorithms and centrality methods

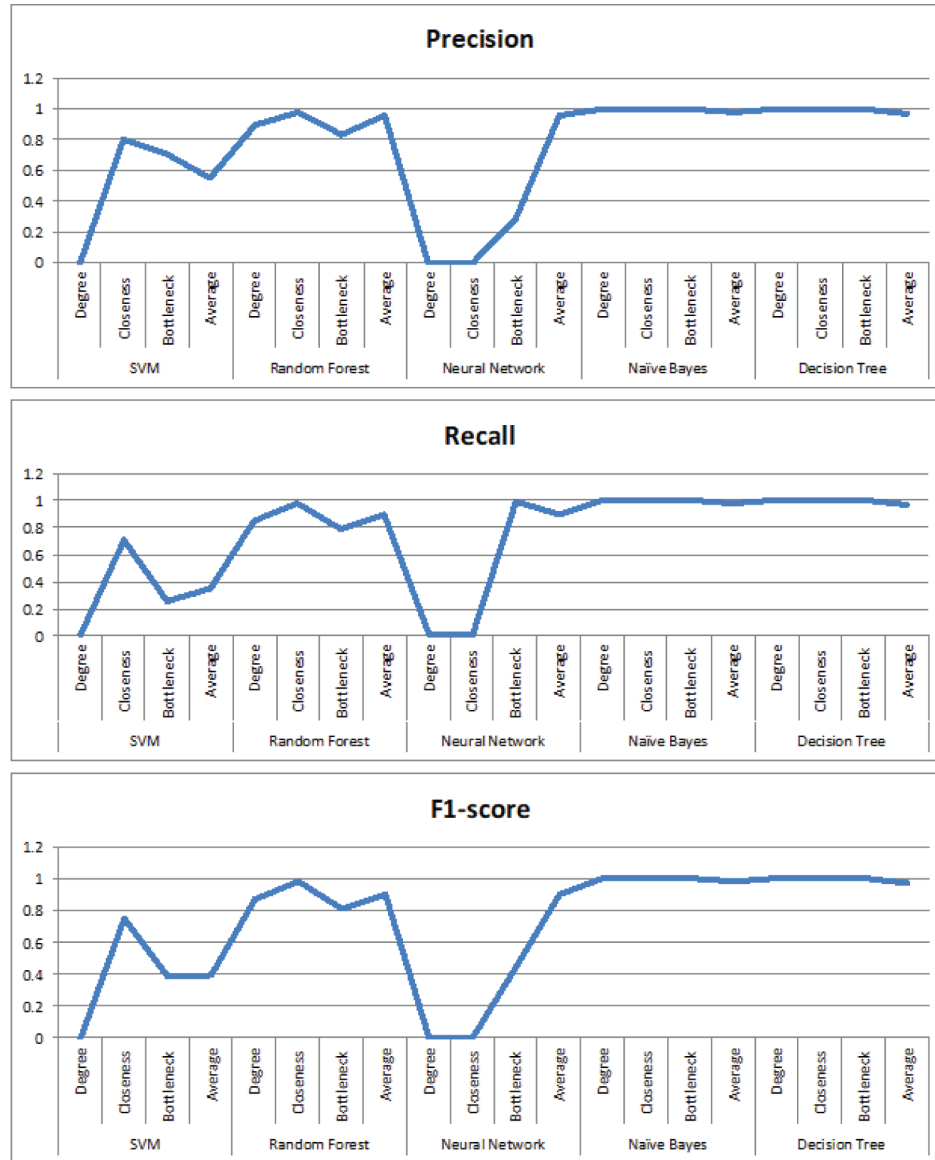


Table 1. Accuracy metrics of proposed model for both dataset

Machine Learning Algorithm	Accuracy (Vicker Chan Dataset)	Accuracy (London Transport Dataset)
SVM	97%	96%
Random Forest	93%	94%
Naive Bayes	97%	97%
Neural Networks (200 hidden Layers)	83%	80%
Decision Tree	97%	95.5%

Classifying the Influential Individuals in Multi-Layer Social Networks

Figure 4. Precision, recall, F1-score and support metrics for Vicker Chan dataset for various machine learning algorithms and centrality methods

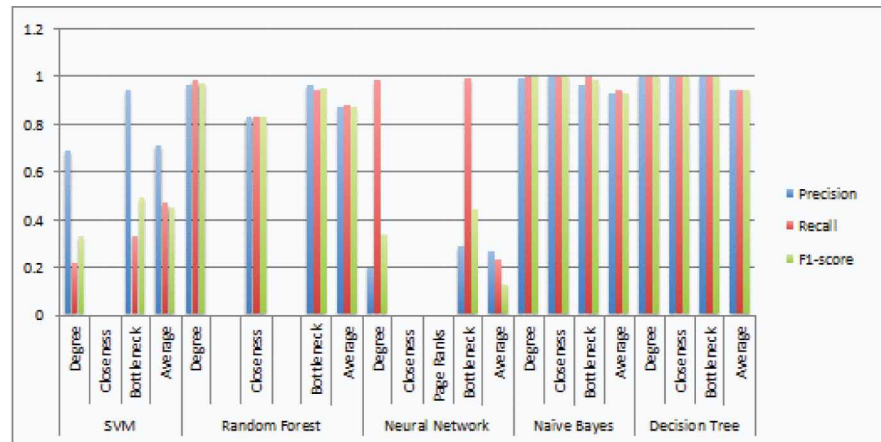
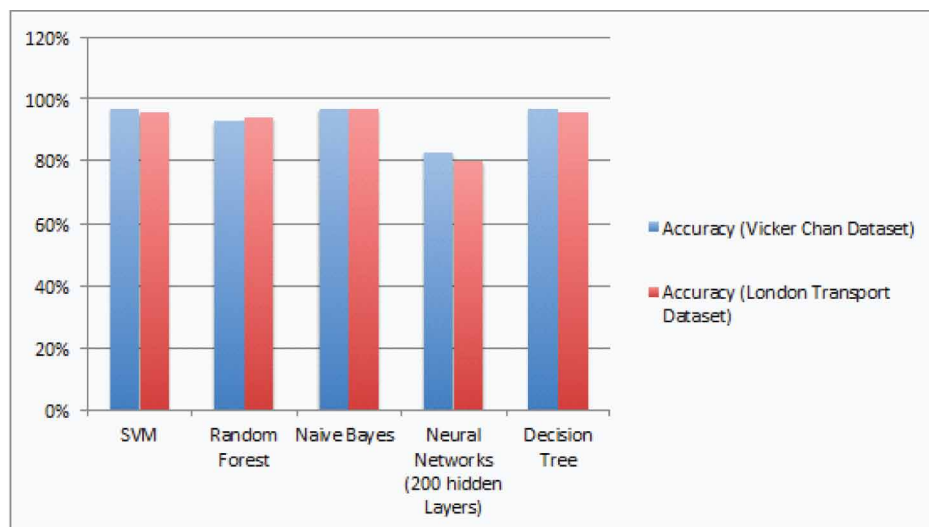


Figure 5. Accuracy metrics of proposed model for both dataset



For Vicker Chan dataset, we compute the influential score for the nodes and found that 35.5% of nodes have less percentage of difference in the predicted vs. original score. This happens because the network is dense. So, we mark such nodes as the influential individual of them, and such prominent students are quite popular in the class. From these results, we conclude that collaborating machine learning techniques with multi-layer social networks techniques provides us some interesting findings, which are used to identify and classify influential users in the networks.

Implementation in Cyber Hack Applications

The Influential individuals are helping in many applications such as advertisements, election campaigns, scientific collaborations and so on. The roles of Influential users in each of these applications are different but are helping in many ways. For example, in scientific collaborations network, finding influential scientists are helping in spreading new technologies and research among fellow researchers. The proposed approach is used to identify such influencers from all such application, where information diffusion or spreading is required.

CONCLUSION

In this paper, we analyzed the influential power of individuals in the system. The analysis includes different types of correlations between users by considering the network in the form of multiple layers. When all the properties of a user were studied together, the combined effort increases the reach value further. Here, we built a model to find the influential individuals in the networks. We empirically showed that collaborating machine learning techniques with social networks methods give a good prediction of the average reach of a user in the network. The proposed methodology performs better than several baselines systems. We used multi-layer social networks generated from multiple sources for our experiments. We are planning to extend our work on weighted systems and collaborating deep learning techniques in the future.

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Chapter 28

The Culture of Volunteerism and the Role of Social Media in its Development

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ABSTRACT

Volunteering is one of the various social activities that human societies have known and practiced since their inception. It is not the outcome of the last decades of the life of these societies, but it was present in almost every human civilization in its various forms and methods. Voluntary work is of great importance as far as individuals and societies are concerned. It is a symbol of solidarity among the members of the community and all its institutions. It positively affects people's lives as well as the community at large. It symbolizes the meanings of good, giving, and help. Accordingly, volunteering has become a cornerstone in building society and social cohesion among its members. In this regard, voluntary work is of great importance. It necessitates the need to spread this culture in the society and to promote and develop volunteerism among young people using all available and possible methods.

INTRODUCTION

Volunteerism is considered one of the most important social activities that accompanied the emergence of human society. It evolved through its development through the ages. The impact of various types and methods of spontaneous volunteerism is dominant in almost every human civilization.

As the human society developed, voluntary work has developed in terms of size and impact. It had a specific methodology and mechanisms of action. This has led the societies of the world to pay more attention to volunteerism, and to spread the culture that supports it as well as to develop the mechanisms that make it possible to benefit most from volunteers, their skills and expertise which they wish to har-

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ness in the developmental field. Moreover, the mechanism harnessed should implant in their minds the culture of voluntary work and incite them to practice it in all its forms.

The best of these mechanisms is that promotes and develops the culture of volunteering can be social media networks. They have two advantages as far as the field of volunteering is concerned. The first is that they can address a large number of people through participating in voluntary initiatives. The second is publicity for these initiatives so that the idea of voluntary work becomes popular, and then turns to developmental initiatives having supporters of financial and cultural capabilities who would help develop and support these initiatives.

RESEARCH PROBLEM

Volunteering work plays a crucial role in building and developing society through its many activities, projects and services which are characterized by smoothness, flexibility and speed of movement. Voluntary work today is one of the outstanding works in the lives of people and societies at peace and war times and at times of crisis. It is an essential element in achieving social cohesion among individuals of society, especially with crises and tribulations afflicting humanity. But voluntary work as an important humanitarian practice is not one in all human societies. It differs from a society to another in terms of form, size, motives, trends, and from time to time. It becomes important and increasingly needed as the societies progress and their life getting more and more complex in all fields and aspects of life.

Volunteering, in this context, has become a vital area for important cultural, social and economic activities. The modern concept of development gives particular importance to the voluntary sector.

In view of this paramount importance for volunteerism, societies ought to pay attention to volunteering, disseminate and reinforce this culture in society, and find appropriate mechanisms and means for the development and promotion of this culture. Perhaps one of the most important means and mechanisms that develop and promote voluntary work within the community are social media networks. These networks represent the new generation of the Internet. They provide new opportunities to communicate through the network using social networking sites, and their impact on people, and how these social media sites can be exploited by some institutions and organizations.

Almost every organization and establishment have a page or an account on social media networking sites, where the big role of this site is shown through contribution to the construction of social virtual networks.

The Facebook site is in the forefront; it is the most important because of its great impact in supporting the idea of communication. It is possible to promote the culture of voluntary work among young people, and to demonstrate its role in society, and the need to engage in it. This is due to the benefits it offers to members or users and their community, providing opportunities to exchange videos and photos and share files and conduct instant conversations and achieve direct communication and interaction, which plays a significant role in influencing the youth using it.

It also might contribute to the development of the culture of volunteerism, which will enable the community to benefit from the energies and capabilities of volunteers and their skills.

The culture of voluntary work reflects a national will that springs from the desire of individuals in society to progress, develop and participate in confronting the challenges and crises that afflict society to minimize their effects and guarantee a better standard of living. Volunteers and voluntary associations have become a criterion showing the degree of the progress and sophistication of a society.

The Culture of Volunteerism and the Role of Social Media in its Development

Accordingly, the problem of this research is thus the following main questions:

- What is the culture of voluntary work?
- What is the role of social media networks in the development of voluntary work within society?

THE IMPORTANCE OF THE STUDY

The importance of the study springs from the society's urgent need for voluntary work and the need to spread its culture among young people as a way to fill the gaps and put an end to present deficiencies, as well as to address the problems that the government sector cannot handle alone. Voluntary work plays a great role in the overall development process in society.

The importance of this study stems from the great importance of the social media networks in the life of each person as a modern means of communication that ensures constant and direct communication between individuals. These sites contribute to the promotion of human thought because they are easy to use, a feature these sites enjoy making them much more powerful than other means of communication.

Of course, this can pave the way for the development of the culture of volunteerism and spread it everywhere, especially among the youth, who represent the power and source of energy for the society.

RESEARCH GOALS

The present study aims at:

1. Recognizing the concept of voluntary work, its importance, and the need to spread its culture in society;
2. Identifying the role of social media networks in the development of the culture of volunteering within the community.

Previous studies:

- Youth and voluntary work in Palestine (Rahal, 2006).

The problem of the study:

- The main problem here is the lack of active participation in voluntary work in Palestine. This is reflected in the low participation and limited participation in the public sphere.

The researcher adopted the historical approach in addition to using the analytical descriptive approach in analyzing the crisis of voluntary work and the comparative approach in studying the experiences of some countries.

THE MAIN FINDINGS OF THE STUDY

- The decline of voluntary work in Palestine with the formation of the Palestinian National Authority;
- Another reason which caused the decline in voluntary work in Palestine is the decline in the positive values and the lack of interest of various socialization institutions in enhancing this value in children;
- The prevailing economic conditions and the weak financial resources of the voluntary organizations led to the decline in voluntary work in Palestine;
- Male and female volunteers do not often participate in decision-making within voluntary institutions (Social Impact of Volunteerism, 2011).

The problem of the study:

- The problem of this study is the social impact of voluntary work. This is a secondary, independent study that assesses whether the national and community service affects society as a whole. This study adopted the descriptive and historical approach.

The main findings of the study are:

- Volunteerism promotes social relations between different sectors;
- Volunteerism helps build a more cohesive, safer and stronger society. It also helps in reinforcing the social network between local communities and the neighborhoods;
- Volunteerism encourages people and those interested in citizenship to be more active in civic engagement;
- Volunteerism provides some public services, pushing sustainable development forward, and solving environmental problems;
- The role of social media networks in serving the humanitarian work (Al Harbi, 2014).

THE PROBLEM OF STUDY

The problem of the study in the main question:

What is the role of social media networks in the service of humanitarian work?

The researcher used a descriptive approach based on collecting, organizing and arranging data to reach the results.

The main findings of the study are:

- Humanitarian action is a form of human solidarity, which provides good for others;
- Some of the fields of humanitarian work: advocacy, relief, health and media;
- Social media networks play an internal and external role in case of disturbances and disasters;
- Their internal roles are to clarify the truth and highlight the damage and losses and to suggest ways and methods of support and assistance;

- Their external role includes religious education, health and security in addition to the coordination of charitable support and assistance.

CONCEPTS AND TERMINOLOGY

Work

Work is defined as an occupation or a profession for which the individual acquires skills, experience and knowledge usually associated with a long experience and practice. It can also be considered a skill since it necessitates certain knowledge and abilities. It can also be considered as an activity of the individual from which he or she derives the meaning of existence and livelihood as well as bread wining (Arab Women Organization, 2011, p. 16).

Volunteerism

Volunteerism is idiomatically defined as applying this term to that characteristic of social theory which aims at interpreting the act that lies in the intentions of its doer, that is, the volunteers acting voluntarily and their actions are not determined according to their organic or social structure (Bruce & Yearly, 20, 2006, p. 315).

Voluntary Work

It is “the work that is done by some persons who voluntarily choose to do it, without asking for any compensation” (Hornby, 2010, p. 1709).

Culture

It is all that the human hand has made and all the human mind has created in all areas of the natural, social and intellectual aspects of the environment, which includes his inventions, discoveries and social heritage of customs, traditions and customs. It has a role in the social process that is passed from generation to another (Ibrahim, 2003, p. 49).

Social Media Networks

It is a system of electronic networks which allows the subscriber to create a site of his own, and then connects it through an electronic social system with other members who have the same interests and hobbies, or it connects the subscriber with friends of the university or high secondary (Radi, 2003, p. 23).

Study Approach

The descriptive approach will be adopted in this study based on gathering organizing and arranging information to reach the results.

The Concept and Importance of Volunteerism

The concept of voluntary work is not a recent concept. It is found in all civilizations and religions. Volunteerism is divided into general volunteerism, and voluntary work. The general volunteerism means that the volunteer does a voluntary act which is not directly related to his or her scientific or practical background.

In the voluntary work, the volunteer is volunteering through his or her knowledge and expertise specialized in the field gained through his or her academic studies and work so that organizations and bodies which work in this field benefit from his or her experience.

Volunteerism, linguistically speaking, is defined as a form of obedience. It is a kind of donation. It is not a must (Al Safar, 2004. p. 8).

Idiomatically, Volunteerism is defined as a social activity carried out by individuals individually or collectively through an association or an institution, without asking for something in return. It aims satisfying the needs and solving the problems of society and contributing to the consolidation of the development process in it. (Al-Rashoud, 2007, p. 328).

Volunteering is therefore a non-profit work. It is not a professional work. It is carried out by individuals in order to help and develop the standard of living of others.

Sociologists have defined volunteerism as an effort based on skill, experience or expertise, which is exerted on a desire or choice, for the purpose of performing a social duty without necessarily expecting financial reward (Aswad, 2011, p. 272).

The Importance of Voluntary

Voluntary work is an integral part of the government's efforts and a support for its efforts as well. It is characterized by flexibility and speed of movement, which enables it to overcome some of the difficulties and solve problems that government institutions may not be able to handle.

Volunteering is an appropriate field for conscious and responsible youth. It is also the key that opens the horizon for communication with others, builds bridges of brotherhood and generates generosity. It is one of the most important means of strengthening social ties and promoting human values.

The significance of voluntary work springs from the fact that it seeks to serve the community and satisfy the needs of people because it develops human's mental abilities, skills and behavioral qualifications, which strengthens his or her personality. Experience and expertise can also be gained from voluntary work can also make man well aware of the reality of community where he lives. It might also show the individual his or her prestige in society. It expands the circle of his or her relations and connections, and shows his talents and competencies (Al-Zaffar, 2007, p. 16).

Moreover, voluntary work is viewed as a measure of progress and development among nations. It plays a vital role in the process of comprehensive development in society in collaboration with other sectors in the society.

In view of the importance of volunteerism, it is necessary to pay more attention to it and to ensure that the culture of voluntary work among young people is constantly supported, observed and encouraged.

Volunteering Culture

The level of culture in any society is a sign of the vitality or stagnation of this society. If the culture of the prevailing society is productive and flexible, it is an advanced dynamic society and vice versa. If culture is a negative, then society will be stagnant and inefficient.

At present day, volunteerism has become an approach, a work method that requires abilities and skills that volunteers have to acquire and practise them practically. If the culture of volunteering is an integral part of the culture of developed societies representing the system of values, principles, standards and practices that encourage initiative and positive action done for the good and benefit of others.

Therefore, the extent of volunteering and involvement in it depends on the extent of the culture of volunteerism in the social sphere. Accordingly, it was necessary to activate the culture of volunteering at the theoretical and practical levels in the social environment through:

1. Formulating a new discourse on the culture of volunteering in a new manner capable of influencing contemporary generations;
2. Focusing on the benefits and gains achieved by the voluntary work for volunteers to convince them of the importance of participating in it;
3. Attracting new voluntary work for breathing a new spirit in society, and producing new ideas and programs;
4. Overcoming the problems and obstacles which hinder voluntary work, and encouraging volunteers and offering financial and spiritual support (Al Yosif, 2005, pp. 21-22).

Thus, the culture of volunteerism comes as one of the necessary needs to be strengthened and developed in the personality of the individual, which evolves through the processes of socialization and cultural formation by the educational institutions.

Types of Volunteer Work

Types of voluntary work vary depending on the organization, whether public, private or non-profit. It also depends on whether that organization engages in voluntary work for a fixed or long period of time, or according to its program. In general, two forms of volunteerism can be distinguished.

Individual Voluntary Work

It is a social act or behavior done by the individual spontaneously, willingly and without any financial gain, based on ethical, social, humanitarian or religious considerations. Individual volunteerism is, however, can stop at any time when facing obstacles unlike the second type.

Institutional Voluntary Work

It is more advanced than individual voluntary work, more organized and more influential in society. In society, there are many institutions in which voluntary work is of great importance. Institutional volunteerism contributes to all social efforts and energies, making them effective if these efforts are incorporated and coordinated (Amer, 2011, p. 9).

It gives the group more respect and strength and thus makes its members immune against individualism or selfishness or deviation from the goals set, and makes them stronger when facing difficulties and challenges during the exercise of voluntary work. Other kinds of voluntary work is donating money and to a body to do something, and volunteering through consultation or research and study.

Benefits of Volunteering

Voluntary work allows people to be involved in the lives of their local and national communities. It gives them a sense of belonging and integration. It also gives them the chance to participate directly in change processes and to support new developments. Thus, it becomes a tool to control their lives and fulfill their responsibilities.

Impact of Voluntary Work on the Individual and Society

Voluntary work has many positive effects both at the individual and community levels.

The Most Important Effects on the Individual Volunteer

First, feeling a kind of psychological comfort when doing any voluntary work.

Second, getting new life experience and knowledge in life. Third, acquiring abilities and capabilities to help improve the behavior of the volunteer.

Fourth, filling in leisure times in a useful way and strengthening the sense of national belonging and making the individual well aware of his or her value and social status. (Al Maliki, 2010, p. 44).

It is worth noting that values of solidarity and the sense of empathy, sympathy and cooperation are a common denominator of all voluntary activities. As these values play an essential role in promoting the physical, economic and social well-being of the most vulnerable and poorest classes in the society, voluntary work can contribute to reducing slavery. Social cohesion and confidence are greater and stronger where voluntary activities take place.

The Positive Effects of Voluntary Work on Society

The positive effects of volunteering on society are:

1. Increasing and reinforcing solidarity and human relations among the members of the society;
2. Developing society in all respects of life;
3. Eliminating destitution as much as possible. Volunteerism often launches campaigns for raising financial donations;
4. Promoting positive competition between individuals and groups;
5. Spending money that would otherwise be spent uselessly in voluntary service projects of paramount importance in society, such as building a school for war-displaced people or refugees (Mashalah, 2017).

It, is therefore, clear that voluntary work must be taken into consideration in every development plan, where it is essential to expand volunteerism and support it, and to promote and reinforce its culture within society.

SOCIAL MEDIA

Social Media sites and networks are one of the most prominent manifestations of the new mass media of the Internet revolution. It depends on new technologies like forums and social networking programs.

Social media has the advantage of being a non-intermediary media, because unlike traditional mass media, (which is an intermediary media that starts as institutional broadcast directed toward public reception), everyone here can be a journalist and a spectator or follower at the same time.

Social media networking can be defined as a set of web sites that have emerged with the second generation of the Internet. It enables people to communicate in a virtual community environment where account holders are grouped according to interest groups or affiliation networks through direct communication services such as sending messages, viewing others' profiles following others' news, the news they themselves want to make public. Social media offers writings, pictures, films, chats and definitions. (Alsaid & Abdelal, 2009, p. 7).

Social Media networks have become an effective means of communication in everyday events, providing an opportunity for all young people, researchers and politicians to convey their ideas and discuss their social, economic and political issues whatever they like to convey thus going beyond natural borders to new and uncensored spaces.

Advantages and Disadvantages of Social Media

Advantages of Social Media Networks

Social media has many benefits like:

1. Ongoing communication among users of these networks with each other. This communication might reinforce social cohesion and improve relations in the community. Social media can also be a means to exercise cultural and social activities that aim at bringing people closer;
2. Social Media also facilitates the process of communication. It allows citizens to have the ability to express themselves, their community and issues;
3. Another advantage of social media networking is that it is global, going beyond time and space barriers and facilitating communication easily in a virtual technical environment;
4. It also offers the possibility of interactivity where the interactive user is an active player because he or she is the receiver, the sender, the writer and the participant;
5. Social media is also a channel that enables people to launch their innovation and creativity. It can also help spread the culture of volunteering and encourage young people to engage in it through the promotion and publicity displayed on its websites about its importance and its benefits for individuals and society;
6. It also helps to exchange ideas, views and getting to know the culture of people of other nations (Al Dodi, 2011, p. 8).

Despite the importance of social media networks, but like any other technological means they have their disadvantages and shortcoming. Some of the disadvantages of social media can be summed up as follows.

Disadvantages of Social Media Networks

1. Excessive use has a negative impact on the health of individuals, which makes them more vulnerable to tension and depression and other psychological disorders;
2. Wasting youths' surfing through the pages of those sites and talking about trivial matters;
3. Overuse can cause social isolation, lack of integration of the individual with his or her family and detachment from the problems and concerns of the family as well as lack participation in social events;
4. Social media can a fertile soil for the emergence of abnormal.

Ideas as well as rumors. All new events are echoed and exchanged on social media sites by different and sometimes contradictory groups (Yaqob, 2015, p. 35).

The Role of Social Media Networks in Spreading the Culture of Voluntary Work in Society

Volunteerism was not far from the state of human consciousness in its new nature in social media networks.

Many institutions and associations took advantage of the new media in spreading the culture of volunteering in all its forms by establishing pages on social media networks .They made their activities public on social media sites. This helped a lot to spread the culture of voluntary work and to attract more volunteers.

Social media networks provided an unprecedented opportunity to address people from all walks of life in different regions.

It is worth noting that social media are mostly used by the young people. This group of people is the most important resource. It the pillar of the voluntary workforce.

Therefore, it was necessary to reach them and speak their language and thus attract and encourage them to volunteer and plant the culture of voluntary work in their minds. It is not always necessarily to use social media networks to publish pictures, news or videos about the activities of associations or voluntary organizations. It is enough to write about topics which have something to do with voluntary work showing its benefits as far as individuals and society are concerned.

In addition to the above mentioned, the role of social networks in promoting and reinforcing the culture of voluntary work within society can be achieved by:

1. Making use of technology as an activity that contributes to the development of volunteerism;
2. Collecting, storing, retrieving and analyzing voluntary work information, because using such networks in information systems management makes information available in a timely and efficient manner based on the efficiency of available data;
3. Improving the quality of the internal processes of volunteerism and providing effective information systems to facilitate the efficiency of planning and organization across the networks of social media;

4. It is also possible to receive and study complaints and urgent cases electronically and analyze them to verify the credibility of the urgent situation (Kirdi, 2011, p. 44).

CONCLUSION

Social media networks are of great importance as far as their users are concerned. They have progressed from being a means of communication to a tool used to promote and support voluntary work, which is crucial and vital for society and its members. Social media is indispensable to promote the culture of voluntary work in society, especially among the youth.

Voluntary work associations and organizations have been used to serve and achieve the general and specific objectives for which they were found.

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Chapter 29

Detection and Prevention of Twitter Users with Suicidal Self-Harm Behavior

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ABSTRACT

Recently, with the development of communication means such as 4G and the rapid growth of the use of mobile devices (smartphones and tablets) the number of twitter users has increased exponentially. By the end of 2018 Twitter had 321 million active users with over 600 million tweets every day. However, all this information will have no use if we cannot access the meaning it carries. The authors' idea is to identify Twitter users with suicidal or self-harm behaviors by analyzing their tweets using an algorithm inspired from the social life of Asian elephants. The objective is to prevent the situations of depressions, threats of suicide or any other form of self-destructive behavior that exists on Twitter.

INTRODUCTION AND PROBLEMATIC

Twitter strives to provide an environment where users can feel free to express themselves. People's anxiety is reported to have increased 70% since the advent of the internet, according to a study published in 2018 by UK-based Royal Society of Public Health (Araque, 2019). Social networks are a vector of anxiety, sleep problems and depression. Twitter receives in this study, the palm of the worst network for morale.

In 2017, an event prompted them to react: an 18-year-old man posted a tweet explaining his desire to end life on twitter, it was April 24, 2017. The next day, he put an end to his days. A shock for users and a bad buzz for twitter. Since 2017, social networks have been working with suicide prevention associations around the world to provide support to persons in distress (Alaei, 2019).

It is difficult to interpret online publications. Even so, there are some warning signs that can help us to identify people who are suicidal or have a risk of self-harm such as:

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- Does this person show a sense of depression or hopelessness in his publications?
- Does this person publish morbid comments? Does she evoke death unequivocally?
- Does this person post comments about past suicide attempts?
- Does this person describe or publish photos of self-harm?

In this context our goal is to develop a new system to detect depressive persons with self-harm or self-suicidal behavior using an algorithm inspired from the social life of Asian elephants. This system aims to analyze the feelings of twitter users based on the interpretation of their publications to prevent situations of depression by signaling a self-destructive post.

The general structure of this paper will be as follows: we start with a state of the art for presenting the essential works in this topic, after we go on with a section detailing our approach and proposed components then an experimental and comparative study will be carried out for presenting the best results obtained. Finally, we will finish with a conclusion and describing some lines of thought that remain open and that we want to share them with you.

LITERATURE REVIEW (RELATED WORK)

Our people detection problem with self-harm or suicidal behavior is registered in sentiment analysis field. In what follows we will mention the different works to realize in this context:

The work of Mohammad et al In (Mohammad, 2013) have described two state-of-the-art of SVM classifiers, one to detect the sentiment of messages such as tweets and SMS (message-level task) and one to detect the sentiment of a term within a message (term-level task) followed by the contributions of researcher Nasukawa and his team in 2003 (Nasukawa, 2003) who proposed a new method for extracting associated concepts from segments and summing the orientations of the opinion vocabulary present in the same segment.

In 2018 Mauro Dragoni et al proposed a commonsense ontology for sentiment analysis based on SenticNet, a semantic network of 100,000 concepts based on conceptual primitives (Dragoni, 2018). In 2006, researchers Kanayama and Nasukawa (Kanayama, 2006) as well as Ding and Liu (Ding, 2008) in 2008 proposed, for their part, a learning-based approach that uses the coordination conjunctions present between a word already classified and a word unclassified.

A new Approach using deep learning was proposed by Cicero Nogueira dos Santos in 2014 for the analysis of tweets, the authors applied their idea on the corpus STS and they have obtained an accuracy of more than 80% (Dos Santos, 2014). A Multimodal sentiment analysis is a very important growing field of research. A promising area of opportunity in this field is to improve the multimodal fusion mechanism in (Majumder, 2018) Majumder et al have developed a Hierarchical Fusion with Context Modeling based on a Multimodal Sentiment Analysis.

In (Alaei, 2019) different approaches to sentiment analysis applied in the field of data analysis and evaluation of metrics. The paper concludes by outlining future research avenues to further advance sentiment analysis in tourism as part of a broader Big Data approach.

In (Xiang, 2018) a new methodology has been adopted using a machine learning approach with which textual documents are represented by vectors and are used for training a polarity classification model. Several documents' vector representation approaches have been studied, including lexicon-based, word embedding based and hybrid vectorizations. The competence of these feature representations for the

sentiment classification task is assessed through experiments on four datasets containing online user reviews in both Greek and English languages, in order to represent high and weak inflection language groups. In (Zheng, 2018) Zheng et al had the idea of sentimental feature selection for sentiment analysis of Chinese online reviews and also in (Proksch, 2019) the authors create a multilingual sentiment-based approach that can effectively capture different types of parliamentary conflict.

In (Araque, 2019), Araque et Zhu proposed a sentiment classification model that uses the semantic similarity measure in combination with embedding representations. In order to assess the effectiveness of this model, the authors perform an extensive evaluation. Experiments show that the proposed method can improve Sentiment Analysis performance over a strong baseline, being this improvement statistically significant.

PROPOSED APPROACH: THE SOCIAL LIFE OF ASIAN ELEPHANT

Generally, each Asian elephant lives in a group led by a matriarch¹ (aged and experienced), who coordinates the movements of the herd. Elephants in each group may be temporarily divided to search for sources of water or food while maintaining contact (pool, 1999).

Elephants communicate with each other directly and discreetly up to 10 km away with an inaudible infrasound for humans (Bates, 2007). The experiments shown that elephants are able to recognize and follow their family members (Bates, 2008). They will join the contact calls sent by his friends from the same group.

The organization of the elephants social life has a practical advantage: when resources are scarce, in the case of drought, for example, links become tighter and elephants in the same group (family) come closer together. Each elephant in a drought situation looks for water points and follows the choice of its congeners. When he finds water points, he sends signals to inform his friends of the place of water. Elephants maintain close ties even after a separation of more than one year (McComb, 2001).

A scenario that summarizes the social phenomenon of Asian elephants in search of food or water points in case of drought is: Initially, a set of elephants are looking for a water point in the space randomly. Elephants do not know where is the water point but they know exactly how far away is and the positions of their elephant friends, then the question that arises: what is the strategy followed to find the water in good conditions? The best solution is to follow the elephants having best position relative to the water point with which have a strong bond of friendship thus to follow the laws of the matriarch who guide the direction of the group.

PASSAGE FROM NATURAL TO ARTIFICIAL

This part is dedicated to the passage of the natural life of social Asian elephants to artificial life as shown in Table 1.

Table 1. Passage from social life to artificial life of social Asian elephants' algorithm

Natural life of Asian social elephants	Algorithm of social Asian elephants
An elephant joins the water point found by his family group	Each user is classified in the most appropriate class (depressive or non-depressive)
Suppose the case where there are only two water points in the search space	Two classes (depressive and no-depressive)
Environment	Search space (twitter)
Elephant	Twitter user
Group of elephants	The users tweets (corpus)
Matriarch (oldest female)	Represents the message of the person with the highest score in the learning base
Best individual of each elephant group (initialization)	For each class it is the Person who has the best correlation with the centroid (barycenter)
Best individual (in process)	Best fitness function
Friendship link between elephant i and the best individual	α : link between each user and the best individual of each class (depressive or non-depressive)
Friendship link between the elephant I and the matriarch	β : link between each user and the matriarch of each class (depressive or non-depressive)
Communication between the elephant and the best individual	$ ME_T^g - E_T^i $
Communication between the elephant i and the matriarch	$ PE_T^g - E_T^i $

THE ARTIFICIAL LIFE OF SOCIAL ASIAN ELEPHANTS' (SAE) ALGORITHM

We have imitated the social life of Asian elephants and their water points search phenomenon in case of drought to formulate a new algorithm to detect depressive behavior by analyzing the users of twitter network. In our problem we have two classes depressive and no-depressive. The user status will be transformed to vectors. Each user with a velocity V is classified according to a fitness function based on his experience, the experiences of other users, the friendship relation that exists with the users of each class and the directives received by the matriarch of each class. The input of the algorithm is a set of twitter users' vectors (corpus), divided into two parts the learning basis and the test basis. The general process is detailed in Figure 1 and the stages of its operation are discussed later:

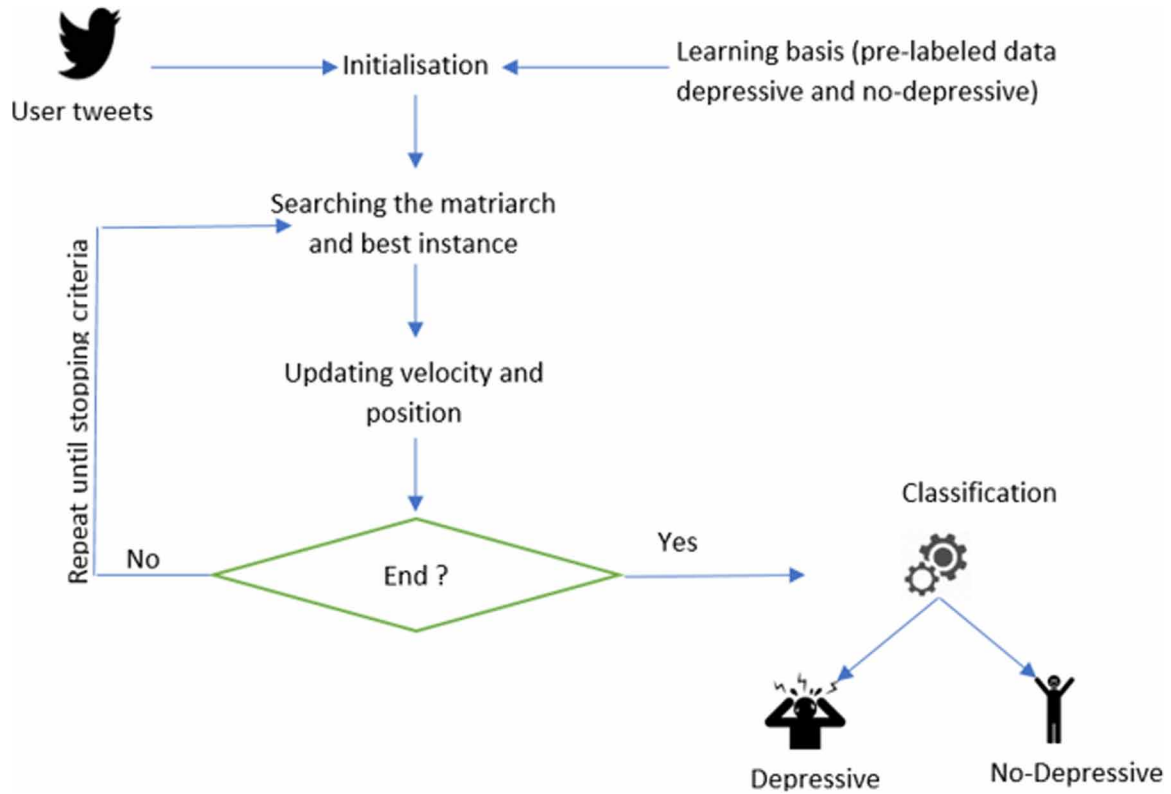
Initialisation

Initially, the position E_0^i and the velocity V_0^i of each user relative to each class g are calculated by the next equations (1) et (2):

$$VE_0^i = score(i) \quad (1)$$

$$E_0^i(g) = \text{the linear correlation between instance } i \text{ and the centroid of class } g \quad (2)$$

Figure 1. General architecture of social Asian elephants (SEA) algorithm for depressive person detection



- $VE_0^i(g)$: The initial movement velocity of the user i .
- $E_0^i(g)$: The initial position of the instance t relative to the class g .
- $Score(i)$: The weights sum of the components user vector i .

For the classification of a new instance (of the test database) the following process is launched:

Matriarch

We are looking for the matriarch of each class (depressive or no-depressive) that is the user with the highest score (the elephant female, the oldest and the most experienced).

$$Mt(g) = (\max(score(i)))g \quad (3)$$

- $Mt(g)$: The matriarch user at time t in class g .
- $(\max(score(i)))g$: the user that has the highest score in the class g .

Velocity

The movement velocity of each user changes from time t to $t + 1$ by the equation (4):

$$VE_{T+1}^i(g) = \frac{VE_T^i}{\alpha \left(\left| ME_T^g - E_T^i \right| \right) + \beta \left(\left| PE_T^g - E_T^i \right| \right)} \quad (4)$$

- VE_T^i : The movement velocity of the user i at time t relative to the class g.
- ME_T^g : The position of the best user at time t in class g (initially it is the closest user to the centroid of the class).
- E_T^i : The position of user i at time t relative to the class g.
- PE_T^g : The position of the matriarch of the class g at the time t.
- α : the friendship relation between the best user and the user i.
- β : the friendship relation between the matriarch and the user i.

The Position (Fitness Function)

This step calculates the new position of each user relative to each class through the equation (5):

$$E_{t+1}^i(g) = E_t^i(g) + VE_{t+1}^i(g) \quad (5)$$

- $E_t^i(g)$: position or fitness function of user i at time T in class g.
- G : has two values depressive or no-depressive.
- $VE_{t+1}^i(g)$: velocity of user i at time T + 1 in class g

Evaluation (Classification) and Update

Each user is classified in the class (depressive or no-depressive) with the lowest fitness function. After each iteration the parameters of the algorithm are updated. The same process will be repeated until stopping criterion (number of iteration).

Procedure

The next pseudo code summarizes the functioning of the social elephant algorithm for the detection of depressive people in twitter network.

Social elephants algorithm.

- 1: Elephant: twitter user
- 2: input:
- 3: - corpus (learning basis, test basis)
- 4: - Initialisation $(E_{T=0}^i, V_{T=0}^i)$
- 5: $T \leftarrow 0$
- 7: while not CD do
- 8: for each tweets user to be classified do
- 9: for each class g do

10: calculate
 11: $Mt(g) = (\max(score(i)))g$
 12: find best user ME: with smaller position E
 13: $VE_{T+1}^i(g) = \frac{VE_T^i}{\alpha(|ME_T^g - E_T^i|) + \beta(|PE_T^g - E_T^i|)}$
 14: $E_{t+1}^i(g) = E_t^i(g) + VE_{t+1}^i(g)$
 15: end for
 16: L' instance(i) \leftarrow the class with the smallest fitness function
 17: end for
 18: update (ME, M, V)
 19: $T \leftarrow T + 1$
 20: end while
 21: output: the class of each user from the test basis.

For the vectorization of user tweets we use: i) text cleaning by eliminating special characters and numbers. ii) transforming tweets to a set of terms using bag of words, stemming or n-gram characters. ii) coding using TF (Term Frequency) or TF * IDF (term frequency * inversed document frequency).

Tweets2011 Corpus (Tweets)

Table 2. General statistical dataset Tweets2011

Category	Depressive	not depressive
Cinema	85	62
Policy	49	33
War	64	13
Sport	33	58
Music	119	56
Science	19	58

In our experiments we used the Tweets2011 corpus that was used in information retrieval famous competition called TREC 201. This specialized body built to keywords. The authors of this corpus have used the API to retrieve Twitter4J 649 tweets where they used keywords (politics, cinema, sport, music, war, science). After TREC in 2012 these tweets were classified in two class (depressive tweet, tweet not depressed) (McCreadie, 2012). The following table summarizes the classification of tweets.

Validation Measures

To validate our results, we have used different metrics that exist in literature such as recall, precision, f-measure, kapa static true positive, false positive, false negative and true negative (Oksuz, 2018).

Results and Discussion

In order to validate the quality of our proposal we have applied an experimental protocol by varying:

- Text representation methods.
- We set the parameters Alpha = 1 and beta = 1.
- Number of iteration.

with objective is to identify the sensitive parameters, we have fixed in each test one parameters and varying the others. We calculate the f-measure, entropy, recall precision kappa static. The best results are illustrated in the following tables.

NB: The boxes colored in blue represent the best results and the boxes colored in red represent the bad results.

Result with Variation of Text Representation:

As a result of the different languages that exist in the world, finding the best message representation technique is a very important task. In this part, we set each time the technique of representation of text (N-grams-characters with N of 2 to 5 and bag of words) and we vary the other parameters. The results are shown in the next table and figures.

Table 3. The results of analysis using the Asian elephant's algorithm for detecting depressive person in twitter with variation of representation techniques

		Evaluation measures							
		Precision	Recall	f-measure	TS (%)	TE(%)	static kappa	Confusion matrix	
Text representation techniques	Bag of words	0.724	0.699	0.7	67.79%	32.21%	0354	258	98
								111	182
	Stemming	0.786	0617	0.6913	68.72%	31.28%	0386	228	62
								141	218
	2-gram characters	0.819	0.7235	0.769	75.19%	24.81%	0.5038	267	59
								102	221
	3-gram characters	0.86	0.764	0811	79.81	20.19	0.596	282	44
								87	236
	4-gram characters	0.918	0.791	0.854	84.12%	15.86%	0688	292	26
								77	254
	5-gram characters	0844	0.764	0802	78.58	21.42	0.56	282	52
								87	228

Figure 2. Number of tweets depressive and not-depressive obtained by the Asian elephants algorithm classified by categories

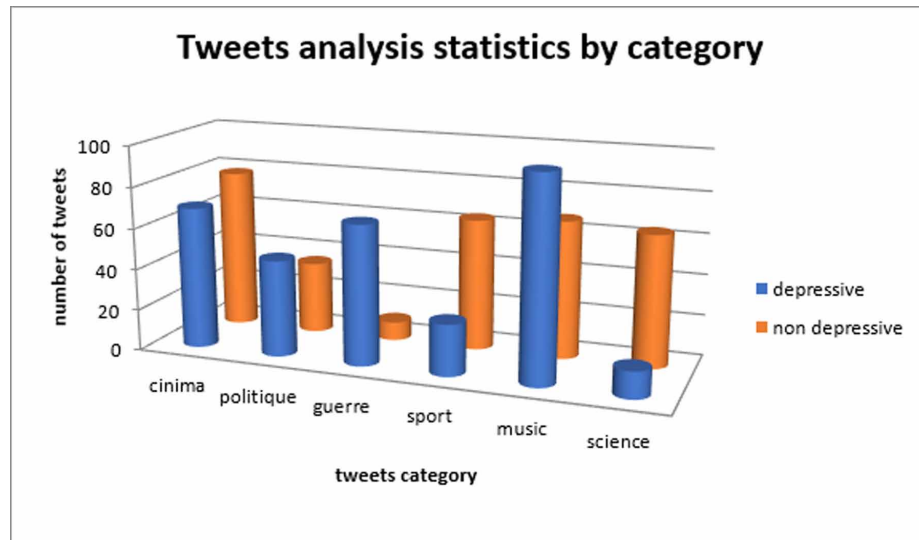
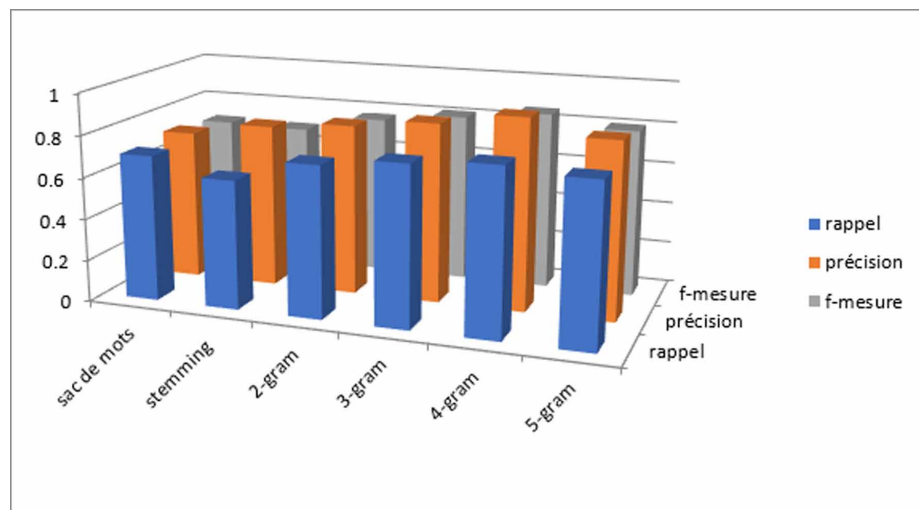


Figure 3. Comparison of text representation techniques results using the Asian elephants algorithm



By observing the Table 3 and the previous Figures (2 and 3) we found that the technique N-grams characters (the blue boxes) allows to obtain the best results compared to the representation bag of words with a $F = 0.85$, $TS = 84\%$ and $\text{kappa static} = 0.68$. A discussion and interpretation of the different results is detailed below:

- The n-gram representation is tolerant to the problems of copy-and-paste technology and especially when copying a tweet from a PDF document, a Word document or from a web page.

- Some characters of the copied words will be imperfect for example, it is possible that the word “text-mining” is copying “text-ining”. A word bag method will have trouble recognizing that it is the word “mining” whereas the technique N-grams characters takes into account other N-grams like ‘ini’, nin and ing to recognize the word. It can also detect compound words such as “united state” or “data mining”, but the word bag method ignores them.
- The bag of word technique requires a semantic and syntactic treatment to remove the ambiguity related to the words and sentences, which is not the case in our work where we have not applied linguistic treatment on the texts because the computer implementation of these procedures is relatively cumbersome. On the other hand, the N-grams technique is independent to the language and makes it possible to treat the tweets of the users in their raw states
- the major drawback of the stemming technique is the loss of complete information on the terms since it is not based on powerful linguistic constraints, which can lead to an amplification of noise and semantic confusions by grouping under the same root words of different meanings. Like the lexical root “port” which groups in the same set the verb “to wear” and the name “port” whereas semantically are very distinct. On the other hand, the technique n-grams is perfectly adapted for texts coming from noisy source and it can lead us to obtain free the roots of the words. For example, the words advance, advance, advance, and advancement automatically have much in common when considered as sets of N-grams. Another advantage is its ability to work with both short and long documents.
- The representation N-grams is dependent on a parameter N and the question which arises: What is the value of N optimal? Analyzing the returned results, we find that $N = 4$ has spawned the production of relevant terms to allow the Asian elephants algorithm to differentiate between depressive tweets and not-depressive tweets.

Results with variation of iteration number:

Table 4 and Figures (4 and 5) summarize the influence of the parameter iteration number in the obtained results.

Table 4. The analysis results using the Asian elephants’ algorithm and variation of distance measures

		Validation Measures							
		Precision	Recall	f-measure	TS (%)	TE(%)	static kappa	Confusion matrix	
Distances measures	10	0.74	0.59	0.654	65.48%	34.52%	0313	221	76
								148	204
	40	0.918	0.791	0.854	84.12%	15.86%	0688	292	26
								77	254
	80	0.781	0715	0.745	72.41%	27.59%	0.45	264	74
								105	206
	120	0.7217	0674	0.699	66.71	33.29	0347	249	96
								120	184

Figure 4. The results of analysis using the Asian elephants algorithm for detecting depressive person in twitter with variation of iterations number

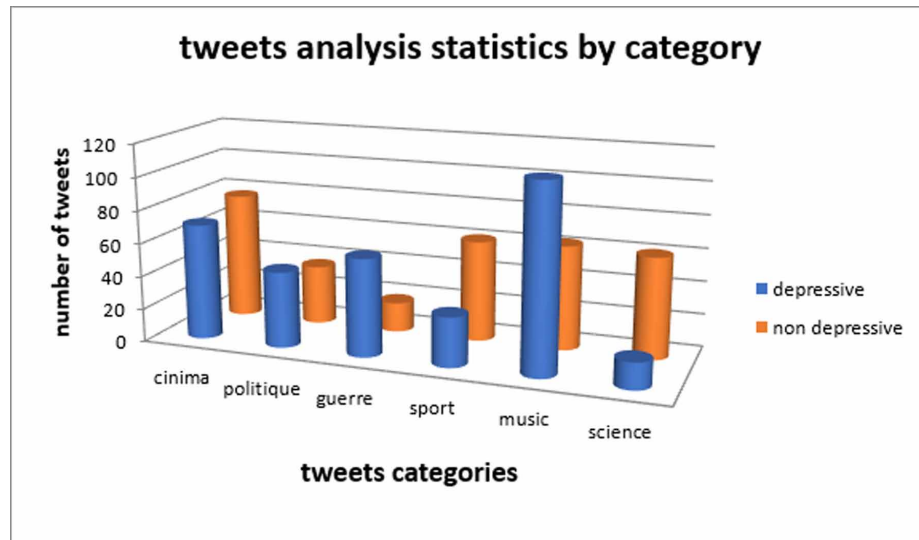
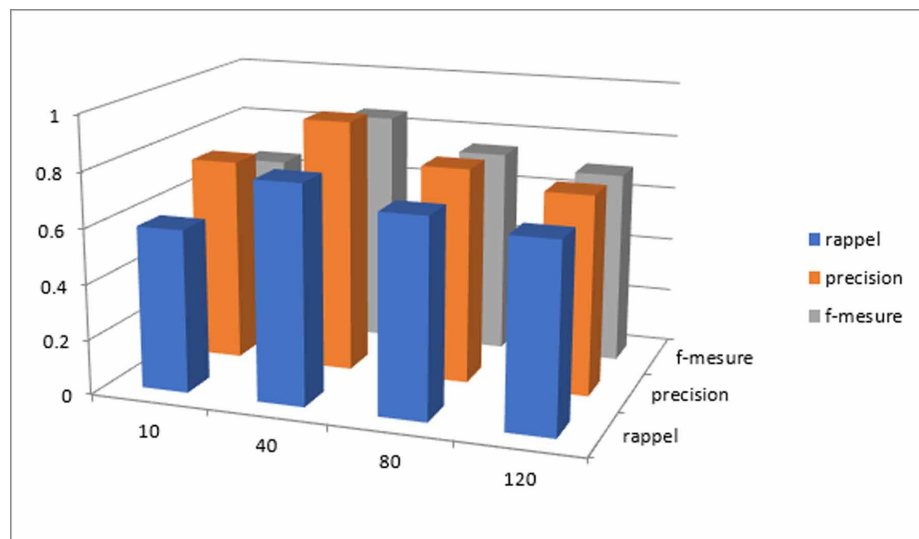


Figure 5. Comparison of distance measurements using Asian elephants



The results clearly show that the stopping criterion is a sensitive parameter because the quality of results of the social elephant algorithm change with the variation of the iterations number.

Comparative Study

in order to reference the results of our algorithm we conducted a comparative study with classical techniques (Naive Bayes, decision tree, KNearest Neighbor) and with bioinspired techniques integrated in the EBIRI tool (machine heart lungs and social cockroaches algorithm (Bouarara, 2017)).

Table 5. Comparison results of the social elephant algorithm with other algorithms that exist in the literature for the problem of depressive person detection

		Valuation Measures							
		Precision	Recall	f-measure	TS (%)	Recall(%)	static kappa	Contingency Matrix	
Algorithms	Naive bayes	0.781	0.715	0.745	72.41%	27.59%	0.45	264	74
								105	206
	Decision tree	0.608	0.51	0.558	53.62%	46.48%	0.09	190	122
								179	158
	Asian elephants algorithm	0.918	0.791	0.854	84.12%	15.86%	0.688	292	26
								77	254
	Social cockroaches Algorithm	0.92	0.74	0.82	82.43	17.57	0.65	276	21
								93	259
	Heart lung machine	0.88	0.82	0.848	84.28	15.72	0.68	306	39
								63	241

The results of this part validate our originally set goal where our algorithm is better than the like algorithms and gives the same performance as the algorithm because our proposal is based on the principle that the solution needs to improve from iteration to another through the intelligence of the group.

CONCLUSION

detecting depressed people is a very difficult task because the feelings of people are not stable and can change from one minute to another and especially based on information shared in virtual world (tweeter). According to our results we notice that Asian elephant's algorithm gives better performances compared to others classical and bioinspired algorithms.

Finally, we propose that Social network owners must add an option to analyze the status of each user to say that a person is in a normal or depressive situation by suggesting those users to:

- Consult a doctor or psychologist because There are many effective treatment modalities against depression, including medications (eg antidepressants) and psychotherapy.
- Get as much information as possible about depression and how it is treated. This will allow you to understand what is happening to you and make informed decisions.

- Adopt a healthy lifestyle and Work less if necessary, avoid sources of unnecessary stress, allow yourself hours of rest and sleep, and eat well are all measures that can help you get back on your feet quickly.

FUTURE WORKS

We will apply the algorithm to the problem of suspicious person detection, spam filtering, DNA classification, information retrieval, sentiment analysis in video, plagiarism detection, and all classification problem supervised or unsupervised.

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ENDNOTE

- ¹ The matriarch: she can be a big sister, mother, aunt, grandmother or grand aunt for all the members of her group. She has knowledge of the group; she knows the migratory routes, the rhythm of the seasons and the important places to find water and vegetation.

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Chapter 30

Recurrent Neural Network (RNN) to Analyse Mental Behaviour in Social Media

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ABSTRACT

A recent British study of people between the ages of 14 and 35 has shown that social media has a negative impact on mental health. The purpose of the paper is to detect people with mental disorders' behaviour in social media in order to help Twitter users in overcoming their mental health problems such as anxiety, phobia, depression, paranoia. The authors have adapted the recurrent neural network (RNN) in order to prevent the situations of threats, suicide, loneliness, or any other form of psychological problem through the analysis of tweets. The obtained results were validated by different experimental measures such as f-measure, recall, precision, entropy, accuracy. The RNN gives best results with 85% of accuracy compared to other techniques in literature such as social cockroaches, decision tree, and naïve Bayes.

1. INTRODUCTION AND PROBLEMATIC

The human beings are under unprecedented competition pressures. Unavoidably, growing teenagers have to experience various adolescent psychological pressures, coming from study, communication, affection, self-recognition, etc. Facing the radical reform of society and economy, lot of persons get confused and become over-stressed due to their immature development of self-cognition and discrimination ability towards things (Koenig, 2018).

Instagram, Twitter, Facebook and Snapchat: these platforms attract the attention of 91% of 16-24 year olds. Between narcissism and harassment, creativity and self-expression, social networks are at the origin of a social revolution, especially among “millennials” (born between 95 and the early 2000s). Unfortunately the conclusion of StatusOfMind is that: social networks are, for the most part, bad for the morale

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of its young users. Thus, twitter is considered to be the most harmful followed closely by Snapchat, then Facebook and finally Instagram (Dragoni, 2018). According to a study by the public health foundation (Mental Health Foundation, 2015), the rate of anxiety and depression has jumped 70% among young people in the last 25 years when it correlated these figures with the increased use of social media. The study established a list of the negative consequences of social networks: cyber-harassment, Addiction (or the feeling of anxiety about missing something), Anxiety, depression, the feeling of loneliness, lack of sleep, physical ill-being. more than one in two (55%) say they have been embarrassed in their daily life by “symptoms of mental difficulty” (anxiety, phobia, depression, paranoia). Even more worrying: one in five young people (22%) say they have felt this discomfort significantly (HO, 2018).

In recent years, we are in a digital world where information is available in large quantities and in various forms. 80% of this mass of information was in textual form. It has only been recently that psychologists, interested in the psychological underpinnings of word usage, have begun using similar analyses of text to understand what words reveal about how people think and feel. For this reason, we need specific tools to access sentiments and meanings hidden in these data (Kazemian, 2018).

In this paper, we have applied the recurrent neural network in order to detect persons with abnormal mental behaviour through twitter analysis. The general structure of this paper will be as follows: we start with a state of the art for presenting the essential works in this topic, after we go on with a section to detail the adaptation of Recurrent Neural Network then an experimental and comparative study will be carried out for presenting the best results obtained. Finally, we will finish with a conclusion and describing some lines of thought that remain open and that we want to share them with you.

2. LITERATURE REVIEW (RELATED WORK)

Microblogging websites have evolved to become a source of varied kind of information. This is due to nature of microblogs on which people post real time messages about their opinions on a variety of topics, discuss current issues, complain, and express positive sentiment for products they use in daily life. In fact, companies manufacturing such products have started to poll these microblogs to get a sense of general sentiment for their product.

The work of Hatzivassiloglou and McKeown in 1997 (Hatzivassiloglou, 1997) consists in using the coordinating conjunctions present between a word already classified and an unclassified word, followed by the contributions of researcher Nasukawa and his team in 2003 (Nasukawa, 2003) who proposed a new method for extracting associated concepts from segments and summing the orientations of the opinion vocabulary present in the same segment.

In the same year, researchers Yu and Hatzivassiloglou (Yu, 2003) used the probability of ranking a word to measure the strength of the orientation of the named entities. In 2006, researchers Kanayama and Nasukawa (Kanayama, 2006) as well as Ding and Liu (Ding, 2008) in 2008 proposed, for their part, a learning-based approach that uses the coordination conjunctions present between a word already classified and a word unclassified (Antonius, 2016).

The approaches of Pang et al introduced in 2002, and that of Charton and Acuna-Agost published in 2007 (pang, 2002) consist of classifying the texts according to a global polarity (positive, negative and neutral). These methods were optimized by Wilson and his research team in 2005 (Wilson, 2005). However, the difficulty lies in the constitution of these corpora of learning, which is a manual process to perform for each area studied. Finally, Vernier and his team (Vernier, 2009), have relied on a method

of detection and categorization of the evaluations locally expressed in a corpus of multi-domain blogs. The second Dictionary-based Approach has had a lot of work. In 2015, Rosenthal and his team (Rosenthal, 2015) built General Inquiry which contains 3596 words labeled positive or negative. In Nakov and al work published in 2016 (Nakov, 2016), they use only adjectives for the detection of opinions. They manually build a list of adjectives they use to predict sentence direction and use WordNet to populate the list with synonyms and antonyms of polarity-known adjectives.

Another significant effort for sentiment classification on Twitter data is by Barbosa and Feng (2010). They use polarity predictions from three websites as noisy labels to train a model and use 1000 manually labeled tweets for tuning and another 1000 manually labeled tweets for testing. They however do not mention how they collect their test data. They propose the use of syntax features of tweets like retweet, hashtags, link, punctuation and exclamation marks in conjunction with features like prior polarity of words and POS of words.

In Hu and Liu's work published in 2004 (Hu, 2004), they use only adjectives for detecting opinions. They manually build a list of adjectives that they use to predict sentence orientation and use WordNet to populate the list with synonyms and antonyms of adjectives whose polarity is known. In the work of Liu et al introduced in 2007 (Jingjing, 2007), the authors count the number of occurrences of each entity in the section expressing a positive opinion and that of negative opinions. In the work of Zhang and his team accompanied in 2010 (Zhang, 2010), the authors have shown that the noun phrases and the noun can also contain opinions. They count the number of positive and negative sentences for each feature of the product using the opinion lexicon prepared by Ding and his research team in 2008 (Ding, 2008). The strength (intensity) of opinion is also necessary. In 2005, Pang and Lee (Bo PANG, 2005) focus on sensing public opinion and use the work of Pang and Lee (Bo PANG, 2002) and Turney (TURNERY, 2002) to classify documents as "thumbs up "Or" thumbs down ", depending on the opinion they convey.

3. RECURRENT NEURAL NETWORK FOR ANALYZING PSYCHOLOGICAL TROUBLING PROBLEM

Considering the input vectors of tweets which vary over time. We used the recurrent connections generally connect all the outputs of the neurons of a layer to all the inputs of these same neurons. As shown in Figure 1 where the x_i^t and x_i^t respectively designate the inputs (weighting of the components of each tweet vector) and the outputs of the layer at time t (psychologically normal class or not).

The recurrent connections reinject the previous outputs y_j^{t-1} at the input of the layer at time t. the network traverses the entered tweet of size T according to the direction of reading, and produces an output y, as illustrated in Figure 2.

The RNN "reads" the input tweet, and produces its output at the last step of time. In this case, the output is a label (psychologically normal or not). Ex: 1) "This stay was wonderful" normal class. 2) "We had a terrible night our neighbor snored all night" psychologically not normal. The network learning consists in learning these three matrices on the basis of labeled examples. W, R and V:

- The w_{ji} are the weights connecting the i^{th} entry to the j^{th} neuron of the recurrent layer.
- The r_{jj} are the weights of the recurrence, connecting the output of the j^{th} recurrent neuron to the input of the j^{th} recurrent neuron.
- The v_{kj} connecting the j^{th} neuron of the recurrent layer to the k^{th} neuron of the output layer.

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Figure 1. A simple RNN layer with three inputs and two outputs. The weights w_{ji} connecting the inputs to the output, and the weights r_{ji} (recurrent connections) between the output and the input of the layer.

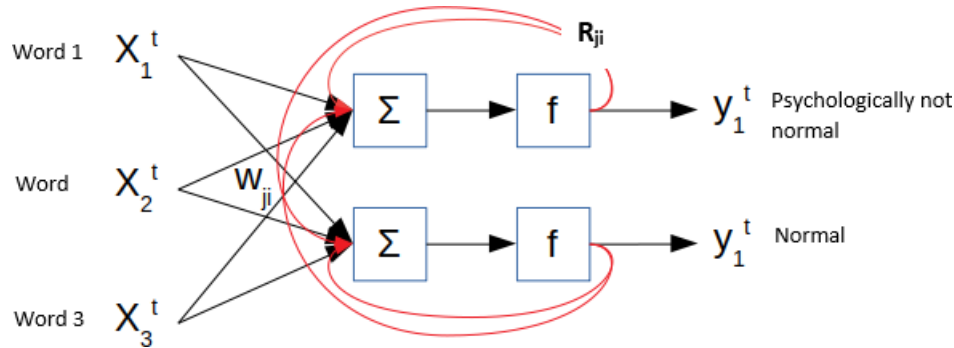
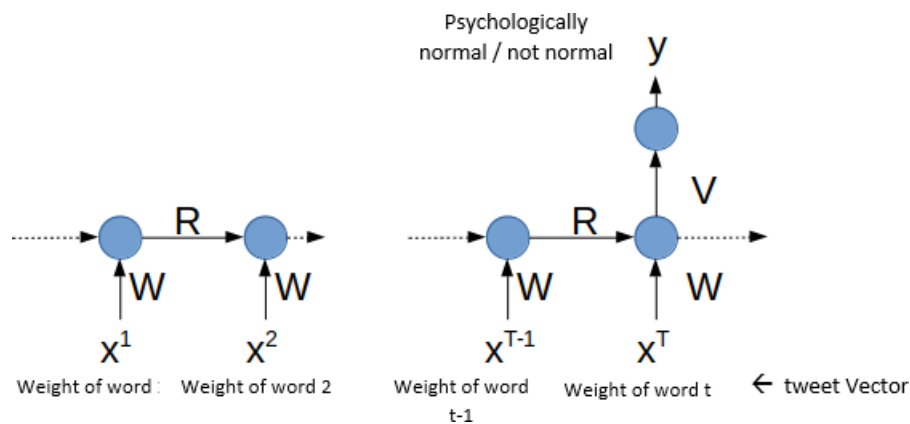


Figure 2. General architecture for detecting users with psychological disorders through the analysis of tweets



To allow the RNN to maintain a state over a long period of time we used the LSTM (Long Short-Term Memories) as illustrated in Figure 3.

As can be seen in the diagram, the memory cell can be controlled by three control doors that can be seen as valves:

- The input control part: decides whether the input should modify the contents of the cell.
- The forgetting control part: decides whether to reset the cell contents to 0.
- The output control part: decides whether the contents of the cell should influence the exit of the neuron.
- f : sigmoid function applied to the weighted sum of the inputs (in blue), the outputs (in green) and the cell (in orange).
- x_i et z_h : inputs and outputs of cell.
- s_c : the value of the cell.
- $i, \omega, c, i, \omega, c$: the indices respectively describing the results from the input control, forgetting and the cell.

[illegible]

- Input control:

$$b'_t = f(a'_t) \quad (2)$$

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$$a_{\phi}^t = \sum_{i=1}^I w_{i\phi} x_i^t + \sum_{h=1}^H w_{h\phi} z_h^{t-1} + \sum_{c=1}^C w_{c\phi} s_c^{t-1} \quad (3)$$

$$b_{\phi}^t = f(a_{\phi}^t) \quad (4)$$

- Output control:

$$a_{\omega}^t = \sum_{i=1}^I w_{i\omega} x_i^t + \sum_{h=1}^H w_{h\omega} z_h^{t-1} + \sum_{c=1}^C w_{c\omega} s_c^{t-1} \quad (5)$$

$$b_{\omega}^t = f(a_{\omega}^t) \quad (6)$$

Regarding the memory cell, its content s_c can be updated or reset to 0. A weighted sum of the inputs and outputs is first applied:

$$a_c^t = \sum_{i=1}^I w_{ic} x_i^t + \sum_{h=1}^H w_{hc} z_h^{t-1} \quad (7)$$

The content of the cell at time t is then recalculated as the sum of two terms:

$$s_c^t = b_{\phi}^t s_c^{t-1} + b_i^t g(a_c^t) \quad (8)$$

- The first term takes the previous value of the cell s_c^{t-1} , which can be canceled by the value of the oblivion control b_{ϕ}^t ;
- g : Sigmoid function;
- The second term is the influence of the weighted sum, driven by the value of the front door b_i^t .

Finally, the output of the LSTM neuron is calculated by an activation h applied to the value of the memory cell s_c^t , driven by the value of the output control b_w^t :

$$y_c^t = b_w^t h(s_c^t) \quad (9)$$

- h : Hyperbolic tangent function

For the learning phase of LSTM we used the BPTT algorithm (Backpropagation Through Time) as for classic recurrent networks, by unfolding the recurrent network over time. In our work. We have used Keras which has provide a very nice wrapper called `bidirectional` that make the implementation of LSTM effortless.

4. TWEETS2011 CORPUS (TWEETS)

In our experiments, we used the Tweets2011 corpus that was used in information retrieval famous competition called TREC 201. This specialized body built to keywords. The authors of this corpus have used the API to retrieve Twitter4J 649 tweets where they used keywords (politics, cinema, sport, music, war, science). After TREC in 2012 these tweets were classified in two class (depressive tweet, tweet not depressed) (McCreadie, 2012). Table 1 summarizes the classification of tweets. One advantage of this data, is that the tweets are collected in a streaming fashion and therefore represent a true sample of actual tweets in terms of language use and content.

Twitter is a social networking and microblogging service that allows users to post real time messages, called tweets. Tweets are short messages, restricted to 140 characters in length. Researchers have used hashtags related to emotions to create and using a combination of rules to generate an emotion score for each tweet in this corpus.

Table 1. General Statistical Dataset Tweets 2011

Category	Depressive	Not Depressive
Cinema	85	62
Policy	49	33
War	64	13
Sport	33	58
Music	119	56
Science	19	58

5. VALIDATION MEASURES

To validate our results, we have used different metrics that exist in literature such as recall, precision, f-measure, kapa static true positive, false positive, false negative and true negative (Oksuz, 2018).

6. RESULTS AND DISCUSSION

In order to validate the quality of our proposal we have applied an experimental protocol with objective is to identify the sensitive parameters. Firstly, we have fixed in each test one parameter and varying the others. We have calculated the f-measure, recall precision loss and accuracy. The best results are illustrated in Tables 2-3 and Figure 4.

We have noticed that the precision and the efficiency of the RNN clearly change with the change of the theme of each tweet. The results show that we had a success rate of 85% and an accuracy of 85%, Recall of 89%, f-measure of 87%. The increase in the number of epochs allows the performance of the RNN to be improved as shown in the curves in the Figure 4.

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Figure 4. The loss and accuracy of analysis using RNN-LSTM approach for detecting person with abnormal mental behavior over twitter by varying of epoch number

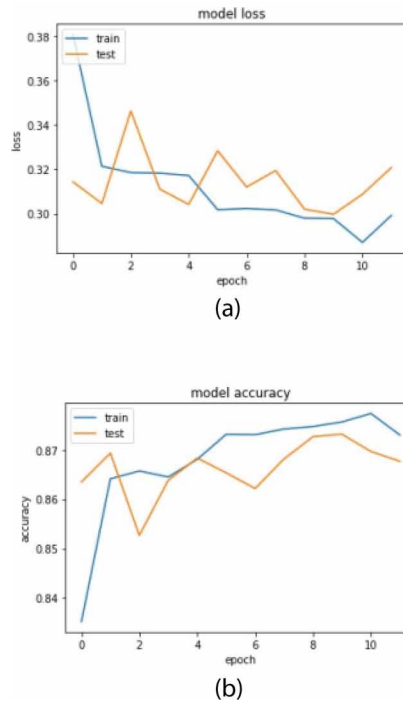


Table 2. The results of analysis using RNN-LSTM approach for detecting person with abnormal mental behavior over twitter

	Precision	Recall	F measure
Psychologically normal	0.92	0.89	0.91
Psychologically abnormal	0.83	0.89	0.83
Average	0.85	0.89	0.87

Table 3. The results of analysis using RNN-LSTM approach for detecting person with abnormal mental behavior over twitter in different categories

Category	Precision	Recall	f-measure
cinema	0.837	0.865	0.85
Politic	0.849	0.894	0.871
War	0.848	0.915	0.88
sport	0.982	0.911	0.945
music	0.887	0.929	0.908
science	0.864	0.882	0.873

7. COMPARATIVE STUDY

in order to reference the results of RNN approach we conducted a comparative study with classical techniques (naive bayes and decision tree) and with bioinspired techniques integrated in the EBIRI tool (machine heart lungs and social cockroaches' algorithm (Bouarara, 2017) (Table 4).

Table 4. Comparison results of our model with other algorithms existed in literature for the problem of depressive person detection

Algorithms	Valuation Measures							
	Precision	Recall	f-measure	TS (%)	Recall(%)	static kappa	Contingency Matrix	
Naive bayes	0.781	0.715	0.745	72.41%	27.59%	0.45	264	74
							105	206
Decision tree	0.608	0.51	0.558	53.62%	46.48%	0.09	190	122
							179	158
RNN-LSTM	0.85	0.89	0.87	85%	25%	/	329	59
							40	221
Social cockroaches Algorithm	0.92	0.74	0.82	82.43	17.57	0.65	276	21
							93	259
Heart lung machine	0.88	0.82	0.848	84.28	15.72	0.68	306	39
							63	241

The results of this part validate our goal where our algorithm is better than the others algorithms.

8. CONCLUSION

Under the rapid social and economic development and intensive competition pressures, adolescents are experiencing different psychological pressures coming from study, communication, affection, and self-recognition. If these psychological pressures cannot properly be resolved and released, it will turn to mental problems, which might lead to serious consequences, such as suicide or aggressive behaviour. The detection of person with psychological problem over twitter is a very difficult task because the feelings of users are not stable and can change rapidly especially in virtual world (twitter). We have adapted the Recurrent Neural Network (RNN) to this problem and obtained a result of 85% accuracy and 0.87 f-measure. The obtained results demonstrate that our proposition outperform others classical techniques existed in literature.

Finally, we propose that Social network owners must add an option to analyse the status of each user to say that a person is in a normal or depressive situation by suggesting those users to:

- Consult a doctor or psychologist because There are many effective treatment modalities against depression, including medications (eg antidepressants) and psychotherapy.
- Get as much information as possible about depression and how it is treated. This will allow you to understand what is happening to you and make informed decisions.
- Adopt a healthy lifestyle and Work less if necessary, avoid sources of unnecessary stress, allow yourself hours of rest and sleep, and eat well are all measures that can help you get back on your feet quickly.
- The analysis of Twitter data can further our understanding of how health behaviours are affected by social media discourse.

For Future works, we will apply the algorithm to the problem of suspicious person detection, spam filtering, DNA classification, information retrieval, sentiment analysis in video, plagiarism detection, and all classification problem supervised or unsupervised.

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Chapter 31

The Rise of Professional Facebook Content Generators in Vietnam: A Fake News Campaign Against the Betibuti Founder

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ABSTRACT

This case study is empirical research. It highlights the fact that the dynamic and complex Facebook content generators involve actively in the formulation and dissemination of fake news in Vietnam. Professional Facebook content generators include not only the paid online commentators, being hired by the government or business sector but also the professional journalists, who can earn for their living by promoting certain ideas and products on Facebook. As journalism functions as a tool for propaganda in Vietnam, even some governmental officers engage in the formulation of fake news, as long as the fake news serves the propaganda purposes. Through the analysis of the engagement of each group of Facebook content generators in fake news, this chapter contributes to the identification and elimination of fake news, and therefore, it is especially significant for journalists in reflexive truth-seeking practice.

INTRODUCTION

The media landscape in Vietnam during 2014-2019 has witnessed a rise of professional content generators on Facebook, including journalists and paid online commentators. The pre-mature legal system can be the reason for this phenomenon. Legal framework for social media management in Vietnam has not yet fully developed. In addition, Vietnamese does not have law for doing lobbying. As the consequences, using media, particularly the prominent social media platform, Facebook, to promote ideas and policies becomes a common practice. Doing propaganda is a norm for Vietnamese journalism. Thus, authorities

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can sometimes prioritise shaping the public viewpoints, rather than truth seeking and verification. This chapter investigates the roles and characteristics of those who produce and deliver content on Facebook for professional purposes, and elaborates their performance in a case study of the fake news against Le Nhat Phuong Hong, the founder of Betibuti, the breastfeeding community in Vietnam.

The first section of this chapter analyses the media context in Vietnam, from the measles outbreak in April 2014 to the approval of the Cyber Security Law in June 2018. The measles outbreak stimulated an unprecedented wave of using Facebook to call for the resignation of the Minister of Health. Responding to this wave, the Minister of Health began to use Facebook for public communication and, as of October 2018, she was the first and only minister managing a ministerial Facebook account in Vietnam. The government and business sector started to establish so-called ‘cyber troops’ and paid online commentators to manipulate social-media contents. Professional journalists engage in Facebook across a spectrum of three categories: social-media refuters, hybrid-media producers, and social-media leaders. Notably, journalists have formed a system of professional content generators on Facebook, doing advocacy for the business sector. The intensive engagement of journalists on Facebook blurs the boundary between professional journalism and manipulated communication. In June 2018, the National Assembly of Vietnam passed the Cyber Security Law, which requests proof of identification from social-media users. Before that, social-media accounts could be unverified and unidentifiable. These developments in the context of Vietnamese media have caused the mushrooming of fake news on Facebook, as well as degradation of journalistic quality.

The latter section of this chapter analyses a case study of fake news used against the Betibuti breastfeeding advocacy group. As of early March 2018, the group had 250,000 followers. In mid-March 2018, starting from a rumour on Facebook that ‘a mother and an infant died during home-based labour in Ho Chi Minh City’, the Ministry of Health of Vietnam (MoH) organised a press conference to deliver the MoH’s charges against the group. Some MoH officers confirmed that the rumour was true, which provoked public scrutiny of the group. Journalists and Facebook became platforms for character assassination and defamation of the group’s founder. Facebook deleted the founder’s account, resulting in the removal of the group from social media and cancellation of group events. MoH then confirmed that the story about a mother and an infant dying was not true. However, this fake news stopped the expansion of breast-milk promotion and advocacy. The reputation of the group founder was severely damaged and had not yet been restored by the end of October 2018. The positive media notice she had earned before was removed or blacked-out by mainstream journalism.

BACKGROUND CONTEXT FOR THE RISE OF PROFESSIONAL FACEBOOK CONTENT GENERATORS

This section explores the rise of professional Facebook content generators in Vietnam from 2014 to 2019. It identifies the measles outbreak in April 2014 as the beginning of using Facebook for public-opinion expression and manipulation. Following this change in the media landscape, a shift has occurred among state-controlled journalists from publishing on mainstream media to publishing on Facebook. Notably, journalists stopped working for the state-run media house and started earning by posting advertorial contents on Facebook, marking the formation of a new media system on Facebook parallel to that of the mainstream media system. Besides journalists, paid online commentators are joining the network generating Facebook contents. Although posting on Facebook was becoming a highly organised profes-

sion, the law associated with social media had not yet sufficiently reacted until the legislative enactment of the Cyber Security Law in June 2018.

Legal Framework

According to Article 14 of the Vietnamese Press Law (Government, 2016), only the entities belonging to the Communist Party of Vietnam (CPV) and the Government can establish journalism organisations. The private sector is not permitted to establish and run journalism organisations. The CPV and the Government control all aspects of journalism, including licensing, patrolling, staffing, training, material supplies, access to information, distribution of media products, and TV and radio frequency control (Palmos, 1995, pp. 7-37). Vietnamese professional journalists must apply for the government-issued press cards (Government, 2016). Violation of the press law results in press-card withdrawal and a ban from professional journalism practice. In this milieu, journalism organisations are the governmental units and journalists are the governmental information officials. Huu Tho (1997), a well-known Vietnamese journalism commentator, in his textbook for journalism education and training *Công việc của người viết báo* (The jobs of journalists), states, 'Since journalists are the spokespeople for the [Vietnamese Communist] Party, the first and foremost truth for journalists is the Party's truth' (p. 25). From this analysis, it could be asserted that journalism coverage is verified by the party-certified journalists and aligns with the guidance from that authority.

The regulations of social media in Vietnam have been elaborated in Decree number 72, the Penal Code and the newly introduced Cyber Security Law. First, Decree number 72 (72/2013/ND-CP, 2013) requires Vietnamese social-media providers to register their services under the governmental provision. However, the decree applies to Vietnamese social media and social networks, and is not applied to international counterparts, such as Facebook, YouTube and Google. Second, the sections numbered 79, 88 and 258 of the Vietnamese Penal Code 1999 (which were renumbered accordingly as 109, 117 and 343 in the new 2015 Penal Code) were often applied to violation of the state's interests, anti-state propaganda and actions aimed at overthrowing the government. However, privately owned businesses, nongovernmental organisations and individuals who do not work for the government are marginalised by the protective boundary of these code sections. Third, in June 2018, the Cyber Security Law was approved. Item 2a of Article 26 in this law requires the information of Vietnamese Internet users to be identifiable and physically accessible on Vietnamese territory. Item 1đ of Article 27 in this law announces that the Government can invest in research and development to trace online sources. Before the Cyber Security Law, there had been a legislative hollow in source identification and traceability. This created the favourable conditions for the rise of fake news on social media.

Measles Outbreak Marks the Rise of Facebook

There is evidence of Facebook blockage in Vietnam during 2009-2012 (Gallup, 2015; ITC News, 2012). However, since October 2012, Facebook has one million new accounts from Vietnam per month, and in March 2013, the number of Vietnamese Facebook users was 12 million (BBC, 2013). As of January 2018, Facebook was the top social-media platform in Vietnam. Sixty-one percent of Vietnamese Internet users were active on Facebook. With 55 million Facebook accounts, Vietnam ranked seventh globally in terms of the number of Facebook users (We-are-social, 2018).

In April 2014, a measles outbreak occurred in Hanoi, an extraordinary milestone in Vietnam media history. With this event, Facebook entered the realm of agenda setting, resulting in the unprecedented social-media embedded strategy among governmental officials.

Facebook Goes Mainstream

For the first time, Vietnamese journalism reported that Facebook had become the source for the top CPV leader. At the start of the measles outbreak, the Deputy Prime Minister, Mr Vu Duc Dam, confirmed that he got the news from a doctor's Facebook page, and not from state-run journalism. On April 16, 2014, Tuoi Tre newspaper published:

During the hospital inspection in the afternoon of April 15, the Deputy Prime Minister Vu Duc Dam said he would like to thank a doctor working in the National Paediatric Hospital who posted on Facebook about the fact that many children died of measles. After the post, the Deputy Prime Minister knew the fact and paid the hospital inspection visit. (Lan-Anh, 2014)

In this news article, Tuoi Tre newspaper covers both the Deputy Prime Minister and the source on Facebook. Stuart Hall discussed this practice: 'The media do not only simply "create" the news . . . [by reproducing the definitions of those who have privileged access] the media stand in a position of structured subordination to the primary definers' (Hall, Critcher, Jefferson, Clarke, & Roberts, 1979, p. 59). This opens up the ideological role of the media. Hall et al. (1979) cited Marx's basic proposition that 'the ruling ideas of any age are the ideas of its ruling class' (p. 59). He asserts:

Because this class owns and control the means of material production, the class also owns and controls the means of 'mental production'. In producing their definition of social reality, and the place of 'ordinary people' within it, they construct a particular image of society which represents particular class interests as the interests of all members of society. (Hall et al., 1979, p. 59)

In this example, by reporting that the top national leader used Facebook, the media produces a 'way-of-life' perception that Facebook is an accredited source for the ruling class, and as such, the society could also trust the source on Facebook.

Facebook for Online Mass Protest

The measles outbreak marked the first time the public used Facebook to protest the national leaders. A Facebook Page titled *Bộ trưởng Y tế hãy từ chức* (Call for the resignation of the Minister of Health <https://www.facebook.com/botruongyettetuchuc/>) was established in October 2013. However, not until the measles outbreak in April 2014 did the page get public notice. On April 18, 2014, 24 hours after Tuoi Tre newspaper published the news article about the hospital inspection by the Deputy Prime Minister, over 2,000 people joined this page. The number of likes dropped sharply on May 3, 2014, because on that day, public attention shifted to the Chinese oil rig Hai Yang Shi You 981, which entered the disputed sea of Vietnam. Between 2013 and 2018, this period of two weeks from April 16 to May 3, 2014 attracted the most significant number of likes and followers to the page (The data was provided by the admin(s) of the Facebook Page call for the resignation of Minister of Health, in April 2015).

It is noteworthy that, according to the administrator(s) of the page, these are the organic likes, not the paid likes. An organic interaction on social media is defined as interacting with certain content shared through unpaid distribution (Chandler & Munday, 2016). From this definition, social media users who make organic like must be interested in the topic of the page. They may do some online searching around the issue before being navigated to the page. Interestingly, from observation of the author, many people used real names with real profiles to join this protesting Facebook page, an unprecedented protest on social media in the one-party state of Vietnam.

Facebook for Public Mobilisation

From April 17 to April 20, 2014, a fundraising campaign arose on Facebook and reached 500 million Vietnamese dong (USD 25,000). This charity was for the purchase of new respiration aid equipment for the measles patients in children's hospitals. ZingNews described the campaign:

The donation was sent to a bank account. The senders transfer money to the bank account, and then leave comments under a post to notify Minh Do [the campaign leader] of the amount and contact details. After the calculation at the end of each day, the total amount and the spending plan will be publicly posted on the personal page [of Minh Do]. (ZingNews, 2014)

Facebook Embedded in Governmental Communication Strategy

In response to the anti-fan page, Minister of Health Madam Nguyen Thi Kim Tien launched her official Facebook account in October 2014: one personal account (<https://www.facebook.com/kimtien1102>) and one professional account, managed by the Ministry of Health (<https://www.facebook.com/botruongboyte.vn/>). As of October 2018, the former has over 45,000 followers, while the latter has over 350,000 followers. The Ministry of Health is the pioneer among Vietnamese governmental organisations for embracing social media in the communication strategy.

Journalists' Engagement on Facebook

A survey conducted in 2017 indicates 96.89% of Vietnamese journalists are using Facebook (Mach, 2017). The journalists are fragmented according to the intensity of their engagement on Facebook for professional practice. There are three categories of journalists, differentiating to each other by journalists' engagement on Facebook. They are social-media influencers, hybrid-media producers, and social-media refuters. The data for this spectrum of categories is acquired from observation of Facebook of the well-known former journalists from 2014 to 2017, and from the survey conducted with 227 journalists to examine how they use Facebook (Mach, 2017).

Social-Media Influencers

They have the high commitment to Facebook, and the low commitment to journalism. These journalists do not identify themselves as working for any media house although previously they were working as journalists of mainstream media houses. They are no longer having the press-cards or governmental professionally certified licenses. They construct real profiles on Facebook to brand themselves as

influential non-affiliated journalists. Truong Huy San (Facebook Osin Huy Duc), Le Nguyen Huong Tra (Facebook Co Gai Do Long), Bach Hoan, Truong Duy Nhat, and Tran Dang Tuan, are some of the typical social-media leading journalists. Osin Huy Duc was a journalist of Tuoi Tre newspaper before being a Facebook-influencers journalist. During a period in 2016-2017, Osin Huy Duc was considered an alarm bell ringing to notify of corruption, because he often posted on his Facebook page the stories of corruption investigations before the policemen and the court released the reports. The formulation of the group of social-media influencers-journalists highlights the fact that there exists a system of highly organised journalistic professional practice on Facebook. This system is independent from the state in term of governance and finance; however, it depends on the inter-personal relationship between journalists and their sources of confidential information that they post on Facebook.

Hybrid-Media Producers

Journalists in the group of hybrid-media producers practice intensive engagement with both social media and journalism. These journalists identify themselves as permanent members of mainstream media organisations. They use social media to share links to their media organisations' websites. Besides sharing professional notes, their posts also cover personal perspectives, such as their families and friends, travelling and hobbies. Although using social media, they tend to set priorities for mainstream media and publish on mainstream media first. Abiding by regulations of their media organisations, they can reduce the level of engagement with social media if there are potential conflicts with their professional practice in mainstream media houses. The author has copies of some contracts, in which journalists were paid by business to promote certain products and services on their Facebook. According to a PR Manager who provided the author such copies of contracts in 2018, it was a common practice for Vietnamese journalists to earn money by posting advertorial content on Facebook.

One of the typical examples for the hybrid-media producers is *Tổ ngàn lai* (One thousand like) group. It is an unofficial name for a group of journalists who are still working at state-run newspapers. Their Facebook posts often attract thousands of interactions (like, share, comments), and as such they identify themselves as a KOL (key opinion leaders) group. The term *Tổ ngàn lai* was coined by NHS, a founding member of the group, in a post on his Facebook in 2015, in which he promised to write a book about profiles of journalists who get a lot of interaction on Facebook. According to NHS (2017), on their Facebook posts, these journalists do not associate themselves with any media house, although they are working as senior managers of media houses. The content of *Tổ ngàn lai*'s posts is often advertorial. They are considered as inappropriate for publication on mainstream media because they lack concrete evidence and use slang and lewd language for many instances, which is unsuitable for the mainstream media.

Social-Media Refuters

These journalists engage in state-run journalism only and keep a very low profile or no profile on social media. Although they demonstrate key attributes of performing well on social media, such as technically savvy and skilful creative writing, these journalists deny using social media for professional purposes. They establish strong bonds with their media organisations and adhere to Press Law and regulations.

A journalist can be listed in different category, depending on his/her engagement on social media from time to time. For example, Do Doan Hoang, a well-known journalist of Lao Dong Newspaper was

a social-media refuter in 2015 (DDH, 2015), but he became a hybrid-media producer from late 2018. Dinh Duc Hoang, a well-known journalist of VnExpress Newspaper was one of the members of *One thousand like* group, and was a hybrid-media producer before 2016, but deactivated (closed down) his Facebook and became a social-media refuter from 2016 to late 2018.

Paid Commentators

The media landscape of Vietnam recorded the emergence of paid commentators, of which there are two major types: government-based and business-based.

Government-Based Commentators

Since 2012, the government-based online commentators have been increasing in quantity. The chairman of Hanoi Propaganda and Training Committee, Mr Ho Quang Loi, revealed in an annual media meeting on December 9, 2012:

There are 900 online commentators in Hanoi, working as propagandists in sensitive circumstances. Hanoi also runs a 'fast click and react' journalists club. The authority even establishes an 'expert group' to direct fight in debates and writing wars. The group constructs 19 online websites and over 400 social media accounts. (Dao-Tuan, 2013)

Nationwide, members of national and CPV-based associations, such as the Elder People Association, Youth Union, Women Association and Veterans' Association, are also trained to use social media to protect the government and CPV (Truong-Son, 2015). In December 2017, in a conference of Central Propaganda and Training Commission in Ho Chi Minh City, Lieutenant General Nguyen Trong Nghia, Deputy Head of the Military's Political Department, confirmed that the Ministry of Defence had been using a military-based cyber troop called the '47th force'. It took this name after decision number 47-QD/TW in 2011, which required the army to protect the CPV and the State in cyberspace. As of late 2017, the 47th force was confirmed to have over 10,000 people. These government-based commentators receive instruction from their organisations to use social-media accounts to leave comments that 'correct the wrong views' on the Internet (Mai-Hoa, 2017).

Business-Based Commentators

A director of a social-media marketing company in Hanoi said in July 2018 that online marketing had evolved to a new branch of corporate communication (Cuong, 2018). The social-media service companies generate hundreds of thousands of fake Facebook accounts to meet the quantification ends of the online marketing campaigns. As consequences, interactions such as like, share, views, report and especially comments can be sold and bought as Facebook commodities. Many online groups exist for Facebook interaction exchange, allowing Facebook users to call for likes and shares. Many applications have been developed to create and maintain fake social-media accounts automatically. Astroturf became a prevalent practice when large numbers of fake social-media accounts could like and comment on Facebook, so that the opinions on Facebook are easy to manipulate. Dissident contents are quickly reported by the mass of fake accounts and quickly removed from the Facebook space. The industry adheres to the regulations

of Facebook and Google and takes full advantage of the social-media algorithms to increase the reach of Facebook contents to the target audience.

THE FAKE NEWS AGAINST THE FOUNDER OF THE BREASTFEEDING COMMUNITY

The Rising Momentum of Breastfeeding Tendency

Betibuti is a breastfeeding community founded by Mrs. Le Nhat Phuong Hong in September 2013. According to Mrs. Hong (LNPH, 2018) initially, the community opened a Facebook group (<https://www.facebook.com/groups/betibuti/>), on which new mothers shared experiences of how to breast feed their new-born babies. The community then expanded its charters to different cities and provinces in Vietnam and the Vietnamese oversea communities, as well as its clubs for new dads and new grandmothers, who supported their wives and daughters in labour and baby care. These grassroots charters and clubs also established their own Facebook pages and groups. The main Facebook group, opened and administered by the founder, grew at the rate of over a thousand new members a week. As of March 2018, the Facebook group had 250,000 members helping each other in various online and offline programs, including breastfeeding, complement feeding, tandem nursing and a small-scale human-milk bank. Le Nhat Phuong Hong and the Betibuti community took part in the breastfeeding policy-making process and policy implementation in Vietnam. According to Mrs. Hong (LNPH, 2018), Betibuti was invited as a representative for community participants to the inauguration of the first breast milk bank in Da Nang city in 2017. While there is insufficient data to confirm the correlation between the development of the breastfeeding movement and the shrinking of the market for dairy products in Vietnam, there is an apparent decline in the sale of dairy products. Market research by Nielsen in six cities in Vietnam indicates the decrease in the retail unit value and volume of milk-based products (Nielsen, 2015). As the consequences, the growth of Betibuti could pose a shrink in the market share of milk companies.

In February 2018, the founder of the breastfeeding community, Mrs. Le Nhat Phuong Hong, advertised for a course on prenatal motions, described as helping pregnant women to practice dancing and squat so that it would be easier to deliver the baby. On its Facebook page, the breastfeeding community discussed that such motions help the pregnant women to avoid the risk of caesarean sections, with the result that the mother and baby would not be separated after the surgery, and the babies could be breast-fed within the first hours of life. The course was scheduled to take place in four days in June and July 2018, and cost 15 million dong. This was expected to be the first training for the trainers, with the participation of one Australian birth-motion expert and 30 Vietnamese trainers. According to Mrs. Hong, the course was considered as the first in series of Bebibuti community initiatives to reduce the formal medical treatment on mothers and babies, helping them less dependent on doctors and hospitals. From this point, Betibute started to have conflicts with the viewpoints of the MoH, who always advice the public to visit doctors and hospitals for medical treatment. At the time of February 2018, the breastfeeding community led by Mrs. Hong had conflicts of interests to both business of milk products and the governmental public health sector.

FAKE NEWS CAMPAIGN AGAINST THE FOUNDER OF BETIBUTI

The Story on Facebook Goes Mainstream

On March 14, 2018, a story started from a Facebook account named Minh Phuong and went viral. The story was about a woman and her new born baby, died in labour at home in Ho Chi Minh City. The woman in the story studied a course on ‘obeying the nature in birth’ which costed 15 million VND (equivalent to 640 USD in March 2018). Many photos of a screen-shot capturing the story were shared on Facebook and picked up by journalism. The following section is the text translated from the photo of some screenshots, published on 2Sao, a website of the *VietnamNet* newspaper (Moc, 2018).

- Text in the Facebook status:
Ho Chi Minh City, 1 hour ago
Hi everyone, let me share a story.
15 million [Vietnam]dongs, 2 people died, after studying the course “Obeying the nature in birth”. Can she [Mrs. Hong – the founder of Betibuti] compensate? Will she accuse people of not doing what she teaches? Will she deny the dead woman studied her course?
- Text in the first screenshot:
My friend died because of her [Mrs. Hong], she died at home, not enough energy to push [the baby out] and exhausted to death. The new born baby died of being stuffed up. I don’t know my friend follows her [Mrs. Hong’s course]. Just got to know about this story 20 minutes ago. I’m crying for my friend and her baby.
Oh my God. Poor her. The old woman [Mrs. Hong] should be in jail because of unintentionally manslaughter.
You should write the story in full. We will share it. Poor the kids.
- Text in the second screenshot:
My friend died. She paid 15 million [Vietnam Dong] to study the course “Obeying the nature in birth”, and she wanted to give birth at home like the westerners do. But in the west people have home doctor. We in Vietnam don’t [have home doctors]. The mother died of exhausting. The baby died of being stuffed up. The husband got mad. People have to tie him up at home.
Oh my God. Why no one stayed beside her during the labour...
Her husband was at work. She didn’t phone him. He found her after she died.
- Text in the third screenshot:
Her husband is still screaming and doesn’t believe she died. He swears to find the house of LNPH. He urged his wife to stay in hospital, but the wife insisted to have home labour. And she squatted to push to baby out. Her husband called me just right now. They are too young and too stupid. How can she breathe if she squats and puts pressure on her heart?
This story had two items of correct information. First, the course fee 15 million VND. Second, the squatting motions dancing course was for pregnant women. However, it mixed up with two items of incorrect information. First, the course was scheduled in June 2018 and had not yet taken place by the time of the story in March 2018. Second, the course was for the trainers, not for pregnant women.

MoH Confirmed the Unverified Story

By the end of business hours on the day, March 14, 2018, before the evening news, Mr. Nguyen Duc Vinh, the Head of the Department of Mothers' and Children's Health, a unit of MoH, confirmed that the authority had found the dead mother and child. The mother's name was T.V.M., living in Thao Dien Ward, District 2, Ho Chi Minh City. About 10:30 pm on March 14, 2018, MoH sent an official letter to the Department of Health of Ho Chi Minh City and to Tu Du Hospital of Obstetrics and Gynaecology, assigning these two organisations to further investigate the case. Mr. Vinh promised the details about the story would be revealed at a MoH press conference in on March 15, 2018. These developments of the story were reported in the news articles "Controversy around the pregnant woman obeying the nature in birth", published on Tuoi Tre newspaper website at night on March 14, 2018. Thus, by the end of the day March 14, 2018, the news was confirmed by an accredited source and the source promise further details in the following morning.

Facebook Became the Platform for Character Assassination

There was a gap of 12 hours from the confirmation by the MoH manager on the evening of March 14, 2018, to the press conference on the morning of March 15, 2018. The night became the prime time for the story to go viral on Facebook. The character assassination on Facebook against Mrs. Hong was conducted using the following approaches.

First, the naming and shaming approach: On the Facebook discussion, the name of the founder was no longer associated with the name of the breastfeeding group Betibuti. Instead, she was featured as the religious leader of a new group titled 'Obeying the nature'. This group was accused of practising extreme self-reliance in birth delivery, refusing doctors and medical aids, anti-vaccine, anti-medicine, and over-worshipping the benefits of human milk (LNPH, 2018).

Second, the use of memes: Some pieces of text that Mrs. Hong posted on Betibuti group were copied, cut out of context, and spread rapidly on Facebook with cynical comments. The most-spread memes were the screen-shot photos in which the following text was highlighted: 'breastfeeding can help the new knuckle grows again on a cut finger of a baby', 'sore-eyes on babies can be healed by dropping mothers' milk', 'like animals, human beings can deliver the babies without medical interference'. Another type of meme is the photo of Mrs. Hong placed together with the photo of a new-born baby whose umbilical cord was uncut, and placenta was attached to the baby (LNPH, 2018). The creation of these memes required professional skills and it was time consuming, which might be produced long before the news.

Third, defamation by highlighting asymmetric knowledge: According to Mrs. Hong (LNPH, 2018) several doctors posted on their Facebook criticising the "Obeying the nature" life-style, creating contrast between the knowledge provided by qualified doctors and the experience shared by the breastfeeding community. Her resume was retrieved, provoking another topic for criticism. She had postgraduate qualification in IT, working experience in the banking sector, and the certifications for the short courses on breastfeeding. It was discussed that she was underqualified and ineligible to share knowledge of maternity.

Fourth, the massive report: Pursuant to Facebook policy and algorithms, an account is deleted if many other accounts submit a report to Facebook. Many Facebook accounts reported that Le Nhat Phuong Hong was using someone else's name for her Facebook account. As a result, Facebook deleted Le Nhat Phuong Hong's account on the night of March 14, 2018. Le Nhat Phuong Hong then sent to Facebook her

proof of identification and eventually recovered the Facebook account on March 28, 2018. During two weeks of waiting for verification, she was unable to use Facebook to respond to the attack (LNPH, 2018).

The Fake News as an Excuse for Propaganda

According to Le Nhat Phuong Hong, she was travelling to Australia in March 2018. Thus, she could not physically attend the press conference. In the early morning of March 15, 2018, before the press conference, Le Nhat Phuong Hong sent an email to one of the leaders of MoH. In the email, she explained the prenatal motion course had not yet taken place. Therefore, it would be unreasonable to claim that the mother and the baby died because of practising what the mother learnt from the course. The email was replied by the leader's assistant about one hour before the press conference (the author was allowed to access to these emails for the purpose of doing research).

The press conference was broadcast live and livestreamed on Facebook. At the beginning of the press conference, Mr. Nguyen Duc Vinh corrected his announcement made on March 14, 2018. He said the story of a mother and a baby dying in birth delivery was not yet verified. He promised MoH would further survey in Ho Chi Minh City and neighbourhood provinces to find the mother and the baby. The address of the dead mother and baby he mentioned the day before, which was in Thao Dien Ward, District 2, Ho Chi Minh City, was actually the home address of Le Nhat Phuong Hong.

The rest of the press conference turned out to be propaganda against developments in the 'Obeying the nature in birth' lifestyle. The press conference was hosted by the Head of the Legal Compliance Department of MoH, the Head of the Professional Committee of the Ho Chi Minh City Department of Health, and the Vice Director of Tu Du Hospital of Obstetrics and Gynaecology. The main message delivered during the conference was recommending professional medical treatment and warning against the risk of practising the community-based maternity initiatives.

On March 19, 2018, MoH sent an official request to the Ministry of Policemen for an investigation on the identification of the Facebook account Minh Phuong, who started the fake story. The Facebook account named Minh Phuong was deleted, and no longer found after March 15, 2018. As of March 2019, there had been no further media report or police report about the identification of Facebook account of Minh Phuong.

Consequences of Fake News

The Betibuti breastfeeding community has not grown since the fake news. Nine thousand members abandoned the Facebook group from March to October 2018, on which 2,000 members abandoned in the first week after the fake news. The course on prenatal dancing, which was scheduled in June and July 2018, was cancelled. This fake news is the starting point for a campaign 'correcting' the view point of the breastfeeding community toward 'Obeying the nature in birth'. With expertise in communication management in public health, the Deputy Minister of Health, Doctor Nguyen Thanh Long, was appointed to become the Deputy Chairman of the Central Propaganda and Training Commission starting in October 2018.

State-run journalism removed the name of Le Nhat Phuong Hong from the previously published news article. An example for the practice of removal can be observed in the news article 'Caution when using bio salty water for babies'. Data from the Content Management System of the *Health and Life* newspaper website indicated that the article was published twice—the first time at 1:27pm, February

23, 2016, and the second time at 11:05am, June 30, 2018. The first version was deleted from the website of *Health and Life* and is no longer accessible. However, it was picked up and republished on Baomoi and Zing News. The first version was published before the fake news. It used Le Nhat Phuong Hong as the source with indirect quotation. The second version of this news article was published after the fake news, in which the name of Le Nhat Phuong Hong and the indirect quotation were deleted. In this way, positive journalism coverage she had earned before the fake news was removed from the Internet. Le Nhat Phuong Hong was not quoted in any news article on mainstream media from the fake news to the end of October 2018.

SOLUTIONS AND RECOMMENDATIONS

To help journalists and audience in fake news identification in Vietnamese media landscape, it is necessary to figure out the elements composing the fake news in the country. This section discusses six typical elements involved in the generation of the fake news, particularly in the context of the rise of using Facebook for professional communication in Vietnam. The elements are presented in the sequence of their appearance in the fake-news process.

Unverified Sources

The fake news starts from an unverified Facebook account whose identification is unclear. The account neither posts any personal photos nor ‘friends’ verified persons. The person(s) behind the Facebook account tell(s) the story in a Facebook group where members may not know each other. Conversations about the story are made up between unverified accounts. Then the made-up story is captured and shared as screen-shot photos. After the screen-shot photos spread on the Internet, the source Facebook account is permanently deleted and untraceable. In the example of the fake news against Le Nhat Phuong Hong, the Facebook account ‘Minh Phuong’ was unverifiable, nor could the group in which Minh Phuong posted the story be identified. Only the photos capturing the screen-shot story were shared on Facebook and published by newspapers.

Half-Truth

The story shared on Facebook is made up from some correct information, such as the course fee of 15 million dongs, and the address in District 2 of Ho Chi Minh City, which is also the home address of the Betibuti founder. The story on Facebook is often a mixture of truth and falsehood, which requires much effort to be fact-checked.

Confirmation by Authority

The information shared on Facebook is just the story. When the story is confirmed by the authority, and published by the mainstream media, it becomes fake news. In this case, the MoH official confirmed the information about the dead mother and baby and promised to provide a detailed investigation the next day. The 12-hour gap between the confirmation and detailed investigation was long enough for the fake news to go viral and exaggerated by mainstream media. In this case, the authority confirmed the fake

news because it might help the MoH to criticise the Betibuti community initiatives of being self-helped and dependent from hospitals and doctors. The authority can alter their answer later, but it was long enough for the fake news to be widespread.

Paid Commentators

As discussed previously, paid commentators can be the anonymous business-paid, or the government-based commentators. The online troop uses hundreds of anonymous Facebook accounts to make a massive report, so that the Facebook account of the victim is blocked or removed from the Internet. The paid commentators also post misleading and hate-speech contents. The government-based commentators (in this case, they are doctors) generate seeding comments against the victim of the fake news.

Removal From Journalism

The worst consequence of the fake news occurred when it created a new meaning for the previous events. Reputation was ruined, and the presence of the fake news victim was removed from the state-run journalism. It is very common in Vietnam journalism to rewrite and repost articles published years before. In the new version of articles, the names, the citations and the photos relating to the fake-news victims are deleted. Since the fake news can lead to a new version of history, fake news sometimes is employed as an excuse for erasing the old conception and making the new meaning.

From Fake News to New Policy

In some cases, the new sense made of the fake news becomes the foundation for the proposal of new policies and procedures. In these cases, the fake news is the good news. MoH made it a chance to correct the viewpoints around home-birth, that are considered wrong or opposite to the mainstream.

The Journalists

This element was not involved in the fake news against Betibuti founder. However, social-media influencers, and hybrid-media producers sometimes involve in fake news generating. For example, in the protest of the Cybersecurity Law in Binh Thuan province in June 2018, Mai Thanh Hai, a journalist of Thanh Nien newspaper, posted on his Facebook that two policemen died in the protest because of nail and gas bombs. Because Mai Thanh Hai was a professional press-carded journalist working in Binh Thuan province, his story on Facebook was considered verified news. Before it was detected as the fake news, it had been used as an excuse for the mobilization of heavily armed forces to Binh Thuan to stop the protesters (Journalist's Mai Thanh Hai and the fake news around the developments of the protest in Binh Thuan was analysed in the post "Revisit the story in Binh Thuan" on BoxitVN blogs on June 15, 2018).

FUTURE RESEARCH DIRECTIONS

The chapter investigate just one case study of the fake news on Facebook environment. It is necessary to study more cases, to identify the models of fake news and the involvement of the professional Face-

book content generators. More case studies would help to consolidate the validity of the formula of the elements of fake news, improving the possibility of fake news detection. One of the extensions for this case study is to investigate the impacts of the fake news on its victims. How the viewpoints created by the fake news affect the fake news victim? What are their re-actions? And what is the optimal re-actions against the fake news that is intentionally and professionally created?

CONCLUSION

In conclusion, the fake news against the founder of the breastfeeding community is typical show case for the involvement of the professional Facebook content generators in fake news. It reflects the complexity of the fake news actors in the Vietnamese media landscape during 2014-2019 in general, and in public-health areas in particular. Journalists and audience are recommended to use seven above-mentioned elements to judge whether the news is genuine or made up. The Cybersecurity Law, legislated in June 2018 and becoming effective in January 2019, is believed to enable identifying, verifying and improving the traceability of a story on Facebook. However, when the law sets the priority as protecting the Party and State in Vietnam, it would create a legal gap and the mushrooming of the defamation against entities and individuals in the private sector. For the ultimate fake news prevention in Vietnam, the function of propaganda should be eliminated from journalism, which is problematic in the one-party country.

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KEY TERMS AND DEFINITIONS

Business-Based Commentator: A person who gets paid from social-media marketing service company to generate content on social media as requested by the clients of the company.

Government-Based Commentator: A person who works for governmental organisation, maybe a doctor, a student, a scientist, etc., and generates content on social media as requested by government to protect governmental interests.

Half-Truth: The truth elements marking parts of the news and often be used to deceive the audience that whole of the news is the truth.

Hybrid-Media Producer Journalist: A journalist who is working full-time for mainstream media and at the same time earns money for publishing on social media.

Paid Commentator: A person who gets paid to generate contents and interaction on social media.

Social-Media Influencer Journalist: A journalist who used to work for mainstream media before but no longer had a license to work in mainstream media anymore, but still earn great public attraction by publishing on social media.

Social-Media Refuter Journalist: A journalist works for mainstream media and intentionally avoid using social media for professional purposes.

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Chapter 32

Commercial Use of Mobile Social Media and Social Relationship: The Case of China

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ABSTRACT

China is well known for its wide and increasing commercial use of mobile social media for various purposes in different areas, ranging from online shopping to social networking. Such a popular commercial use was insightfully examined in relation to social relationship in the age of mobile internet, which enables people of either weak or strong connections to socialize anywhere anytime, leading to scenarios where mobile social media can be leveraged for profits. In what way can user experiences be guaranteed while platforms' value-added targets be achieved at the same time? In addressing that question, the authors of this chapter examined the commercial use of mobile social media in the context of complicated social networks. It is expected from the editor that further studies are to be carried out to comprehensively and comparatively examine the same topic in different countries or cultures.

INTRODUCTION

In the Internet age, especially in the age of mobile Internet, online social networks are making the connection, interaction, and relationship among people even more complicated. The social relationship of the younger generation is also being made more complicated, in which individual roles are being constantly transformed (Luo, 2017). In the past, mechanistic logic and reductionism were applied to analyze the problems of social networks from social sciences perspectives. In fact, the strength of weak

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ties (Granovetter, 1973) could play a more important theoretical role in explaining social networks in the Internet age, which argued that the weak ties in social networks could satisfy some social needs, with those who have favorable resources play a key connecting role as bridges.

Before studying changes in social networks, technical factors should be first taken into consideration. Information technology is clearly the fundamental factor for social reshaping, and in an era where strength and efficiency surpass any source of power, the technical logic has begun to replace the functions of social regulation and cultural traditions in certain areas, which changes people's cognitive and action frameworks. To make people's connection more convenient and meet people's social needs, mobile social media are growing more mature with technology, and developers spare no efforts to strive to occupy every single market. Even though mobile users are so different in their perceptions and expectations of mobile social media, mobile social media have gradually been transformed a communication tool to a living necessity. This development has been driven by business and user traffic, regardless of platforms, channels or media, which in turn would attract more attention and capital. When mobile social media and commercial capital are becoming more maturely integrated, interacted, interconnected, or even interdependent, how mobile social media have been commercially leveraged in the context of the mobile Internet and in the presence of the strength of weak ties of social networking. That is an imperative topic to be fully investigated from mixed perspectives in relation to communication and economics studies.

RESEARCH PURPOSE

Based on the view of strength of weak ties of social networking, the research on mobile social software, driven by Internet technology, is deconstructing the power structure and communication pattern. And when audiences have more power, they will have their own commercial value and they are likely to pay for channels and contents.

Mobile Internet, firstly, is to deconstruct the power structure of traditional society. Fei (2006) proposes 'Differential mode of association' of agricultural society and he thought blood relationship is the basis of agricultural social relations where egoism occupies personal emotions and there is on obvious distinction between public and private, also, violent ruling, without democracy; Industrial society appears '*Group pattern*', where nation controls rare resources and builds a new organizational framework with production materials, employment position and living space, so that it can eliminate the differential mode of association based on the blood relationship. Internet society has brought elimination of those power structures. The decentralization and fragmentation of state power, and the opening and connection of the Internet have changed the scarcity of resources, and the mobile Internet has made information sharing easier, and even the marginal cost of surplus social resources is close to zero. The essence of '*sharing*' makes the Internet burst out with greater energy. Sun (1993) argues that the basic unit of social control and resource allocation gradually loses the power to monopolize social resources and to control social relations. The society becomes a relatively independent source of resources and opportunities, and individual dependence on the state is significantly weakened (Sun, 1993).

Mobile Internet then deconstructs the dependence of traditional media on content and channels and the content is not the key point anymore and channels are not the only choice. In the internet system, Yu (2016) proposes a new developing direction which is 'Relationship Empowerment'. He argues that 'relationship empowerment gives the public right and ability to discuss and participate in public affairs, by stimulating individual value and relationship networking. Hence, the environment and pattern of

social governance are undergoing unprecedented changes (Yu, 2016). This way of empowerment could also be seen as a paradigm for the reconstruction of the value of the media in the Internet age. The Six Degree Separation theory nowadays can even become to Three Degree. It is very important for every transformation of media form whether the vital hint which hid among everyone could be accurately controlled and stimulated or spread forms could be strengthened with activation and scene technology.

Another important reason for supporting the theory of strong-weak ties theory is the technology and means provided by the Internet, which increases the scenes of users. When new scenes appear, people can play different roles in a variety of scenes. For example, virtual reality technology can create a versatile field to make people enter a scene that connects many people's social connections and feelings to achieve the immersive experience. Once these technologies are widely used, users can generate emotional experiences, and personal emotions are fully driven. This is the best mobilization and utilization of relational resources and emotional resources. The emergence of multiple situations is a key point which can become a strong relationship between social media and audience.

Information technology surpasses the supreme power source in efficiency and intensity, showing its own logic, and even in some areas has been or has replaced the functions of social regulation and cultural traditions, reshaping people's cognitive, behavior, and perception frameworks. Therefore, the social relationship is being reshaped, and the allocation system of social resource is transformed. Mobile social applications are clearly closely related to users. And user relationship is vital to social media.

LITERATURE REVIEW

User-centric relationship network covers various application scenes. SoLoMo (Social, Local, Mobile) has deeply changed internet user's habit to obtain information. In internet age, mobile internet changes the whole relation structure from the bottom of society, and various mobile social media nearly have occupied all social networking nodes of people. Developers are also constantly occupying market gaps, and the business model of social applications is being promoted by capital. Now, the business model of mobile social media is mainly built from two ways. The one is that application itself can realize cash storage or income and another one is to attract flow to external applications for cash achieving. No matter which way, it is reusing the weak ties which are already gathered. From the strong-weak ties theory, interpreting the social relationship changes in the era of mobile internet and the meaning behind it, and paying attention to the commercial phenomena appearing in social applications, to support some viewpoints are the purpose of this chapter.

Research on Strong-Weak Ties of Social Relationships

The relationship between the strengths and weaknesses of the audience is related to the changes in social relations. 'Free flow resource' and 'Free Space' both promote structural differentiation between societies. For the performance of the audience on social media, social structure differentiation is the underlying reason. Sun (1993) describes the manifestation of structural differentiation in his article. Firstly, he argues that society becomes a relatively independent source of resources and opportunities and the dependence of individuals on the state are evidently weakened. Then, relatively independent social power would be developed and formed. Lastly, the intermediary organization would appear, which is a civil organization between the state and family and these organizations do not target social services

and profitability. Because of the 'Free flow resource' and 'Free space', the re-division and structuring between the state and society has brought far-reaching significance to all aspects of Chinese society. For individuals, changes in identity and status will naturally lead to more independence.

Yu (2016) mentions one concept called 'Relationship Empowerment' in his paper that the most prominent trait of the Internet society is that information technology has become the basic power shaping society. In internet society normal people are given by some power which transcends any age and their (internet celebrities and opinion leaders) value and influence hardly came from administration, capital or force (Yu, 2016). Internet, especially social media, not only gives individuals the speaking and executive power, but also meets individuals needs of social resources and materials in basic survival and longer-term development. Personal internal needs and value system are being re-arranged.

Based on the development of technology, the emergence of mobile terminals actually realizes the switching of scenes at any time. Peng (2015) argues that the mobile Internet includes three areas that is content, social and service, and mobile media has made a leap in the three directions of content media, relationship media and service media. She also mentions that in the analysis and application of mobile scenes, the current focus is on the location and significance of users here and now, but in the long run, the analysis and application of mobile scenes need to involve three stages (Peng, 2015). In addition to here and now, mobile scenes also need to extend to two different space-times of 'Before here and after here'. Our research on social software is to explore all aspects of the various situations, such as causes, conditions, and impacts. Once the audience have become dependent on the scene, it means that the fixed relationship is highlighted, or briefly, the strong relationship is established.

Actually, defining the transformation of strong-weak ties in social media can be described in terms of very vivid words, which is from 'Masked Internet' to 'Face-seeing internet'. Masked internet brings great freedom based on anonymity. Face-seeing internet is constantly updating social platform functions of social media. Social attributes lead to a strong tie with a limited scope, but this transformation needs many activate factors, such as multiple interactions which brought by social users' common concerns and providing real-time communication and advancement of sticky communication mobile platforms. This layer of conversion implementation would make the Internet more and more close to interpersonal communication, and of course, it would be the basis for mobile social media to expand business applications.

Research on the Business Application of Social Mobile Media

The development of mobile technology brought about the rapid growth of mobile data. As of December 2017, the number of mobile Internet users in China reached 753 million (CNNIC, 2018). The report (2018) points out the proportion of Internet users using mobile terminals s increased from 95.1% in 2016 to 97.5%. Moreover, there is a change about mobile terminals. Smart devices represented by mobile phone have become the basis of 'Internet of Everything'. Smart lights for cars and home appliance have begun to enter personalized and intelligent application scenarios. This is also consistent with 'scenarios that bring strong connections'. Business application research for the mobile social industry has gradually become a hot topic. Data output is mainly concentrated in industry reports. Some scholars interpret the attributes of mobile social media from the perspective of communication. Some scholars analyze the innovation of social media from the field of marketing.

On the whole, the business model on mobile social media has few refining results. All of them are based on case studies. Cheng (2014) uses SWOT analysis to expound the commercialization of Tencent WeChat. He proposes that the WeChat business model components include proposition, network,

maintenance and realization of value. Liu (2015) conducts a business form analysis on social networking sites, Weibo, and instant messaging. But it lacks systematic summaries and improved views. Zhao and Luo (2015) use the ‘street-side network’ as an example to obtain the optimization steps of social network application software through the research methods of questionnaires. It includes ‘person’, ‘machine’, ‘material’, ‘law’ and ‘ring’. In five aspects, the product is iterated. But providing personalized services, securing user information and improving the user experience can provide a precedent for other social media. Li (2014) analyzes that WeChat’s profit points include user payment, advertising revenue, value-added services, profit sharing, e-commerce and game revenue. It points out that WeChat’s profit direction is mainly focused on value-added services, marketing platforms, games and e-commerce platforms. Zhao (2014) points out that the core business model of WeChat is ‘platform business model’. But the content of the discussion still focuses on four types of modules: value-added, games, marketing and e-commerce.

In terms of review, the scholars’ research focuses on the case study of the representation. The power structure and relationship network behind the mobile social platform are not mentioned. The expression of the viewpoint is not refined enough. The discussion on the profit model only stays at present, not highlighting the changes of mobile social which resulted from the changes of mobile internet. So what are the changes of advertising, value-added, game and e-commerce in future? Will there be new profitable revenue points? This chapter attempts to propose a new profit model.

Research Methods and Research Problem Design

This chapter mainly adopts the investigation method with a systematic understanding of case, industry data and existing research results. It also conducts text analysis on the survey data. It shows the current development status and prospects of the deep logic and profit model of current mobile social media by reading the relevant documents. At the same time, in order to make the arguments more sufficient, the case analysis method is introduced to analyze the commercialization method of mobile social software.

DATA ANALYSIS AND DISCUSSION

Mobile Social Media From the Perspective of Social Relations

Technological Change Makes Mobile Internet Become the Dominant Technology

Mobile Internet is the technological change firstly. It breaks through the barriers of time and space from the technical level. It also brings the possibility of sending and receiving information anytime and anywhere. The individual has become a small tower. With the continuous development of technology, the speed of information dissemination and the expansion of information storage, the audience has gradually gained a new understanding of their own roles. Under the drive of subjective initiative, they have made adjustments in the era of mobile internet. The ‘‘empowerment’’ function of mobile internet technology even surpasses the Internet. Because the conditions for changing the scene at any time are realized, people become more active actors. The emergence of scenes means the deconstruction of traditional rights structure, as well as society redistribution of resources.

Based on technologies such as Internet of Things, big data, cloud computing and high-frequency information transmission, on one hand, mobile internet inherits the characteristics of PC terminal inter-

action and the advantage of crossing the information gap. On the other hand, it breaks down the barriers of time and space. It adds meaningful ‘instant’ communication to users. In addition, in the diversity of information, it is more creative. It can meet the transmission of various types of information such as text, voice, pictures, video, etc. With the help of high-frequency communication technologies such as 4G, 5G and Wi-Fi, users can even make up for the shortcomings of mass communication - ‘lacking of interpersonal communication interaction’ under the carrier of the Internet APP.

Especially on various smart phone applications, it covers almost every corner of the user’s life, such as social, shopping, entertainment and knowledge sharing by satisfying the needs of users at all levels. All things that users can think of and hope to use are developed. It’s better to say that the mobile Internet is connected by multiple small fields instead of a large of field. It is precisely because of the technology that the relationship between these small fields is complicated. In the case of social software, the crowds gathered on the same social software. It means that the recognition of the software interaction, whether it is interpersonal communication between people, or group communication within a small group, or the organization and dissemination of social software are gathered on this platform. Individuals become the center of platform maintenance. Multiple individuals are connected together to provide a continuous source of power for social software. It provides cumulative users and further profitability.

Mobile Social Media’s Role Changes

From a personal point of view, it is a change in personal roles. Internet pioneer Negroponte (1997) once predicted that digital survival naturally has the essence of ‘empowerment’, which would lead to positive social changes. And in the digital future, people will find new dignity. We can see that this prophecy has become a reality today. The Internet empowers ordinary people more than any era. It has dealt a blow to any source of power. Both the opinion leaders in Internet and people who influence the surrounding people pass on their information to others. When some creative and influential mobile Internet users use those apps with non-social attributes, they will make them socialized. It can be seen that under the level of technological innovation, the way of social interaction has changed significantly. Specifically, individuals have such performance in the mobile Internet.

Individuals become the direct productivity of social networks. In other words, the wisdom of individuals provides the raw materials for social networks. The operational logic of Web 2.0 makes everyone a relatively independent ‘propagation base station (Peng, 2013). On the basis of data, individuals can maintain the passive acceptance of information in the past, as well as actively control the data production. Through the shaping of data, Internet people have gradually formed a way to survive and perform in this era. In the traditional sense, the ‘background’ has been moved to the ‘front desk’. People are no longer constrained by whether they need to take into account the image, but play a role in the massive wave of information. Based on the ‘performance’ and ‘relationship’ of data, individuals are gradually exposed to form a ‘data memory’ about this era. As far as social networks are concerned, based on the use and satisfaction of individual contributions, attention resources, knowledge reserves and user data support for social platforms can even become the basic driving force for the existence of the platform. Zhihu, as a platform for user knowledge collection, the way of rationally treating problems has become a gathering place for a large number of outstanding intellectuals. It is precisely because this platform provides a relatively rational communication environment that it can stand out among many social platforms. The power of users brings together a steady stream of content for the platform.

Individuals assume the responsibility of spreading nodes. And the network of individual connections becomes a new place for public opinion. When the technical conditions satisfy the individual's ability to act as a small mobile tower, we can regard the individual as a node in the communication network. Of course, this node will be based on the individual's grasp of the information, the social status of the individual and the reason of the opinion leader. But the common point is that the entire process of 'coding, decoding, decoding' can be completed. Mobile social software is very easy to become a new 'public opinion generation and fermentation platform' when it acts as a life communication assistant. In the public opinion event, the individual is continuously coding as an information node, releasing the code at a relatively fast speed and then decoding. Sending and promoting the process of public opinion events has become a new place for public opinion fermentation.

The habits of personalized usage are obvious. Mobile social software is also tending to introduce personalized customization services. Different people have different software usage habits. People's information 'experience domain' is different in size. So the performance is different in the process of socialization. Users use mobile social media to obtain information and experience knowledge. They use it as a medium to interact with people in the society to generate information flow. On the one hand, it is to understand the surrounding environment. It can be called the 'environmental radar' function of Lasswell's three functions. On the other hand, it is better to integrate into society and complete the socialization process. With the advancement of Web3.0 technology, social software has also showed different needs in the process of socialization between people, paying more attention to personalized customization and creating private scenes.

'Mobile Community': Scenarioization of Mobile Social Media Mimicry Environment

The Internet platform combines the breadth of mass communication and the depth of interpersonal communication. The mobile social application restores the communication advantages of interpersonal communication. It includes the comprehensive meaning of transmitting information, the strong two-way, the high feedback, and the flexible method. It also broadens the types, time and space of interpersonal communication on a technical level. On the one hand, it is no longer limited by time and place. People who are not in the same situation can also interact. On the other hand, it developed multiple ways of paralleling sound and picture in the ways of communication. Then a private imaginable discourse space can be built.

'Relationship' plays a fundamental role in mobile social applications and it embodies in two aspects. First of all, strong connections are based on the users' trust. Mobile social software has numerous complex functions and has accumulated a large amount of users' information. Besides, it can record users' normal life and even analyze such behavioral characteristics like reading and consumption habits. In this case, if it is not built on a high degree of trust between users, it will not be easy to obtain data. In other words, the essence of the existence of mobile social networks is based on the users' trust in sharing information, including sharing their hobbies, interests, status, activities and locations online. Network topology varies, and mobile social network is a tool to connect nodes of users. Interpersonal trust manifests the interactive generation of value conception, attitude, mood, and even personal charm between the users. The word "network trust" has initiated many research by scholars when it was put forward in the 20th century. Lu (2003) has concluded network trust into three categories: the trust relationship between the users and the websites in the electronic commerce activities, the 'trust system' of technology, the trust

relationship in the process of online interpersonal communication and the network trust among the users in the mobile social networking platform.

In addition, the relationship between the platform and users is also worth studying. Unlike WeChat as a social software, there are also many platforms maintaining a light connection with users and rarely being used unless when they are needed. This kind of trust is based on the theory of 'Uses and Gratifications', the theory shows that whether in mental or in action, once the platform has the characteristics which the users need and could bring a certain degree of satisfaction for users, it may obtain basic trust. What's more, if users feel the platform is coordinated with their own using habits, the reliability will be enhanced. This is also why the platforms will make a difference in the competition. To focus attention on the commercial realization of mobile social application, only if users are confident with security and privacy of the platform may the consuming behavior or the 'payment' action can be generated, which means users confident with the platform and willing to pay attention and money for support.

From the perspective of social scenes, all communication activities are carried out under specific scenes. Merowitz(2010) believes that it takes a long time for the traditional development of society to form a universal connotation of any scene. Electronic media also create a scene in the development and become a situational factor which will influence the human behaviors. Lippmann(2010) believed that the communication behavior of modern people is not in the real environment, but in the 'pseudo-environment' rendered by mass communication. In English, words like situation, context, settings and field are used to express the semantics of a situation, and in Chinese, there are also synonyms words like situation, background, and environment, which are not easy to distinguish.

From the perspective of space-time dimension, Goffman (2009) believes that a scene is 'a place that is limited to a certain extent by the perceptible boundary'. In a specific time and place, only people who face each other in the same three-dimensional space can perceive the same information. Merowitz (2010) and Goffman (2009) also stressed from the situational perspective, 'places create information system of live communication, and other channels create many other types of situation.' One of the most conspicuous signs is the birth of the television which created a new situation for people directly. People sitting in front of the TV to watch the content on the screen and their mood going up and down with the plot as if they are one part of the virtual world.

Some scholars believe that the elements of scene in the mobile era include space and environment, users' real-time state, their habits and social atmosphere based on the perspective of compound latitude of new era. These scenes become the entrance of data for mobile media.

Despite of the dimensions, the emergence of the scene is ultimately oriented to the deconstruction of the traditional power structure. In a macroscopic view, information technology disintegrates the operation mechanism of power structure in traditional society. First of all, the interaction between different scenes become more common when a new social scene has emerged, and the word 'decentralization' can best represent the disperse of traditional social rights. In the past, the privileged shapes their authority through clearly defined scenes which could sustain their uniqueness and mystique. Network platform becomes more open and full of information hybridity. Due to Internet technology, network platform has greatly filled the chasm between ordinary people and power center caused by information asymmetry, so that people from different social classes are placed in a unified scene. French philosopher Foucault (2012) proposed that information asymmetric is equivalent to a low-cost and efficient tool for social governance, just like the pyramid prison in ancient Rome: prisoners are kept in different cells and the jailer can monitor them at the top meanwhile the other prisoners could not see him. It is known as 'Pan-opticon' while Internet technology has generated a new social structure described as "common view

prison” which is completely relative to ‘Panoticon’. The later, as an ‘onlooker’ structure, concentrates on many-to-one model. In this way, information is relatively symmetrical. The information in this time is relatively symmetrical, managers will no longer have absolute control of the information resources and almost every manager are in the surveillance of ordinary citizens thus the role has exchanged between the two. Quantitatively, managers are less outnumbered, and moreover, the protections which new information technology has brought to the democracy have become more rampant, such as anonymous, hint, group-behavior-infection.

Microscopically, the mechanism of power granting has broken through the previous mode of ‘‘institutional appointment’’. Toffler (2006) believes that force, wealth, and knowledge constitute the triangle cornerstone of different power frames based on the criterion of the evolution of human society. The early human society need force to penalize but with the rise of the capital market, a part of power has changed from force to wealth, money can make a clear distinction between reward and penalty and more flexible; As the industrial civilization declines, knowledge became the dominant force and people from all social stratification has an opportunity to grasp, it could violate the violence if applied appropriately so that it has been called ‘high-grade right’.

However, there is no one such as web celebrity, influential WeChat official accounts, Taobao celebrities could obtain the position from international agencies for it comes from their own relationship resources. The social status in today’s market-oriented society will be relatively easy to obtain when every individual and every institution has channels to obtain attentions and financial support.

A deeper reason is that those groups such as marginal groups and isolated individuals who are easily neglected in traditional society, are also ‘empowered’ in the era of mobile Internet. Different from the superposition of order in the period of institutional empowerment and the pursuit of maximization of economic interests in the period of industrial capitalism, however, mobile Internet is different, it has changed the paradigm of individual empowerment and fundamentally changed the rules of the game of power. Those who have traditionally been kept out of the empowerment sphere have deservedly stepped into the center of the stage. Moreover, there is no upper or lower level of empowerment. For the web celebrities and their fans, they are all the consensual subjects participated and no one is forced. ‘Mutual benefit, mutual respect and mutual identity’ are necessary conditions for the existence of cooperation mechanism. After scaling up to the entire society, interpersonal cooperation will be enhanced exponentially instead of growing layer by layer in the pattern of hierarchy.

For social resources, it also breaks through the dominance of ‘scarce resources’ in the past and advocates ‘sharing economy’ now. The characteristics of internet such as open, interactive and complex have changed the endorsement of trust among various subjects. Nowadays the core of trust construction is the capacity of connecting, integrating and applying relational resources. As Tencent Charity for example, in August 2017, it launched a charity activity called ‘one yuan purchasing a painting’, it chose to advertise in the WeChat moments, and turning the paintings created by mental disorder children into electronic ones selling on 1 yuan. Each work has a simple introduction and summary of status of the children. People could scan the QR code to pay and sending the blessings, writing the messages meanwhile. This activity spread widely on WeChat platform. Different from the past form of donating money on the spot and large amount of the remittance, the form of ‘Internet and commonweal’ has made charity no longer just a process of mobilization, dissemination of information, donating money, but can widely obtain the effect of emotional resonance among the public. The conception of ‘charity is nearby’ and ‘everyone could become a commonweal’ will become more down to earth. In this micro public welfare platforms,

Commercial Use of Mobile Social Media and Social Relationship

common strangers are connected with each other due to consensus and trust. Together, each person's puny effect will confluence into huge power.

The change that the mobile internet brings to the social environment, is connecting everyone in every corner of the world, letting them abandon their suffering in the real life and be connected together. It gives confidence to everyone to integrate into the society, because common resources are shared and various ethnic groups, all kinds of demands are included within a framework to interact, so that people could be harmonious yet different.

Changes in Communication Content and Forms of Mobile Social Media

After mobile network successfully enter the market, all kinds of applications have showed carrying out by smart phones. Among numerous of mobile applications, instant-messaging software is on the top of downloads ranks in mobile application market for replacing text function and integrating social circle. For now, this software is mature after development and the problems of adhesiveness of users has been resolved, the only problem left is how to break through the bottleneck problem of user experience. Besides, there is no doubt that for the emergence of new social software, the requirement of attracting attention is still necessary.

Though the content of mobile social media still follows the mode of user-generated content, it is developing towards the direction of professional, depth and precision. Meanwhile, many content producers that are widely concerned have emerged. With the era of live broadcasting and short video has come, more ordinary people become a popular star. Those content provides a new subculture environment for the new generation of young Internet users who admire the secular pleasure and their spiritual satisfaction are related to the short-time value, so that they could compete with the mainstream culture. Of course, with the further evolution of the Internet, those subcultures will eventually be integrated after the process of compromise. From the view of professional communicators, precision is the main feature for the users can get information exactly right what they need, and the analysis tools are needed to produce accurate delivery and production. In this way, under the support of multiple forms of contact, that fragmented information actually has a rule to follow, which is accorded with information personalized and customized.

In terms of communication form, due to the flexibility of mobile terminals, the form setting must conform to the reading characteristics of mobile intelligent devices, which is, flexible switching, short text, light reading, multi-text and so on. Compared with traditional social media, the function of browsing and searching of mobile social media are less important. However, in recent years, public accounts and other community functions have been opened and searching functions have been added to expand the functions of social media. It has changed the 'treelike' information flow mode of traditional media into the 'network' information flow mode of the new media era and increased the subjective initiative of the audience, finally strengthened the 'interaction' and 'feedback' effect. With the further development of interactive media, the future media environment will be more immersive.

Theoretical Basis of Commercialization of Mobile Social Media

Mobile social media owns a huge number of users, it is also a way of communication based on social relations. This means that mobile social media holds huge social capital and has the ability to carry out business transformation. Massive users accumulated by strong relationships can provide a great mar-

keting space. By using aggregation effect, information can be aggregated, and the essence of attention economy can be shown.

Three Degrees of Separation- Strong and Weak Ties- Structural Hole- SoLoMo

The theory of ‘Six Degrees of Separation’ is a well-known social theory, also known as the ‘Small World Theory’. The theory shows that weak relationships are ubiquitous in society and play a very powerful role. At the beginning, the theory is closely linked to the Internet, and then lead to emergence of ‘social software’ that support people to establish a close and mutual trust relationship. These are also what we are familiar today as the social software. Blog took the lead in popularity at the initial period, thanks to its equipped features of posting feelings, communicating with ease and personalized displaying. After a while of gradual evolution, there came these chatting software with purpose of making friends which were built on direct social relations. And more innovative social interaction cases were then springing up. Domestically, platforms such as Renren, Qzone, Douban.com and Zhihu were all role models, who knew well how to use games, knowledge discussions as ways to better communicate with their users. With development of mobile network, ‘Six Degrees of Separation’ was upgraded into ‘Three Degrees of Separation’. That’s where mobile social network was built on the basis of a ‘strong relationship’, as compared to the Internet, mobile web can bring people much closer to burst out more concentrated capabilities. Hence in an era of mobile social media, people often find that it is easier to get acquainted with strangers who share common interests or hobbies, or whom they are more willing to get to know. And the function of location sharing makes users feel much closer.

Based on Granovetter (1973) ‘s ‘The Strength of Weak Ties’ theory, American sociologist Burt(1995) proposed the theory of ‘Structural Holes’ in his study on what hinders interpersonal communications. A structural hole is understood as a gap between two individuals who have complementary sources to information. The theory suggests that some individuals in a social network hold certain positional advantages/disadvantages from how they are embedded in neighborhoods or other social structures. And if we see the network as a whole, it seems that there are gaps in the network structure (Dong & Li, 2011, p.40-43). Coleman (1988)’s theory of social capital has the greatest impact on the theory of structural holes. Only by participating in social groups and establishing group ties can people gain social capital. Heterogeneity is significant among weak ties and the feasibility of sharing scarce resources between the two sides is also greater. People who do not have a strong relationship with each other are not able to communicate smoothly because of objective or subjective barriers. The hypothesis of weak ties can be regarded as the foundation of structural holes theory. On the contrary, strong ties are shaking this foundation. It believes that if people are closely connected in mobile social networks, the holes will shrink or even disappear.

The concept of mobile social networking that based on strong ties is SoLoMo, which means Social, Local, Mobile. Since the concept was put forward by John Doerr, a partner of a well-known venture capital firm in February 2011, technology companies started to consider it as the development trend of future Internet marketing. In fact, this is indeed a keyword of mobile internet. In order to obtain real services in the virtual Internet, people can achieve their goals through shifting. LBS applications (positioning services) have been pushed into people’s vision. Virtual networks can react to the real human society through this application technology. LBS applications (Location service) have been pushed into people’s vision. Virtual networks can react to the reality through this technology. Mobile social media knows that it’s not enough for social users to just record where they’ve been. What’s more important is

how different LBS applications can make, that is, ‘geographic location information can provide what services’. In November 2010, Renren became the biggest LBS service provider in China after the launch of the ‘Everyone Check-in’ product based on mobile Renren’s clients. Users are willing to ‘check in’ because the product integrates the real social relationship in Renren, which makes it possible to increase the opportunities for interaction between friends. Businessmen are always sensitive, and advertisers always pay attention to what users care about. In order to promote the new flavor of beverage, Tingyi (Cayman Islands) Holding Corp launched campaign through LBS services, ‘Everyone Check-in’ and ‘Sina Wei Territory’, which brought direct profit growth offline.

Attention Economy and Community Shared Economy

‘...In an information-rich world, the abundance of information means the lack of information consumption. Now, the object of information consumption is the attention of its recipients. The abundance of information leads to a lack of attention. Therefore, attention needs to be allocated effectively in an excessive amount of consumable information resources,’ said Herbert Simon, the Nobel Prize Winner for Economics in 1978. Because attention is a psychological concept, therefore, a psychologist named Thorngate put forward ‘attention economy’. Zhang (2009) mentions that the so-called attention economy is human interaction mode of production, processing, distribution, exchange and consumption of attention resources. In the Internet era, the attention economy is more obvious, the group of internet celebrities is the example. In the era of mobile social networking, information tends to be more fragmented, so it is hard to gather up the attention from audience. But at the same time, delivering information accurately becomes easier. Users can customize the information based on their preferences. Mobile social media has huge marketing potential in allocating users’ attention.

Felson and Spaeth (1978) mentioned the concept of ‘Collaborative Consumption’. But sharing economy did not become popular until recent years. Under the background of mobile social networking, the essence of sharing economy is based on the interpersonal relationship, and economic value is realized by detonating a certain scale of user groups. The greatest value of mobile internet lies in the network effect. Sharing economy is more like a community economy on mobile social software. People stop hiding their name in social network communities, mutual trust starts to increase, and then value got generated from it, together to form a self-operating, self-cycling economic system. In these community systems, any need or interest may eventually evolve into a business purpose. And both extensive networking resources and business development are worth noting and exploring. In a many-to-many relationship, information, resources and creativity are stimulated by the interaction, and then they will reproduce content and value. Therefore, social interaction will be self-operating and self-enhancing once it develops to a certain extent.

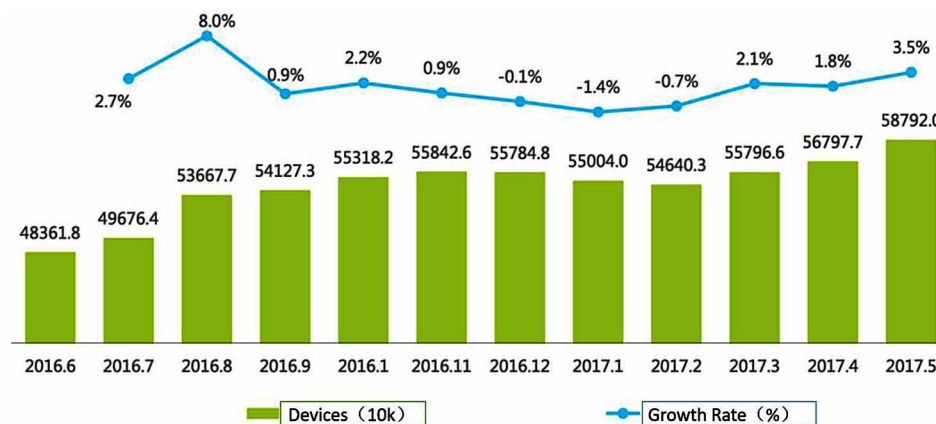
Social Virtual Currency and Fan Economy

According to mUserTracker (2017), a monitoring product of iResearch, a provider of online audience measurement and consumer insights in China, the monthly number of mobile devices that contain social APPs reached nearly 590 million in May 2017. Among the mobile netizens, the social communication APP usage rate is the highest, namely 91.8%.(Figure 1) There are many ways to use the interpersonal relationship in the mobile social era for marketing. Based on some common understandings, social platforms produce many virtual gifts to replace money for fans to interact with their idols, which is

essentially word-of-mouth communication. From the Stealing Vegetables game in the Qzone.com to giving out gifts during live-streaming, those actions are all aimed at increasing the activeness of fans through using social virtual currencies on mobile social platforms. From a certain point of view, it is the monetization of fans, apart from letting fans to consume directly, it also involves the deep interaction between individuals and brands. There is an important feature of social currency, which is the ability to arouse users' emotional resonance by presenting interesting content, and in turn stimulating their sharing behaviors. That is a typical communication process of transforming the influence from thoughts to actions. With the development of live-streaming, the scale of users has increased dramatically, and social dividend has increased. Under the external push of technology support and capital boost, the scale of live-streaming industry keeps expanding.

Figure 1. China mobile social app monthly independent device number trend map during June 2016-May 2017

Note: China's social network includes independent network communities like Baidu's social product Baidu Tieba, social products of portal websites like Sina Weibo and Qzone, and excludes instant messaging APPs.



Mobile social networking offers the opportunities for people to have the decision-making power, to release them from the shackles of society. Social virtual currency becomes the carrier of time consumption in social networking, it also carries emotions and thoughts. It is a common asset held by consumers and enterprises, which helps to enhance user's recognition and loyalty to the brand, and also helps to realize the rapid marketing promotion of the brand in a short time, that is, word of mouth.

Ways to Commercialize Mobile Social Media: A Case Study of Communication Social Media

Mobile social media is a combination of mobile internet, smart terminal and media service. CIC(2015) introduced the different categories that mobile social media applications fall into, including Weibo/blog, dating networking, entertainment social networking, instant messaging, community social networking, anonymous social networking and workplace social networking. In the above categories, instant messaging applications can play a role comparable to mobile phone in people's daily life. With the largest

cumulative user traffic, mature user experience and greater stickiness of users, the foundation for cash revenue is becoming increasingly solid. This is also the focus of this chapter.

The Current Profit Model of Mobile Social Media

The commercial practice on mobile social media in recent years are mainly focus on internal cash flow, drainage to external APP and advertising.

Turing Internal Value-Added Flow Into Cash

Mobile social media can usually bring a group of core users together. They are able to maintain daily activity and overlap the communication between users invisibly. Under the background of three-degree segmentation, it is less difficult to connect two strangers. For platforms, it has the basis to user operation and the ability to bring value-added products through internal flow.

The most important way of realizing internal flow is to use social virtual currency to complete the value-added closed-loop within the media. As mentioned in the previous article, virtual currency is sold by catering for people's psychological social needs. And with the development of social software algorithms, these virtual currencies are dressed up with aesthetics. From QQ space decoration in the early years to sending presents in live-streaming, they have become the media of user communication. Taking anonymous social media Momo as an example, Momo announced its unaudited financial statements for the third quarter of 2017. Quarterly growth in paid subscribers brought in total revenue of value-added services of \$26.3 million, up 45% year-on-year, mainly concentrated on members' subscription revenue and virtual gift revenue. The products ordered by members include recording visitors, quiet viewing, voice self-introduction, group online reminder, exclusive membership logo and personalized information pages, etc.

Figure 2. The utilization rate of China netizens' mobile application in May 2017

Source: mUserTracker 2016.11. Based on data of 4 million mobile phones and tablet mobile device software on a daily basis, as well as communication data from over 100 million mobile devices plus joint computing research.

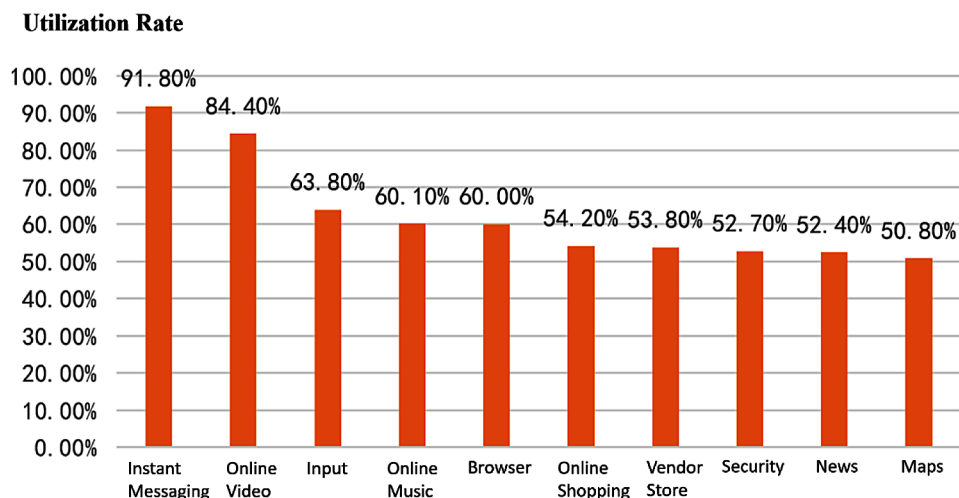


Table 1. Momo 2017 First three quarters earnings

	Total net revenue (\$ one hundred million)	Gross Revenue of Value-added Services (\$ Ten thousand)	Mobile Game Revenue (\$ Ten thousand)	Mobile Marketing Revenue (\$ Ten thousand)
2017 Q3	3.545	2630	800	1740
2017 Q2	3.122	2460	910	1900
2017 Q1	2.652	2290	1160	1790

Value-added service means mobile social media transforming their social attributes and user resources into real wealth. It also creates a more interesting social environment for users. In addition, there is also the form of liquidation which is developing downstream products within mobile social media.

Ding Talk is a working APP, the main functions are providing smart office phone, recording office attendance, etc. The registered users climbed after the APP becoming an internal office communication platform. In order to highlight its workplace function, it started to focus the function of recording attendance. By accumulating users online and developing hardware products offline, the company used the platform to publicize and sell, and achieve its goal to revenue.

Using Internal Flow to Attract External Flow

Flow has great potential for adding values. Social media will naturally attract capital attention on the basis of such huge traffic and share with other offline enterprises. On the one hand, it can achieve a win-win situation on using resource; on the other hand, it can add a new way to create cash flow. This is also a widely used way of making profits in mobile social media

Social Game Mode: Rich Benefits, Promising Prospects

Adding the game section in social media to trigger multi-user participation has been commonly used in early non-mobile social media. It is represented by various small games in QQ space. Fast, interactive, interesting, simple and relational attributes make these social games unique and make people happy. Mobile social media also choose this way to enhance the user experience, and it takes more effort in game form and page design. After the ‘small program’ was launched, WeChat allowed the company to develop its own small program based on WeChat’s huge user base. It was equipped in WeChat platform and directly entered the program page, which not only directly promoted its own brand and products, but also realized user value conduction.

‘Jumping’ is a very representative WeChat applet developed by WeChat team. When it was first launched on December 28, 2017, the WeChat team introduced a mandatory launch page and recommended it to the huge WeChat users. This little game with smart voices, simple operations, and challenging gameplay allows people to ‘jump up’ in an instant and make competition in the circle of friends. A continuous influence of ‘jumping’ game decryption and being able to send to the group to hold an invitational tournament can easily help people kill time. By setting up an exclusive game springboard

for the brand, WeChat has also achieved the function of advertising, in order to obtain advertising fees, and gain more.

Lao Yue Gou is a social APP that uses games to attract users. In May 2017, Lao Yue Gou announced that it had 45 million registered users in China. The main ways to promote themselves are using joint live-streaming platforms and the fan communities. Inside the APP, user's behavior data are generated around the game. Through the settings of different game types, users can get a more authentic display of their self-state. For a game social platform, it will have a higher matching efficiency if it can present user portraits more realistic and comprehensive, compare with the settings that matching friends with strangers. In the process of mining user's value, Lao Yue Gou has developed value-added services such as providing accompanies, opening self-owned internet cafes and table games shops. All those actions form a closed-loop with online games and other value-added services. Lao Yue Gou's revenue reached 40 million yuan in 2017 (36Kr, 2017).

'Social Media + E-Commerce' Model

This is a reliable way to mature development and to commercialize at present, and transaction sharing can be a significant profit point for social media. First of all, for the e-commerce platforms such as Taobao, Tmall, and JD.com, cooperation with social media can introduce sufficient traffic into e-commerce. In addition, they can use the user data obtained from social media to enhance fan marketing and content marketing, so as to make the shopping mall recommendation more accurate and improve the shopping experience. JD-WeChat shopping, mobile QQ shopping and other social e-commerce provide businesses and consumers with another platform to directly establish a trust relationship, which is a new entry for consumers to mobile shopping. Secondly, for social media, e-commerce has a payment logistics system that is complementary to the social media O2O closed-loop and realizes commercialization by diverting traffic to the e-commerce platform.

In 2014, Sina weibo announced the launch of Alipay's payment tool, "Weibo payment" on its platform. It opened a receiving function to the users who is has enterprise qualification certification, this means that the platform where the fans gather is going to employ fan economy. After Sina Weibo announced its cooperation with Taobao in 2013, Weibo started to imported flow to Taobao and obtained transaction share. It has taken another step on the road of commercialization. By using marketing strategy with social elements and the word-of-mouth to spread the brand and to improve brand recognition, it changed the weak ties in the past into strong ties which have multi-direction links. It shows that the 'marriage' of e-commerce and social media can bring win-win relation.

Secondary Sale Model

The secondary sale we know is to sell time and space from TV to advertisers, the essence is to sell the audience's attention to advertisers. When audience's attention shifts to internet platform, internet advertising has gradually replaced television advertising, and capital tends to be attracted to most people's attention. As audiences divert their attention to mobile social media, the profit-seeking nature of capital completes for the secondary sale. The products are still the audience's attention, and in the era of mobile internet, audience's attention is more focused on the content than in the era of television.

Social media has an advantage which cannot be found in the traditional content era. It can be well targeted at a particular type of consumers to improve the conversion rate of advertisements. The big data

provide accurate information on age, gender, income, and interest, and individualized environment creates a sense of personal identity. The connection between the strong relationship and the weak relationship also invisibly constructs the user's social identity, thereby distinguishing the complete virtual anonymity of the internet era, so that advertisers are more targeted in the promotion to provide better services.

In 2016, the scale of social advertising in China was 23.96 billion yuan. China is also following the global trend of rapid growth of social networks, with the development of advertising technology, the original information stream advertisement, video advertisement, H5 advertisement and soft text marketing advertisement based on social media have pushed social advertisement to a high-speed development period.

The Efficiency of Social Media's Cash Conversion Under Social Scene

Although mobile social networking has more flexibility and business opportunities, there are also shortcomings in various ways of cash conversion.

Internal Cash Conversion is Easy to Reach Saturation Point

Each social media has its own characteristics and target users, which limits the main direction of one social media in the process of turning flow into cash. Both social and media attributes require social media to consider both the strength and weakness of the relationship between users. It relies on the relationship chain for business development, but also need to convey certain information to users, whether through pictures, videos, or text.

Being the one-to-one dating APP, Momo was initially turning flow into cash through ads. Now it put video social networking as its main business and most of its revenue comes from live-streaming services. According to Momo, in the third quarter of 2017, the proportion of live-streaming business increased from 80% in the first quarter to 85.36%. However, making money from live-streaming subscribers has entered into a stagnation period, which means that Momo has encountered the predicament of saturation. The solution is either to maintain the existing cash conversion way and enhance media content, or to continue to seek the next business opportunity to develop new business.

The Limited Ability of Turning Flow Into Cash

However, consumers are difficult to fully adjust to. For different types of advertisements, the level of audience attraction varies. Therefore, advertising has become a relatively mature one in all commercialization channels, but it cannot monopolize all channels. The advertisers will use the benefit as the standard, and the audience will also pay attention to some advertisements.

WeChat's 'Moments' function is a form of precise delivery of advertisement based on big data analysis. However, from the perspective of existing WeChat advertising technology, it is impossible to achieve the target of investment, let alone precise marketing. In the context of WeChat 'Moments', information tends to be redundant and complicated. People rarely discuss topics in income, consumption, and living standards in 'moments'. Even if so, the revealed information could be misleading, such as the act of showing off wealth, and the desire to seek weird ideas. The strategy of topic marketing in social media is nothing more than a notion. The hot topics can always attract people's attention and have the advantage of viral spreading. But there are also problems, such as poor controllability, fast propagation

speed, and rapid update of public opinion trends. There are not many brands that can accurately predict public opinion. Hence, this kind of topic marketing has its limitations and faces difficulties.

The Strong Ability to Attract External Flow and Turning It Into Cash

Shareaholic (2015), a foreign content marketing platform published a report announcing that social media has become the biggest source of recommendation traffic for websites, targeting the huge traffic that Facebook and Twitter have brought into blogs.

Taking shopping as an example, although social media has constructed social and shopping scenarios, it would be friction if the entrance is not packaged and publicized to cultivate users' habit of using scenario entrance. It attracts users by using discounts. Meanwhile, it strengthens users' memory of scene entrance by triggering scene memory, such as sending short messages and APP messages.

The Social Game Model Works Well

For the user experience in the social context of strong-weak ties, scene is the most emotional alternative to enable users to have a stronger immersive experience. Games can compensate for simple social media attributes and provide users with a perfect scene. By providing tips and plots to stimulate users' willingness to consume in the game, using interesting social functions to improve users' activities, game developers, advertisers and online payment systems can all benefit from the industry chain.

"Face to Lite" is a typical APP that integrates games into mobile strangers' social networking. After users' registration, there will be a various types of dating game. These functions can create a romantic scene, which can offer opportunities to chat with strangers at any time and can also transfer weak ties between strangers into a strong connection.

CONCLUSION

To analyze the strong and weak relationship in the context of a mobile social era is aimed to solve social relationship development behind the technical level. It doesn't matter if it's a weak connection among strangers created by network attributes, or it's a strong connection built upon social communities and scenes. Both are based on people's instinct to socialize anywhere and anytime. This is also the basis for social media to develop into multiple branches and make profits. In what way can user experiences be guaranteed while platforms' value-added targets be achieved at the same time? This chapter attempts to summarize commercial application rules of mobile social media for communication.

Build a Scene to Maintain User Activity

Attracting users to retain is the primary condition for communication social media to survive as a functional software. The drawback of the tool will be remembered by users only when certain scenes are present. For example, all mobile phones have a call and text message function, which leads to the condition that the tool solves the user's just need problem. But it is still limited by the frequency of use, which requires further active users.

The reason why WeChat is regarded as a ‘dependency’ by people is its multi-faceted scene setting. First of all, group scenes are very easy to stimulate the gathering of people. The first group breaks through the limits of time and distance and regroups together. The collection of occasional groups can also be guaranteed. The community plays the role of the media, releasing information and exchanging information, it becomes a distribution center for information. Secondly, the circle of friends is a big social platform. Self-information sharing at any time and the function of comment, like, sharing makes it a place for information diffusion. It also has the saying that ‘We can know the world in the circle of friends’. These functions are all creating an image scene for the user, allowing the user to experience the feeling of ‘a lot of information and high social frequency’ in WeChat. Construction of scenarios help to open up space for new products, and also means there is commercial potential.

Games and E-Commerce Access to Increase Profit Points

Communication-based social media is targeting the communications space, but it can also increase profit margins by accessing games and e-commerce. The game can realize the scene substitution, and the scene of socialization is the part that every enterprise is trying to build. In the past, the relationship between enterprises and users was not equal. The majority of users were eager for getting quality content but it’s not available, and there was almost no relationship between users. In this context, Tencent’s QQ, which does not create content, has made great strides. The most successful part of this social software is established a perfect membership system that allows users to create themselves through interaction, when most companies focus on production content. The more active Zhihu (Chinese network Q&A community) and Douban (Chinese community website) in the Chinese market also follow this principle. QQ has developed the user’s payment habits, and the game sector in Tencent has also brought real benefits to the company. In 2003, Tencent released a series of games prefixed with QQ, ‘QQ Fantasy’ and ‘QQ Tang’ became the childhood memories of the older generation of QQ. In 2006, Tencent officially entered the field of online games and embarked on the development of highways. Until now, it has accounted for half of China’s game industry. Tencent Games, which carries the QQ scene, has given itself a well-performing advertisement and helped Tencent possess a stable revenue channel.

The traditional e-commerce platform relies on its own platform to carry users, and also uses traditional advertising methods in publicity and promotion. In May 2016, think tank Analysys and JD.com jointly released ‘the China Mobile Social E-Commerce Development Special Research Report’. It showed that domestic mobile e-commerce transactions reached 2.07 trillion yuan in 2015. This is not only a quantitative accumulation, but also a qualitative change. Looking at the development of e-commerce platforms over the years, there is a place worthy of attention: the cooperative relationship with social media.

In 2014, JD.com teamed up with instant communication social media like QQ’s mobile phone app and WeChat to tap into mobile e-commerce industry. Among all the social media, those in the communication category have the largest user base and are used most frequently as they fit better into mobile social communication’s features. Therefore, they become the e-commerce platforms’ first choice.

For e-commerce platforms, the first move to realize their purpose of gaining traffic is promotion. Social media has such advantages in concentrating dispersed traffic and improving users’ engagement. It’s the most reliable way to reach a large number of users in a short time through mobile social media. Most consumers will refer to other buyers’ reviews to make purchases. But such relation between consumers themselves and other users belongs to the ‘weak tie’ category. Sharing information among friends based on social media platforms is able to enhance users’ trust in products. Moreover, the opening of

mobile social e-commerce platforms also improves overall operational efficiency of both sides. Take JD.com as an example, after joining hands with WeChat and QQ, these two mobile social applications have launched many public platforms in addition to instant messaging and social entertainment. It has also opened interfaces to third parties. All these have enhanced users' consumption experiences and provided richer user data for companies, making it easier for precision marketing.

Invest in High Quality Advertising to Attract Attention

The significance of advertising is to attract attention. The advantage of mobile social media is that it can reach large-scale users. In recent years, social marketing has continued to develop, and advertising creativity combined with life is also easily accepted by the public, but the disadvantage of social media is that technology is not enough to achieve precision marketing.

Mobile social users have obvious likes and dislikes of advertising forms, which results in completely different recommendation effects of various advertisements. Those attracting the highest attention are video advertising, QR code advertising, feeds and APP recommendations. While those with the most selective attention are screen ads or pop-up advertising. All these stems from users' experiencing effects. Based on the theory of Usage and Satisfaction, users seek attention according to their own needs. Mobile social users pay more attention to product performances introduced by advertisements, while also have the desire to further understand high-quality audio-visual effects of advertisements and advertising discount information.

For mobile social platforms, high-quality advertising means having the effect of reaching users, but also stimulating users' desire to view and pay attention. The goal of all advertising is to motivate public action. The Moment advertisements in WeChat are collected through open appraisal to reach the attention information. The convergent advertisement method is close to the user's habits, but there are often cases of inaccurate promotion. A good social advertisement can instantly capture the user's eyes, trigger the desire to explore, allow users to think that they have a real need for such information or items from their own perspective. Or it pushes public join the purchase list in the future, and make people actively talk about brands with friends to form a share path, not simply conduct rude closure or rushing through.

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Chapter 33

The Important Role of the Blogosphere as a Communication Tool in Social Media Among Polish Young Millennials: A Fact or a Myth?

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ABSTRACT

This chapter proposes and discusses the hypothesis that the blogosphere is a relatively well-developed and independent social media communication tool used by millennials. The first part of the study concentrates on the theoretical aspects of social media communication as presented in the literature, and the way blogs and the whole blogosphere function. The communicational and social profile of Generation Y is presented as it is this cohort that constitutes the major portion of the Polish blogging community. The prevailing trends in the Polish blogosphere are discussed, following a desk research into reports and professional studies. Moreover, some comments and findings are presented regarding an experiment conducted by the authors in which some representatives of younger millennials ran personal, non-profit blogs on a subject of their choice.

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INTRODUCTION

The social media market is characterised by the dynamic growth of various platforms and possible communication tools. Still, the research shows the blogosphere – with its communicational, marketing, and advertising potential – remains an important part of the world wide web. The global blogosphere is in its maturity stage, which means it is stable but growing at a slower pace. Blogs are a commonplace phenomenon with a significant impact on the way individuals function in their societies. The Polish blogosphere, too, is growing steadily. Just like everywhere else, with time and the permanent development of new social media forms and tools, the Polish blogosphere is changing: new trends emerge, and various aspects of the art of blogging and online presence take the spotlight.

One of the most prevailing trends – which is a subject of research – is the increase in the importance and the frequency of using social media channels to communicate blog contents. More and more often, bloggers make use of various social media to provide a permanent communication channel for their readers, which makes obsolete the original means of communication that is the comment section. The length of an average blog entry increases, which may be the reason for the decrease in posting frequency. In order to keep the readers interested and engaged, bloggers frequently make use of the shorter and easier social media formats (e.g. Facebook, Snapchat, Instagram, Twitter) to accompany the main contents of their blogs. As a natural consequence, a question may be raised here whether blogs remain an independent communication tool within social media or whether their role was slightly aberrated. And if blogosphere is not the independent communication tool, can we talk about its important role in Generation Y communication at all?

For the reasons mentioned above, the authors decided to describe the phenomenon from the perspective of Polish millennials, who constitute the major portion of the Polish blogging community. This study describes blogs as an integral part of constantly developing social media communication, defining the characteristic features of this form of communication among millennials, and discussing the validity of the hypothesis that the blogosphere is a relatively mature and independent social media communication tool for Polish younger millennials.

The discussion in the study is based on a literature review and desk research. Moreover, some comments and findings are presented regarding an experiment conducted by the authors in which some representatives of younger millennials ran personal, non-profit blogs on a subject of their choice.

POLISH BLOGOSPHERE PROFILE AND CREATING COMMUNICATION CHANNELS

In the broad range of online communication tools, social media are doubtless one of the most important ones. Due to their dynamic growth, the specific character, the scope of functionalities available through the services, and the continuous increase in the number of users, they have become an important communication channel. They demand continuous and careful attention, as well as quick adaptation to new circumstances, which is to say they entail creating new ways of surviving in an evolving and dynamic environment which is continuously discovered anew (Cross, 2011, pp. 3-4; Szewczyk, 2015, p. 120; Couldry, 2012).

The term ‘social media’ refers to using online and mobile technologies to transform communication into interactive dialogue. The media are used for social interaction in the form of an elaborate set of

electronic (online) communication tools which go far beyond what we used to know as social communication (Allmer, 2015, pp. 44-45). Usually, social media are divided into several different categories: blogs and microblogs (Twitter, WordPress, Blogger), social networks (Facebook, LinkedIn, nk.pl, MySpace), content services (YouToube, Instagram, Pinterest), virtual games (World of Warcraft), virtual worlds (Second Life), and social bookmarking web services (delicious.com).

Social media are an extremely dynamic phenomenon. Research shows that it may take only several month to significantly change the design, the character, or the scope of functionalities of a given service (Pruszyński, 2012). The dynamics of such changes, i.e. the growth rate of social media services, has constantly been increasing. Complementary apps and services are transformed to eventually make their scopes of functionalities relatively similar (Wagner, 2014). Such initiatives are meant to ensure loyalty of current users and win new ones through better quality and competitiveness of services (Somers, 2014).

Blogs are one of the most dynamic forms of participation in online communication. They are online services with chronological entries called 'posts' (Drezner, Farrell, 2007, p. 2). Once, they used to be diaries or memoirs written by Internet users. Nowadays, they concentrate on many various topics, which depends on many different factors, e.g. the preferences, the goals, and the abilities of their authors, as well as on profiles of given blogs (Cass, 2007, pp. 4-7; Pedersen, 2010, pp. 16-17).

Recent studies show that this form of social communication has been developing in Poland. The Polish blogosphere is dominated by women (84.2%). The most popular blog categories are: lifestyle (15.2%), cooking (14.4%), beauty (12%), art and culture (9.5%), personal (7.7%), family (5.8%), fashion (5.3%), and crafts (4.8%). That general disproportion is not, however, reflected in specific blog categories. Women are found most often in the beauty and the crafts categories (98.8% and 98.4%, respectively). Men dominate the following categories: cars (98.4%), money (71.4%), and sports (70%). Analyses of blog contents against the age of their authors show that in the younger millennials cohort the following categories are most common: fashion, beauty, lifestyle, health and fitness, and personal (see report *Badanie Polskiej Blogosfery 2016*, 2016, p. 10).

Blogging platforms are characterised by their interactivity. Usually, blogs grant open access for everyone, and both entries and comments can be read by the authors and the readers alike (Zygmunt, Koźlak, Krupczak, Małocha, 2009, p. 673). The informal and personal character of the opinions, the ability to interact and comment, and the opportunity to impact opinions and emotions make blogs a form of expression and inspiration which influences people's attitudes, behaviours, and decisions, as well as giving readers a chance to develop relationships (Li, Bernoff, 2009, cited in: Gregor, Kaczorowska-Spychalska, 2014, p. 18).

However, the interactivity and the two-way real-time communication between authors and readers are not limited to a given blogging platform (Dean, 2010, pp. 33-37; Cass, 2007, pp. 199-201; Cross, 2011, pp. 5-13). With time, social media are becoming more and more important in communicating blog contents. There is only little research available confirming – indirectly – that hypothesis. The only evidence is the fact that the previous research into the Polish blogosphere had not identified using social media channels for communicating blog contents, nor had it attempted to define the scope of the phenomenon (see report *Badanie Polskiej Blogosfery 2014*, 2014). Earlier studies provide no relevant data. We can therefore assume that social media have for long been used to communicate blog contents, but the frequency and the scope of the phenomenon must have been more limited than what is currently happening as evidenced in recent studies (see report *Badanie Polskiej Blogosfery 2016*, 2016, pp. 19-20).

The studies of blog traffic patterns show a great diversity of traffic sources, e.g. Google organic entries, direct entries, and using aggregator websites and social channels. The research shows varied results for

each traffic source and regularities pertaining to blog categories. Organic traffic is most common for cooking, art and culture, and crafts blogs. Least common is the lifestyle category, and – again – art and culture¹. The relation is reversed for the traffic from social media channels. The largest share of traffic from the channels go to lifestyle, and art and culture blogs; the smallest – to the cooking, travel, and beauty categories (see report *Badanie Polskiej Blogosfery 2016*, 2016, p. 19).

The report presents a detailed analysis of the social media communication channels used by bloggers (p. 19). It concentrates on three dimensions:

- Using various social platforms for communicating blog contents,
- Sizes of blog communities,
- Importance of each channel for bloggers.

The analysis shows two interesting correlations between:

- The increase in PV blog stats and the increase in the proportion of blogs with Facebook fan pages, Instagram and Pinterest profiles, or Snapchat accounts; and
- The increase in PV blog stats and the decrease in the proportion of blogs with Google+ profiles.

The analysis of the average values for all the subjects of the study made it possible to define the two social channels most often used for communicating blog contents. They are Facebook and Instagram (used by 91.1% and 88.9% of Polish bloggers, respectively). The least important for them are Snapchat (16.3%), Pinterest (16.8%), and Twitter (28.6%) (see report *Badanie Polskiej Blogosfery 2016*, 2016, p. 20).

DIGITAL CHARACTERISTICS OF GENERATION Y COMMUNICATION PROCESSES

Generation Y is also often referred to as ‘Millennium Generation’, ‘millennials’, ‘Generation whY’, ‘Echo Boomers’, ‘Generation Net’ (Tapscott, 2010), ‘Generation Next’, ‘Search Generation’, ‘Me Generation’, ‘iPod Generation’, and even ‘Flipflop Generation’. Generation Y consists of people born between 1980 and 1996 (van den Bergh, Behrer, 2012), or 1977 and 2004, or maybe between 1980 and 2000. Some authors emphasise the fact that the term should only be used when referring to people from the USA or Canada (see *Webster's II New College Dictionary*, 2005). The nomenclature is, however, accepted in Poland, too, although there are no precise dates in the literature for when the cohort starts and ends.

The traits which are most often associated with the entire millennial generation are: using all the possibilities that communication technologies gives us and a sort of a life impatience resulting in fast and intensive existence, multitasking, and looking for new stimuli and challenges. The members of Generation Y belong to numerous online communities, and have many acquaintances – not only in the virtual reality (Tapscott, 2010).

Polish publications on the subject most often claim that the ‘Generation Y’ moniker refers to people born between 1983 and 1997 (Oleszkowicz, Senejko, 2013), who are now 20—35 years old. For them, the twenty first century marks the beginning of their exploration of the job market. The temporal shift, in comparison with the USA and Canada, results from the fact that the new technologies came to the countries of the post-Soviet bloc with a certain delay. Polish millennials are a large cohort (about 11

million people), yet so diverse that they can be divided into two subgroups with both common and differentiating features. The younger millennials are people born between 1990 and 2000, whereas the older ones were born between 1977 and 1989. The former are most often still studying; the latter have jobs. It means that the opinions of the two subgroups may and will often be poles apart (especially as regards their purchasing power, preferences, and shopping behaviours).

The older millennials are attributed with some traits of the preceding Generation X²; however, the new social, political, and technological reality – mostly, the growth of communication technologies – forced them to adapt quickly to the new conditions and to use the Net effectively for communication, spending free time, and online shopping.

The younger millennials in Poland are a group of about 5 million. Just like their older siblings, they share some traits with Generation X, as well as resembling Generation Z³ – with their smartphones giving them immediate access to the Internet, communication with their friends, music, films, and numerous apps. Their high digital literacy should not however be treated in terms of the communication technologies only, as it is about their lifestyle and self-expression.

The younger millennials put a lot of emphasis on their image. They use all the Internet has to offer in this regard, all the newest tools, social media, and the blogs they run (see *Raport Odyseja Public Relations 2014*, 2014). The studies conducted on the Polish blogosphere in 2016 show that the majority of bloggers are members of Generation Y. We can see two distinct age groups there: 1) between 26 and 35 years old (40.7% of the subjects), and between 20 and 25 years old (25.6% of the subjects), which more or less reflects the age range for Polish millennials. Similar results were obtained in the earlier study from 2014 in which the two major groups were individuals between 26 and 35 years old (34%) and between 20 and 25 years old (34%) (see report *Badanie Polskiej Blogosfery 2014*, 2014, p. 6; report *Badanie Polskiej Blogosfery 2016*, 2016, p. 6).

AIMS, METHODOLOGY, AND CONCLUSIONS OF THE STUDY

The experiment conducted by the authors, in which some representatives of younger millennials ran personal, non-profit blogs on a subject of their choice, may be deemed as a continuation of the discussion of the blogs as a relatively mature and independent communication tool in social media.

The experiment was carried out for five consecutive years (2013-2017). Its aim was to record changes, trends, and specific behaviours in blogosphere of Generation Y⁴, that is the largest cohort in the Polish blogging community. The subjects were to create and run for at least four months a free and non-profit blog. In order to make sure the experimental situations were as similar as possible to what would have happened in real life, the authors gave the bloggers the freedom to choose any subject and any blogging platform. The results of the experiment were assessed against several criteria: 1) general appearance (aesthetics, images and content compatibility); 2) layout (template, font, content presentation); 3) content (topics, originality, factuality, works presented, photos, etc.); 4) writing style; 5) the profiles of the communities.

During the five-year experiment, thirty nine blogs were created and run. Their subject matters were: lifestyle (25.6%), hobbies (20.5%), fashion and beauty (20.5%), and healthy lifestyle (15.4%) – which reflected the general tendencies in the age group. Next, there were blogs devoted to travelling (7.7%), cooking (5.1%), and art and culture (5.1%) – which also reflects the recent popularity of the categories in the Polish blogosphere (see report *Badanie Polskiej Blogosfery 2016*, 2016, p. 10).

As was mentioned above, the following aspects of running a blog were analysed: the size and the profile of a blog community, as well as its specific behaviours; the authors' attempts to support building such communities; and continuous activating the communities' engagement. At that stage, the statistics were analysed showing the structure of traffic sources. The data obtained reflect the general tendency in the Polish blogosphere, i.e. the considerable diversity of the sources and the prevalence of Google organic entries. In the five years of the experiment, their share varied from 48% to 56%. The organic traffic volume varied depending on how active the bloggers were in building and engaging their communities. The use of social media channels increased steadily from 5% at the beginning to nearly 40% at the end of the experiment. The figures obtained in the last instalment of the experiment were slightly higher than the average for the Polish blogosphere in general. That was probably due to the specific communication practices of Polish millennials, who tend to use social media every day. The sharp increase in the number of social media channels generating traffic coincided with the steady increase in the number of social media used for communicating blog contents. While in the first year of the experiment, out of the eight blogs, only two were supported through another social medium communicating blog contents and activating the communities, with time, the number grew to reach seven out of seven blogs that were run at that time.

Apart from the year-to-year increase described above, two other tendencies can be seen.

- The steady increase in the number of social media used for communicating contents of blogs to readers. Whereas in the first year of the study, only two blogs used one, additional social medium (which was a Facebook fan page), in the last year all the bloggers enriched their communication with their readers through social media (the average was 2.4 additional channels). The first choice was always Facebook; then, they activated Instagram, Twitter, and Pinterest accounts.
- The increase in the scope, the diversity, and the intensity of actions undertaken by bloggers in social media to keep their readers interested and engaged, with simultaneous decrease in the intensity of conversation on blogs.

Briefly speaking, social media are more and more often being used for communicating blog contents at the expense of conversations held directly on blogs, and the results of the experiment reflect the general tendencies observed in the Polish blogosphere. The inconsequential deviations from the average values for the entire blogging community in Poland may result from the aforementioned specific character of the communication patterns of younger Generation Y in Poland and the prevalence of social media in this cohort. The observations may contribute to the discussion of blogs as independent communication tools in social media. It appears that building a vast, active, and loyal community around a blog, attractive content is not enough. Bloggers need to actively create a broad portfolio of social media accounts which will be used for communicating blog contents.

CONCLUSION

In this study, the authors discuss the hypothesis of the blogosphere as a mature and independent communication tool in social media. The reports describing the Polish blogosphere provide evidence supporting the opinion that nowadays blogs are an insufficient means of communicating content. They do not come up with conclusions literally supporting the claim that social media are more and more often

being used for communicating blog contents at the expense of conversations held directly on blogs. There are, however, reasons why it may be assumed that such process is taking place. This tendency appears to be confirmed by the observations and conclusions of the experiment conducted by the authors in which some representatives of younger millennials ran personal, non-profit blogs on a subject of their choice. In the context of the above considerations, it is difficult to confirm the thesis about the important role of the blogosphere as a communication tool in social media among Polish young millennials.

Since the research referred to in this study was selective, i.e. its focus was the younger millennials cohort, it must not be treated as exhausting and conclusive as to the scale of the process in the entire Polish blogging community. It may, however, be a starting point for further, more comprehensive research into the phenomenon, including other generations.

An electronic tool of social communication, blogs are a relatively mature phenomenon which still makes effective use of new possibilities and growth opportunities. Apart from the trend towards changing the hierarchy of the channels for communicating blog contents and conversing with users, various studies focus on other aspects of the current dynamics in the blogosphere. The most common tendencies are: decentralisation of activity (as a result of decrease in the importance of the user/blogger conversations on blogs), higher value of engaged users, decreasing value of comments, lower community migration rate, lack of content recycling, or growing importance of vloggers and influencers (using mostly Facebook and Twitter) at the expense of bloggers (Hunt, 2016). They all deserve a closer look and appropriate research efforts which will help us better understand how the Polish blogosphere works.

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ENDNOTES

- ¹ It is due to the diversity of the art and culture blogs included in the study that they are found at both ends of the scale.
- ² Generation X (the 'Indifferent Generation' or 'Ghost Generation') includes people born between 1965 and 1981, even though in some sources the cohort ends as late as in 1986. The X in the moniker referring to individuals reacting to the chaotic reality with individualism and pessimism was popularised by D. Coupland's study *Generation X* (Coupland, 1991).
- ³ 'Generation Z' describes young people born after 1995 (opinions vary as to when the cohort starts – some mention 2000). The generation is commonly thought to treat new technologies as something natural because they have always been here even before they were born. They are also described as Generation C (from 'connected to the Net'). Experts focus in their definitions on change (that is the state the generation likes best) as continuous experimentation implies growth and is stimulating. The members of the generation most often concentrate on the reality and the material aspects of life, as well as being creative and ambitious. They want it all and they want it now. They have a different attitude towards knowledge – they value fast searches and creative ways of obtaining knowledge. They know the world is changing, and deem knowledge as something that may lose its value. They are mobile. They know other languages and often have friends in different parts of the world (Troksa, 2016; Törőcsik, Szűcs, Kehl, 2014; Singh, 2014).
- ⁴ The experiment described in the publication involved members of the younger millennials cohort.

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Section 4

Utilization and Applications

Chapter 34

Adolescents, Third–Person Perception, and Facebook

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ABSTRACT

The purpose of this chapter is to document the extent of Facebook use and cyberbullying among adolescents. It is based on a study theoretically grounded in third-person perception (TPP), the belief that media messages affect other people more than oneself. As Facebook establishes itself as the dominant social network, users expose themselves to a level of bullying not possible in the analog world. The study found that 84% of adolescents (middle school through college undergraduates) use Facebook, and that most users log on daily. While 30% of the sample reported being cyberbullied, only 12.5% quit using the site and only 18% told a parent or school official. Despite heavy use and exposure, adolescents exhibit TPP, believing others are more likely to be negatively affected by Facebook use. A range of self-protective behaviors from precautionary (deleting or blocking abusive users) to reactionary (quitting Facebook) were related to decreased degrees of TPP. Implications for prevention education are discussed.

INTRODUCTION

Consider the numbers:

- 800 million: Number of active Facebook users (Lyons, 2012).
- 49: Percentage of Americans using Facebook (Lyons, 2012).
- >50: Percentage of American teens who have been cyber-bullied (Bullying Statistics, 2012).
- 10 to 15: Percentage of bullied teens who tell their parents (Bullying Statistics, 2012).
- 4,400: Number of teen suicides in the U.S. each year (CDC, 2012).

The National Crime Prevention Council (2012) defines cyber bullying as “the process of using the Internet, cell phones or other devices to send or post text or images intended to hurt or embarrass another person.” This may include sending nasty messages or threats to a person’s email account or cell phone,

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spreading rumors online or through texts, posting hurtful or threatening messages on social networking sites or web pages, stealing a person's account information to break into their account and send damaging messages, pretending to be someone else online to hurt another person, taking unflattering pictures of a person and spreading them through cell phones or the Internet, sexting or circulating sexually suggestive pictures or messages about a person.

The use of Facebook and other social media can be especially problematic, because once something is shared, it replicates and may never disappear, resurfacing at later times. Cyber bullying can be damaging to adolescents and teens. It can lead to depression, anxiety and suicide (Bullying Statistics, 2012).

The purpose of the study is to document the extent of Facebook use and cyber bullying among a sample of adolescents. The study is theoretically grounded in third-person perception, the belief that media messages affect other people more than oneself. Exploring third-person perception, Facebook use and cyber bullying may shed light on the extent of the problem and may also explain why adolescents do not report cyber bullying and do not take self-protective measures online.

THE STUDY

Procedures and Participants

Participants were recruited through school-based programs about bullying offered by Crisis Center North, a Pennsylvania women's center. Multiple school districts and universities participated. The sample (N = 1,488) was 51% male, with an average age of 15 (range = 12 (middle school) to 24 (college undergraduate)). These age ranges were selected because they coincide with reported cases of cyber bullying and dating/relationship violence.

Results

Participants believed they were less likely than others to be affected by Facebook use. This is classic Third-person perception (TPP). As predicted, participants who believed they are less influenced than others by Facebook use also believed they are less likely than others to become the victim of cyber bullying. This misperception is called optimistic bias.

Most of the participants (84%) said they use Facebook. When controlling for non-users, the average adolescent logs on daily. Enjoyment of Facebook ranged from zero (uncommon among users) to "LOVE it." Use and enjoyment emerged as the strongest predictor of TPP.

TPP increased as perceived social norms reject cyber bullying as normal. Responses to the statement, "my friends think cyber bullying is funny," ranged from strongly agree (4%) to strongly disagree (55.6%). Over half of the adolescents (64%) disagreed or strongly disagreed with this statement, indicating the subjective norm for cyber bullying is perceived to be more supportive of victims than bullies. Age emerged as a weak predictor, with TPP increasing with age. There were no differences attributable to gender or race.

Table 1 shows the percentage of adolescents who have taken steps to prevent harm on social media. Deleting friends or blocking peers was the most common action taken (50.8%). Nearly one-third of the sample (30%) said they have been electronically bullied, so an additional 20% of the sample has taken this action as a precautionary measure. The remaining behaviors are each below the 30% (affected) range,

suggesting 12% to 25% of adolescents who experience cyber bullying take no action. Participants scored an average of 70% on a knowledge pre-test. Responses to individual items ranged from 89% correctly responding that deleted posts and photos from Facebook can be recovered, to 59% incorrectly responding that drug and alcohol abuse are reasonable explanations for bullying and violence.

Table 1. Percentage of adolescents who have taken self-protective behaviors

Behavior	% Taken
Deleted “friends” or blocked someone from Facebook	50.8%
Told a parent or school official about a cyber bullying incident	18.0%
Saved comments or posts to document the abuse.	17.5%
Quit using Facebook or another social networking site	12.5%
Changed cell phone number	5.7%

Discussion

As Facebook establishes itself as the dominant social network, approaching 1 billion users world-wide, adolescents expose themselves to a level of bullying not previously possible in the analog world. Facebook has a minimum age requirement of 13, but 12-year-olds in the current sample reported daily use. Adolescents over share personal information and photos on their own and have no control over what peers share on their behalf. The national statistics on teen suicide speak for themselves.

The current study found that 84% of adolescents (middle school through college undergraduates) use Facebook, and that most users log on daily. While 30% of the sample reported being cyber bullied, only 12.5% quit using the site, and only 18% told a parent or school official about the abuse. Informal discussions within the school-based sessions suggest the 30% figure may be under reported. Students routinely talked about behaviors that meet the legal definition of stalking as “normal,” saying things like, “If I didn’t want people to know where I am all the time, I wouldn’t post it,” and “That’s what Facebook is for.” Between the GPS tracking capabilities embedded in posted photos and literally posting locations in status updates and in applications like Foursquare and Runkeeper, escalating from cyber stalking to in-person stalking would be easy.

A possible explanation for bullied adolescents’ failure to report harassment is a form of third-person perception; they believe the impact on themselves is minimal when compared to their peers. Despite heavy use and exposure, adolescents exhibit third-person perception (TPP), believing others are more likely to be affected by Facebook use. A range of self-protective behaviors from precautionary (deleting or blocking abusive users) to reactionary (quitting Facebook) were related to decreased degrees of TPP. TPP was also related to optimistic bias; adolescents who believe others are more influenced by Facebook also believe others are more likely to become the victims of cyber bullying. This information is useful to schools, parents and anti-bullying programs, suggesting a media literacy approach to prevention education may decrease TPP and increase self-protective behaviors.

The remaining predictors of TPP flesh out a better understanding of the interplay between TPP and cyber bullying. The strongest predictor of TPP was liking of and use of Facebook. TPP only decreased with experience. The more adolescents use Facebook, without experiencing cyber bullying first-hand,

the more they enjoy the experience, believe they will not be adversely affected and larger the perceived gap between themselves and others. Beliefs about peers' perceptions of cyber bullying (subjective norm) widen the perceived self/other gap. Facebook can provide a positive experience for adolescents, a place to establish an identity and maintain relationships with peers. Unfortunately, it also establishes a platform for name calling, harassment and abuse. Adolescents need to be aware of the dangers, so they can take appropriate precautions and be aware of resources, if they do become victimized electronically. Partnerships between school systems and women's centers may offer a viable solution.

BACKGROUND/LITERATURE REVIEW

Outline

The study described in this chapter draws together a number of related literatures. After grounding the work in adolescents and social media, a number of studies in communications and health psychology are explored. Authors in these two disciplines don't often draw equally from the other. This is unfortunate, as the following review of the literatures shows they are clearly related and the preceding study documents the relationship. The second section introduces the reader to third-person perception (TPP), a communications theory about perceived influence of the media. The next section introduces optimistic bias, a health psychology theory that explains why people believe they are invulnerable to harm. Each of these are misperceptions that result in behaviors: People act on their perceptions, not on reality. The last section reviews the literature on subjective norms: How adolescents' perceive the attitudes of their peers impacts their own perceptions of social media and ultimately their uses and abuses of social media platforms.

Adolescents and Social Media

A report issued by the American Academy of Pediatrics (2011) outlined the benefits and risks of social media use by children and adolescents. On the positive side, staying connected with friends and family, exchanging ideas, and sharing pictures. Adolescent social media users find opportunities for community engagement, creative outlets, and expanded social circles. According to the report, the risks fall into these categories: peer-to-peer (bullying), inappropriate content, lack of understanding of privacy, and outside influences (social and corporate). The report also refers to "Facebook Depression," which emerges when adolescents spend too much time on social media and start exhibiting classic signs of depression.

A number of social media apps were designed specifically for finding sexual contacts or the "hook-up culture." Apps like Grindr and Tinder allow users to find potential sexual partners locally, using the GPS in their smart phones. The popular app Snapchat began as a means to quickly share explicit photos for a set period of time, without the receiver saving a copy of the image. Use of the app has evolved, with some users sharing benign photos and videos and others using it for more explicit purposes. Facebook also began as a hookup app limited to college students. As other users (including parents) were permitted to use the app, the social media giant evolved, becoming many things to over one billion users worldwide.

A recent study (Stevens, Dunaev, Malven, Bleakley & Hull, 2016) outlined how adolescents use social media in their sexual lives. Adolescents seek out sexual content (sexually explicit material, information about sexual health, sexual norms). Social media platforms provide an opportunity for sex-related

communication and expression; According to the study, 25%-33% of adolescent social media users post or distribute provocative images, seeking feedback on their appearance or connection with other users. Finally, social media provide adolescents with tools for seeking out romantic or sexual partners, which may result in risky behaviors.

The National Academies of Sciences, Engineering, and Medicine issued a review of a decade of research on bullying (Flannery et al., 2016). According to the report, bullying and cyberbullying prevalence rates reported vary from 17.9 to 30.9% of school-aged children for the bullying behavior at school and from 6.9 to 14.8% for cyberbullying. Much of the variance can be attributed to sexual orientation, disability, and obesity. Physical consequences can be immediate (injury) or long-term (headaches, sleep disturbances). Psychological consequences include low self-esteem, depression, anxiety, self-harming, and suicide. There is some evidence to suggest links between being bullied in adolescence and perpetration of violence in adulthood.

Third-Person Perception and Social Media

Third-person perception (TPP) is the belief that negative media message influence others more than oneself. The phenomenon has been well-documented over a variety of contexts, which recently include news coverage of election polls (Kim, 2016), deceptive advertising (Xie, 2016), and the impact of religious cartoons (Webster, Li, Zhu, Luchsinger, Wan & Tatge, 2016). A third-person effect emerges when the misperception causes a behavior or attitude change. The most common third-person effect reported in the literature is support for censorship (Chung & Moon, 2016; Webster et al., 2016).

A growing literature is documenting TPP regarding social media (Antonopoulous, Veglis, Gardikiotis, Kotsakis & Kalliris, 2015; Wei & Lo, 2013). Facebook users believe they are less likely than other users to suffer negative consequences to their personal relationships and privacy (Paradise & Sullivan, 2012). Adolescents believe others are more harmed by sexting, and, in turn, support restrictions for others.

TPP and Optimistic Bias

Of the many theoretical frameworks thought to contribute to third-person perception, optimistic bias is the most promising. Optimistic bias is the belief that “bad things happen to other people” (Weinstein, 1980). More than 100 studies have documented optimistic bias in a range of health issues, including cancer (Jansen, Applebaum, Klein, Weinstein, Cook, Fogel & Sulmasy, 2011), natural disasters (Trumbo, Lueck, Marlatt & Peek, 2011), and sexually transmitted diseases (Wolfers, de Zwart & Kok, 2011). The first to link the two literatures (Chapin, 2000) found that adolescents exhibiting optimistic bias regarding risky sexual behaviors also exhibited TPP regarding the influence of safer sex (HIV) advertisements. Adolescents who exhibited first-person perception, believing they were more influenced by the TV spots than were their peers, reduced their optimistic bias to a more realistic risk perception. A number of later studies have linked the literatures in a number of contexts, including bird flu (Wei, Lo & Lu, 2007), computer knowledge (Li, 2008), and domestic violence (Chapin, 2011).

The Behavioral Component

Optimistic bias and third-person perception are both misperceptions about risk. Misperceptions are interesting in their own right, but they become more important, because people act on their mispercep-

tions. Both literatures include a behavioral component (Behaviors and attitude changes brought about by the misperceptions). In a recent optimistic bias study of adolescents in the Netherlands, participants exhibited optimistic bias regarding sexually transmitted diseases (STDs): Adolescents believed they were less likely than their peers to contract an STD (Wolfers, de Zwart & Kok, 2011). It is well documented that people who exhibit optimistic bias are less likely to take precautions. In this case, adolescents who believed they were less likely to contract a STD were also less likely than peers to get tested. Recent studies have also linked optimistic bias with failure to use sun screen (Roberts, Gibbons, Gerrard & Alert, 2011), failure to vaccinate children (Bond & Nolan, 2011), and diminished mental health (O'Mara, McNulty & Karney, 2011).

People exhibiting TPP are also predicted to act on their perceptions, but what is described in the literature as a behavioral component is more often measured as an attitude or support for restriction. A study of video games found heavy gamers exhibited higher degrees of TPP (Schmierbach et al., 2011). TPP was related to less support for censorship of violent video games. Recent studies have also linked TPP with support for censorship (Lim & Golan, 2011), willingness to restrict product placement in film (Shin & Kim, 2011) and increased information seeking (Wei, Lo & Lu, 2011). The study of TPP and Facebook use among college students (Paradise & Sullivan, 2012) failed to document a relationship between TPP and support for enhanced regulation of the social networking site.

Subjective Norms

Subjective norm is our perception that most people (friends, family, etc.) take a particular position on a particular topic (Fishbein & Ajzen, 1975). Consider the example of college students and gambling. College students are at an age that is highly impressionable, experimental and conducive to risk-taking. Not surprisingly, college students are three times as likely as adults to gamble. The advent of Internet gambling brings the high stakes of Las Vegas to dorm rooms across America. Students' parents likely view gambling as economically irresponsible, so personal attitudes and subjective norms are at odds. A study of 345 mid-western college students (Thrasher, Andrew & Mahony, 2007) found that both positive attitudes about gambling and perceived positive subjective norms predicted increased gambling among college students. The researchers suggest that gambling-themed campus events (casino nights, poker clubs) help create positive subjective norms that may differ from students' family perspectives, and thus may increase gambling among students.

While it has yet to be applied to violent crime, one study (Woolley & Eining, 2006) examined the applicability of subjective norms to one of the most common non-violent crimes among college students: Software piracy. Students routinely download music (mp3 files) illegally; the same principles apply to sharing software. For instance, the Microsoft Office Suite costs hundreds of dollars. "Free" versions are available online and sharing or copying CDs is commonplace. The study focused on accounting students and the expensive software packages required for coursework. The study split subjective norm into two categories: peer and authority (A business professor may not approve of piracy, but peers may be routinely engaging in the behavior). Both categories predicted piracy among accounting students. Compared to previous studies, Woolley and Eining found that students today are more aware of copyright restrictions, but also have greater access to computers, making piracy easier than ever. The study also found that students were more likely to pirate software than adults. The belief that software developers charge too much for their product and the belief that "everybody does it" support continued infractions. There have been no previous TPP studies using subjective norms as a predictor.

FUTURE RESEARCH DIRECTIONS

Understanding how children and adolescents use social media and their misperceptions about potential harms is an important first step. Addressing the problem is the next step. This information is useful to schools, parents and anti-bullying programs, suggesting a media literacy approach to prevention education may decrease optimistic bias and TPP, thereby increasing self-protective behaviors. It's important that children and adolescents have realistic perceptions of their vulnerability online, ways they can protect themselves, and the available resources once a harm has taken place. This study resulted from a collaboration between a university (Penn State) and a local women's center (Crisis Center North). Each brought specific areas of expertise resulting in free services to area schools. At the end of the school year, the partners meet to review the results and improve the curriculum specific to the needs of the schools. This model is easily replicated in other communities.

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Chapter 35

Application and Impact of Social Network in Modern Society

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ABSTRACT

Social network and its corresponding website permits a client to make a profile, set up an authorized account to create a digital representation of themselves, to select other members of the site as contacts, make connections with them, communicate and engage with these users in different social activities, etc. So, social network includes details of persons, group details, their friends list, contact list, business, affiliations, personal data, personal preferences, and historical information. In this age of smart communication and technology, most of the time people are connected with mobile smart telephones in their work culture, home, office, or any other related places. As they are constantly associated with social systems for long time, they get new posts, messages, and current refreshed news readily available in a flash. This is the constructive part of social networking that individuals consistently remain refreshed with most recent news and innovation. This chapter presents an overview of social network design, various issues, and emerging trends that are evolved simultaneously with modern age. It also presents a detail study on application and impact of social network in modern society as well as exhibits an exhaustive review of security measures in social sites.

INTRODUCTION

Different Social Network Sites (SNS) such as facebook, MySpace, YouTube and Bebo etc. got maximum user appreciation and became very prominent during the period and primary decade of the twenty-first century. But it was challenging to know who are their clients, how are they utilized and are social network locales a passing trend or will they be a generally lasting feature of the Internet- all these were difficult to handle. In the meantime, various pro locales have developed many social networking features, including digg.com (news separating), YouTube (video sharing) and Flickr (picture sharing): Are these

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the future as in social networking will end up installed into different applications as opposed to keeping up a moderately free presence? Social network destinations have pulled in noteworthy media intrigue due to their fast ascent and wide client base, particularly among more youthful individuals, and as a result of different terrifies, for example, the posting of unseemly material by minors and the potential SNS use in personality extortion. There is likewise a justifiable worry from guardians about their kids investing a lot of energy in an obscure online condition (M.Rath et. al, 2018) Be that as it may, there is a little methodical examination into social network destinations to look at the pervasiveness of attractive and bothersome features and to get solid proof of examples of clients and employments. This chapter audits such research and numerous subjective and blended strategy examinations concerning explicit parts of SNS use or into explicit gatherings of clients. One of the issues with social occasion information about SNSs is that they are benefit making endeavours and data about angles, for example, client socio-economics and use designs are commercial privileged insights. Notwithstanding the usage of security approaches to ensure individuals' data, this makes deliberate investigations troublesome. MySpace is a fractional special case, in any case, and this part exploits to exhibit a few examinations of MySpace clients to supplement the writing surveys(M.Rath et.al, 2018).

Social system information can help with acquiring significant understanding into social practices and uncovering the fundamental advantages. New huge information advances are developing to make it less demanding to find important social data from market examination to counter fear based oppression. Sadly, both various social datasets and huge information advancements raise stringent security concerns. Enemies can dispatch surmising assaults to anticipate delicate idle data, which is reluctant to be distributed by social clients. Along these lines, there is a trad eoff between information advantages and security concerns. It has been examined in some examination work about how to improve the exchange off between idle information protection and modified information utility. We propose an information sanitation system that does not significantly decrease the advantages brought by social system information, while delicate inactive data can in any case be secured. Notwithstanding considering intense foes with ideal deduction assaults, the proposed information sanitation procedure (Z. He et.al, 2018) can at present protect the two information advantages and social structure, while ensuring ideal idle information security.

A social system is a description of the social structure including individuals, for the most part people or affiliations. It speaks to the manners by which they are associated all through different social familiarities extending from easygoing social contact to close natural bonds (J. Jiang et.al, 2018). The casual association is a caught structure made out of social people and associations between them. Huge scale online relational associations like Sina Weibo, Tencent Wechat and Facebook have pulled in a substantial number of customers starting late People should need to use relational associations to pass on or diffuse information. For example, an association develops another thing, they have to advance the thing in a particular casual network. The association has a limited spending so they can simply give free precedent things to couple of customers (Rath et.al, 2018). Four major applications of social networks are as follows.

- Multimedia – Photo-sharing: Flickr – Video-sharing: YouTube – Audio-sharing: imeem
- Entertainment – Virtual Worlds: Second Life – Online Gaming: World of Warcraft
- News/Opinion – Social news: Digg, Reddit – Reviews: Yelp, epinions
- Communication – Microblogs: Twitter, Pownce – Events: Evite – Social Networking Services: Facebook, LinkedIn, MySpace. Figure 1 shows Four important applications of social networks.

Figure 1. Four important applications of social networks



They assume that the fundamental customers could influence their buddies to use the things, and their friends could affect their colleagues. Through the verbal effect, incalculable finally get the items. Impact help is a basic research issue in relational associations. It picks a course of action of k centers as seeds with a particular ultimate objective to help the inducing of considerations, ends and things.

Section one presents the introduction part. Segment 2 shows Exigent features in Social Networking and utility devices utilized in social system for improvement and support, for example, context of big data, delicate registering methods and so on. Segment 3 presents applications and Impact of Social Networking in Modern Society and at last section 4 concludes the chapter.

Exigent Features in Social Networking

Many challenging issues should be tended to execute plan of social system design. Most of them are as per the following:

1. Representation of learning - Although different ontologies catch the rich social ideas, there is no need many “persuasion” ontologies characterizing a similar idea. How might we advance toward having few normal and exhaustive ontologies?
2. Control and administration of learning - Semantic Web is, relative the whole Web, genuinely associated at the RDF diagram level however inadequately associated at the RDF archive level. The open and circulated nature of the Semantic Web likewise presents issues. How would we give productive and powerful components to getting to learning, particularly social systems, on the Semantic Web. There are different types of social network sites that are used by many people now a days in cyber space. They are used for various purposes such as entertainment, education, friendship, lifestyle, business etc. .
3. Analysis, extraction and joining of data from social system Even with all around characterized ontologies for social ideas, separating social systems accurately from the loud and fragmented learning on the (Semantic) Web is exceptionally troublesome. What are the heuristics for incorporating and intertwining social data and the measurements for the validity and utility of the outcomes?
4. Derivation and honesty in dispersed impedance Provenance partners certainties with social elements which are between associated in social system, and trust among social elements can be gotten from social systems. How to oversee and lessen the multifaceted nature of circulated induction by using provenance of learning with regards to a given trust show?.

Applications and Impact of Social Networking in Modern Society

Inoculation and Security in Social Network

W. Yang et.al (2015) recommend how to keep the engendering of social network worms through the immunization of key nodes. Not at all like existing control models for worm proliferation, a novel immunization methodology is proposed dependent on network vertex impact. The procedure chooses the basic vertices in the entire network. At that point the immunization is connected on the chosen vertices to accomplish the maximal impact of worm control with insignificant expense. Diverse calculations are executed to choose vertices. Reenactment tests are introduced to break down and assess the execution of various calculations.

Social Set Identification and Analysis

In view of the human science of affiliations and the arithmetic of set hypothesis, R. Bhatrapu et. al, (2016) presents another way to deal with huge information investigation called social set analysis. Social set analysis comprises of a generative system for the methods of insight of computational social science, hypothesis of social information, applied and formal models of social information, and a systematic structure for consolidating huge social informational indexes with authoritative and societal informational indexes. Figure 2 shows example of some social media available in internet.

Figure 2. Example of some social media

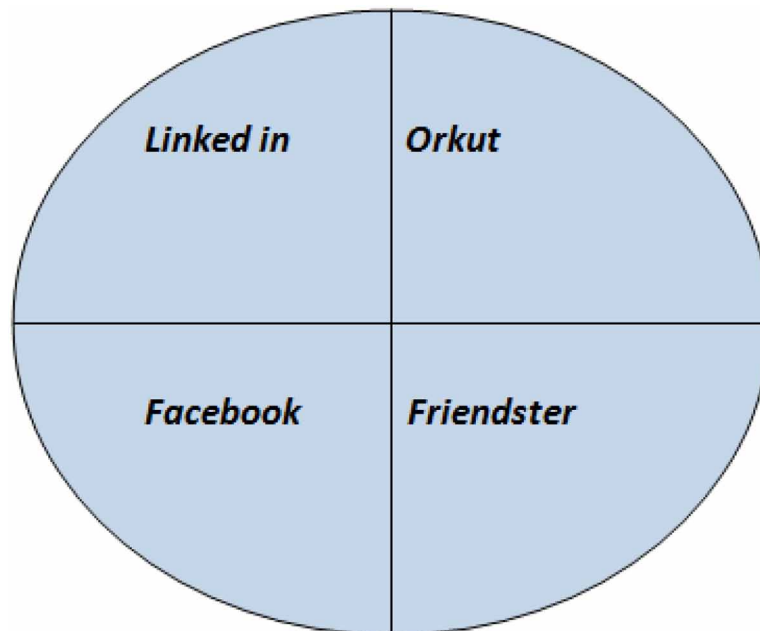


Table 1. Represents various impact and issues of social network on society

Sl.No	Literature	Year	Impact of Social Network
1.	M.Davidekova et.al	2017	Emergency social network approach that uses emergency posting through Application Program Interface.
2.	C.Marche et.al	2017	Object navigation in social network as per distance from one node to other
3.	Merini et.al	2017	Image tracing in social network using CNN approach
4.	P.Santi et.al	2012	Analysis of mobile social network based on mobility model for the purpose of next generation network
5.	L.Nie et.al	2016	Learning and Teaching from Multiple Social Networks
6.	E. Hargitai et.al	2016	Investigation on Social network analysis based on big data, big problems and Internet Log Data
7.	Z.Zhao et.al	2018	Recommendation of movie for social awareness through multi modal network learning
8.	A.Mitra et.al	2016	Analytical study of dynamic models in social network
9.	Rachael P. et.al	2017	Focus on positive aspects of social security measures
10.	Md.S. Kamal et.al	2016	An automated system for Monitoring of facebook data

Longitudinal Mobile Telephone Dataset:

An enormous, longitudinal mobile telephone dataset has been explored that comprises of human versatility and social network data at the same time, enabling us to investigate the effect of human portability designs on the basic social network. D. Wang et.al (2015). Fig.3 shows few prominent social web sites.

Figure 3 shows few prominent social web sites . Important Social Networking Websites are – MySpace – Facebook – Hi5 – Orkut – Bebo – Friendster – LinkedIn – StudiVZ – Xing. Worldwide top 10 web-sites as per August 2008 survey are given in fig.4 (Source: comScore). With an objective to build up a methodical comprehension of mobile social networks Device to Device (D2D) communication are conveyed by X. Chen et. al, (2015) who use two key social question, to be specific social trust and social correspondence, to advance effective collaboration among gadgets. With this understanding, an alliance diversion theoretic structure has been produced to devise social-tie-based collaboration techniques for D2D interchanges. Table 2 shows details of various issues in social networking in modern society.

Social network analysis (SNA) is becoming increasingly concerned not only with actors and their relations, but also with distinguishing between different types of such entities. For example, social scientists may want to investigate asymmetric relations in organizations with strict chains of command, or incorporate non-actors such as conferences and projects when analyzing coauthorship patterns. Multimodal social networks are those where actors and relations belong to different types, or modes, and multimodal social network analysis (mSNA) is accordingly SNA for such networks. S. Ghani et.al (2013) present a design study that we conducted with several social scientist collaborators on how to support mSNA using visual analytics tools. Based on an openended, formative design process, a visual representation called parallel node-link bands (PNLBs) has been devised that splits modes into separate bands and renders connections between adjacent ones, similar to the list view in Jigsaw. We then used the tool in a qualitative evaluation involving five social scientists whose feedback informed a second design phase that incorporated additional network metrics. Finally, a second qualitative evaluation has been conducted with social scientist collaborators that provided further insights on the utility of the PNLBs representation and the potential of visual analytics for mSNA.

Figure 3. Few prominent social web sites

Google
Microsoft
Yahoo!
AOL
Wikimedia
eBay
CBS
Fox Interactive Media
Amazon Sites
Facebook

Impact of Social Network on Education

A most noticeable resources for Universities are the information and must be shielded from security break. Security dangers and prevention (C. Joshi et.al, 2017) particularly develop in University's network, and with thought of these issues, proposed data security structure for University network condition. The proposed structure decreases the danger of security rupture by supporting three stage exercises; the primary stage surveys the dangers and vulnerabilities with a specific end goal to distinguish the frail point in instructive condition[8], the second stage concentrates on the most noteworthy hazard and make significant remediation design, the third period of hazard appraisal display perceives the helplessness administration consistence necessity so as to enhance University's security position. The proposed structure is connected on Vikram University Ujjain India's, processing condition and the assessment result demonstrated the proposed system upgrades the security level of University grounds network. This model can be utilized by chance investigator and security administrator of University to perform dependable and repeatable hazard examination in practical and reasonable way. W. Chen et. al (2015) propose associating the secluded administration islands into a global social administration system to improve the administrations' friendliness on a global scale. In the first place, connected social administration particular standards are proposed dependent on connected information standards for distributing administrations on the open Web as connected social administrations. At that point, another system has been proposed for building the global social administration organize following connected social administration particular standards dependent on complex system speculations. Table 3 describes Social networking design and focused challenges in society.

Table 2. Details of various issues in social networking in modern society

Sl. No	Literature	Year	Social Network Issues/ Challenges
1	W.Yang et.al	2016	Immunization Strategy for Social Network
2	R. Vatrpu et.al	2016	Social set analysis with big data analysis
3	D.Wang et.al	2015	Impact of human mobility on social network
4	X. Chen et.al	2015	Mobile social networking – D2D communication
5	M. Trier et.al	2009	Exploring and searching social architecture
6	L. Meng et.al	2016	Interplay between individuals evolving interaction patterns
7	S. Ghani et.al	2013	Visual analysis for multi-modal social network analysis
8	W. Chen et.al	2015	Global Service network for web service discovery
9	Y. Song et.al	2015	Friendship influence on mobile behaviour of location based social network users
10	Y. Wang et.al	2015	Epidemic spreading model based on social active degree in social network
11	H. Zhao et.al	2015	Social discovery and exploring the correlation among 3D serial relationship
12	Y. Wu et.al	2018	Challenges of Mobile social device caching
13	Y. Zhu et.al	2013	A survey of social based routing in delay tolerant network
14	T. Silawan et.al	2017	Sybilvote: Formulas to quantify the success probability
15	L. Zhang et.al	2018	Social networks public opinion propagation influence models
16	B.Schneier	2010	Taxonomy of social networking data
17	C.Yu et.al	2014	Collective learning for the social norms
18	V.K.Singh et.al	2014	Online and physical network with social implications
19	Z. Yan et.al	2015	Trustworthy pervasive social networking
20	Z. Wang et.al	2013	Peer-assisted social media streaming with social reciprocity
21	A.M. Vegni et.al	2015	Social network with vehicular communication
22	F. Xia	2014	Exploiting social relationship to enable ad-hoc social network
23	M. Yuan et.al	2013	Security in social network with sensitive labels protection scheme
24	C. Timmerer	2014	Social multimedia in social network

In mobile figuring research zone, it is very alluring to comprehend the attributes of client development with the goal that the easy to understand area mindful administrations could be rendered successfully. Area based social systems (LBSNs) have thrived as of late and are of incredible potential for development conduct investigation and information driven application plan. While there have been a few endeavors on client registration development conduct in LBSNs, they need exhaustive examination of social effect on them. To this end, the social-spatial impact and social-fleeting impact are broke down artificially by Y. Song et. al (2015) in light of the related data uncovered in LBSNs. The registration development practices of clients are observed to be influenced by their social fellowships both from spatial and fleeting measurements. Besides, a probabilistic model of client mobile conduct is proposed, joining the thorough social impact display with degree individual inclination show. The trial results approve that the proposed model can enhance expectation precision contrasted with the best in class social recorded model thinking about fleeting data (SHM+T), which for the most part ponders the transient cyclic examples and utilizations them to show client versatility, while being with reasonable unpredictability.

Table 3. Social networking design and focused challenges

Sl. No	Literature	Year	Highlighted Topics
1	R. M. Bond <i>et.al</i>	2017	Effect of social networks on academic outcomes
2	S.Rathore <i>et.al</i>	2017	Survey of security and privacy threats of social network users
3	J.Zhu <i>et.al</i>	2017	Influence maximization in social networks
4	F.Meng <i>et.al</i>	2017	Data communication between vehicle social network
5	W.Wang <i>et.al</i>	2017	Crowd sourcing complex tasks by team formation in social network
6	V.Amelkin <i>et.al</i>	2017	Polar opinion dynamics in social network
7	R. Schlegel <i>et.al</i>	2017	Privacy preservation location sharing
8	C.Joshi <i>et.al</i>	2017	Security threats in Educational Social network
9	J.Kim <i>et.al</i>	2018	Social network in disaster management
10	A.Ahmad <i>et.al</i>	2017	Authentication of delegation of resource use in social networking
11	B.Tarbush <i>et.al</i>	2017	Dynamic model of social network formation
12	R.Rau <i>et.al</i>	2017	Financial outcome of social networks
13	D.Quick <i>et.al</i>	2017	Pervasive social networking forensic
14	S.Janabi <i>et.al</i>	2017	Privacy as a concern among social network users
15	L.C.Hua <i>et.al</i>	2017	Cooperation among members of social network in VANET

An enhanced Susceptible-Infected-Susceptible (SIS) plague spreading model is proposed (Y. Wang *et.al*, 2015) with the end goal to give a hypothetical technique to examine and foresee the spreading of illnesses. As a moving station in a city, a vehicle has its own dataset of directions. On every direction, remote connections can be worked between various clients and the vehicle. Since every vehicle is related with a particular territory that covers certain potential client gatherings, such portable vehicles have turned into the premise of a Vehicle Social Network (VSN) for prescribing items to potential clients in present day society. However, little research has concentrated on publicizing through a VSN. For VSN-based publicizing, the advertiser normally situated in a remote Central Office (CO) chooses certain vehicles to go about as recommenders as indicated by their scope territories. Data about the vehicles' scope zones will be sent from the VSN to the advertiser working at the CO i.e., information backhauling. Moreover, the advertiser will send the outcomes in regards to the picked recommenders to all vehicles in the VSN, i.e., information front hauling. Naturally, a compelling correspondence framework is desperately required to help information transmission.

CONCLUSION

From the study above, it can be summarised that there are many positive impact of social networking systems on current society. Communicating with people and making friendship is a very natural method of connecting people, moreover who are of different age groups and different backgrounds. It was never been less demanding to make companions than it is at the present time. Furthermore, that is primarily on account of social networking locales. Only a couple of decades back it was really hard to associate with individuals, except if you were the excessively cordial sort ready to make discussion with anybody

at a gathering. The increasing use of mobile smart phones among people helped change this, associating individuals recently. It's completely conceivable to have groups, friendship and communication among several companions on Facebook. They may not be companions you know on an individual dimension and invest energy with in reality on a week after week premise. Be that as it may, they're companions regardless. There are a few people I consider companions who I have never met — actually, I may never meet them — yet that doesn't decrease the association we have because of social networks. They for the most part do mind, and will let you know so. They will tune in to what you need to state, and help you manage any issues you might confront. In the event that this isn't the situation, you might need to discover new companions. The fact of the matter is that on social networking destinations, we're ready to sympathize with one another. A companion may have experienced a comparative difficulty that you are right now experiencing, and they will have the capacity to enable you to get past it. Social networks support sparing of quality time because of quick correspondence among friends and group members. Our time is being extended more trim and lesser by work and family duties. In any case, social networking sites offer an opportunity to impart in a rapid and productive way. Composing a relaxed comment for twitter takes only few seconds, and one can finalise a business deal, an appointment, an interview, a conference, a business meeting through these social sites very easily. So, there are many positive impact of social networks on people.

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Chapter 36

Unemployment, Personality Traits, and the Use of Facebook: Does Online Social Support Influence Continuous Use?


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ABSTRACT

Different personality traits respond differently to unfavourable life situations. Unemployment can have several negative social, economic, and domestic consequences. Many people use social media for a variety of reasons. The aim of this study is to examine the way different personality traits respond to Facebook in the period of unemployment. Data was obtained from 3,002 unemployed respondents in Nigeria. The study used regression model to analyse the data. Among the five personality traits, results indicated that the relationship between neuroticism and online social support was negative. However, the relationship between online social support and satisfaction was positive. The study highlights several theoretical and practical implications.

INTRODUCTION

Unemployment is a pervasive economic condition. Authorities at the international, national and municipal levels are all trying to keep the unemployment figure down to the minimum. It is a concern because when people are unemployed, it leads to several negative consequences such as social (e.g., crimes), economic (e.g., poverty) and domestic (e.g., relationship and family breakup) (Hooghe et al., 2010; Song et al., 2011; Siwach, 2018). Unemployment can lead to negative personality change (Boyce et al., 2015), thus, the individual's disposition to life begins to take a downward turn. Generally, a coping strategy is to resort to the encouragement of others in the period of misfortune with some personality traits more adaptable to change than others (Merema et al., 2013). Interestingly, self-disclosure, which is the art of disclosing one's personal information to others (Bazarova & Choi, 2014) plays a crucial role on the level of trust that communicating partners have with each other, and the amount of information they share. Accordingly, the more revealing information that the communicating partners provide to others, the more they will be trusted with confidential information.

To the best of our knowledge, there have been no study done to establish how these personality traits adopts coping strategies during unemployment. Thus, the objective of this study is to understand how the different personality traits respond to online social support and whether the social support provided leads to satisfaction and continuous use of Facebook among the unemployed. Specifically, this study (a) examines the influence of personality traits on online social support in unemployment; (b) evaluates the role of online social support on satisfaction with Facebook, and (c) evaluates the role of satisfaction on continuous use of Facebook during the time of unemployment. Theoretically, our study is important because it contributes to the social media literature by explicating the psychological role of Facebook during unemployment. Additionally, our study extends the online social support in relation to unemployment and social media use. The rest of paper is structured as follows: next section addresses the literature review. This is followed by the methodology, analysis and results. The discussion section is presented, before providing the implications as the study concludes with the limitations and avenues for future research.

LITERATURE REVIEW

Personality Traits

A summary of each of these personality traits is provided below.

Conscientiousness

Conscientiousness is defined as individual differences in the propensity to follow socially prescribed norms for impulse control, goal-directed, able to delay gratification, and to follow norms and rules (Roberts et al., 2009). People with high degree of conscientiousness are reliable and prompt. A number of studies have been conducted to gain insight into the characteristics of conscientiousness. Notable of the attributes of conscientiousness in extant literature are avoidance of work, organization, impulsivity, antisocial, cleanliness, industriousness, laziness, appearance, punctuality, formality, and responsibility. Searching for jobs and the success in finding one, is largely dependent on individual's personality (Kanfer et al., 2001). Also, in the online platform, Giota and Kleftras (2014) found a positive relationship between conscientiousness and online social support. Thus, it is argued that during period of unemployment, individuals are likely to turn to Facebook as an escape route to seek social support. It is thus hypothesized that:

H1. Individuals with conscientious personality trait will respond positively to online social support in the period of unemployment.

Neuroticism

Neuroticism is one of the 'Big Five' factors in the study of personality in psychology (Hassan et al., 2019). This mirrors one's propensity to experience psychological ordeal, as well as high levels of the trait are associated with a sensitivity to threat (Friedman and Schustack, 2016). Neuroticism is measured on a continuum, ranging from emotional stability to emotional instability thus from low neuroticism (Toegel and Barsoux, 2012) to high neuroticism (Dwan and Ownsworth, 2017).

Studies show that high levels of stress (Frost & Clayson, 1991) and high levels of depression (Dooley et al., 2000) can be associated with unemployment. This is because neuroticism involves stress and depression at the dispositional level (Abitov, 2018 et al., 2018; Widiger et al., 2009). Therefore, unemployment will trigger higher neuroticism. Demographic factors like age and gender, have been discovered to mediate neuroticism levels such that neuroticism scores progressively decrease as people advance in age and become more comfortable with their situation in life (Oishi et al., 2007). Research suggests that the neuroticism levels of females usually are higher than those of males, notwithstanding, however, as they advance in age, this gender disparity decreases (Weisberg et al., 2011). Absence of social support may result in loneliness (Heinrich & Gullone, 2006) and low self-esteem (Waters & Moore, 2002). Similarly, lack of social support and low self-esteem induce negative emotions, cognitions, and behaviours (Cohen et al., 2000; Sedikides & Gregg, 2003).

H2. Individuals with neurotic personality trait will respond positively to online social support in a period of unemployment.

Agreeableness

It is the trait that reflects tendency to be cooperative, trusting and compassionate. Agreeable personalities are believed to be agreeable, friendly and good-natured, sympathetic and warm. Individuals with agreeable traits are easy to get along with as they are generally kind, friendly and considerate (Amichai-Hamburger et al., 2010). An individual who is known to be hostile is less likely to receive social support from his or her social network. An extraverted individual is likely to have many of his or her social networks to turn to for support, when he or she is under stress (Swickert et al., 2010). In addition, various research studies have shown that individuals with high agreeableness personality, respond positively to social support while those with low agreeableness personalities do not show a significant change to social support (Hoth et al. 2007; Swickert et al., 2010). Thus, in a period of unemployment, the study contends that individuals with agreeable personality traits will seek online social support.

H3. Individuals with agreeable personality trait respond positively to online social support in a period of unemployment.

Openness

Openness is a personality trait that measures flexibility in individual's imagination, openness to new ideas, culture and experience (Amichai-Hamburger et al., 2010). It reflects the ability to be flexible, tolerant and open-minded. Also, open individuals are liberal, like novelty, focus mainly on practical things and eschewed imagination (Heinström, 2003). According to O'Súilleabháin et al. (2018), openness facilitate ability of an individual to respond to stress in an adaptive manner. In other words, individuals with a high level of openness trait have tendency to withstand and adapt to new stress. As a result, openness correlates positively with stress response. Open individuals respond positively to social support and they tend to reciprocate any emotional support they received (Leary and Hoyle, 2009). Thus:

H4. Individuals with openness personality trait will respond positively to online social support in a period of unemployment.

Extraversion

Extraverts are "outward-turning" enjoy more frequent social interactions, feel energized after spending time with other people. They are also believed to be attention-seekers, easily distracted, and unable to spend time alone. According to the Myers-Briggs Personality Type Indicator (MBPTI), extroverts have more of the following traits: sensing, thinking and judging and less of intuition, feeling and perceiving (Yoo and Gretzel, 2011). Extraverts air their grievances rather than letting them sink or fester. They are believed to enjoy better social support from, electronic networks, religious communities, local communities, rehabilitation groups and other organizations. Because they do not allow the problems to sink in but rather share it in support groups, they are believed to have a better psychological health and are protected against psychological stress. They are more likely to use support forums to discuss personal struggles, and disclose emotions and thoughts pertaining to their struggles than introverts.

H5. Individuals with extraversion personality trait will respond positively to online social support in a period of unemployment.

Online Social Support and Satisfaction

Job satisfaction is the degree to which one is content with their activity, consequently a worker's readiness to perform at an ideal dimension (Hoffman-Miller 2013). Some underlying assumption of Job Satisfaction according to Taye (2018) includes theoretical review, contemporary theories, theories of job satisfaction, types of job satisfaction measurement scale, empirical review and conceptual framework. The antecedence of job satisfaction: Motivation (Sohail et al., 2014; Nyantika et al., 2015), Working environment (Rasiq & Maulabakhsh, 2015; Jain & Kaur, 2014), Employees' salary (Saeed et al., 2013), level of fairness (Saeed et al., 2013), Promotion and Job security (Saeed et al., 2013) and thriving at work and fairness perception. The consequences are financial indicators (Batokic, 2016) and Repeat-purchase intension (Kuo et al., 2013)

Continuous use of Social networks is defined according to how much a user reads or posts, messages, photos, or links, utilizing different channels including cell phones and personal data assistants as well as personal computers (Kim et al., 2010). Some of the factors that precipitate the continuous usage are: creating awareness (Wu et al., 2018), it promotes sharing of lectures (Royall et al., 2017), encourages easy communication (Chen & Liu, 2017; Cheng et al., 2017), it helps to maintain contacts (McLean et al., 2017), easy access to books thereby the cost of purchasing books (Kim & Kim, 2018), It boosts self-esteem (Turel et al., 2018), it helps to improve social and communication skills (Charoensukmongkol & Sasatanun, 2017) and it intensify knowledge (Leonardi, 2017; O' Connor et al., 2016).

H6. Online social support is positively related to satisfaction.

H7. Satisfaction is positively positively related to continuous use

METHODOLOGY

Data for this study was obtained from Nigeria. Nigeria is the largest country in Africa with a population size of about 200 million (InternetWorld Stat, 2018). Unemployment rose from 16.74 million in 2011 to 20.9 million in 2018 (NBS, 2018). Similarly, Facebook subscription rose from 4.3 million in 2011 to 17 million in 2017 (Vanguard, 2012; InternetWorld Stat, 2018). Thus, as unemployment increased, so did the number of Facebook subscription. Survey was administered via face-to-face contact to respondents with focus on those who have lost their jobs or those that are willing to change their jobs. A screening question such as (a) student but looking for part-time job; (b) unemployed; (c) employed but looking for a better job; and (d) employed and not looking for another job, was used. Out of 3,021 responses received, 19 were removed during data cleaning. Accordingly, 3,002 were used for the data analysis. Similarly, the items for measuring the constructs were obtained from extant studies. As such, items measuring personality traits comprising conscientiousness, neuroticism, agreeableness, openness and extraversion were obtained from Yoo and Gretzel (2011); online social support (Chung, 2014); self-disclosure and satisfaction (Kim et al., 2014) and continuous use (Chen, 2014). These items were measured using 7-point Likert scale. Please see Appendix 1 for the items.

Data Analysis and Results

Linear regression analysis is used to show the linear relationship between a dependent (or response) variable and an independent (or predictor) variable. The linear regression models are of the form:

$$y = b_0 + b_1 + e \quad (1)$$

where Y is the dependent variable; X_i are the independent variables; b_i are the regression coefficients; e is the random error. To test if the regression model significantly fits the data, the study considers the hypothesis: H_0 . The regression model does not significantly fit the data; vs; H_1 . The regression model significantly fits the data. Also, H_0 is rejected if the p-value is less than or equal to the level of significance

$$y = b_0 + b_1X$$

Where

$$b_0 = \bar{y} - b_1\bar{x} \text{ and } b_1 = \frac{\sum xy - \sum x \sum y}{\sum x^2 - (\sum x)^2}$$

b_0 = intercept

b_1 = slope

x = independent variable

y = dependent variable.

Table 1. Descriptive statistics for unemployment

Descriptive	Frequency	Percentage	Mean	Std. Deviation
Gender			1.49	0.51
Male	1523	50.8		
Female	1475	49.2		
Age			1.97	1.01
18 - 28	1220	40.7		
29 - 31	967	32.2		
32 - 41	553	18.4		
42 - 51	213	7.1		
52 and above	47	1.6		
Marital Status			1.54	0.53
Single	1409	47		
Married	1573	52.4		
Others	20	0.6		
Education			1.69	0.84
High school/diploma	1498	49.9		
Bachelor's degree	1073	35.8		
Master's degree	317	10.6		
Doctorate degree	77	2.6		
Others	35	1.1		

Unemployment, Personality Traits, and the Use of Facebook

In Table 1, among the participants, male participants (1523=50.8%) are more than the female (1475=49.2%) participants. For gender, the mean and standard deviation was (M=1.49, SD=0.51). Additionally, different age groups participated in the study. Age bracket 18 – 28 was the highest with (1220=40.7%), 29 – 31 account for 29 – 31 (967=32.2%), 32 – 41 (553=18.4%), 42 – 51 (213=7.1%), 52 and above (47=1.6%). The age mean and standard deviation is (M=1.97, SD=1.01). The frequency of single was (1409=47%), married participants excel single and others (1573=52.4%), while others only account for (20=0.6%). The mean and standard deviations of marital status are (M=1.54, SD=0.53). Regarding education, High school/diploma records the highest participants with (1498=49.9%), Bachelor's degree (1073=35.8%), Master's degree (317=10.6%), Doctorate degree (77=2.6%), and others (35=1.1%). The mean and standard deviations of education are (M=1.69, SD=0.84) respectively.

Table 2. Reliability test result

(n=2993)	Mean	Std. Deviation	A
CON1	4.01	0.97	0.82
CON2	4.11	0.87	0.82
CON3	4.07	0.86	0.82
CON4	4.01	0.93	0.82
CON5	3.83	1.01	0.82
NEU1	2.3	0.90	0.82
NEU2	2.05	0.77	0.82
NEU3	2.75	1.19	0.83
NEU4	2.8	1.20	0.83
NEU5	2.82	1.17	0.83
AGR1	3.86	0.99	0.82
AGR2	3.94	0.94	0.82
AGR3	3.97	1.00	0.82
AGR4	3.78	1.06	0.82
AGR5	3.3	1.14	0.82
OPE1	3.95	0.95	0.82
OPE2	3.88	0.95	0.82
OPE3	3.95	0.95	0.82
OPE4	3.88	0.96	0.82
OPE5	3.77	1.00	0.82
EXT1	3.6	1.11	0.82

(n=2993)	Mean	Std. Deviation	A
EXT2	3.71	1.03	0.82
EXT3	3.69	1.06	0.82
EXT4	3.83	1.03	0.82
EXT5	3.69	1.11	0.82
OSS1	3.63	1.13	0.81
OSS2	3.69	1.08	0.81
OSS3	3.7	1.07	0.81
OSS4	3.66	1.12	0.81
OSS5	3.71	1.14	0.81
SED1	3.55	1.19	0.81
SED2	3.61	1.13	0.81
SED3	3.73	1.03	0.81
SED4	3.8	1.06	0.81
SAT1	3.67	1.12	0.81
SAT2	3.81	1.01	0.82
SAT3	3.94	0.96	0.82
SAT4	4	0.95	0.82
SAT5	4.01	0.96	0.82
CONT1	3.85	1.01	0.81
CONT2	3.9	0.92	0.81
CONT3	4.09	0.84	0.82

In Table 2, the study conducted reliability test with SPSS and the Cronbach Alpha test was between 0.81 to 0.83. Alpha calculation is suitable for multiple-items measurement and Alpha result for this study was above the boundary of 0.7 as stipulated by the earlier authors (Tavakol and Dennick, 2011). The study also used SPSS for regression analysis and the main effect for conscientiousness yielded an F ratio of $F(1, 300) = 40.66, p < .05$, Neuroticism $F(1, 300) = 0.95, p > .05$, agreeableness $F(1, 300) = 70.50, p < .05$, openness $F(1, 300) = 84.73, p < .05$, extraversion $F(1, 300) = 43.44, p < .05$, online social support $F(1, 300) = 52.86, p < .05$, satisfaction $F(1, 300) = 85.04, p < .05$. To compare group means, the study used Stata to conduct discriminant analysis (Table 3). The result shows that the p-value (0.000) is less than 0.05. The study concludes that there is difference in the group 1 (male) and group2 (female) using the variables marital status, extraversion and there is no difference in the group 1 (male) and group2 (female) using the variables educational status, employment status, conscientiousness, agreeableness, openness, neuroticism, online social support, self-disclosure, satisfaction and continuous use of Facebook. The variables used do not contribute to discriminant function since it is not close to zero. And since p-value (0.000) is less than 0.01, the study can conclude that the corresponding function explain the group membership well (male and female). 57.0% of the group cases were correctly classified while 43.0% were wrongly classified. The study constructed a discriminant score that (1) for detecting the variables marital status, educational status, age, conscientiousness, online social support, self-disclosure, neuroticism, openness, agreeableness, extraversion, and continuous use of Facebook which allows discrimination between male and female and (2) for classifying cases into different groups (Table 4).

Table 3. Test of equality of group means

	Wilks' Lambda	F	df1	df2	Sig.
Marital	0.982	54.337	1	2996	0
Education	1	0.005	1	2996	0.945
Employ	1	0.004	1	2996	0.951
Avegcon	1	0.167	1	2996	0.682
Avegneu	1	0.962	1	2996	0.327
Avegagr	0.999	2.521	1	2996	0.112
Avegope	1	0.223	1	2996	0.637
Avegext	0.998	5.29	1	2996	0.022
Avegoss	1	0.601	1	2996	0.438
Avegsed	0.999	3.822	1	2996	0.051
Avegsat	1	0.085	1	2996	0.77
Avegcont	0.999	1.571	1	2996	0.21

Note: Wilks' Lambda test is to test which variable contribute significance in discriminant function. The closer Wilks' lambda is to 0, the more the variable contributes to the discriminant function. The table also provides a Chi-Square statistic to test the significance of Wilk's Lambda. If the p-value is less than 0.05, the study concludes that the corresponding function explains the group membership well.

Table 4. Classification of group

		Gender	Predicted Group Membership		Total
			1	2	
Original	Count	1	827	696	1523
		2	593	882	1475
		Ungrouped cases	1	1	2
	%	1	54.3	45.7	100
		2	40.2	59.8	100
		Ungrouped cases	50	50	100

*57.0% of original grouped cases correctly classified.

Table 5. Hypothesized relationships

Models (OSS)	B	SE	T	p-value	R ²	Hypothesis	Confirmation
CON	0.083	0.013	6.4	0.000	0.013	H1	Accepted
NEU	0.011	0.011	0.97	0.330	0.000	H2	Rejected
AGR	0.104	0.012	8.4	0.000	0.023	H3	Accepted
OPE	0.119	0.013	9.2	0.000	0.028	H4	Accepted
EXT	0.299	0.014	20.8	0.000	0.126	H5	Accepted
Models (SAT)							
OSS	0.49	0.022	22.8	0.000	0.148	H6	Accepted
Models (FCU)							
SAT	0.44	0.015	29.2	0.000	0.221	H7	Accepted

*CON: Conscientiousness, NEU: Neuroticism, AGR: Agreeableness, OPE: Openness, EXT: Extraversion,

OSS: Online Social Support, SAT: Satisfaction, FCU: Facebook Continuous Use.

Note: Since Eigen value is small (0.024), the less variance the function explains in the dependent variables.

From Table 5, as p-value (0.000) is less than 0.01. The study concludes that the regression model significantly fits for the data. This implies that 1.31% of the variability in the conscientiousness is explained by online social support. Conscientiousness is positively related to online social support, that is, conscientiousness → online social support ($\beta=0.09$, $t=6.4$, $P\text{ Value} = <.01$). Also, since p-value (0.3300) neuroticism is greater than 0.05. The study concludes that the regression model does not significantly fits the data. This implies that 0.03% of the variability in neuroticism is explained by online social support. This result indicates that neuroticism is negatively related to online social support, that is, neuroticism → online social support ($\beta=0.01$, $t=0.97$, $P\text{ Value} = >.05$). Regarding agreeableness, the p-value (0.0000) is less than 0.01. The study concludes that the regression model significantly fits the data. This implies that 2.3% of the variability in the agreeableness is explained by online social support. Agreeableness is positively related to online social support, that is, agreeableness → online social support ($\beta=0.10$, $t=8.4$, $p\text{-value} = <.01$). With regards to openness variable, the p-value (0.0000) is less than 0.01. The study concludes that the regression model, significantly fits the data. This implies that 2.75% of the variability in openness is explained by online social support. Openness is positively related to online social support, that is, openness → online social support ($\beta=0.12$, $t=9.2$, $P\text{ Value} = <.01$). As shown in

Table 5, extraversion p-value (0.0000) is less than 0.01. The study concludes that the regression model significantly fits the data. This implies that 12.61% of the variability in the extraversion is explained by online social support. Extraversion is positively related to online social support, that is, extraversion \rightarrow online social support ($\beta=0.30$, $t=20.8$, $P \text{ Value} = <.01$). Further, online social support p-value (0.0000) is less than 0.01. The study concludes that the regression model significantly fits the data. This implies that 14.78% of the variability in the online social support is explained by online social support, that is, online social support \rightarrow satisfaction ($\beta=0.49$, $t=22.8$, $P \text{ Value} = <.01$). As shown in Table 5, the p-value of satisfaction (0.0000) is less than 0.01. The study concludes that the regression model significantly fits the data. This implies that 22.09% of the variability in the satisfaction is explained by continuous use. Satisfaction is positively related to continuous use, that is, satisfaction \rightarrow Facebook continuous use ($\beta=0.44$, $t=29.2$, $P \text{ Value} = <.01$). In all the analyses conducted, satisfaction as a predictor of Facebook continuous use has the highest coefficient of determination and it was a little bit below weak in comparison with the threshold of 25% of R^2 . Regarding online social support for unemployment, extraversion was the highest predictor. For online social support, satisfaction of the Facebook users was extremely significant while Facebook users' satisfaction exceptionally predicted Facebook continuous use. All the hypotheses proposed were accepted except H2 that had insignificant p-value.

DISCUSSION

Due to the scarcity of studies that address the role of unemployment on an individual's personality traits and how it influences their use of social network sites, this study fills this gap by analysing a model that explicates the interrelationships between the unemployed personality traits, online social support and continuous use of Facebook in an emerging market context. Seven hypotheses were proposed for which six were accepted while one was rejected. Thus, conscientiousness, agreeableness, openness and extraversion were all positively related to online social support. Again, online social support demonstrated a positive relationship with satisfaction with the use of facebook while satisfaction also showed a positive relationship with continuous use. Interestingly, the relationship between neuroticism and online social support was not supported. This finding is in line with extant findings which showed negative relationship between neuroticism and Instant messaging application (Amiel and Sargent, 2004). This finding is one of the most crucial for this study because unemployment exerts social pressure on the individual because of their inability to perform statutory obligations (Raimi et al., 2015), thus leading to depressive thoughts, social withdrawal and disruption of family peace and joy (Brand, 2015).

Theoretically, our study contributes to existing knowledge by explicating how the different personality traits responds to online social support, during the period of unemployment. Majority of the studies on the relationship between personality traits and the use of social networks dwell on general experiences such as students, relationship management (Knnibbe and Luchies, 2013) and coping strategies (Lepri et al., 2016). Thus, the current study extends this body of work to unemployment as a critical social challenge. Furthermore, to the best of our knowledge there is an acute shortage of empirical studies, which examines social media use in an emerging market context in Africa. With this study, our findings shades light on a very challenging social anomie which should be of interest to both policy makers and scholars.

Finally, our study offers many insights to different stakeholders. For instance, administrators and managers of Facebook and other social media platforms can leverage on our findings to optimize the content, particularly job-related advertisements. Nigeria and other African countries are currently facing

challenging times in terms of job loss. Therefore, to continue to make these platforms attractive, they need to encourage companies who are hiring to utilize social media channels as advertisement channels.

CONCLUSION

Unemployment affects all the observed temperaments, however, the degree to which they resort to online social support differs. Extraverted individuals are the most prone to resort to online social support. The next is openness. Openness is characterized by originality, independence, and intellectual curiosity. Persons high on the openness scale are full of ideas and values and may be seen by others as intelligent. This also leaves important implications for policy planners and administrators in the developing countries. It has been found that individuals with higher level conscientiousness tend to be more empathetic towards others. Thus, people with high conscientiousness could control, regulate, and direct their impulses at ease and prompt. This finding can further be explained in line with social influence. Thus, social influence shapes people's conscientiousness, thereby influencing people's thought about their social surroundings. Conversely, people with low conscientiousness are dull and often rely on others to control, regulate, and direct their impulse.

Limitation and Future Research

One of the limitations of our study was in the representativeness of the sample. Nigeria currently has about 17 million Facebook subscribers. Thus, 3000 respondents may be unsuitable for a large country like Nigeria. The data was collected in the South Western part of Nigeria which may have neglected the views of users in the South-East, South-South, North-Central, North-East and North-West alike. It is likely that a more representative sample, could offer a different result. Neuroticism normally ranges from high to low, but our study generally lumped them together without identifying these different segments. These results could also affect the interpretation of our result. In spite of these drawbacks, it is believed that this study offers interesting perspectives to the use of Facebook by the unemployed in Nigeria.

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APPENDIX: EXAMPLES

Table 6. Conscientiousness (Yoo and Gretzel, 2011)

CON1	I carry out my plans
CON2	I pay attention to details
CON3	I am always prepared
CON4	I make plans and stick to them
CON5	I am exacting in my work
Neuroticism (Yoo and Gretzel, 2011)	
NEU1	I get stressed out easily
NEU2	I worry about things
NEU3	I fear for the worst
NEU4	I am filled with doubts about things
NEU5	I panic easily
Agreeableness (Yoo and Gretzel, 2011)	
AGR1	I sympathize with others' feelings
AGR2	I am concerned about others
AGR3	I respect others
AGR4	I believe that others have good intentions
AGR5	I trust what people say
Openness (Yoo and Gretzel, 2011)	
OPE1	I get excited by new ideas
OPE2	I enjoy thinking about things
OPE3	I enjoy hearing new ideas
OPE4	I enjoy looking for a deeper meaning in things
OPE5	I have a vivid imagination
Extraversion (Yoo and Gretzel, 2011)	
EXT1	I talk a lot to different people at parties
EXT2	I feel comfortable around people
EXT3	I start conversations
EXT4	I make friends easily
EXT5	I don't mind being the center of attention

Table 7. Online social support (Chung, 2014)

OSS1	I use Facebook to gather information about job opportunities
OSS2	I use Facebook to find out things I need about job opportunities
OSS3	I use Facebook to look for information I need about job opportunities
OSS4	I use Facebook to talk to a knowledgeable individual about job opportunities
OSS5	I use Facebook to get answers to specific questions about job opportunities

Table 8. Self-disclosure (Kim, Chung and Ahn, 2014)

SED1	I would like to use Facebook to let my life and news be known to others
SED2	I would like to use Facebook to share my unemployment experience
SED3	I would like to use Facebook to express my personality with my friends and my friend of friends
SED4	I would like to use Facebook to leave a record with photos and emoticon and show them to others

Table 9. Satisfaction (Kim, Chung and Ahn, 2014)

SAT1	I am satisfied with what I achieve at work
SAT1	I feel good at work
SAT1	I am satisfied with my use of Facebook
SAT1	I will keep using Facebook
SAT1	I will recommend people around me to use Facebook

Table 10. Continuous use (Chen, 2014)

FCU1	I will continue to use Facebook for my personal needs
FCU2	Using Facebook is something I would like to do to seek social support
FCU3	I see myself continuing to use Facebook for various reasons, such as getting close to others, and so on

Chapter 37

The Effect of Social Networks on Relationships Outside the Network

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ABSTRACT

This chapter examines the impact of three different aspects of romantic discourse on social networks: romance, identity, and privacy. Qualitative research focused on the influence of the social networks on the opinions and interpersonal behavior of 11 single academics, aged 30-45 years old, men and women who used Facebook as a means for meeting potential romantic partners. The research employed semi-structured in-depth interviews to elicit qualitative data. Results indicate that an intimate, romantic setting cannot exist on the social network. Most users enhanced their identity in order to appear more attractive online. Most of the interviewees clearly felt that they needed to control the exposure of their personal details, and there was a clear indication that privacy does not exist online: it seems to be impossible to limit exposure of the published contents to specific selected audiences. Online romantic relationships are a metonymy for rapidly changing values and social norms in a dynamic global reality.

INTRODUCTION

Technological developments have an indelible impact on the society in which we live, and their influence shapes new norms and rules. The Internet is seen as a world in which new friendships and support networks are formed, so that the user feels involved and supported. Nevertheless, this world often creates a fantastic illusion, and participants may feel a sense of alienation and loneliness.

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The Effect of Social Networks on Relationships Outside the Network

The dynamics and interactions on social networks (SNs) create a new and varied world of online dating sites and “romantic” encounters. SNs have altered their original function and because of their unique features they have been used to form various types of interpersonal relations. Facebook is open to a community of users and yet it can provide the individual user with a sense of anonymity and invisibility, in other words it can seemingly maintain the user’s privacy (Cooper & Sportolari, 1997).

The present study investigated how the virtual world in general and SNs in particular influence romantic interactions and interpersonal behavioral norms outside the network. The research focused on Facebook as a SN that allows the formation of social relationships between couples and investigated the opinions about the existence of romance and privacy in SNs and how SNs influence romantic relationships and social norms outside the network.

Two main questions were derived from this topic to underpin the research:

1. Which characteristics are reported by the interviewees and expressed in their Facebook texts as part of their romantic discourse in encounters between couples?
2. Do the interviewees think that the romantic discourse on Facebook influences romantic discourse outside Facebook and if so, how?

REVIEW OF RELEVANT LITERATURE

Romantic Relationships on the Internet

The last decade has witnessed a revolution in the ways that singles meet other singles. In the “era of isolation”, the Internet offers displays of a wide array of eligible single men and women, allowing the user to form romantic encounters and helping to break through gender norms and to form new rules for dating.

The Creation of Romantic Relationships on the Net

The SNs help users to create a self-image (DeVito, Birnholtz & Hancock, 2017; Rettberg, 2017). Consequently, although the romantic connections acquired on the net may be intensive, this does not necessarily testify to any genuine reality. Couple relations on the net often create a fantasy for the user (Mendelson & Papacharissi, 2010). The probability that two people meet on the net is insufficient to ensure that a relationship will be formed. However, geographical space is reduced on the net and this sense of geographical vicinity combined with imagination can help two partners to develop a relationship (Mayers, 1993; Halpern, Katz & Carril, 2017).

The feeling created as a result of the use of the Internet as a tool for acquaintance and to establish a couple relationship is frequently ambivalence. Although romance is usually associated with love and leisure the romantic relationship usually becomes commercialized and practical, contributing to its endurance. Network users today are usually individual, independent persons who seek self-realization (Illouz, 1997). They choose and evaluate their partners through technological means, thus, creating a new situation. This situation allows them to get to know each other through calm conversation at a time when it is suitable and comfortable for both partners. Of course, this conversation lacks the characteristics of normative discourse including meaningful components such as: facial expressions, body language etc.

The development of face-to-face relationships undergoes metamorphosis: from the initial encounter, based on vicinity in space and physical attraction, to the revelation of the potential partner's image and self-exposure (Illouz, 1997). In contrast the development of romantic relationships on the Internet space undergoes an opposite process – while the close relations formed in the initial conversations on chats and/or on Internet pages are often deep, personal and intimate, in face-to-face relationships, physical interaction determines much of the relationship and this intensive exposure may lead to sexual consequences and renewed future search (Wysocki, 1998).

Motives for Couple Relations on Social Networks

In the Internet era, a new persona is created, in a new method for making acquaintances with several characteristics: anonymity and discretion; invisibility; escape, intimacy (Cooper & Sportolari, 1997) and imagination and difference (Amichai-Hamburger & Ben-Artzi, 2000). As a dating site, the SN creates a large alternative space for the shy and unconfident user that is less restricted. This world opens up a new window, facilitating the realization of the desire and ability to become involved. Additionally, the communications media and the technological space apparently protects the user: he/she is kept safe in their interaction with the other user since they are able to gain access to and alter their answers online. This differs from face-to-face dialogs which are conducted as oral “ping-pong” with no possibility to alter answers after they have been voiced (Amichai-Hamburger & Ben-Artzi, 2000). This process alters the acquisition of social observation and dynamic social norms are created outside the technological space (Cooper, McLoughlin & Campbell, 2000). The network user acts in a new world and can create an alternative and different identity than that which he/she holds in human reality.

Activity on the Net: Fictive Identity or Construction of a New Self?

Many philosophers and theorists have discussed the concept of the “self”. Kohut (1971) defined the self as a collection of feelings, thoughts, images and ideas that the individual grants to himself/herself. Goffman (1980) claimed that we shape our self-identity according to the situation in which we find ourselves. Invisibility on the Internet has important consequences. It enhances the user's experience of success and self-evaluation (Barak, 2006). However, on the Internet the falsification of identities and unreliable behavior is accepted and even becomes a regular practice. Psychologists estimate that this re-construction of identity allow the user to shape their personality (Turkle, 1995). The persona that appears on the Internet covers itself with masks and different identities, it tries out and examines several identities until the stage when one of the identities becomes an integral and indivisible part of the real self that exists outside the net (Turkle, 1995). Additionally, the use of the network and the time spent on it create a familiarity with a better self and ability to cope with it. Thus, the user is afforded a different experience and a more intelligent ability to examine the “self” (Mckenna & Bargh, 2000). The use of the network exposes aspects of the user's personality that would not be exposed outside this world (Suler, 2004). This manner of activity has been broadened by the world of dating sites, which allows a type of invisibility and self-branding on SNs. One of the networks that has been a trailblazer in this field is a Facebook profile.

FACEBOOK

Facebook: The Privacy Dilemma

In the past, networks had a common character and concept. Today, the SNs have a decentralized character adapted to the individuals who use the network and their character (Wellman, 2003). The depth of connections and relationships on the network vary from what are known as “weak ties” to “strong ties” The substance of the relationships and their strength are defined according to the level of several parameters: (1) intimacy; (2) closeness; (3) length of acquaintance (Granovetter, 1973). It was found that closeness is the main dimension that contributes significantly to the strength of the contact.

The SNs were established in order to reinforce connections existing on the net. Recent research suggests that these networks help to create new connections and opportunities. Relations on the SN can reach a high level of intimacy and familiarity. Continuity is needed following the initial acquaintance on the Internet space to sustain a subsequent relationship between the two network users (Granovetter, 1973). Facebook users will try to find new persons in order to empower their social world in a way that they would not be able to do in actual reality.

Dating Sites

In the last decade, the world of dating sites and ANs has increased its volume and become an integral part of making acquaintances in the modern era. Search engines and SNs help singles to find their partners (Whitty & Carr, 2006). The dating sites in fact fulfill two main purposes: (1) finding romantic contacts for the long-term with a view to marriage and bringing children into the world and; (2) finding romantic sexual partners for short-term relationships for entertainment, pleasure and amusement. The sorting process that the user undergoes is comparatively simple in comparison to that which the prospective dater undergoes outside the Internet. Moreover, the abundant supply of potential partners reaches the surfer in a convenient ready-made package and they just have to leaf through forwards and backwards until they find a suitable candidate (Ben-Ze’ev, 2004).

In studies conducted in the USA, it was found that most users on the dating sites are between ages 30-49. They are mostly academics and their income is above average with greater preponderance of male users (Whitty & Carr, 2006). Studies have found that women and people with lower level education perceive the Internet as an unsafe environment, that can be dangerous and violent. Falsification of many details of the personae of users on these sites is seen by this population as fraudulent and unreliable (Shade, 2002).

In the virtual world, there are other parameters by which the potential partner can be evaluated: writing style, recklessness, spelling mistakes, imagination, creativity, nicknames, pictures etc. The Internet users try to present themselves as attractive and in demand (Connolly, Palmer, Barton, & Kirwan, 2016). It was found that men describing their personality will focus on their personality traits, while women focus on their external appearance. Women will describe themselves as: young, slim, sexy while men describe themselves as romantic and having a good sense of humor (Ben Ze’ev, 2004).

Most of the population that surfs on dating sites does so in order to find a partner for relations outside the network. Relationships that begin on the network, eventually lead to a face-to-face meeting. In some of the cases the users experience disappointment regarding the appearance of the partner during the meeting outside the technological space. Thus, falsification of identity on the net will mostly be

expressed by users who do not aspire to form long-term relationships and this form of activity serves them for momentary entertainment and pleasure (Connolly, Palmer, Barton, & Kirwan, 2016). The situation is problematic since the two people do not always have the same goal, meaning that their purpose for using the network may be different. Research has also shown that there are often gaps between the desired characteristics of the partner that the surfer chooses and their prospective partner's requirements (Ben-Ze'ev, 2004).

Facebook: A Platform for Acquaintance Where Identity and Relationships Can Be Built in the Digital Space and Beyond It

Facebook brands those who use it and helps them to construct identities and profiles. In fact, it is a marketing tool for those who use it, the individuals that use the site to create and construct identities. In other words, identity-making is a public process that also includes the construction of the "self" by a person and by the others (Zhao, 2006). The users of the network clothe themselves in different online images forming a dichotomy with their real-life identities beyond the Internet space (Turkle, 1995). This space actually helps them to bypass limitations that exist in face-to-face encounters.

Facebook is actually the ideal environment to examine the construction of identity in an online environment, where relationships are anchored in online communities. It was found that in online dating there is an expectation that users will also engage in structuring identity and will adopt strategies of self-presentation that will help them to protect their anonymity (Connolly, Palmer, Barton, & Kirwan, 2016). This means that the individuals on Facebook will adopt a structured self and not necessarily their real self, which remains hidden. Thus, Facebook users are likely to emphasize things or create an exaggerated form of their possible self, appropriate for the accepted, preferred stereotype outside the online network. In contrast to networks that offer opportunities for dating on the net for those who search solely for momentary romantic relationships, Facebook allows the expansion of existing relationships and acts as an alternative for meeting new acquaintances and the establishment of a romantic couple relationship on the network that will continue outside the network (Zhao, Grasmuck & Martin, 2008). By its very structure, and special profile Facebook has created unique features for the construction of identities. Different goals have developed for identity construction offering different characteristics for its users. Facebook has become a known brand and is marketed today as a broad accessible and available tool for a global audience. Beyond its existence as an online network it has helped to develop different ethical rules that widely influence the dating world and couple hood.

METHODOLOGY

The research aimed to investigate the influence of SNs in general, and specifically of Facebook on couple relationships outside the network.

RESEARCH DESIGN

The research was a qualitative-phenomenological study, dealing with the correlation between participants' external reality, their thinking and feelings and their subjective inner world (Denzin & Lincoln,

1994). The choice of qualitative research enabled the researchers to study how the world of singles' couples is structured in Facebook discourse and the implications of this world on relationships outside the network. Qualitative research aspires to conduct deep investigation into the substance of the studied phenomenon, with an emphasis on the respondents' experiences (Denzin & Lincoln, 1994). Using this methodology, it was possible to elicit and understand the interviewees' meanings and provide interpretation for the experience of couple hood on Facebook and to understand the influence of this experience outside the network.

Sample and Sampling Procedure

The sample in this study was a "convenience sample" and included 11 male and female singles aged between 30-45 years in Israel. They expressed their consent to participate in the research. In order to attain maximum diversity, interviewees were selected from different occupational fields and different geographical regions of Israel (Patton, 1990). The respondents participated in Facebook as a platform on which they could make romantic acquaintances. The interviews were conducted in person at the respondents' homes.

TOOLS USED FOR THE STUDY

A semi-structured in-depth interview (Smith, 1995) specially created for the research by the researchers was used to collect the singles' experiences. The singles were interviewed in person about their activities on Facebook as a platform on which they could make romantic acquaintances. Interview guidelines were employed including a list of questions that served as a tool to remember to focus on the studied subject, in content and to thoroughly exhaust the participants' personal experiences (Patton, 1990). The questions relied on the fact that the Facebook reality is structured by the participants, and the responses to the questions were used to collect data and construct central generalizations that could be transformed into a theoretical attitude (Smith, 1995). The interview encompassed several main areas of interest: (1) the perception of romance, the influence of couple relations on the network on the construction and/or extinction of romance; (2) the meaning and significance of the creation of an identity on the network on the couple's relationship; (3) the Facebook privacy dilemma.

DATA ANALYSIS

The interviews were tape-recorded with the respondents' consent and transcribed. Data analysis was performed by clearly defining the units of analysis and constructing a hierarchy of the repeated contents and themes in the narrative texts, in an attempt to compose a theoretical model (Sabar Ben-Yehoshua, 2001). Qualitative analysis was conducted in stages: the first stage involved repeated holistic readings of all the interviews until the researchers felt that they were familiar with the collected materials. The second stage involved content analysis of the interviews according to "field grounded theory" (Glaser & Strauss, 1967) and main themes and categories were identified. At the third stage the categories were organized into themes with common subjects by relating to the respondents' linguistic elements and

images (Lincoln & Guba, 1985). At the last stage, the researchers examined whether there were connections between the different themes through focus and comparison between the contents.

FINDINGS

Three main themes emerged from the interviews: romance, identity and privacy. Categories were derived from these themes. The themes were investigated and received responses from the qualitative interviews. The names of the interviewees reported in the findings are fictive to ensure their anonymity and privacy, for example P1, P2 or P3.

Romance on the Net: Couple or Individual

A central theme that emerged from the interviewees' narratives was their consideration for romance as part of a relationship. They reported that at each state when an intimate situation was created, romance developed. They felt that romance was lacking in SNs. They noted that: physical contact, speech and gestures exchanged between couples create an intimate situation that cannot exist in general on the Internet and in particular on Facebook. It appears from the interviewees' responses that conversations on the Internet are initial discourse that permits the individual to get to know basic identifying details of a prospective partner as a preparation for a meeting outside the Internet.

Intimacy and Privacy in a Romantic Online Conversation

When the interviewees talked about romance they invariably spoke about "intimacy". For most of the interviewees intimacy is formed in a quiet space. A complex situation is created between a couple that meet and get to know each other. According to the interviewees' responses, the intimacy component must exist so that romance can develop. In this manner, intimate cognizance becomes a partnership with someone who is known and familiar. In intimate situations symbiosis forms, allowing the "self" to be shared and bond with parts of the other. Asked about romance on the network, P1 expressed amazement:

I don't think that there is romance on the network. The relationship becomes something that is between interpersonal and publicity, I experience romance when something is intimate. If I make a contact in order to share, that's not romantic.

Thus, intimacy is formed from shared activity between partners who continue romantic discourse in confidentiality. P7 described her first meeting with her partner:

two people who do things together, going to the beach together ... holding hands, intimate things, things that you do not share with others, something personal that is not exposed.

Such intimacy was seen as impossible on the network by interviewees who think that it is only possible to perform romantic gestures on the network. P2 thought that the lack of intimacy would harm absolute romance as he sees it:

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It's as though someone is making a party or someone proposes marriage during a football game, there are people who see this as something romantic, to propose marriage in front of the whole world. But it's not intimate. There can [only] be romantic gestures on the Internet.

Most of the interviewees emphasized the issue of touch, and giving and taking as conditions for the creation of romance without which romance could not exist. Intimacy was in their opinion created in a real meeting between two people who create reciprocal discourse between them and communication with special qualities.

Difficulties Involved in Creating a Romance on the Network

When the interviewees were asked to define romance, most of them gave a clear definition that included intimacy, shared gestures and containment. Nevertheless, the interviewees were hesitant to declare that romance existed on the network. They felt that there could be no romance without conversation, a face-to-face meeting and gestures of giving and reciprocity between a couple. P8 argued that it was impossible to realize a romantic relationship in the virtual space of the network:

I think that there is no true romance on the network. There is gesturing when one person writes to another, personal matters and personal greetings in posts. [But] I think that it is far more romantic to receive this in a note and not written in the post ...in my opinion the network serves to publish romantic gestures. It's like seeing pictures of diners in a restaurant menu and not really eating the meal.

In her interview, P9 opposed the use of the networks. She did not see the use of technology as an alternative for romantic relationships. P9 found it difficult to understand why she should conduct such a relationship on the network. She told us that she found herself outside the game because she did not approve of such relations. For her, romance did not and could not exist on the Internet:

I am against it, it's shocking, I personally do not like it because there is no courting here and no investment by the man in what is known as romance, it's only to make the initial contact ...when a man invests in me, courts me, invites me for a date, or meals [that can be romantic].

In contrast to P9, P4 does not believe in romantic communication on the network in general, but believes that it can exist to some extent. The network can be used for interpersonal interaction after a continuous period of relations between a couple, and P4 indicates that the network could help to sustain the relationship:

I think that if it takes place let us say after the contact is already established and they already met, for example if they have been going out together for a year, then I think it is personal, even if it's written correspondence.

Although written correspondence may be created after a relationship is established, P4 still does not believe in romantic correspondence on a SN:

there is no romance on the network, it is all shallow communication ... I think it is just a tool for initial acquaintance.

Unlike the other interviewees, P5 found that using the network was effective and efficient. The network opened a window and many possibilities for the user. P5 did not see the Internet as a place where romance developed, however she thought that the network offered many possibilities for meeting people:

I think it's wonderful, because not everyone has ways for meeting people and the network provides them with possibilities they did not otherwise have. In other times you had to go to a club or seek a match through family or friends. Today there are more possibilities on the Internet and that is amazing. Nevertheless, it is not suitable for everyone because there are some who get confused by such a large choice, and there are those who are more stable who are satisfied with what they found on the network and continue on to their real lives.

The evidence from most of the interviewees seems to indicate that there is no romance on the Internet. Romance is seen as created in meetings outside the network. The dialogs on the network provide a springboard from which to begin the relationship and as a basis for getting to know the other person. P4 explained:

[its] just a springboard to form something that will be continued afterwards in a meeting or telephone call.

The interviewees indicated that romance cannot be expressed in a shared space. One of them (P9) thought that her reservation regarding romance on the network was because she had been born and educated during the 1980s, when there was not much exposure to technology, differing from the experience of those who were born into the technological world.

There are some girls who are thrilled when they are proposed marriage and they receive 1000 likes ... I think romance is more personal and private ... perhaps those who did not grow up with the Internet relate to this as something less natural than those who grew up with it.

Initial Encounters on the Network: "Hi, Would You Like to Get to Know Me?"

Most of the interviewees intimated that romantic discourse only exists on the network at the very beginning, in order to make the initial acquaintance. P10 noted:

On the dating sites of the network it is just to make an acquaintance, not for deep conversations, and that's where a decision is made whether to get to get to know someone in more depth or not.

P7 told us:

I went into the site but didn't have any romantic discourse, only exchange of general details, a first dialog that is meant to get to know them, for example what our hobbies are.

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Like those interviewees noted above P4 described her conversation on the Internet as the use of a tool to meet her future partner. She told us that she received initial details concerning the partner in the correspondence on the network, but that she had still not managed to form a real connection with someone she met on a SN. She felt that the technological screen formed a wedge between her and her partner:

The network is like a screen, it's not something real unless you channel this just for something real – to meet up ... and that's why I have never met someone new through the network.

In contrast to P4, P2 noted the advantages of a conversation on the network. He indicated that romantic correspondence on the network is advantageous for someone who is introverted and finds it difficult to express their feelings. It offers various opportunities to become acquainted with women with whom they would not talk without the use of Internet. Nevertheless, like P4, P2 only used Facebook for initial acquaintance: *On the Internet it's more a matter of initial meeting and outside the network it's something more concrete and serious*, and he added:

I wasn't good at chatting up girls in person, it requires far more courage to start to talk with a girl in a pub or discotheque ... it's far easier to send a "Hi" or something like that to a thousand girls who live in your vicinity and if ten percent answer you that is already a good start ... first you say "hi" and then you introduce yourself... and tell them something about yourself; 'I live alone ... I have my own apartment ... I am single etc. ... I am looking for something serious, or a one-night stand or something else ... and then she says yes ... and that's how the Internet conversation begins.

In contrast to most of the other interviewees, P3's conversation on Facebook did not only include initial acquaintance with the potential partner. She reported deep conversations that contained experiences and emotions that helped her to get to know her partner:

Yes, there was a guy who contacted me on the site and sent me a message: 'Hi, how are you doing? I'd like to get to know you'. I felt it was a compliment and sent him a message: 'Yes, I'd be happy to get to know you', and that was followed by a ping-pong of questions: where are you from, what do you do? etc. and very quickly we went on to a "chat" conversation and then it became a real conversation through the network and that quickly advanced.

IDENTITY ON THE NETWORK

The interviewees described their identities and the ways in which they were reflected on the dating sites and on the network. It seemed from their evidence that the description of their identity on the network differs from their real identity outside the network. Most of them published selective details for their image on the network.

“If Someone Looks at Me from Behind They Won’t Know Who I Am”: Basic Identity

Most of the interviewees who were asked to describe how they characterize their identity on Facebook, told us that they only publish basic information, detailing their occupation. Thus, too the pictures that they publish on their profile are selective and displayed only to friends on Facebook. P2 explained:

First of all you being with your personal details, for security reasons you are also prohibited from putting too many personal details on Facebook. You only put in the relevant details ... for example if you went to a low level school you wouldn’t mention that ... just like you wouldn’t put a place of work that had fired you into your Curriculum Vitae ... I think that finding work and finding a girl are the same thing.

P4 reinforced the words of other interviewees, saying that the construction of a Facebook profile is an important parameter in one’s career. She added that Facebook is an accessible means, in which work partners are exposed to pictures and posts that are published there:

It is not always advantageous ... my family has a completely different political opinion so I don’t always share discussions with them – on Facebook I am even more cautious, sometimes I prefer not to upload a picture from family events which are not fitting for the character of my friends from college or similar matters ... as if I make a selection and it’s not always spontaneous.

Many of the interviewees saw the construction of their initial profile on Facebook as something laconic, without any imagination and providing basic information about their identity. P5 reinforced the words of P2:

I have a Facebook profile that I built from my picture, first and family names and my professional status, where I studied and what my profession is. Most of the details are rather dry ... my identity is far more interesting and complex than appears on the network. I am more reserved and closed on the network.

It seems that the image that the interviewees present on Facebook is not identical to their real identity. The Facebook image is a fantasy and presents facets of their personality that they want to present. P8 talked about his Facebook profile:

I think that it only partially resembles [my identity] since I haven’t really participated in the activity for a long time. Let’s suppose that I mark likes for some pictures or posts of others, from whom I can perhaps learn something about my opinions but in general it is far from reality. On Facebook I am quite passive and what others publish doesn’t really interest me. If I mark likes for friends on the network this is mainly to be considered “a good guy” unless it is something that somebody from my close circle publishes, then I relate to it more seriously and give likes intentionally.

P3 feels that she can choose to present her identity on the network as she wishes. This provides her with confidence as she can choose which details will appear on her profile. She feels that she does not need to expose intimate information that she does not want to share with her network friends:

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It gives me confidence since it allows me to express my opinion on subjects that are raised there, it's another platform that creates an experience of identity, where I can expose things and upload pictures from the experiences that occur around me.

The Privacy Dilemma

When the interviewees spoke about privacy, their main theme was their reluctance to share things. The interviewees testified that the right to privacy allows them to act in their private space without exposure to other people. They feel that privacy is built through their ability to selectively choose the details that they decide to expose. Most of the interviewees claimed that there is no privacy on the network. The use of the network was seen by them as an intrusion into their personal world. It seems that most of the interviewees feel that the collaborative element of the SNs clashes with what they understand by the term “privacy”. Yet, their participation in SNs stems from their understanding that they are an integral part of the technological circle.

Privacy: Considerations for Controlling Exposure

For some of the interviewees privacy means the ability to control their personal space, where they can determine the rules of the game. P7 related to her desire to expose details of her life. She described “privacy” as *something of yours that you do not wish to expose to everyone ... daily matters that you don't want to share.*

Like other interviewees, P6 related to the word “exposure”, which she included as part of her consideration of the term “privacy”. She related to the component of “perfection”. P6 claimed that exposure of details of her life is influenced by the desire to show an image of perfection to her target audience on the network:

In principle, it means not exposing my feelings ... the less good things. I think that when things are just perfect then there are less filters and when they are less perfect then more care is taken to maintain privacy.

The Network Exposes: Privacy Is Invaded

The interviewees were in a state of dilemma and confusion regarding the definition of the term “privacy” on the net.

You can maintain privacy on the network but you have to be on the alert all the time. Let's say if you publish a post on the iPhone there was a possibility that it would also publish your location, so I closed that possibility. Let's say that yesterday I wanted to note that I was in Tel Aviv, but then I thought, I have lots of friends in Tel Aviv and perhaps they would like to meet me and I wasn't so available for that. If I upload a picture then I flow with that ... those are matters of principle for me. For example when there are articles on a book that I read that I thought of publishing, but then I thought that my family might be hurt by them so I didn't publish them, in other words, that relates more to opinions and attitudes.

Like P4, P7 also considered aspects of exposure on the network. P4 spoke about conflicts and dilemmas when she used the network. She described a situation of deliberation when a gap formed between

her desire to share something on the network and her fear that her privacy would be infringed in her world. She spoke about a process that the user undergoes before publishing contents on the network.

There can't be any privacy on the network because the moment that the sites and Facebook began there is no privacy. There are things that you can expose or not expose and at the moment everyone is exposed. If you are not exposed on Facebook then you are exposed on your mobile phone ...Yes, if a picture is too exposed I block it or delete it completely. Sometimes for example I leave a picture that I took on my mobile phone and don't publish it.

P11 supported her words, adding:

There may be a sense of privacy but in practice there is no privacy, there is always someone who will analyze the data that you publish on the network and use it.

It seems from P11's words that exposure of personal contents stimulates subjective interpretation of the published contents. This interpretation is dangerous for the publishing person, if the message that they intended to impart was not understood when the contents are shared.

Publishing Contents on the Network: I Am Aware That I Am Exposed

The interviewees were asked to express their feelings concerning their knowledge that others were "nitpicking" whatever they put on their Facebook accounts. Like P4, so too P6 felt that the Facebook contents took on a collaborative dimension. This collaboration meant that the contents were visible to and open to criticism by others. P6 told us that she would choose not to publish pictures on Facebook that she did not wish to expose to a wide public, but rather upload them on to other SNs that maintain the privacy of the people photographed. P5 claimed that the problem created in the framework known as Facebook was the shared friends circle of a member telling something to another member. In this manner, their pictures would be exposed to a broad audience that she was not willing to share this information with. P6 described this:

It doesn't bother me and it doesn't interest me, I take into account that everything that I upload becomes public and I have no control of how it will look, what they will say or remark ... [but] when Tamar was born I asked everyone not to upload her photographs on Facebook ...I felt that something that this was something that was exclusively mine and not everyone should share in this ...until today I won't upload her pictures.

P11 explained that he often encountered dilemmas when he published contents on the network. He examined the materials that he wanted to upload and deliberated before leaving them for a continuous period:

It is not something private for me, sometimes I had opinions about an article that I decided to publish and then I took it down because I had second thoughts about the subject and so I deleted it. ...I'm not sure if I could say that I was afraid exactly ...like when we sometimes say something that should not be said and then rethink things and perhaps wait before saying it.

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P1 supported what the other interviewees had noted. He understood that the information that he chose to publish on the network exposed information from his private life. In his opinion, the contents were open to the use of a wide community to whom he published the information. His words intimate that putting contents on the net should be considered selectively. P1 noted contents that he preferred to delete because of their implications:

I made a photographs competition together with a group of friends on the network and the pictures were silly, in retrospect I regret that they were published so no, today I would not do that, I have matured, it has implications ...you have to sort things before uploading them onto the network. It actually reflects who we are.

On the other hand, he said that there was a tremendous advantage in sharing:

Everyone can know what the consequences will be, the question is whether it is possible to use the information in a bad or good way. There are good consequences, for example if you need help. But again, it is transformed from private to public. There is no privacy and users can exploit the information in a bad way.

The Network: Close Follow-Up

When the interviewees were asked about their observation of their friends' accounts on Facebook, most of them admitted that in their spare time they surf the SNs in general and especially Facebook. Their acquaintances' profiles are interesting and intriguing and the users find themselves "tracking" their friends on the network. P2 explained that with the help of the network he is exposed to the worlds of people whom he knew in the past. He learns about what has happened to them, what their occupations are, their status and sexual preferences:

All sorts of things interest me ...my 'ex's or all sorts of people ... to see if they are married and whether they have children ...someone from my class published that she was a lesbian ... all sorts of things like that.

In contrast to P2, P7 does not track down people from her past. She is occupied with the present status of her current friends. P7 spoke about an additional dimension, her she does not only follow her friends on the network, but also the reactions and feedback that her friends write on the SNs:

I love to look at pictures, [especially] family and if there are reactions to your pictures. I am not on the network everyday but I follow it.

P5 added an observation from a different angle regarding the tracking of friends on Facebook. She explained that she tends to offer friendship only after she has viewed the profile of the user that she intends to approach. She said that there are very specific parameters according to which she chooses her virtual friends, for example: their noted content, age and occupation:

I look at the profiles of other people that I know on Facebook, so I was slightly interested in what is happening to them today, what they experience and then I decide whether to offer them friendship on the network or not.

In her interview P5 said that there is professional dimension to the Facebook search. She learns about her profession by looking at the profiles of her friends on the network. In her interview, it seemed that the P5's cooperation with users creates a professional partnership that broadens the horizons of the area in which she works.

I look at it from a professional level in the field of cosmetics, where they studied and what they do and I look at how they wrote things with their content and then I offered them friendship ... and when others offer me friendship I check what they write and then decide whether to confirm their friendship.

P7 expressed anxiety regarding the exposure of her private details on the Internet and on Facebook. She explained that she does not expose private details because of her desire to maintain confidentiality. She notes that even in situations where friends look at her Facebook account, she feels that her inner world is exposed:

It is harmful, I don't expose all my personal matters ...I feel that they are intruding on my privacy although I only have my close friends on Facebook, they see the pictures and it is not revealed to people who are not my Facebook friends.

P4 talked about another dimension of the implications of personal details to other users. P4 explained that people publish and share information on the network without being aware of the implications. P4 explained that she sometimes feels discomfort about information that she publishes:

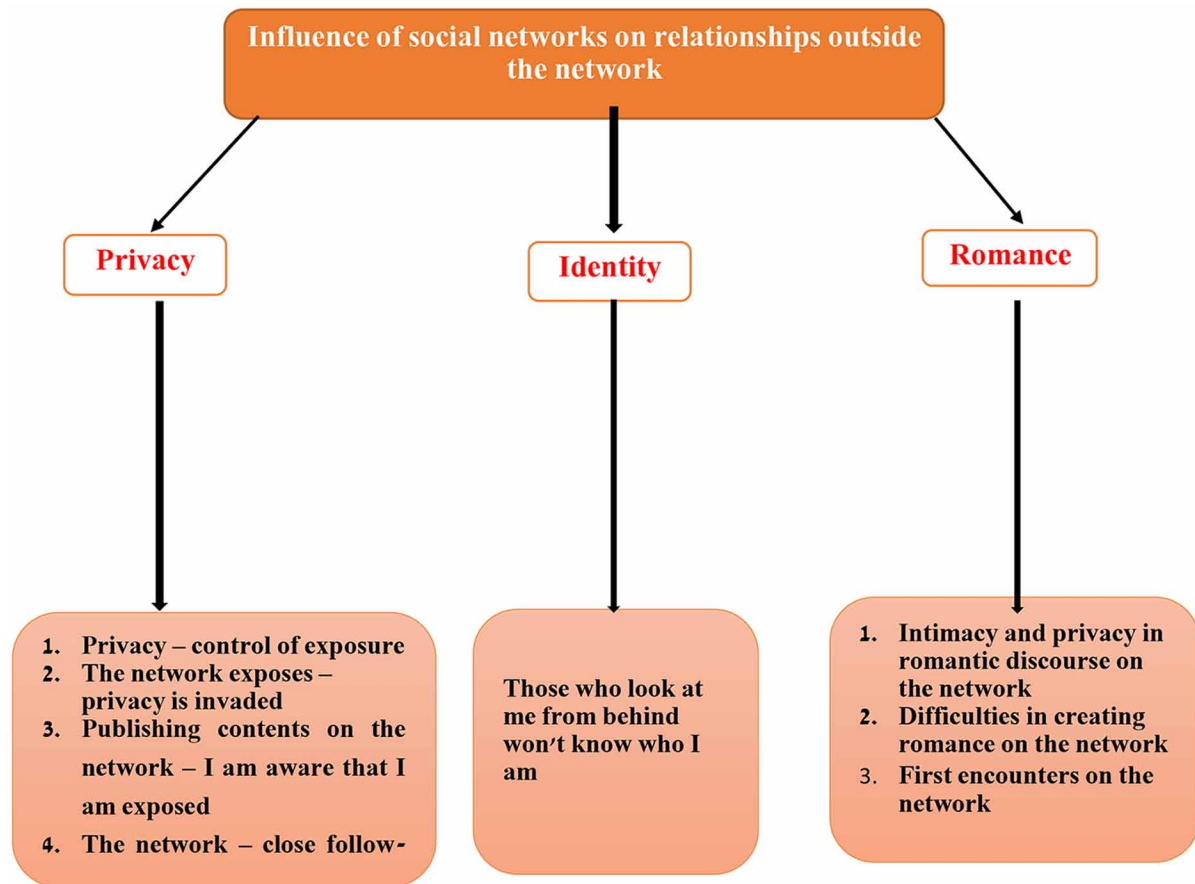
I only upload onto Facebook those contents with which I feel comfortable ... I think that each person only publishes what he feels fine to publish ... for example, my friend was once right-wing and since being in the theater she has changed her opinions and become left-wing and two of her brothers cancelled their friendship and when she talks with them they say they can't continue to be her friends on Facebook because she puts up posts that hurt their friends who are right-wing.

In contrast to P4, (P11) agrees that there is a free choice in the very fact of opening and sharing a personal Facebook account. He explained that users should be understanding and know that they expose their details on the network and are exposed:

Those who want to see, let them see, I relate to Facebook as a noticeboard so similar to a noticeboard I have to know that someone will look at it...on the one hand it is intriguing to know who looks while on the other hand I think it can be onerous.

Figure 1 provides a model of the categories and themes that emerged from the findings

Figure 1. Model of categories and themes relating to the influence of social networks on relationships outside the network



DISCUSSION

This research investigated how the virtual world in general and specifically Facebook influences romantic activities and norms outside the Internet. The main themes that emerged from the initial analysis related to the access to and development of romantic relationships on the network: romance, identity and privacy.

Romance on the Network

The network has in recent years become a key space for romantic and sexual relationships. This space allows surfers to get to know others in order to form serious relationships such as friendship and marriage on the one hand and on the other hand to form random temporary attractions (Ben-Ze'ev, 2004). The research participants were asked about the nature of the connection that was formed between them and their potential partners and they were asked to describe their experiences on the network.

Does Romance Exist on the SN?

The themes that emerged from the research related to the interviewees' consideration of romance. The most outstanding opinion voiced in the findings was that romance did not appear in the virtual space. In the past, romance was seen as a component in the formation of love and it was created in face-to-face encounters (Illouz, 1997). The network users refused to attribute the component of romance to the virtual space and stated that romance on the network transforms an interpersonal act into something commercial. Romance on the network only relates to the initial meeting in which the users get to know who is involved. The intimate context is only created in a closed space, where two partners meet without distractions (at a café, film etc.). For most of the interviewees, romance remained a fantastic dream, in which the couple meet in an intimate environment and get to know each other. In order for "romance" to exist on the network they felt it needed to include four components: (1) two partners who meet face-to-face; (2) a quiet space – a place in which the two partners meet and conduct intimate conversation; (3) a spiritual experience, and; (4) physical contact.

The interviewees emphasized that the second parameter, i.e. the "space" in which a romantic encounter took place was an important component. Mayers (1993) and Illouz (1997) saw modernism as enabling the creation of public meanings in a sphere of consumption and as allowing an authentic development of a relationship between a couple and defined this as "modern romance". The users aspire to engage in classical romance as it existed in the past, before the existence of SNs. Romance according to the evidence from this study can be defined as a face-to-face encounter, in an intimate space that includes physical contact and gestures between two partners such as *going to the beach together ...holding hands, intimate things*. According to the findings this is the only way that romance can develop within a relationship. For the interviewees, the network was a place where users could be exposed to potential partners and participate in a dialog, in other words in order to create a romantic relationship two stages were needed:

Stage 1: Initial acquaintance on the network, revealing identifying data and basic familiarity with the "candidate" and for initial acquaintance.

Stage 2: A face-to-face encounter including an intimate conversation between two partners willing to form a relationship:

what happens on the network is not real, it's just a type of courtship and preparation for romance outside the network, romance outside the network is real.

The interviewees negated the possibility of a continuous romance on the network. Dialog in a virtual space that is not shared creates an intimate, experiential and adventurous moment. Even if this acquaintance does not include any physical contact or gestures that the interviewees hoped would be included in a romantic moment, there would be a special, mysterious first meeting for the user.

The findings supported the argument of Illouz (1997) that romance and relationships on the network lack the components that were mentioned above and so there is no complete romantic relationship in the interactive space. The alternatives open to users in order to conduct a relationship are more flexible online; there are many alternatives and they create a new situation. Activities in a modern discourse on the network create a different type of interaction for love life in general and romantic discourse in particular (Illouz, 1997).

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Wysocki (1996) argued that romantic relations on the network work in a single direction. The romance begins on the network and continues as interactive interaction. Face-to-face relations are intimate and physical, while romantic discourse that takes place on the Internet is an initial discussion in most cases.

Some of those who surf on the Internet in general and on dating sites in particular arrive “prepared” and motivated to arrange a first meeting. In contrast to the opinion of Wysocki (1996), the findings testify that romantic discourse does not exist on the Internet and an intimate meeting including stroking and intimate gestures are needed for romance:

romance can begin through the network, through a gesture, messages ...but it cannot remain there alone. In my opinion it can strengthen and encourage romance but you need something else beyond the network (P4).

It seems that the findings mostly contradicted and disproved the theory of Visoki. Nevertheless, it seems that after a continuous period of communication when a couple feel confident and their relationship has become more established interactive communication is formed on the SN.

Identity on the Network

The network users dress themselves in masks to create stereotypes to respond to social norms associated with both external appearance and personality characteristics. It was found that these identities develop on the network and alter. Of course, the face-to-face meeting and the path towards it are influenced by the profile and these identities acquired on the SN. However, the meeting in a space outside the network means that the user has to confront their real identity and the potential partner has to accept that real identity.

According to Barak (2006) the “invisibility” afforded by the Internet serves important purposes: the user can attain their goals in this manner. Nevertheless, the user often undergoes a process of symbiosis with the new identity, continuing to wear this mask even in a face-to-face meeting. This manner of behavior seems improper and unreliable. This may be explained because the masks that are worn by the user and the need to change them create an opportunity to examine who their real “self” is (McKenna & Bargh, 2000). In this way the user is able to cope with the search for their real self, find it and cope with it emotionally. The interviewees were asked about the process of construction and the process of coping with the construction of their identities on the network.

Facebook: Self-Presentation

Most of the interviewees altered their identity so that it would be appropriate for the partner that they wanted to “conquer” and/or for the scene for which they wanted to modify their profile. The identities published on Facebook are attractive images that undergo selection. The details that the users chose to define their “self” are subjective details intended to leave a positive impression on the surfing audience. Thus it seems that the interviewees profile is definitely their personal digital footprint.

Goffman (1980), focused his interest on an analysis of the way that people present themselves in their daily life in different social settings. He noted that when a person appears before others, they create a conscious or unconscious definition of the situation and of their identity. It was found that women more than men, tend to falsify their identities and try to adapt them to stereotypes that they think that men would see as attractive (Shade, 2002). According to the present findings, women did indeed alter

their profile on Facebook in order to modify themselves to suit the situation and to impress their target audience. However, according to the interview data, it can be seen that this phenomenon also occurs among men. In other words, both sexes create a suitable personal digital footprint for themselves, which is not real, in order to “market” themselves. The users choose to present their identity in the most complimentary manner and to display a facet of their personality that will market an attractive and inviting image to surfers. The surfers understand that before they meet with the potential partner they should transmit pleasantness, beauty, seriousness, reliability, wisdom etc. This is all transmitted through dialog conducted in writing on the network (Ben-Ze’ev, 2004). The surfers understand that their presentation on the network is the first opportunity to create a continuation to a real relationship. The meeting on the network is a springboard to future dialog that will only occur if they succeed in making an impression on the user with whom they conduct an initial conversation. For them their self-presentation resembles an “entry ticket” earned for making a good impression: *you wouldn’t put a place of work that had fired you into your Curriculum Vitae.*

According to Amichai-Hamburger and Ben-Artzi (2000), users do not distinguish between the identities they present in the technological space and their identity in actual reality. Nevertheless, according to the present findings the users emphasized that they consciously use fictive identities. As Goffman (1980) claims, people create complementary identities to fit the world in which they belong and the situations in which they exist. The interviewees noted that the details for the construction of their Facebook identities were selected carefully according to the message that they wanted to deliver to other users.

Amichai-Hamburger and Ben Artzi (2000) note that the use of the Internet helps introverted surfers who find it difficult to find partners and romantic relationships outside the network. These users hide and shelter themselves behind the screen. The findings show that indeed the network does provide a real advantage for these introverted surfers who find it difficult to make friendships outside the network and allows them a range of alternative opportunities to meet someone. It is easy to create identities on the Internet, using suitable pictures, a description of a fascinating life and creating a fake identity that does not resemble your true life.

Some of the findings disproved the claim of Amichai et al. (2000). The interviewees noted that they were hesitant to be extensively exposed on SNs in order to meet people. Lack of privacy and the exposure of their profile on Facebook deterred some of the interviewees and created a situation in which they consciously selected the details that they published. The users often fear the consequences of publishing their details. A situation is created in which they meet new people thanks to their Internet personal digital footprint, however the Facebook profile also has a significant disadvantage in the Internet space: *my identity is far more interesting and complex than on the network.*

Privacy on the Network

The network user is in a constant dilemma relating to the choice of details that it is suitable to expose on the network. On the network in general and on Facebook in particular the user enjoys anonymity that is not possible in a face-to-face meeting. The anonymity and privacy create a special situation suitable for introverts. Wellman (2003) assumed that because of their sophisticated technology, the networks are suitable and adapted to the personal character of each user.

Does Privacy Exist on the Network?

It seems that there is privacy on the network and it can be controlled by the user. The user has free choice to choose what to publish in the technological space and who will be the target audience that will view the materials. Brandtza (2010) calls this the “privacy conflict”, the gap between efforts to maintain privacy and the desire to publish personal details on the network. The interviewees testified that they choose the details to appear in their profile, which constitutes their personal digital footprint. They decide who will be their “friends”, when to react and in what manner. Facebook allows them to expose themselves as eligible singles and to market themselves as experienced professionals. To this extent it is clear that the users can enjoy privacy on the network and it is they who decide exclusively about the publication of their contents.

Nevertheless, the interviewees who used Facebook, also felt that privacy was an illusion on the SN. The network is a shared space in which privacy cannot exist in entirety. Surfers have a feeling of lack of control when their details are exposed to others that they do not know. When the interviewees were asked: “what is privacy for you?” they all expressed a need for control. According to the findings privacy only exists when two basis components exist: (1) control of the choice of contents that they expose and; (2) the ability to choose who will be able to see the contents. The exposure may be performed by a third party. The ownership of a Facebook account is only partial. The user’s details can be exposed in a situation in which a friend shows the account of the user to another account holder who is not in the user’s community of friends.

The anonymity that characterizes the activity on SNs differs from complex relationships in real life. Being on a SN reduces the difficult coping of persons with a passive, shy or introverted identity. The SNs undergo metamorphosis and alter their purpose, from networks serving collective needs to networks serving individual needs. This fact reflects a change that the networks are undergoing and a change in the individual’s consideration of them. In the past, the networks had a common concept. Today, the SNs have a decentralized character that is suited to the user and adapted to its personal character (Wellman, 2003).

IMPLICATIONS

The findings seem to indicate that romance does not exist on the network, rather romantic signs that are expressed in written text. In the modern technological era single can create a romantic space if they adapt the modern tools (the SNs and/or online dating sites) to parameters that they consider romantic. Although the intimate space and physical contact that they expect does not exist on the network, it is possible to create a situation that aspires to intimacy during an initial conversation. The user needs to ensure that they are indeed in a “private” space where they can conduct dialog solely with the proposed partner and that there is no intervention of other partners without their knowledge during the specific conversation. The participant in the conversation should be aware that the identities on the network are built to be “attractive”, attempting to create a high-quality image that will be better than those of other candidates on the SN. Awareness of this subject should prevent the user’s disappointment in any future face-to-face meeting after the initial acquaintance. Moreover, romantic discourse on the network is influence by behavior outside of the network. In other words, the user will not always aspire to form a serious relationship. In the conversation, the user should define their main goals. The written word and transcription is the user’s tool. The dialog should be conducted with care, the style of writing, and words

that are chosen, can lead the candidate for a relationship to attain their desired goal. It should also be remembered that the ability to share and publish contents to other participants without the knowledge of the other participant in the conversation on the network limits privacy. Although the first meeting on the network can constitute a “springboard” to a relationship outside the network, the details that are provided by the user should be chosen carefully before knowing the identity of the other side in the dialog. This means that the user should continually be aware of the rules for activity on the network. The network is a space in which conversations take place for various objectives, such conversations have special characteristics that differ from conversations outside the Internet. In order to understand this issue further research should relate to the characteristics of social discourse on the Internet and its contribution to different aspects of our lives.

LIMITATIONS OF THIS STUDY

Since this was a qualitative study with a relatively small sample, the results cannot be generalized to similar circumstances. However, the reader can decide to what extent they are informative for other similar contexts.

Future research should consider a larger sample of respondents with different academic and professional characteristics. In order to derive suitable conclusions for a broader population, further research should relate to a random population of additional singles from different regions and countries. Different populations could be studied including non-academic populations and compared with populations that do not use the SNs.

To summarize, the research and findings described in this paper showed that network surfers idealize their images when presenting themselves on the network in order to be perceived as an attractive and eligible in their search for the ideal partner. The surfers adopt characteristics and attractive features from the images that they know in real life.

The interviewees were asked to define romance on the network. They found it difficult to find its existence on the network. They negated the possibility of creating a romantic situation in the virtual space.

The network personality meets its potential partner in the digital space and from there they can move on to the real world. However, the continuation of this relationship often returns to the network and exists in substance there. Nevertheless, the behavior of the couple on the network is just one of many representations of social aspects in a dynamic changing existence. Dating sites are a metonymy for a whole refreshing world that represents the society in which we live. The SNs began a novel social-personal process which has influenced our lives. At this point in time the digital networks and sites dictate new norms and rules. The open question that remains in this context is whether a long-term study over several years would reveal a different sort of couple relationships.

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Chapter 38

Online Social Capital Among Social Networking Sites' Users

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ABSTRACT

This research aimed to explore types of online social capital (bridging and bonding) that the Emiratis perceive in the context of social networking site (SNS) usage. A sample of 230 Emiratis from two Emirates, Abu Dhabi and Dubai, was used to investigate the hypothesis. The results showed that WhatsApp was the most frequent SNS used by the respondents. Also, a significant correlation of the intensity of social networking usage and bridging social capital was found, while there was no significant association between SNS usage and bonding social capital. The factors determined the SNSs usage motivations among the respondents were exchange of information, sociability, accessibility, and connections with overseas friends and families. Males were more likely than females to connect with Arab (non-Emiratis) and online bonding social capital. Both genders were the same in their SNSs motivations and online bridging social capital.

INTRODUCTION

Internet and Social Media Connect People

In geographic communities, people typically get to know each other in face-to-face settings, and then maintain contact via communication technologies, such as telephone and email. When geographic communities have high Internet penetration, people, groups, and organizations readily turn to email and the World Wide Web to stay in touch and exchange information (Kavanaugh, et al., 2005). Early and continuing excitement about the Internet saw it as a stimulating positive change in people's lives by creating new forms of online interaction and enhancing offline relationships. The Internet would restore community by providing a meeting space for people with common interests and overcoming the limitations of space and time (Wellman, et al., 2010: 438).

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Gershuny (2002) argued that the Internet has changed the nature of leisure activities; the same might be said of social networking sites (SNSs). Instead of displacing leisure or communication, Facebook constitutes a new communication activity that supplements communication amongst friends. Social media provides individuals an interpersonal connection with others, relational satisfaction, and a way to learn about the surrounding cultural milieu (Croucher, 2011: 261). Online sites are often considered innovative and different from traditional media, such as television, film, and radio, because they allow direct interaction with others (Pempek, et al., 2009: 229).

To summarize, SNSs provide users with meaningful ways to make, maintain, and enhance relationships. For many "Friends", the site is the primary method through which to stay connected (Vitak, 2012: 469).

Internet Access and Social Media in the United Arab Emirates (UAE)

Social networking has spread around the world with remarkable speed. In countries such as Britain, the United States, Russia, the Czech Republic, and Spain, about half of all adults now use Facebook and similar websites (Kohut, et al., 2012: 1).

The UAE has been ranked (13) in the world in terms of individuals using the Internet, with 88% of the country's residents now online. This is just behind the United Kingdom (89.8%) and Bahrain (90%), according to the United Nations Broadband Commission report (2014), which elaborates on the number of Internet users, specifically broadband, in 191 countries. In global rankings of countries with the highest frequencies of Internet access, the UAE holds 13th place, way ahead of United States, which is in the 19th spot, and Germany, which has grabbed the 20th position (p: 102–103). It should be indicated here that the demographics of UAE residence are very unique as it includes various nationalities from Asia, Europe, USA and others. According to the National Bureau of Statistics (2010), the UAE nationals are 11.5% of the total population that exceeds 8.264.070 million and the non-national are 88.5% of it (P: 10).

Ayyad (2011) indicated that the United Arab Emirates' high percentage of Internet users makes it the "most wired nation in the Arab world and one of the top nations of the online world" (p: 43).

Al Jenaibi (2011) concluded that social media has a very strong presence in the lives of a sample of 556 Emiratis from the seven Emiratis of UAE. Most participants agreed that the use of social media is on the rise in the current teenage and adult population (Twitter, YouTube, the iPhone, Blackberry, and iPad were mentioned frequently). They had a clear conception of a wide range of uses for it, defining it as useful for contacting others, discussions, searching for information, selling products and logos, making announcements, and distributing surveys (p: 19, 20). Wiest and Eltantawy (2012) found that nearly 90% of a sample of UAE universities' students have created a profile on one of the social networking sites and 78.5% have a profile on more than one such site (p: 214). Karuppasamy, et al. (2013) found that most of a sample of the students of Ajman University of Science and Technology (n = 300) were found to be users of social networking sites, and Facebook was the most popular SNS (p: 248).

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Like traditional media, Facebook and other social networking sites consist of a one-to-many communication style, where information presented reaches many "viewers" at a time. However, with social networking sites, users are now the creators of content, and they view one another's profiles and information rather

than viewing mass-produced content made by large corporations. They also become the stars of their own productions (Pempek, et al, 2009: 234).

Social networking sites are online environments in which people create a self-descriptive profile and then make links to other people they know on the site, creating a network of personal connections. Participants in social networking sites are usually identified by their real names and often include photographs; their network of connections is displayed as an integral piece of their self-presentation (Donath & Boyd, 2004: 72).

Wellman et al (2010) indicated that online interactions may supplement or replace those interactions that previously were formed offline. Some other researchers (Kavanaugh and Patterson, 2001; Hampton and Wellman, 2003; Kavanaugh, et al., 2005) have concluded that computer-mediated interactions have had positive effects on community interaction, involvement, and social capital. Social network sites now mediate a variety of human interactions for a wide spectrum of individuals, from early adolescents to adults (Ahn, 2011: 108). Donath and Boyd (2004) argued that the SNSs provide the technical features for their users to build and maintain large networks for social ties, which supplements their offline social networks. Specifically, individuals can remain in contact with more members of online networks more often than with their offline counterparts.

Social Capital and Its Types

Social capital refers to the set of resources embedded within community networks accessed and used by individuals within a network (Coleman, 1988). Putnam (2000) defined social capital as connections among individuals and the social networks and the norms of reciprocity and trustworthiness that emerge from them. Lin (2001) defined social capital as “investment in social relations with expected returns in the marketplace” (p: 19). Ellison, et al., (2014) explained that social capital is created through social interactions and the expectations of future social resources they engender (p: 856).

Some studies indicated that social capital is linked to positive social outcomes, such as better public health, low crime rates, and increased participation in civic activities (Adler & Kwon, 2002; Ellison, et al., 2007). Wellman, et al., (2010) stated that some evidence suggests that the observed decline in the offline social capital has not led to social isolation but to the community becoming embedded in social networks rather than groups, and a movement of community relationships from easily observed public spaces to less accessible private homes. If people are tucked away in their homes rather than conversing in cafes, then perhaps they are going online: chatting online one-to-one; exchanging e-mail; ranting about important topics; and organizing discussion groups or news groups (p: 437).

Although sociologists and political scientists tend to use the term “social capital”, psychologists refer to a related concept using the term “social support” (Burke, et al., 2011, p: 1–2). In media literature, most scholars use “social capital” (Ellison et al. (2007; Ellison, 2008; Valenzuela, et al., 2009; Watkins & Lee, 2009).

Stevens Aubrey, Jennifer et al (2008) summarized Putnam’s (2000) distinction of two kinds of social capital: bridging (characterized by weak ties) and bonding (characterized by strong ties).

- Bridging occurs when individuals from different backgrounds make connections between social networks. It is often seen as having a lot of tentative relationships (“weak ties”) that provide little emotional support. Still, bridging can also be viewed as the broadening of one’s social horizons or world views.

- Bonding, on the other hand, occurs when strongly tied individuals provide emotional support for one another. It occurs between individuals who have strong personal connections. The downside of bonding is its insularity; it can lead to mistrust and dislike for those outside the group (p: 2).

Johnston, et al., (2013) explained that bridging social capital occurs between individuals of different ethnic and occupational backgrounds and it provides useful information and new perspectives (p: 25). Bridging may broaden social horizons or world views, or open up opportunities for information or new resources. On the down side, it provides little in the way of emotional support. (Williams, 2006: 597).

In contrast, bonding social capital exists between family members, close friends, and other close relations and focuses on internal ties between actors. It does not provide links to individuals of differing backgrounds (Johnston, et al., 2013: 25).

Bonding social capital refers to close relationships between individuals that provide emotional support and access to scarce resources. SNSs enable members to connect with existing close friends and relatives, thus functioning as an additional means for them to interact outside of face-to-face encounters (Phua and Annie, 2011: 508). Williams (2006) stated that the individuals with bonding social capital have little diversity in their backgrounds but have stronger personal connections. The continued reciprocity found in bonding social capital provides strong emotional and substantive support and enables mobilization. Its drawback is assumed to be insularity and out-group antagonism (p: 579).

Adding further to this distinction, Johnston et al., (2013) introduced a different classification of social capital retrieved from the work of two researches (Islam et al, 2006; and Fukuyama, 2001). They suggested that social capital can be broken into two classes: cognitive and structural.

- Cognitive social capital is linked to personal aspects, such as beliefs, values, norms, and attitudes. It is also a by-product of cultural norms like religion, tradition, and shared historical experiences.
- Structural social capital is the outwardly visible features of social organizations, such as patterns of social engagement or density of social networks (p: 25).

Ellison et al. (2007) introduced a third type of social capital called “maintained social capital” that is created when individuals maintain connections to their social networks having progressed through life changes. This type of social capital supports the idea suggested by Bargh and McKenna (2004) who stated that the use of technology can assist people to maintain relationships threatened by changes in geographical location. This might be the case when university students use various types of social media to stay in touch with old high school friends and classmates who moved away to join universities in different countries or locations.

In this research, Putnam’s (2000) classification of social capital (bridging and bonding) will be adapted.

Social Media and Social Capital

Social networking sites provide an important source of community and thus represent a key source of social capital in the digital age (Watkins & Lee, 2009: 16). In this context, many research efforts were spent to determine whether social media increases or decreases the level of social capital among SNS users.

SNS users were found to enjoy both the development of new relationships and the maintenance of existing relationships online (Walkins and Lee, 2009). Ahmed, Azza (2015) examined offline social support in relation to online self-disclosure. She found that the more respondents have emotional and

informational offline support, the less they are likely to disclose positive matters online (p: 215). Nie (2001) argued that Internet use detracts from face-to-face time with others, which might diminish an individual's social capital. From their surveys with undergraduate Facebook users, Ellison, Steinfield, and Lampe (2007) found that Facebook usage interacted with measures of psychological well-being; Facebook intensity predicted increased levels of maintained social capital, which they interpreted as the college students' ability "to stay in touch with high school acquaintances" and possibly "offset feelings of 'friend sickness', the distress caused by the loss of old friends". However, Valenzuela, et al., (2009) found that the positive and significant associations between Facebook variables and social capital were small.

Phua and Jin (2011) suggested that SNSs naturally lend themselves to the development of large heterogeneous networks by enabling individuals to connect with people outside their immediate geographic locations (p: 506). Ahn's (2012) findings suggest that having interactions that are more positive in SNSs is related to bonding social capital but not to bridging relationships. He concluded that when one spends more time in SNSs and interacts with wider networks, one may readily keep in touch with acquaintances rather than developing close relationships, stating that the intensity of SNS use appears to influence bridging social capital development (p: 107).

Ellison, Steinfield and Lampe (2007) found that both strong and weak social ties are sustained on SNSs. Studying a sample of undergraduate university students, they concluded that intensive use of Facebook was associated with higher levels of three types of social capital: bridging capital or our "friends of friends" that afford us diverse perspectives and new information; bonding capital or "the shoulder to cry on" that comes from our close friends and family; and maintained social capital, a concept the researchers developed to describe the ability to "mobilize resources from a previously inhabited network, such as one's high school"(see also: Ellison, 2008: 22).

Greenhow and Robelia (2009) explained that the computer-mediated communication has the potential for online social interactions to enhance self-presentation, relational maintenance, and social bonding (p: 1133). Wong (2012) explained that people might be eager to present themselves in certain ways so as to manage their optimal impressions of others and get social support in return online (p: 185). Koku & Wellman (2001) argued that the Internet may be more useful for maintaining existing ties than for creating new ones. Thus, there is evidence that the Internet plays a critical role in shaping and maintaining bridging and bonding social capital (Phua and Annie, 2011: 506).

Motives of Social Networking Sites Usage and Social Capital

The uses and gratifications approach argues that different audiences use media messages for different purposes to satisfy their psychological and social needs and achieve their goals (McQuail, Blumler, & Brown, 1972). Recently, a number of researchers have employed the uses and gratifications approach in the context of new media and the social networking sites (Dunne, Lawlor & Rowley, 2010). According to Colás, et al., (2013), social network is a virtual space that is emotionally gratifying and allows young people to express their intimate feelings through the perception others have of them (p: 21).

Papacharissi (2002) identified six motives for using social networking sites: "passing time", "entertainment", "information", "self-expression", "professional advancement", and "communication with family and friends". Similar to the results pertaining to traditional media, she concluded that information and entertainment motives were most important. Banczyk, et al. (2008) found that communication and entertainment are the most important motivations for hosting a profile at MySpace, followed by passing time, providing information, and conformity (p: 15). Boyd (2008) found that teenagers were joining

SNSs because “that’s where their friends are” (p: 126). Karuppasamy, et al. (2013) observed a positive association between meeting new people on SNS and an SNS addiction score; 38.2% of the moderate to high users and 21.2% of the average users used SNS for this purpose (p: 247).

Lenhart and Madden (2007) found that 91% of teen SNS users use the sites “to stay in touch with friends they see frequently and 82% to stay in touch with friends they rarely see in person”, whereas only 49% use these sites “to make new friends” (p: 2).

Based on a survey of Facebook users, the findings of Villegas, et al. (2011) suggest that information and connection motives have a positive relationship with the perceived value of advertising on the site. However, when the motivation to use an SNS is moderated by bonding, perceptions toward advertising’s value are negative (p: 69).

Aubrey & Rill (2013) found that those who were motivated to use Facebook for its sociability function were more likely to experience gains in online bridging and bonding. They explained that relationship-building on Facebook would be more appealing to the person who is using FB to meet people (sociability) than to the person who is using FB to create an ideal presentation of self (status) (p: 492).

Ellison, Steinfield, and Lampe (2011) found that social information-seeking behaviors, such as using FB to know more about friends and neighbors, are significantly correlated to bonding social capital.

The use of SNSs for relational purposes and the resulting social capital and relationships are culturally driven. American college students held larger but looser networks with a far greater portion of weak ties, whereas their Korean counterparts maintained smaller and denser networks with a roughly even ratio of strong and weak ties. American college students also reported obtaining more bridging social capital from their networks in SNSs than did their Korean counterparts, whereas the level of bonding social capital was not significantly different between the two groups (Choi, et al., 2011).

There is little academic work examining the online social networking and social capital in the Arab world. This study investigates the online social capital (bridging and bonding) among Emiratis using social networking sites. In other words, it investigates the type of social capital developed as a result of using SNSs. It also explores how motivation of using SNSs might make a difference in the type of the perceived social capital among respondents. The differences between males and females in their SNSs usage, type of social capital, and type of motivations are also examined.

RESEARCH QUESTIONS AND HYPOTHESES

Based on the literature, three research questions were formed:

RQ #1: What are the SNSs that are most frequently used by Emiratis?

RQ #2: What are the motives of using online social networking sites among Emiratis?

RQ #3: What is the nationality that Emiratis tend to mostly communicate with via SNSs?

In addition, five hypotheses will be examined based on the literature, as follows:

Research Hypotheses

By using the Internet, people are substituting poorer quality relationships for better relationships, substituting weak ties for strong ties (Kraut, et al, 1998: 1208). Boase, et al. (2006) in a Pew Internet survey

showed that online users are more likely to have a larger network comprised of close ties compared to non-Internet users. Ellison, N. et al (2006) found that there was a strong connection between Facebook intensity and high school social capital (p: 25). Therefore, it can be hypothesized that:

H1: Intensity of SNS use is positively associated with individuals' perceived online bridging and bonding social capital.

Aubrey & Rill (2013) indicated that one of the structural properties of users' FB experiences that might predict the relationship between SNS usage and the type of online social capital is the number of relationships formed online (p: 493). Valenzuela, et al. (2009) suggested that individuals with a large and diverse network of contacts are thought to have more social capital than individuals with small, less diverse networks (p: 875). Hofer and Aubert (2013) found a negative curvilinear effect of the number of Twitter followers on bridging and the number of Twitter followees on bonding online social capital. Therefore, it can be predicted that the size of the SNS might predict the type of social capital as follow:

H2: There is a correlation between online social networking size and social capital type (bridging and bonding).

The results of Wellman, et al. (2010) suggest that the Internet is particularly useful for keeping contact among friends who are socially and geographically dispersed, concluding that communication is lower with distant than nearby friends. Also, investigating the relationship between Facebook usage and online and offline social capital, Aubrey & Rill (2013) found that Facebook habit was related to online bridging and offline network capital. They concluded that it is likely how a person uses FB, rather than how much he or she uses it, which is related to online bridging and offline network capital. This means that studying the impact of social networking on social capital should be in the light of the types of usage and patterns of SNS use. One of these patterns might be the diversity of social categories the SNS users have. Thus, it can be hypothesized:

H3: There is a correlation between diversity of social categories (various nationalities and relationships) and social capital type (bridging and bonding).

Literature on social media concluded that college students are motivated to use social media to keep in touch with old friends, sharing artifacts, learning about social events, and gaining recognition and self-expression (Ellison, et al, 2007; Papacharissi, 2002; Raacke & Bonds-Raacke, 2008). Greenhow, Christine and Robelia (2009) found that high school students from low-income families used their online social network to fulfill essential social learning functions. Ellison, et al. (2006) found that using FB to connect with offline contacts and for fun were positively associated with bridging social capital, while using it to meet new people had a negative association among a sample of high school students. These motives did not explain bonding social capital well (p: 25). Burke & Lento (2010) found a correlation between social capital and active contributions to Facebook as compared to passive consumption of other's information. Ellison, et al. (2011) found that using Facebook for information-seeking purposes were positively associated with online social capital. Therefore, it can be hypothesized that:

H4: There is a significant correlation between the motivation of using SNSs and type of social capital.

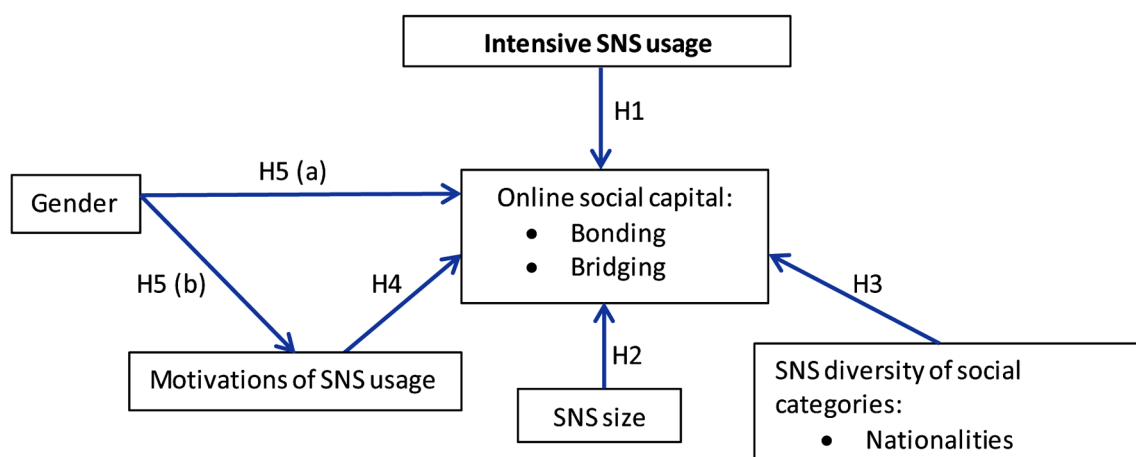
The differences between males and females have been studied by some researchers. Ayyad (2011) found that male students are more interested in using the Internet to engage in dialogue and chat with their friends and relatives, while female students are more interested in using the Internet to get information that serves their studies and to communicate with their instructors (p: 57). In the light of social capital, Colás, et al. (2013) found that online social networks are a source of resources for young people that are used to fulfill needs, both psychological and social. However, the differences between genders in these variables demonstrate that they play a compensatory role; males generally use them to cover emotional aspects (“to feel good when I am sad”) and reinforce their self-esteem (“to know what my friends would say about my photos I upload”), while for young women, the relational function prevails “to make new friends” (p: 20). Therefore, it can be hypothesized that:

H5: There is a significant difference between males and females in their:

1. Motivations of using social networking sites, and
2. Online social capital.

Figure 1 illustrates the hypothesized relationships among the research variables.

Figure 1. The research variables and the related hypotheses



METHODOLOGY

Sampling and Data Collection

The sample is composed of only Emiratis. Two out of seven Emirates were selected to draw the sample of the study: Dubai, the leading and most modern Emirate in UAE, and Abu Dhabi, the UAE capital.

A constructed self-administrated questionnaire was used to collect the data. It included 12 questions with various kinds of measurements for the research variables which will be described later. The questionnaire was written in Arabic, as it is the native language of the respondents and it makes it easy for them to fill out the questionnaire. The questionnaire reliability was good ($\alpha = 0.851$).

The data was collected during February-March 2014. Five national students of the Mass Communication Program at Abu Dhabi University assisted in collecting data using Snowball sampling from the two Emirates where they live. The students gained extra credit in the Media Research Methods and Communication Theories courses for this extracurricular activity.

Total of (300) questionnaires were distributed and filled in by respondents. A number (70) of questionnaires were excluded due to various reasons, specifically: uncompleted sheets and inaccurate responses. Therefore, the sample was composed of (230) respondents. They were distributed equally between the two Emiratis; their characteristics are shown in Table 1.

Table 1. The demographics of the sample (n = 230)

Demographic	%
Gender	
• Males	48.3
• Females	51.7
Age (*)	
• Less than 25 years old	49.6%
• 25 to less than 35 years old	38.7%
• 35 years old and above	11.7%
Education	
• University level	67.4%,
• High school level	17.8%
• Post graduate level	10.9%
• Preparatory or less	3.9%

(*) The mean age is 26.13 & St. Deviation 8.143

MEASUREMENTS OF VARIABLES

Types of Social Networks

The respondents were asked about the social networking sites they usually use. A list of social networking sites was provided and the respondents were asked to indicate how frequently (3 “always”, 2 “sometimes”, 1 “rarely”, and 0 “never”) they use each of them (Facebook, Instagram, Kik, WhatsApp, BBM, and Twitter).

Intensity of Social Networking Connection

It refers to the frequency of using social media and the time spent on social media. Three questions were used to measure the intensity of the social networking connection adapted from Lee (2009).

The respondents were asked how many years they had been using the social networking sites. The categories were: less than a year, from 1 year to less than 3 years, from 3 years to less than 6 years, and 6 years and above. Due to the small number of respondents who chose “less than one year, this category

was combined with the second one, which is “1 year to less than 3 years”. The scores ranged from 1–3. The highest score (3) was for the “6 years and above” and the lowest was (1) for the “1 year to less than 3 years” category.

The second question asked about how often they use social media in the average week. The answers were almost every day, 5–6 days a week, 3–4 days a week, once or twice a week, or never. The “3–4 days a week” was combined with the “once or twice a week” due to the low number of respondents who gave this answer. The highest score (3) was for the “almost every day” and the lowest (1) was for “once or twice a week”. None of the respondents expressed that they never use the SNS during an average week.

A third question asked about the number of hours the respondents use social networking sites in one day. Possible answers were: less than an hour, 1 to less than 3 hours, 3 to less than 5 hours, 5 hours and more. The first two categories were combined together; so it turned to be “1 to less than 3 hours”. The highest score (3) was for the “5 or more” category, followed by 3 to less than 5 hours a day (2) and the lowest (1) was for less than 1 to 3 hours a day.

The total score of this variable was 9 and ranged from 3–9 points. Responses were divided into three categories: highly connected with SNS (8–9 points) 33.9%, moderately connected (5–7 points) 60.4%, and weakly connected (3–4 points) 5.7%. Cronbach's Alpha indicated a good internal reliability of 0.823.

Online Network Size

It refers to the size of friends the respondents have via social networking sites. The respondents were asked how many friends they have in the online social networking sites. The answers have five categories: 50 to less than 100 friends, 100 to less than 200 friends, 200 to less than 300 friends, and 300 friends and more. The results revealed that 46.5% of the sample has more than 300 friends in the SNS while 53.5% has 50 to less than 100 friends.

Diversity of Social Categories

It refers to the diversity of social categories and type of friends in terms of relationship and nationalities. It also reflects the geographical and psychological distance of SNS friends. Two questions were asked to measure this variable. The first asked how frequently the respondents communicate with the following social categories (family, colleagues, friends, relatives, work partners, and strangers). The score ranged from 3 “always”, 2 “sometimes”, 1 “rarely”, and 0 “never”. The total score for this part was 18, and respondents were divided according to their responses into three categories: high diversity of relationships (scores from 14–18) 37%, medium diversity (7–13) 60.4%, and low diversity (0–6) 2.6%.

The second question was about the nationality of the friends and followers with which the respondents communicate (Emiratis, non-Emirati Arabs, Americans and Europeans, and Asians). The total score for this question was 15, ranged from 3 “always”, 2 “sometimes”, 1 “rarely”, and 0 “never”.

The responses were divided accordingly into three categories: high diversity of nationalities (scores from 12–15) 5.2%, medium diversity (6–11) 58.7%, and low diversity (0–5) 36.1%. Cronbach's Alpha indicated good internal reliability ($\alpha = 0.851$) for the items measuring the diversity variable.

Motivation

Motives of using the online social networking sites were measured by using a 5-point Likert scale, ranging from strongly agree (4 points) to strongly disagree (0 point) for 13 different motives: “to pass time” (M = 4.03); “to connect with new friends” (M = 3.83); “to find new friends” (M = 3.13); “to have accompaniment” (M = 3.33); “to connect with my friends overseas” (M = 3.97); “to connect with my family living abroad” (M = 3.97); “to exchange opinions with friends” (M = 4.01); “to write comments on everyday events” (M = 3.62); “to upload some videos and photos” (M = 3.74); “to post some up-to-date news that might grab my friends’ attention” (M = 3.82); “to read what others have posted” (M = 4.12); “because it is the best way to find the latest news” (M = 4.23); and “because it is the easiest way to connect with my friends” (M = 4.14).

Factor analysis was used to identify the factors that determine the respondents’ motivations of using social media (see the results of the research).

Social Capital Measurements

The measurement of the social capital variable was adopted from Chua, Shu-Chuan and Choib, Sejung Marina (2010). Minor changes have taken place while translating the statements as a result of the pre-test and a necessity of changes to go along with the cultural differences between the western and the Arab communities.

The social capital variable consists of two sub-variables: bridging social capital and bonding social capital. The 5-point Likert Scale ranged from “strongly agree” (5) to “strongly disagree” (1 score) was used to measure the social capital variable using (10) statements for each variable as follows:

Bridging Social Capital

1. Interacting with people on the social network site makes me interested in things that happen outside of my town (M = 3.98).
2. Interacting with people on the social network site makes me want to try new things (M = 4.02).
3. Interacting with people on the social network site makes me interested in what people unlike me are thinking (M = 4.04).
4. Talking with people on the social network site makes me curious about other places in the world (M = 3.80).
5. Interacting with people on the social network site makes me feel like part of a larger community (M = 4.06).
6. Interacting with people on the social network site makes me feel connected to the bigger picture of my community (M = 4.08).
7. Interacting with people on the social network site reminds me that everyone in the world is connected (M = 4.03).
8. I am willing to spend time to support general community activities on the social network site (M = 3.82).
9. Interacting with people on the social network site provides me with a chance to connect with new people to talk to (M = 3.77).
10. I come in contact with new people on the social network site all the time (M = 3.69).

The total score was 50 and the respondents were divided according to their answers into three categories: High in bridging social capital 59.1% (scores from 39–50), moderate in the bridging social capital 39.6% (scores from 26–38) and low in bridging social capital 1.3% (scores from 10–25). The low and the moderate categories were combined because of the low percentage of the low category. The respondents then divided into two categories: high in bridging social capital (59.1%) and middle in bridging social capital (40.9%).

Bonding Social Capital

1. There are several members of the social network site I trust to help solve my problems ($M = 3.35$).
2. There is a member of the social network site I can turn to for advice about making very important decisions ($M = 3.33$).
3. There is no one on the social network site that I feel comfortable talking to about intimate personal problems (R) ($M = 3.27$).
4. When I feel lonely, there are members of the social network site I can talk to ($M = 3.39$).
5. If I needed an emergency loan, I know someone at the social network site I can turn to ($M = 2.79$).
6. I always evaluate the people I interact with on the social network site ($M = 3.47$).
7. The people I interact with on the social network site would be good job references for me ($M = 3.00$).
8. The people I interact with on the social network site would share all their money to support me if I face any financial problem ($M = 2.70$).
9. I do not know members of the social network site well enough to get them to do anything important ($M = 3.57$). (R)
10. The people I interact with on the social network site would help me fight an injustice or unfairness that I might face in my life ($M = 3.05$).

The total score of bonding social capital was 50. The respondents were categorized according to their responses into three categories: high in bonding social capital 16.5% (scores 39–50), moderate in bonding social capital 64.3% (scores 26–38), and low in bonding social capital 19.1% (scores 10–25).

Cronbach's Alpha indicated a high internal reliability ($\alpha = 0.851$) for the items measuring the social capital (bridging and bonding) variable. The respondents' age, gender, and education levels were recorded for sampling demographics.

Statistical Techniques

The SPSS statistical program was used in analyzing the data. Frequencies, Cronbach's Alpha, Pearson correlation, Factor Analysis, and T-test were used to answer the research questions and test its hypotheses.

RESEARCH RESULTS

Usage Patterns of Social Networking Sites Among the Respondents

RQ #1: What is the SNS/s that are most frequently used by Emiratis?

Online Social Capital Among Social Networking Sites' Users

The results revealed that WhatsApp is the social network that got the highest percentage among SNS Emiratis users as shown in Table 2.

Table 2 shows that the SNS that is used most frequently by the sample is WhatsApp ($M = 2.70$), followed by the Instagram ($M = 2.53$), then Twitter ($M = 2.08$). Unexpectedly, Facebook was in fourth place among the most frequent social networking sites the respondents use. This contradicts some findings of research results in UAE and USA, as will be discussed later.

*Table 2. Frequency of using SNS among respondents ($n = 230$)**

SNS	Frequency of Using SNS %				M	Weighted Mean %
	Always	Sometimes	Rarely	Never		
WhatsApp	81.3	12.2	2.2	4.3	2.70	90.1
Instagram	72.2	15.7	4.8	7.4	2.53	84.2
Twitter	50.9	21.7	11.7	15.7	2.08	69.3
Facebook	35.7	17.0	10.0	37.4	1.51	50.3
Kik	24.3	17.4	22.6	35.7	1.30	43.5
MySpace	11.7	6.5	11.7	70.0	0.60	20.0

(*) The respondent might choose more than one SNS

RQ #2: What are the motives of using social networking sites among Emiratis?

Factor analysis was used to identify the most factors that determine the social media usage among the respondents.

The results indicated that there are four factors identifying the motives of using social media. Table 3 presents the factor analysis rotated component matrix of SNS motivations among Emiratis.

The factor analysis reveals that there are four factors that determine the Emiratis' motivations of using SNS.

1. Exchange news, opinion and photos (items 1–5)
2. Sociability (items 6–9)
3. Accessibility (items 10–11)
4. Connecting overseas friends and families (items 12–13)

RQ #3: What is/are the nationality/ies that Emiratis tend to mostly communicate with via SNS?

Connecting to people is one of the main factors that motivate the intensive usage of SNS among various groups.

The respondents were asked with which of the nationalities they communicate most of the time through SNS. The answers are listed in Table 4.

Table 4 indicates that the Emiratis use SNS to always communicate to nationals, as Emiratis got the highest percentage compared to other nationalities, followed by the Arabs (non-Emiratis). This indicates that the SNSs are not used to extend the respondents' networking outside the Arab region.

Table 3. Factor analysis rotated component matrix of SNS motivations among Emiratis

Factors Motives	Factor 1 Exchange news, opinion, and photos	Factor 2 Sociability	Factor 3 Accessibility (new and easy way of communication)	Factor 4 Connecting to overseas friends and families
1. To exchange opinions with friends	0.681	-.044	0.193	0.328
2. To write comments on everyday events	0.707	0.239	0.109	--
3. To upload some videos and photos	0.641	0.292	0.102	0.160
4. To post some up-to-date news that might grab my friends' attention	0.804	0.123	0.217	--
5. To read what others have posted	0.534	0.130	0.501	--
6. To pass time	0.046	0.614	--	--
7. To connect with new friends	--	0.715	--	0.295
8. To find new friends	0.294	0.743	--	--
9. To have accompany	0.388	0.636	--	0.144
10. Because it is the best way to find latest news	0.222	0.085	0.789	0.065
11. Because it is the easiest way to connect with my friends	0.149	0.068	0.820	0.063
12. To connect with my friends overseas	0.166	0.147	0.094	0.809
13. To connect with my family living abroad	0.043	0.122	--	0.836

Table 4. Frequency of communicating with various nationalities via SNS

The Nationality	Frequency of Connecting to Various Nationalities %				Mean	Weighted Mean %
	Always	Sometimes	Rarely	Never		
Emiratis (Nationals)	81.7	15.2	2.2	0.9	2.78	92.6
Arabs (Non-Emiratis)	38.7	40.0	16.1	5.2	2.12	70.7%
Americans	10.0	16.5	22.2	51.3	0.85	28.4%
Europeans	10.0	12.6	22.2	55.2	0.77	25.8%
Asians	--	0.9	--	--	--	--

HYPOTHESES TEST

This research examines five hypotheses. The results are as follow:

H1: Intensity of SNS use is positively associated with individuals' perceived online bridging and bonding social capital.

Pearson correlation was used to test this hypothesis and the result is shown in Table 5.

Table 5. Correlation between intensive usages of SNSs and online social capital

Variables	Online Social Capital	
	Bridging	Bonding
Intensive Usages of SN Connection	.200(*)	0.100 (NS)

* $P \leq 0.001$ (2-tailed) N = 230 (NS) non-significant

The result showed a significant correlation between intensity of SNSs usage and bridging social capital $r = .200$. However, the correlation is not significant between intensive usages of SNSs and bonding social capital.

This indicates that social networking websites are effective in predicting online bridging social capital, in that the SNSs allow Emiratis to establish tentative relationships with new friends. In addition, the intensive usage of SNSs does not predict bonding social capital, which means that Emiratis tend to have weak ties via SNSs rather than strong personal connections.

H2: There is a correlation between online social networking size and the social capital types (bridging and bonding).

The result of Pearson correlation is shown in Table 6.

Pearson correlation revealed a significant weak correlation between online SNS size and bridging social capital $r = .155$, while there is no significant correlation between online social networking size and bonding social capital.

This means that the bigger the size of SNS, the more the bridging social capital and the lesser the online bonding will be perceived by the respondents.

Table 6. Correlation between online social networking size and the social capital type

Variables	Online Social Capital	
	Bridging	Bonding
Online social networking size	.155(*)	-0.018 (NS)

Note: * $P \leq 0.02$ NS: Non significant (2-tailed) N = 230

H3: There is a correlation between diversity of social categories (nationalities and relationships) and social capital type (bridging and bonding)

The results in Table 7 showed a positive significant correlation between diversity of “relationships” connection via SNSs and both of bonding and bridging social capital. However, the diversity of “nationalities” was not significantly correlated to bonding social capital while it was significantly correlated to bridging.

Table 7. Correlation between diversity of social categories and social capital types

Variables		Online Social Capital	
		Bridging	Bonding
Diversity of social categories in SNS	Relationships	.173(**)	.139(*)
	Nationalities	.141(*)	0.028 (NS)

Note: * $P \leq 0.03$ ** $P \leq 0.001$ (2-tailed) N = 230 (NS) non-significant

H4: There is a significant correlation between motivation of using SNSs and type of social capital.

Pearson correlation revealed that there are significant correlations ($p = .000$) between respondents' motivations of using SNSs and both types of social capital (Sociability $r = 0.242$), (Connecting overseas friends and families $r = 0.242$), (Exchange news, opinions, and photos $r = 0.345$) and (Accessibility “new and easy way of communication”, $r = 0.322$). The correlation between each factor of motivations and the types of social capitals were significant as shown in Table 8.

The results showed a significant correlation between all SNS motivation factors and both types of social capital: bonding and bridging. However, the correlation was stronger between motivation and bridging than bonding.

The correlation was stronger with bridging especially for both motivation factors: “exchange opinions and news” and “accessibility”. The “exchange news, opinions, and photos” motive strongly predicts both bridging and bonding.

This indicates that using SNSs more for “exchanging news”, “connecting families and friends”, “sociability”, or “accessibility” is associated with increased online bridging and bonding.

Table 8. Correlation between motivations and types of social capitals

Variables		Online Social Capital	
		Bridging	Bonding
SNSs Motivation factors	Exchange news, opinions, and photos	0.374(*)	0.210 (***)
	Accessibility (new and easy way of communication)	0.316(*)	0.174 (*)
	Connecting overseas friends and families	0.225(*)	0.141 (**)
	Sociability	0.241(*)	0.196 (**)

Note: * $P \leq 0.000$ ** $P \leq 0.003$ *** $P \leq 0.001$ (2-tailed) N = 230 NS) non-significant

H5: There is a significant difference between males and females in their:

1. Motivations of using social networking sites, and
2. Online social capital.

The T-test was used to examine this hypothesis. It showed no significant difference between males and females in their motivations of SNS usage. The results are shown in Table 9.

The T-test shows that there is no significant difference between males and females in bridging social capital in the social networking sites. The difference was significant in bonding social capital ($t = 3.840$, $p = 0.000$). The results show that online bonding social capital is higher among males than females.

In addition, the T-test was used to examine if there is any significant difference between males and females in their communication with various nationalities. The results revealed that there is no significant difference between males and females in their connections to Emiratis, Americans, and Europeans. However, there was a significant difference ($t = 2.87$, $df = 228$, $p = 0.004$) between them in their connection to Arabs (non-Emiratis). Males ($M = 2.29$) have more connection with Arabs (non-Emiratis) than females ($M = 1.97$).

Table 9. Differences between males and females in their social capital

Online Social Capital Type	Gender	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Bridging	Males	2.56	0.499	-0.973	228	0.331 (NS)
	Females	2.62	0.487			
Bonding	Males	2.13	0.558	3.840		0.000
	Females	1.83	0.601			

DISCUSSION AND CONCLUSION

This research investigated the association between intensive usage of the social networking sites and online social capital. Also, the correlation between size of social networking friends/followers and the type of online social capital was investigated. The effect of diversity of relationships and nationalities on the type of online social capital was examined. The type of and effect of SNS usage motivation were tested. In this section, a discussion of the research results is presented.

In this research, it was revealed that the WhatsApp is the most frequently used SNS among the respondents. Facebook was the fourth-used SNS. This result is different from some Arab and Western research findings.

According to the Arab World Online report (2013), Facebook is the most popular social network, followed by Google+, and then Twitter. Most respondents in that report stated they have never used the other social networks listed in the AWO survey. The report also indicated 54% of respondents used Facebook more than once a day, while 30% used Google+ at the same frequency. Only 14% of respondents used Twitter more than once a day (13).

Ellison, N. et al (2007) found that university students intensively use Facebook in their everyday lives. Ahmed, Azza (2010) indicated that Facebook is the most popular online social network (65.2%) among a sample of (325) respondents from Egypt and UAE (p: 82). Mourtada and Salem (2011) found that Facebook is the most popular social media technology in the Arab world, with Twitter rapidly gaining in popularity. Al-Jenaibi, B. (2011) found that the most popular social media technologies are, for the most part, the same as in the West: Facebook, video-sharing sites like YouTube, and micro-blogging sites like Twitter. Wiest, J. and Eltantawy, N. (2012) found that Facebook is overwhelmingly the favorite social networking sites among a sample (n = 179) of UAE university students. In her quantitative and qualitative study, Ahmed, Azza (2015) found the mobile application "WhatsApp" was the most common application used among a sample of 313 Arab residents of the United Arab Emirates. Facebook and Instagram followed it. In addition, the qualitative analysis showed that Facebook is the predominant SNS among the majority of the interviewees along with WhatsApp (p: 205).

It seems that the SNS usage habits have changed rapidly throughout the past few years. The smart-phone might have an impact on the frequency of using each type among many other factors, such as the culture factors and the features in each SNS.

The literature suggests that the type of relationships within the social network can predict different kinds of social capital.

The results showed that Emiratis tend to communicate with nationals and Arabs (non-Emiratis) more than people from other nationalities. This result supports the findings of Wellman et al (2010) that suggest the Internet is particularly useful for keeping contact among friends who are socially and geographically dispersed. Yet distance still matters: communication is lower with distant than nearby friends (p: 450). Also, Watkins & Lee (2009) concluded that SNS users tend to interact mostly with friends they already know well rather than be friend to complete strangers (p: 22).

Also, the research revealed that the more diverse the social categories of "relationships" and "nationalities", the more bridging social capital can be predicted. Bonding social capital is associated positively with "relationships", but negatively with "nationalities". This means that Emiratis are keen to use SNS to broaden their social networks rather than get/provide emotional support.

The results showed an association between intensity of SNS connection and bridging social capital, while no significant correlation was found between intensity of SNS connection and the bonding social capital. This result supports the Ellison, Steinfield, & Lampe (2007) findings, indicating that bridging social capital was the most valued use of Facebook. They suggested that networking through these sites may help to crystallize relationships that "might otherwise remain ephemeral" (p. 25). They explained that the intensity of Facebook usage can help students accumulate and maintain bridging social capital. This form of social capital; which is closely linked to the notion of "weak ties", seems well suited to social software applications, because it enables users to maintain such ties cheaply and easily.

Granovetter (1973) explained this process by saying that the social capital is to encourage users to strengthen latent ties and maintain connections with former friends, thus allowing people to stay connected as they move from one offline community to another.

Johnston, et al. (2013) results indicate that intensity of Facebook use plays a role in the creation of social capital, but it is particularly significant regarding the maintenance of social capital in the South African context. The Facebook intensity is positively correlated with all types of social capital.

However, Aubrey & Rill (2013) found that FB use was not associated with online bridging or online bonding; they suggested that Facebook might not be effective in facilitating bonding relationships, but it might help users to maintain already established weak ties between individuals (p: 491). Wellman, et al. (2010) concluded that the greater use of the Internet may lead to larger social networks with more weak ties and distasteful interactions with some of these ties, resulting in lower commitment to the online community (p: 494). Phua, and Jin, (2011) found that intensity of SNS usage was significantly positively associated with bonding and bridging social capital in the US college environment (p: 512). In addition, Ahn (2012) found that time spent on Facebook and MySpace was significantly related to bridging social capital, whereas there was no relationship to bonding social capital (p: 106).

In the current study, four factors were found to determine the respondents' motivations of SNS usage. These factors are: Exchange information, Sociability, Accessibility (which refers to easy way to access new information), and Connecting with overseas friends and families. This finding supports the results of Ellison (2007) who reported that Michigan undergraduate students overwhelmingly used Facebook to keep in touch with old friends and to maintain or intensify relationships characterized by some form of offline connection, such as dormitory proximity or a shared class.

In addition, the findings of the current research revealed that the four SNS motivation factors were associated with increase online bridging and bonding. This finding supports Aubrey & Rill (2013) results that found using Facebook for sociability reasons was associated with increased online bridging and bonding. Moreover, they provided evidence of the sociability motivation mediating the relationship between Facebook habits and online bonding and bridging. Ellison, et al. (2011) found that FB communication practices focused on using the site for social information-seeking purposes were positively associated with online social capital. In this context, Donath and Boyd (2004) suggested that Facebook allows users to maintain weak ties cheaply and easily. These findings suggest that intensive users of SNSs are likely to experience gains in online social capital. The results of Haythornthwaite (2000) suggest that online communicators who communicate with each other more frequently may be more likely to have closer relationships; therefore, more frequent communication with other Facebook users is necessary to build closer relationships as a first step towards bonding social capital.

LIMITATION AND SUGGESTIONS

Although the method used in this study does not allow for making a causal conclusion, it was clear that intensive usage of social networking sites is a significant predictor of online bridging social capital among Emiratis. However, the research findings are still not generalizable to the larger Emiratis population of SNS users in other Emirates.

Future studies should investigate how these variables interact among other populations of users. More research efforts should be directed to study how new generations are using the social networking websites and the mechanism used to build their social capital. More research should be conducted to investigate

the differences between social capital in online and social offline settings for the two types of social capital in the Arab region. In other words, does online social capital strengthen or weaken the offline social capital? This field of research should attract more Arab scholars to investigate the impact of social media on Arab societies and whether these impacts differ from their counterparts in the US and Europe.

A longitudinal research should be conducted to investigate the habits of SNS usage among Arab societies. The findings of such research might help in planning how social media will be used to affect the Arab youth's attitude and behaviors.

In conclusion, as social network sites grow, understanding the interaction between site features and individual differences in users will become even more important and will require more attention from the media scholars.

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Chapter 39

Supporting Participation in Online Social Networks

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ABSTRACT

Social networking systems can be considered one of the most important social phenomena because they succeeded in involving billions of people all around the world and in attracting users from several social groups, regardless of age, gender, education, or nationality. Social networking systems blur the distinction between the private and working spheres, and users are known to use such systems both at home and at the work place both professionally and with recreational goals. Social networking systems can be equally used to organize a work meeting, a dinner with the colleagues, or a birthday party with friends. In the vast majority of cases, social networking platforms are still used without corporate blessing. However, several traditional information systems, such as CRMs and ERPs, have also been modified in order to include social aspects. This chapter discusses the participation in online social networking activities and, in particular, the technologies that support and promote the participation in online social network.

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INTRODUCTION

Social networking systems represent one of the most important social phenomena involving billions of people all around the world, attracting users from several social groups, regardless of age, gender, education, or nationality. In fact, some social networking systems have become the largest information systems accessible to the general public and, because of their neutrality regarding the public-private and the work-home axes, they often assume the role of feral systems.

Social networking systems blur the distinction between the private and working spheres, and users are known to use such systems both at home and on the work place both professionally and with recreational goals. Social networking systems can be equally used to organize a work meeting, a dinner with the colleagues or a birthday party with friends. For example, the chat systems that are embedded in social networking platforms are often the most practical way to contact a colleague to ask an urgent question, especially in technologically oriented companies.

Moreover, several traditional information systems have been modified in order to include social aspects and several organizations: (i) allow external social networking platforms to be used (e.g., Facebook was available for Microsoft and Apple employees before the general public launch), (ii) have created an internal social networking platform (DiMicco & Millen, 2007), or (iii) allow other social platforms for specific purposes (Millen et al., 2006). However, in the vast majority of cases, social networking platforms are used without corporate blessing, maintaining their status as feral systems.

According to DiMicco (2008), most users that use social networking platforms for work purposes are mostly interested in accumulating social capital, either for career advancement or to gather support for their own projects inside the company. Given the close relation between professional usage of social media and social capital.

This chapter has the goal of discussing about the participation in online social network, about the technologies that support and promote their use by individual and organization. The next section introduces online social networks; the third section discussed about the participation in this kind of networks; the fourth section introduces the technologies that support the activities in online social network; the fifth section discusses about the use of online social network and related social media in firms and organizations; and, finally, the last section concludes the summarizing its main contributions and presenting the directions for future work.

BACKGROUND

The result of the interactions among the users in a social networking system is an online social network, i.e., a special case of the more general concept of social network. A social network is defined as a set or sets of actors and the relations defined on them (Wasserman & Faust, 1994). Social networks are typically studied using social network analysis, a discipline that focuses on the structural and topological features of the network. More recently, additional dimensions have been added to the traditional social network analytic approach (Monge and Contractor 2003; Borgatti and Foster 2003; Parkhe et al. 2006; Hoang and Antoncic 2003).

The study of structure of Online Social Networks, expressed as patterns of links among nodes, can exploit models and ideas from classical sociology and anthropology, with particular attention to contextual and relational approaches. In fact, all the results obtained in decades of studies of human networks

are also at the basis of the analysis of online social networks. However, these results cannot be simply applied to the different context of online relations. Instead they have to be evaluated and adapted to the new networks, which may have significantly different structure and dynamics.

Moreover, online social networking platforms may greatly vary both technically and in their aims. They may be used by people for organizing quite diverse activities, in different types of virtual communities. In particular, virtual organizations, virtual teams, and online networks of practice are the most discussed. Although there are several differences that clearly set the concepts apart, the *trait d'union* of these virtual communities are: i) the lack of central authority, ii) their temporary and impromptu nature, and iii) the importance of reputation and trust as opposed to bureaucracy and law.

Virtual Organization

According to the definition given by Mowshowitz (1994), a virtual organization is “a temporary network of autonomous organizations that cooperate based on complementary competencies and connect their information systems to those of their partners via networks aiming at developing, making, and distributing products in cooperation.” The term was then popularized by the Grid Computing community, referring to Virtual Organizations as “*flexible, secure, coordinated resource sharing among dynamic collections of individuals, institutions, and resources*” (Foster et al., 2001). The premise of Virtual Organizations is the technical availability of tools for effective collaboration among people located in different places, but their definition also emphasizes the possibility to share a large number of resources, including documents, data, knowledge and tools among interested people. Their importance is sustained by continuing trends in production and social forms, including the growing number of knowledge workers, the emergence of integrated industrial district and other aspects developing at an international level, like dynamic supply chains, just-in-time production, sub-contracting, delocalization, externalization, global logistics and mass migrations which collectively are usually named “*globalization*”.

Virtual Team

A virtual team is usually defined as a group of geographically, organizationally and/or time dispersed members connected by information and telecommunication technologies (e.g., email, video and voice conferencing services) that work together asynchronously or across organizational levels (Powell et al., 2004; Lipnack & Stamps, 2008; Ale Ebrahim et. al. (2009). Virtual teams can represent organizational structures within the context of some virtual organization, but they can also come into existence in other situations, where independent people collaborate on a project (e.g., an open source project); in these cases, they do not have hierarchy or any other common structure because member may be from different organizations.

Due to the streamlined development of information technologies, today many companies prefer to take advantage of virtual teams for the development of the work of a relevant part of their projects and more and more people work in virtual teams for at least part of the time. In fact, virtual teams allow companies to procure the best competences necessary for their projects without geographical restrictions and usually well-managed virtual teams are more productive than co-located teams (Vlaar et al., 2008). However, the success of the work of virtual team requires new skills, new ways of working and the presence of effective leaders.

Online Network of Practice

An online network of practice represents an informal and emergent virtual community that is represented by individuals connected through social relationships and that supports the exchange of information between its members in order to perform their work and sharing knowledge with each other (Brown & Duguid, 2017). The term practice represents the glue that connects individuals in the network. Usually the glue is the type of work (e.g., journalist, software developer, teacher), but often is the sharing of similar interests (e.g., common hobbies, discussing sports and/or politics). In an online network of practice, individuals may never get to know one another or meet face-to-face. Moreover, their interactions are generally coordinate through means such as blogs, microblogs, mailing lists and bulletin boards (Teigland, (2004).

Networks of practice differ from networks in several significant ways. In fact, individuals not only for their own needs, but to serve the needs of others. One of the most interesting distinctions is that in a network of practice, there is an intentional commitment to advance the field of practice, and to share those discoveries with a wider audience; in fact, its members make their resources and knowledge available to anyone, especially those doing related work (Wheatley & Frieze, 2006).

PARTICIPATION IN ONLINE SOCIAL NETWORKS

In order to understand the reasons that motivate the users in engaging in online social activities in general, and, more specifically, in sharing their valued knowledge in online communities, it is necessary to analyze the nature and the structure of their relationships in the context of a specific community, and to evaluate the possible implications for the involved users.

Social Capital

In particular, an important theoretical foundation for the analysis of participation in social networks is constituted by social capital (Maskell, 2000; Lin, 2017). Social capital represents a person's benefit due to his relations with other persons, including family, colleagues, friends and generic contacts. The concept originated in studies about communities, to underline the importance of collective actions and the associated enduring relations of trust and cooperation, for the functioning of neighborhoods in large cities (Jacobs, 1961).

Erickson (2000) argues that network variety as much as the people that someone knows, is a form of social capital valuable to both employers and employees in the hiring process. In fact, network variety is social "capital" in the same sense that education and work experience are human "capital" because all these forms of capital yield returns in the form of greater employee productivity.

Social capital has been studied as a factor providing additional opportunities to some players in a competitive scenario, and, from this point of view, it has been studied in the context of firms (Backer, 1990), nations (Fukuyama, 1995) and geographic regions (Putnam, 1995). In this sense, social capital is defined as a third kind of capital that is brought in the competitive arena, along with financial capital, which includes machinery and raw materials, and human capital, which includes knowledge and skills. Moreover, the role of social capital in the development of human capital has been studied by Loury and Coleman (Loury, 1987; Coleman, 1988).

Social capital is typically studied: (i) by drawing a graph of connected people and their own resources, creating a connection between each player's resources and those of his closest contacts; or (ii) by analyzing social structures in their own right, and supposing that the network structure alone can be used to estimate some player's competitive advantage, at the social stance.

The size of the ego-centered social network is an important factor to estimate the social capital of one individual; however, the size alone does not provide enough information. According to Burt (1992) social capital is related with the number of non-redundant contacts and not directly with the simple number of contacts. In fact, although information spreads rapidly among homogeneous, richly interconnected groups, Granovetter (1973) argues that new ideas and opportunities are introduced in the groups by contacts with people from outside the group. In order to explain this phenomenon, Granovetter distinguished among three types of ties: (i) strong ties, (ii) weak ties, and (iii) absent ties.

A quantitative distinction between strong and weak ties has been subject of debate, but intuitively weak ties are simple acquaintances, while strong ties are reserved for close friends and family. The "*absent ties*" indicate missing relations in the network. Burt capitalizes on Granovetter's insight, and emphasizes the importance of absent ties, that create the "*structural holes*" in the network texture. According to Burt, structural holes allow the individuals that create a weak link among two otherwise separated communities to greatly increase their social capital.

Nahapiet & Goshal (1998) discuss the role of social capital in building intellectual capital inside organizations. The authors distinguish the structural, relational, and cognitive aspects of social networks. The structural properties describe the patterns of connection among actors and regard the social system as a whole. The relational properties describe the type of ties people have developed during their interactions, including relationships like friendship, trust, and respect. The cognitive properties refer to basic knowledge, representations, languages and other systems of meaning, shared among actors. Moreover, they focus on the development of intellectual capital, which is essentially an aspect of human capital, but may also be owned by a social collectivity. In fact, they classify knowledge as (i) either implicit or explicit, and (ii) either individual or social. In the case of social knowledge, they argue that social capital facilitates the creation of intellectual capital primarily by creating conditions for exchange and combination of knowledge.

Evolution of Network Connections

Monge and Contractor (2003) proposed a multi-theoretical and multilevel model for analyzing the evolution of network connections in online social networks. Their analysis considers the following theories: self-interest, mutual interest and collective action, homophily and proximity, exchange and dependency, co-evolution, contagion, balance and transitivity, and cognition.

According to the theories of self-interest, people create ties with other people and participate in team activities in order to maximize the satisfaction of their own goals. The most known theories of self-interest are based on the notion of social capital (Burt, 1992). Another foundation of these theories lies on transaction cost economics (Williamson, 1991).

The mutual interest and collective action theories study the coordinated action of individuals in a team. They explain collective actions as a mean for reaching outcomes which would be unattainable by individual action (Fulk et al., 2004). Thus, individuals collaborate in a community because they share mutual interests.

The principle at the basis of homophily and proximity theories is that connections are mostly structured according to similarity (McPherson et al., 2001). Moreover, connections between dissimilar individuals break at a higher rate.

Another founding motivation for the emergence of groups can be the exchange and dependency theories (Cook, 1982). These theories explain the creation of communities by analyzing the network structure together with the distribution and flow of resources in the network. Example of exchange networks vary from data analysts to bands of musicians.

The underlying principle of co-evolution theories is that evolution based on environmental selection can be applied to whole organizations, and not only to individuals. Thus, they study how organizations compete and cooperate to access limited resources, and how communities of individuals create ties both internally and towards other communities (Campbell, 1985; Baum, 1999).

For explaining the spread of innovations, contagion theories study how people are brought in contact through the social structure (Burt, 1987). Social contagion is described as a sort of interpersonal synapse through which ideas are spread. Conversely, some sort of social inoculations may prevent ideas from spreading to parts of the network.

Since macroscopic patterns originate from local structures of social networks, balance and transitivity theories cope with the study of the distribution of triads in digraphs and socio-matrixes (Holland & Leinhardt, 1975). In particular, the first applications of these studies identified the most typical distributions of triads configurations in real social networks and from such distributions showed that individuals' choices have a consistent tendency to be transitive.

Finally, cognitive theories explore the role that meaning, knowledge, and perceptions play in the development of teams and the impact of increasing specialization over collaboration. In this sense, the decision to form a collective depends on what possible members know (Hollingshead et al. 2002). These studies are grounded on the concept of transactive memory.

Social Capital and Knowledge Contribution

Chow & Chan (2008) present a study that was one of the first to provide empirical evidence about the influence of a social network, social trust, and shared goals on employees' intention to share knowledge. This study offers insights to practitioners on the value of social capital and reasons why people are or are not willing to engage in knowledge sharing within an organization. Moreover, it found that social network and shared goals directly influenced the attitude and subjective norm about knowledge sharing and indirectly influenced the intention to share knowledge. Finally, this study argues that social trust does not play a direct role in sharing knowledge and that organizational members do not differentiate between tacit and explicit knowledge when they share it.

Wasko & Faraj (2005) present a study that tries to better understand knowledge flows by examining why people voluntarily contribute knowledge and help others through electronic networks. This study starts from the theoretical model proposed by Nahapiet and Ghoshal (1998) and reports on the activities of an online network supporting a professional legal association. Using archival, network, survey, and content analysis data, it empirically tests a model of knowledge contribution. One of the result is that people usually contribute their knowledge when they perceive that it enhances their professional reputations, when they have the experience to share, and when they are structurally embedded in the network. Surprisingly, contributions occur without regard to expectations of reciprocity from others. Moreover, this study attempts to address the question of why people nevertheless contribute knowledge to others

in online networks of practice. The study takes the following features into account, as possible enablers of participation: individual motivations, relational capital, cognitive capital and structural capital.

One key aspect of social contribution is given by individual motivations. In fact, an individual's expectation that some new value will be created, as result of his participation in the network. The individual should expect to receive some benefits from his contribution, even in the absence of direct acquaintance with other members of the community and without mechanisms enforcing or encouraging reciprocity. Increasing the reputation is one of the most important forms of return of investment, especially if the online reputation is believed to have a positive impact on the professional reputation.

Another enabling factor for contributions to an online community is represented by the personal relationships among individuals, as members of that community. Relational capital is directly related to the level of an individual's identification with the community, trust with other members, perception of obligation to participate and reciprocate, acceptance of common norms. In particular, commitment can be associated with a community, apart from individuals.

Any meaningful interaction between two members of a community requires some basic shared understanding. All those common semantic resources, including languages, interpretations, narratives, contexts and norms, are usually described as cognitive capital. In fact, an individual can participate in community activities only if he possesses the required knowledge and, more in general, the required cognitive capital.

Communities characterized by dense internal connections are dialectically correlated with collective actions (Structural capital). In fact, individuals who are strongly embedded in a social network, have many direct ties with other members and a habit of cooperation. On the other hand, an individual's position in the network influences his willingness to contribute, thus increasing both the number and quality of interactions.

Those factors have different weight in different social contexts. In the case study analyzed by Wasko & Faraj (2005), reputation plays a crucial role, since it also affects professional reputation. Other factors, though, also have significant correlation with the number and usefulness of contributions in the online community. The final results compare both the level and helpfulness of contributions against the following factors: (i) reputation, (ii) willingness to help, (iii) centrality in the network structure, (iv) self-rated expertise, (v) tenure in field, (vi) commitment, (vii) reciprocity.

With regard to individual motivations, results for the case at hand show a stronger influence of reputation over intrinsic motivations, like willingness to help. Social capital, assessed by determining each individual's degree of centrality to the network, is confirmed to play the most significant role in knowledge exchange. Also cognitive capital, assessed by self-rated expertise and tenure in the field, shows a strong influence over participation, but this is mostly limited to the individual's experience in the field, while self-rated expertise is not quite significant. Finally, in the analyzed network of practice, relational capital, assessed by commitment and reciprocity, is not strongly correlated with knowledge contribution, suggesting that these kinds of ties are more difficult to develop in an online network.

TECHNOLOGIES FOR SOCIAL ONLINE SOCIAL NETWORKS

One of the goals motivating the participation in online communities is the benefit of team work over solo work. Various studies (Van de Ven et al., 1976; Malone & Crowstone, 1994) describe the advantages and costs of coordinating team activities. In fact, while an increase in coordination can lead to greater

effectiveness, typically it also produces a faster growth of coordination costs. As a consequence, a lot of effort is being devoted in creating tools and technologies that make group work more effective by containing the costs of their coordination (Bergenti et al. 2011; Franchi & Poggi, 2011; Franchi et al., 2016a). Virtual Teams assembly is another problem that online social platforms can help to solve. In fact, the success of a team depends largely on its assembly process, for identifying the best possible members.

Social collaboration platforms should also help to model and manage multidimensional networks. In fact, apart from direct relationships among people, such platforms should also include other resources. For example, in the area of academic research, a network model could include both people and the events they attend (Wasserman & Faust, 1994), thus creating a bimodal network. Su and Contractor (2011) propose a more complex multi-dimensional network model, including people, documents, data sets, tools, keywords/concepts, etc.

Additionally, in some online communities, participation may also strongly depend on adopted mechanisms and policies for preserving privacy, including confidentiality of messages and identity (Mordonini et al., 2017). For personal identity privacy, stable pseudonyms could be assigned at registration (Andrews, 2002). Moreover, in online communities and Virtual Teams, acquaintance may happen online, without previous connection in real life. In those cases, a member's reputation is directly related to his pseudonym, and ratability of his online activities may be more important than his real world identity for creating trust. Complete anonymity may also have a value in some activities of Virtual Teams, apart from encouraging participation in general. For example, an anonymous brainstorm activity may help opening a conversation about trust and ground rules for online meetings (Young, 2009).

For reaching wider and more effective adoption in open and dynamic online communities, including virtual organizations, virtual teams and online networks of practice, we argue that social networking platforms should embrace an open approach (Franchi et al. 2013). In fact, many isolated sites could not satisfy the need for an inter-organizational collaborative environment. On the other hand, organizations are not keen to rely on a single centralized site, which may pose risks to privacy and may control published data. Moreover, openness is important for participation, too. In fact, a closed environment can hardly reach the minimal dimension and variety required for activating the typical dynamics at the basis of the different theories taken into consideration by the multi-theoretical and multilevel model (Su & Contractor, 2011), for explaining participation in online social networks.

Requirements

In online social networks there are at least three distinct functional elements: *(i)* profile management, *(ii)* social graph management and *(iii)* content production and discussion. In fact, by definition, a social network cannot lack social graph management and self-presentation, no matter how minimal. On the other hand, virtually no modern online social network lacks the content generation features. According to these three main functional areas, it is also possible to draw a classification of the online social networks in three main categories: *(i)* systems where the profile and social graph management is prevalent; *(ii)* systems where the content has a prominent role with respect to social networking activities and there are frequent interactions with people not closely related; and *(iii)* systems where the two aspects have roughly the same importance.

The archetypal examples of the first category of systems are business-related and professional online social networks, like LinkedIn. People pay a great deal of attention in creating their profile. In this type of systems there are usually various relationships among users, representing the variety of relationships

that members may have in real life. Most users do not visit the site daily and do not add content to the system often (Skeels & Grudin, 2008).

The second type include blogging, micro-blogging and media sharing web sites, like Twitter. The “follow” relationships, which are typical for a system of this kind, are usually not symmetric. The focus is in information transmission; often the system does not support a proper profile and sometimes even the contacts may be hidden. Often weak semantic techniques such as Twitter hash-tags are used, in order to read content by subject instead than by author. Through collaborative tagging, the actors of the system may develop a sort of emergent semantics (Mika, 2007), possibly in the form of so-called “folksonomies”. Considering that tags usage is a heavy tailed power-law like distribution, i.e., most people actually uses very few tags, collaborative tagging usually produce a good classification of data (Halpin et al., 2007).

The third category includes the personal online social networks, like Facebook. In this type of systems, users have a profile, partly public and partly confidential. Frequently, there is only one kind of relation, “friendship”, which is symmetric and requires approval by both users. These sites have extremely frequent updates: a noticeable percentage of users perform activities on the system at least on a daily basis.

Interoperability

Among the open protocols and data formats for conveying profiles and contacts, Portable Contacts (<http://portablecontacts.net/>) shows some benefits, especially from the point of view of interoperability. In fact, it is quite simple and well supported by existing large social networks and mail systems, to manage lists of “friends” and address books, respectively. It also allows to associate tags and relationship types with each user, thus paving the way for semantically annotated social networks. In order to let users to express their profile, Friend of a Friend (FOAF) is another sensible choice (Brickley & Miller, 2005). In fact, it provides a descriptive vocabulary that allows the definition of profiles that can be searched and filtered through semantic engines.

Content publication and distribution is another important requirement of online social networks. Atom and RSS emerged as two similar technologies, intended to help readers to receive automatic updates of their favorite websites, and possibly from online acquaintances. RSS and Atom protocols use a pull strategy, i.e., the observer periodically checks the observed resource for updates.

As an alternative, online social networks could adopt a push strategy, i.e., the update is automatically announced to the subscribers. The OStatus protocol (<http://status.org/>) is a minimal HTTP-based specification for realizing a publish-subscribe mechanism designed around a hub that allows an efficient notification of news to the subscribers.

An on-going and well-supported effort to standardize typical users’ activities in social networks is Activity Streams (<http://activitystrea.ms/>). It is an open format specification for the syndication of activities taken in social web applications and services. The activities of a user are represented as a flow and followers can get it through a subscription.

Finally, OpenSocial (<http://opensocial.org/>) is a set of common APIs, defined in the form of RESTful Web services, that allow developers to access core functions and information at social networks: (i) information about a user’s profile, (ii) information about the social graph connecting users, and (iii) activities occurring in the network, including status updates, publishing of new content and media, commenting and tagging. Moreover, OpenSocial also allows the development of social applications by composing gadgets for collecting and organizing data from different services in a single user interface.

For verifying authorization across different applications, OAuth is often used. An OAuth security token can be used to grant access to a specific site (e.g., a video editing site) for specific resources (e.g., just videos from a specific album) and for a defined duration (e.g., the next 2 hours). This approach allows different social-aware systems to cooperate, and to reduce the necessity for users to maintain and use too many different passwords (Tomaiuolo, 2013; Franchi et al., 2015).

ORGANIZATIONS AND ONLINE SOCIAL NETWORKS

The initial adoption of online collaboration tools and social networking platforms in the work environment has occurred largely on an individual basis. Faced with an increasingly decentralized, expanded and interconnected environment, workers and members of organizations began adopting social networking platforms as better tools for connecting and collaborating with colleagues and partners (Einwiller & Steilen, 2015; Ellison et al., 2015). Thus, social media made their first appearance in firms and organizations mostly without indications from the management and without integration with internal information systems. In this sense, they took the form of feral systems. In fact, (i) they were not “part of the corporation’s accepted information technology infrastructure”, and (ii) they were “designed to augment” that infrastructure, along with the definition of Feral Information Systems provided by Houghton & Kerr (2006).

Challenges

In a study published by AT&T (2008), ten main challenges are listed for the adoption of social media by businesses. In fact, these challenges can be grouped in three main areas: (i) organizational costs, (ii) risks of capital loss, and (iii) technical challenges.

About organizational costs, the first issue is that social networking have indirect benefits, which often are not fully appreciated. It is probably the main area of resistance, due to the perceived costs of networking time, not seen as cost efficient activity, and the necessity to allow employees to manage their working time with more freedom. However, traditional ROI methods make it difficult to incorporate all the benefits of social media, both direct and indirect. Thus new performance indicators will be needed. Another issue is the definition of an effective plan to reach the critical mass for the social network to be functional. In fact, common figures of users creating content and collaborating through social media are pretty low, typically from 1% to 20%. Resistance to adoption can come from both regular employee and cadres, possibly including managers and executives. Such a plan would also face the problem of timeliness. In fact, developments in the Web 2.0 environment occur very fast: successful applications may reach millions of users in a couple of years, sometimes creating a new market.

Other challenges are related to the risk of loss of capital, faced by organizations in the adoption of social media. The capital at risk can include intellectual property, as well as human and social capital. In fact, organization members may easily and inadvertently leak sensible and protected content on social media, and such content may face rapid diffusion by “word of mouth” mechanisms. An even greater risk, however, may come from the increased mobility of organization members and employees. This risk is increased by the exposure of members’ profiles to the outside world, including other organizations and competitors.

Finally, the adoption of online social networks implies technical costs for creating and maintaining a more complex and open infrastructure. Some important challenges regard security, which is harder to enforce as intranets need to open to the external world, for enabling social collaboration. The risks include the malicious behavior of users, as well as the proliferation of viruses and malware. Also on the technical front, social media applications require increased levels of bandwidth, storage and computational capacity, to support interactions through videos and other form of rich content. Moreover, the increased and differentiated use of social media will pose challenges for the interoperability of different applications, especially with regard to security and authentication schemes.

While the study of AT&T is formulated in reference to the business context, it is interesting to notice that similar considerations are also referred to government agencies and other types of organizations. For example, Bev et al. (2008) describe the case of government agencies. Among other issues, the study underlines the problems of (i) employees wasting time on social networks, (ii) risk of malware and spyware coming from high traffic sites, and (iii) bandwidth requirements. About the first issue, that we described as one aspect of the organizational costs, the authors of the document argue that the problem is not specific to Web 2.0 technologies. In fact, a similar argument was used with respect to mobile phones, emails, etc. For this reason, it is better treated as a management problem instead of a technology problem. About security, efforts should be dedicated to at least mitigate the risks, if they cannot be canceled. Finally, with regard to bandwidth and other technological issues, enough resources should be deployed, to allow at least some selected employees to use rich-content media to communicate with the public, in the most effective way.

Augmenting Information Systems

Although often social networking technologies are not condoned as part of the official information system, yet people use them routinely, at least on an individual basis. In fact, many work activities, in many different sectors, benefit from social media. The use of social media can help workers in their activities (Isari et al., 2011). Social media are a suitable means for coordination among people. Usually it happens across firm boundaries, but they can help in the coordination of activities within a same firm with a big help when employees work in different sites. In this last case, they can provide a complete environment to enable employees to self-organize online, report their status, and stay aware of the status of the other employees of course, considering all the information necessary for coordinating or helping their work. Moreover, the access to social media and, in particular, to community discussing about the technologies and the business of the company can help in the distribution of knowledge within the company and minimizing misunderstandings between colleagues who do not meet face-to-face frequently. Of course, the use of corporate microblogs, either feral or officially supported, can help in the previous cited tasks, but also it allows employees to spread knowledge, ideas, and suggestions about the ways of improving their work.

It is quite easy to find many concrete cases of use of social media for work activities, adopted at first on an individual basis. Just as examples, we will briefly cite the two quite different cases of (i) journalism, and (ii) software development.

In the field of journalism, social media have already acquired an important role, especially for reporting on breaking news. In those cases, when journalists lack direct sources, social media can guarantee an alternative flow of information, produced by eyewitnesses and other non-professional reporters, who happen to be on the scene at the right moment. However, this new flow of information poses new chal-

lenges, as professionals have to discern interesting and trustworthy sources and pieces of content in a magma of information overflow. Professional journalists, in particular, should be wary of rumors and misinformation which are easy to spread on social networks. They should avoid to augment their epidemic potential, to provide credible reports to the public and protect their own professional reputation. For this reason, some research works are targeting specifically the problem of filtering and assessing the veracity of sources found through social networks (Diakopoulos et al., 2012).

Another, very different, example is software development, where Virtual Teams are quite a common practice. In fact, individual developers increasingly use social networks to self-organize both with colleagues in the same organization, and across organizational boundaries. Also, some large communities have emerged as a grassroots process, empowered by new social media and motivated by common interests and emerging attractive targets. In particular, Begel (2010) apply a specific model of teaming to the process of software development. The teaming problems are central in the process, and thus it is highly dependent on developers' abilities to connect and relate with colleagues with similar interests and sufficient skills. The role of social media can then be analyzed in the various aspects of teaming: (i) forming, i.e., to select and organize developers into a team; (ii) storming, i.e., to reach consensus about the team's goals; (iii) norming, i.e., to define guidelines and development methodologies; (iv) performing, i.e., to actually develop the new product, through coordinated activities; (v) adjourning, i.e., to evaluate accomplishments and failures and improve the team's functioning.

More in general, social media are appreciated by individuals and organizations as they improve collective thinking and thus foster innovation. In fact, creativity and innovation have long been the subjects of organizational studies and social network analysis. Though not all creative ideas lead to innovation, yet it is from creativity that innovation may arise, if followed by successful implementation. Fedorowicz et al. (2008) note that creative ideas rarely come from individuals. More often, they come from teams and groups. Today, this frequently happens in Virtual Teams, through social media and e-Collaboration. Studies focus on various important aspects, such as: (i) the impact collaborative tools; (ii) the impact of e-Collaboration processes; and (iii) the design requirements for tools supporting creativity and innovation. Dwyer (2011) argues that, apart from the number of collaborators, it is also important to measure the quality of collaboration. In fact, various collaborator segments can be identified, with significant differences in the value of contributed ideas and the timing of participation. Thus, new metrics should be used, taking those differences into account and being based on information content. Hayne & Smith (2005) note that groupware performance depends on the fit between the structure and task of the group. However, they argue that an important role may also be played by the cognitive structure, which also maps to the group structure. In fact, collaborative tasks may push human cognitive capabilities to their limits, in terms of perception, attention and memory. Thus, the authors argue for the integration of different areas of study, such as: psychology, especially with regard to abilities and limitations; theories of social interactions, with regard to group communication and motivation; studies of groupware structures and human interactions mediated by artifacts.

To leverage the advantages of social networking, organizations and firms should support their transition from the individual adoption as feral systems to the formal incorporation into existing information systems. To achieve this goal, knowledge management professionals should act as social networking architects, in conjunction with other managers and IT professionals. In fact, social network analysis can highlight the patterns of connection among individuals and the main knowledge flows in a whole organization. Thus, it can be used by managers as a basis for reshaping the organization and advanc-

ing towards the business goals. Anklam (2004) describes three main types of intervention, to conduct after a social network analysis: (i) structural/organizational, i.e. change the organigrams to improve the knowledge transfer; (ii) knowledge-network development, i.e. overcome resistance to action on the basis of evidence, instead of intuition; (iii) individual/leadership, i.e. resolve problems with the particular role of individuals, for example acting as factual gatekeepers and resulting in a knowledge bottleneck. More in general, social network analysis can be useful to cope with common business problems, including: launching distributed teams, retention of people with vital knowledge for the organization, improve access to knowledge and increase innovation.

Along the same lines, Roy (2012) discusses the profile of leaders in Virtual Teams. In fact, apart from usual technical and leadership capacities, to work effectively in a virtual environment, they also need abilities to build relationships among participants and to defuse frustrations. In fact, on the one hand, they need particular communication skills, as well as good knowledge for operating video conferencing software and other CSCW tools. On the other hand, they must be able to establish trust, embrace diversity, motivating team members and fostering the team spirit.

Adaptation

The trend toward introducing social media systems in the work environment has seen a massive increase in importance in recent years. At their first appearance, without indications from the management and without integration with internal information systems, social media took the form of feral systems. However, organizations and firms are finally becoming to accept this situation as a matter of fact, trying to gain benefits from the same features that drove the introduction of social platforms in the first place. Thus, information systems are moving from the communication level, to the coordination and collaboration levels, increasingly acknowledging and leveraging the various dimensions of social relations among people, both internally and across organization boundaries.

A first strategy, that some organizations and brands are adopting, is to use social media for improving their Customer Relationship Management (CRM). In fact, social media can be a means for firms and organizations to listen to customers and to cope with the difficulties in collecting data through interviews (Murphy et al., 2011). Social media allow the use of online sources of information, sometimes for free. So firms and organizations are moving to reduce costs and time needed by traditional survey researches. Moreover, in the last years several social media monitoring tools and platforms have been developed to listen to the social media users, analyze and measure their content in relation to a brand or enterprise business and so it is reducing the time necessary for extracting the useful information through the huge data provided by social media (Stavrakantonakis et al., 2012). However, this quite popular trend towards so-called “*Social CRM*” has not always been satisfactory. A study by IBM (2011) shows that there’s a quite large gap between the expectations of brand managers and social media users. In fact, only the 23% of users are keen to engage with brands on social media, and only 5% of users declare active participation. The majority, instead, limit their communications and shares with parents and relatives. Among the potentially interested people, many expect tangible benefits, including discounts, services, additional information and reviews about products. The study is in accordance with the difficulties that brands face to engage with users and to launch viral campaigns. Nevertheless, businesses continue to be greatly interested in using social media for rapid distribution of offers and content, reaching new people through trusted introducers, but also for improving customer care and research.

A second type of effort is directed to augment internal tools, in particular Knowledge Management (KM) systems, with explicit and rich data about relationships among involved people. The long term goal of KM, in fact, is to let insights and experiences existing in implicit way into an organization emerge and become easily accessible for wider internal adoption. Such knowledge can be either possessed by individuals or embedded into common practices. To provide effective access to valuable internal knowledge and expertise, it is essential to recognize and value the particular knowledge possessed by different persons, and then to have means to contact the relevant persons in a timely manner, thus making information-seeking an easier and more successful experience. In many regards, such a scenario can be fully developed only on the basis of the evolution of existing ICT tools and the creation of new ones, by making some typical features of social networking applications available in tools for daily activities.

This trend regards existing Information Systems and also, for some aspects, platforms for Enterprise Resource Planning (ERP). In fact, some aspects of traditional ERP systems are integrating features of social networking platforms, fostering collaboration among people on the basis of direct interpersonal links and simple knowledge sharing tools. The centralized and inward approach of early systems is being challenged also in the core area of production management software. The drift towards network of integrated enterprises is testified by an increasingly dynamic production environment, arranged in the form of complex Virtual Organizations and Virtual Enterprises. In this context, the tasks of supply chain management, project and activity management, data services and access control management require the participation of actors of different organizations and possibly different places and cultures.

Finally, a third type of effort is directed to offer a large-scale knowledge sharing inside an organization through an enterprise social network (Ellison, 2015). This kind of site includes the fundamental features of online social network, but is implemented within an organization and have the ability to restrict membership or interaction to members of a specific enterprise.

FUTURE RESEARCH DIRECTIONS

The importance of online social network and the importance of the data that can be extracted from them determined a strong need of research on new techniques and models for their analysis. Our idea is agent-based techniques can easily deal with the modelling and the analysis of online social networks that represent a massive number of individuals and organizations with different behaviors and behaviors changing over time. In fact, agents are suitable to model and simulate both the low level and complex interactions among the parties. Moreover, agent-based applications can be easily executed in a distributed computing environment that can scale with the size of the online social network. We are working for some year on the use of agents for modelling and analyzing online social networks (Bergenti et al, 2013). In particular, we developed a software framework, that will be the basis for an easy and fast development of distributed applications working on online software networks (Bergenti et al., 2014), and started a first experimentation oriented to the analysis on their data (Fornacciari et al., 2017). Of course, we still working on it with the goal of providing interesting results by extending the experimentation to the modelling of online social network and involving in the experimentation two of the most known and used online social network (i.e., Facebook and Twitter).

CONCLUSION

This chapter discussed about social networking systems and how they assumed a fundamental role in both the private and working spheres. In fact, individuals use them both at home and on the work place both professionally and with recreational goals. Moreover, the chapter discussed about the importance of social capital in online social networks and showed how it or at least the idea of being able to accumulate it, either directly or indirectly, is an important factor in the participation in online social networking activities. Finally, the chapter discussed how social elements have been introduced into more traditional business systems.

The most known and used social networking platforms utilize a traditional client-server architecture. This means that all the information is stored and administered on central servers. Although this approach supports highly mobile user access since users can log-in from any web browser, it also presents many drawbacks, e.g., lack of privacy, lack of anonymity, risks of censorship and operating costs. The integration between peer-to-peer technologies and multi-agent systems may be used for developing social networks that do not present the previous drawbacks. Moreover, the use of multi-agent systems is the right solution to offer strong coordination techniques to the users of social networks and provide them more sophisticated and usable services. In the last years, we worked to study and to develop prototypes to support an evolution in this new direction, we achieved some interesting results (Franchi et al., 2016b; Bergenti, et al., 2018), but we are still working to improve such first results and to experiment some new prototypes in a real setting.

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KEY TERMS AND DEFINITIONS

Online Network of Practice: A group of people who share a profession or an interest, whose main interactions occur through communication networks and tools.

Privacy: The right to be secluded from the presence or view of others.

Social Capital: Is a form of economic and cultural capital derived from interpersonal relationships, institutions, and other social assets of a society or group of individuals.

Social Network: Social structure made by individuals and organizations that are connected by relationships; relationships that may represent various kinds of ties between member and that can be either symmetrical or asymmetrical.

Social Networking System: A software system that allows users to manipulate a representation of their online social networks and to interact with the other users in the system, especially collaboratively discussing user-produced resources.

Supporting Participation in Online Social Networks

Virtual Organization: A network of autonomous organizations and individuals, typically with the main aim of sharing resources in a coordinated fashion.

Virtual Team: A group of workers connected mainly through information and communication technologies that is often temporary and exists only until the achievement of a specific goal.

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Chapter 40

Frugal Living for Our Collective and Mutual #Bestlife on a Distributed and Global Electronic Hive Mind

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ABSTRACT

What is not as commonly identified as an optimal life #bestlife is living #frugal, and yet, there is a global electronic hive mind about how to live sparingly based on highly variant local realities. There are blogs about living on a shoestring, stretching funds, cooking in, engaging in a DIY economy (bartering with like-minded others), living off the grid, taking low-cost and simple vacations, maintaining a food garden, raising food animals, and forgoing the more spendy aspects of modern living. The narrative goes that saving up and retiring early enables low-pressure and intentional lifestyles (and an ability to focus on family and friends), low-carbon footprints (with low impacts on the environment), and the embodiment of a frugal virtue. This chapter explores what a #frugal living EHM looks like and how it brings together people around shared values and lifestyle practices for personal peace of mind, social justice, and long-term sustainability.

INTRODUCTION

Without frugality none can be rich, and with it very few would be poor. - Samuel Johnson

Many people take no care of their money till they come nearly to the end of it, and others do just the same with their time. - Johann Wolfgang von Goethe

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Frugal Living for Our Collective and Mutual #Bestlife

In terms of most people's #bestlife (that leads to others' jealousy and plenty of FOMO) in the materialistic West, there are various sorts of selfie-shared (or paparazzi-captured) depicted acts:

- The pursuit of ostentatious and expensive pleasure (jets, parties, high fashion, luxury bling, spa vacations, and shopping sprees),
- Having the perfect family (well set and not a hair out of place),
- Dating up (and often),
- Experiencing various acts of daring (jumping out of planes, buidling, bungee jumping, and other risk-taking),
- Hanging out with friends in various exotic locations, and
- Simply being famous, among others.

And yet, there is a narrative of frugal living on social media that has attracted adherents from around the world. Some human behaviors involve personal decisions and actions at a ground level that taken together have a larger impact on the environment and on others. There is an “emergent” aspect to individual actions taken collectively and writ large. Sometimes, the individual actions are merely individual choices, and others are somewhat coordinated. Some electronic hive minds (EHMs) can speak into such collective spaces and encourage collective awarenesses and behaviors of various types (Hai-Jew, 2019). “Frugality” or a kind of resourcefulness and avoidance of waste (of money or material resources) is one of these phenomena. People choose how they want to use their moneys and resources, and their consumption affects others' livelihoods, the respective product and service supply chains, the natural environment, and other outcomes.

Being frugal (or frugal living) goes against some of the core assumptions of economics: that people's appetites are insatiable and unlimited in a resource-constrained environment. No amount fully satisfies people's appetites, so some constraints have to be applied—such as people's financial wherewithal.

There are some “stars” (personalities) and “models” in this space:

- A “zero-waste” young woman becomes well known for apparently being able to condense all her garbage for four years in a small glass jar (East, July 6, 2016). Everything else, she says, has been composted or recycled. She is working hard on maintaining a light “carbon footprint.” Her achievements have sparked a “zero-waste” movement with others working towards similar goals.
- Two young men host a podcast about frugal living in the finance realm. (They advertise themselves as “frugal dudes.”)
- Several different families share on social media about their living off-the-grid and simply, while raising children. For some of the families, they have a rental that they use for funding; others have a retirement fund, built up during years of intense and often lucrative careers (and ensuing burn-out). Their stories are similar in that they live in nature, raise their own food, hunt in-season, and provide for themselves through sparse resources.
- Some have stories of leaving high-powered careers in order to live off savings in urban environments, with some traveling globally and sharing their adventures.
- Others are living carefully off of their social media presences. They use advertising funds and company-provided funds for their travels and then provide reviews and evaluations to their huge populations of followers. Various world travelers visit different locales, and they share photos of

their travels and low-cost adventures. They further share stories of those who are running taxi, tourist, food, and other scams.

- A farmer buys a used truck for \$100, and he video records other people wanting to sell their used trucks for a lot more money and calls them out for daring to ask for more moneys. He has clearly gotten a deal, but subsequent tales of truck breakdowns and other challenges fill his video channel.

How people present on social media may be part of a social performance. It may be “cheap talk” vs. “costly signaling,” the latter of which requires actual commitments and actual sacrifices. Certainly, there has been no shortage of “reveals” of people’s fictions shared widely on social media. Superficially, a simple walk-through on social media provides some snapshots of frugality, via stories that people tell about themselves (in a form of *sousveillance*):

- **People will not let usable goods go to waste. (They will somewhat make up for some of their less frugal compatriots.)**
 - A search of “dumpster diving” (as a seeding term) on Google Images shows intrepid individuals hip deep in discarded contents looking for valuables. There are people with boxes of fruits and vegetables, print goods, canned goods, plastic wrapped foods, and other resources. There are signs advertising an art to dumpster diving. On Google Scholar, “dumpster diving for food” results in some 5,470 results. In mass media, there are articles that share the art to dumpster diving: in order to track what goods are dumped when and the best times to collect them (and which dumpsters are locked and which are accessible) and how to stay safe while collecting others’ undesirables. Dumpster diving is now not just a practice of starving college students but of organized groups that collect goods for distribution to the hungry through food banks and other organizations.
 - Second hand shopping (thrift shopping) in second hand stores and garage sales and yard sales is a global phenomenon. Social videos share various shopping adventures and finds. Some social videos unwrap the finds in others’ storage units, which are auctioned off after non-paying customers stop paying rent on their storage units. Mainstream media shares stories of treasures found. Some mainline television shows feature experts who evaluate various used and antique objects for their market value to collectors.
- **They work to have small carbon footprints, and they can make do with less than others.**
 - Individuals and sometimes families live in micro houses, which are just a portion of the sizes of mainstream houses. These are portable, and they have many of the affordances of other houses, but in miniature.
 - Major news outlets have carried stories of landfills and the multi-generational persistence of plastics and other discarded items. There are stories of electronic goods graveyards where computers and electronic equipment is retired and salvaged for anything usable. A pioneering family who is living “plastic-free” is spotlighted and lauded. Anything left over (most of the device) is left to leach toxins into the soil and environment.
 - People develop skills to grow their own food, repair their own homes and cars, cook home meals, and engage the world differently than in the mainstream. They sew their own clothes. They create their own soaps and toothpaste.
 - They engage in trade with like-minded individuals. They learn to keep their bills to a bare minimum. They are creating an alternative lifestyle to the material-driven ones. Some work

intense careers and then choose to retire in their late 20s, their 30s, their 40s...and show how they can guarantee sufficient funds skimmed off of their savings.

- **They will manage finances and invest with care.** Frugal people will have a working budget that makes sense in relation to their earnings. They will have a financial plan and follow through on their savings. They will be aware of the compounding expenses of even small fees by their investors.

Frugality is not quite a coalesced movement or even really a trend yet. It reads like a general drifting phenomenon that has captured the interest of some on the periphery. The effort feels counter-cultural (because of the focus on non-materialism), and frugality is certainly not in the mainstream. In terms of people's spending, at least in the U.S., people are mostly at the limits of what their earnings enable (and beyond, for many, living on debt).

In many senses, the frugality endeavor is told from a Western point of view, and for many, the lifestyle is somewhat by choice and by purposeful expression of preferred values and behaviors (of non-wastage of material and other resources). As a construct, "frugality" is seen as more of a composite of various values than an entity alone except as a "lifestyle choice" (Todd & Lawson, 2003, p. 8). [A quote attributed to Cicero reads: "Frugality includes all the other virtues."]

As an EHM, "frugality" thinking and its thinkers seem distributed (geographically dispersed) with a mix of local interests and local realities. As a consumer phenomenon, it is studied by companies that want to know how to market to "frugal" individuals and to encourage them to spend. Some of the social imagery captured as part of this work show businesses that have arisen around "frugal" but with the idea of low-cost and discounts. Frugality is also studied by environmentalists who have an interest in encouraging people to live differently and more sustainably. One other aspect of interest with the frugality EHM is that it evokes private individual choices that have an emergent collective quality, with theoretically measurable impacts on expenditures and the natural ecosystem.

REVIEW OF THE LITERATURE

A core assumption of the "frugal living" EHM is that "endless growth" to meet insatiable human needs is infeasible. There is an ethos of "de-growth" that practitioners share, with the "politics of scarcity," so people may live in "responsible togetherness" (Natale, Di Martino, Procentese, & Arcidiacono, 2016, p. 50). The authors explain:

The degrowth paradigm offers a possible solution to the negative effects of capitalistic and consumeristic culture. This lies in curbing the unbridled production and consumption of commodities—along with the values attached to them—and downshift towards what Latouche (2011) has named 'frugal abundance', that is, a relational and economic system freed from the myth of endless growth (Natale, Di Martino, Procentese, & Arcidiacono, 2016, p. 49).

Those who pursue "voluntary simplicity" avoid "clutter" (Gregg, 1936, as cited in Leonard-Barton, Dec. 1981, p. 243). A draft behavioral index to measure individuals' tendencies towards voluntary simplicity "characterized by ecological awareness, attempts to become more self-sufficient, and efforts to decrease personal consumption of goods" (Leonard-Barton, Dec. 1981, p. 243) includes elements like

making gifts instead of purchasing them, riding bicycles for exercise and commuting, recycling (news-papers, jars, cans, and others), doing oil changes at home, developing skills “in carpentry, car tune-up and repair, or plumbing” for self-reliance, eating “meatless main meals,” buying clothes from second hand stores, setting up a compost pile, making “furniture or clothing for the family,” and bartering “with others in lieu of payment with money” (Leonard-Barton, Dec. 1981, pp. 250 - 251).

These values are often translated to actions, with frugality as a “pervasive consumer trait” (Lastovicka, Bettencourt, Hughner, & Kuntze, 1999, p. 85). Such approaches have been a part of “day-to-day American life” beginning in colonial times (Witkowski, 1989, as cited in Lastovicka, Bettencourt, Hughner, & Kuntze, 1999, p. 85). What are some basic observed traits of people who are frugal?

Empirically, the frugal are less susceptible to interpersonal influence, less materialistic, less compulsive in buying, and more price and value conscious. Being frugal does not correspond with being ecocentric nor with being prone to using coupons. A motivation to save the planet and being frugal are found unrelated. Further, it seems, being frugal means no necessary interest in the coupons used so often to promote convenience goods. Frugality consistently explains consumer usage behaviors. The data show the frugal use products and services resourcefully; this ranges from timing their showers to eating leftovers for lunch at work. Being frugal empirically affects purchasing. In a mental accounting experiment examining how the source of income influences spending, only the less frugal are manipulated into spending more. Scale norms from a general population survey, combined with data from Tightwad Gazette subscribers, show Gazette subscribers are on average at the top two deciles on the frugality scale. (Lastovicka, Bettencourt, Hughner, & Kuntze, 1999, p. 96)

Frugality is a part of social movements. As a “social innovation,” defined broadly as “new ideas that address unmet social needs—and that work” (Mulgan, Tucker, Ali, & Sanders, 2007, p. 2, as cited in Nicholls, Simon, & Gabriel, 2015, p. 2), frugal living may lead to individual-level (micro), group level (meso), and societal and global level (macro) changes.

World-scale religious ideas and philosophies have also been harnessed for the avoidance of over-consumption through frugality, including Eastern philosophies of Confucianism, Jainism, Buddhism, Daoism, and other traditions (Roiland, 2016). Various world religious systems (including “American Indian, Buddhist, Christian/Jewish, Taoist, (and) Hindu”) speak to frugality and its importance (Lastovicka, Bettencourt, Hughner, & Kuntze, 1999, p. 86). These evocations speak to spiritual dimensions in electronic hive minds, a Zen aspect with particular balanced decisions and practices.

There are arguments against lifestyles in “industrial societies and people (who) spend too much in goods and items when a majority only tries to survive” (Roiland, 2016, p. 571). And yet, frugality has to be balanced against practical considerations: “Frugality is a concept that forces (us) to redefine our priorities in life, in economy in a global system. An Ethic of frugality on different levels appears essential to face the actual challenges. However frugality cannot be presented in opposition with creativity and economic growth.” (Roiland, 2016, p. 583)

Other research has focused on the various types of “food wasters” (non-frugals, meant in a derogatory sense). A study conducted in Italy described this group of “food wasters” with seven profiles.

Out of seven profiles identified, four are the most representative ones in terms of size: the conscious-fussy type, who wastes because food doesn’t smell or look good; the conscious-forgetful type, who forgets what is in the fridge or on the shelves; the frugal consumer who tends not to consume fruits and vegetables and

declares to waste nothing (or almost nothing); and the exaggerated cook, who overbuys and overcooks (Gaiani, Caldeira, Adorno, Segrè, & Vittuari, 2018, p. 17)

The additional profiles are “the unskilled cook,” “the confused type” [who is “confused about (food) labelling”], and “the exaggerated shopper” who overbuys (Gaiani, Caldeira, Adorno, Segrè, & Vittuari, 2018, p. 23). In a sense this and other works call out those who misuse available resources. Indeed, in developed countries, when food is wasted, it is usually at the “consumption stage of the food supply chain” (Gaiani, Caldeira, Adorno, Segrè, & Vittuari, 2018, p. 17).

Thrift in terms of energy usage has been associated with consumer motivations based on “multiple self-identities” with self-concepts of the self as “environmentally friendly and a frugal person” (Thøgersen, 2018, p. 1528) as contrasted against a “green” (pro-environmental) motivation in terms of engaging in energy-saving behaviors in the home (p. 1521). Research does suggest a positive correlation between the “frugal” and “green” self-identities.

One core concept in the consumption debate is that of fairness: Which populations in the world have rights to consume outsized shares of the Earth’s resources? Sustainable consumption is debated at both local and more global scales.

Socially conscious consumer behavior, like its ecological counterpart, appears to be an expression of pro-social values. In contrast, frugal consumer behavior relates primarily to low personal materialism and income constraints. As such, it does not yet represent a fully developed moral challenge to consumerism. (Pepper, Jackson, & Uzzell, 2009, p. 126)

Even if the challenge is not direct to the retail-industrial complex (so to speak), the idea of living with basic necessities alone without excess may have impacts on consumption. Marketers of firms with B-to-C (business to consumer) businesses have an interest in studying “non-consumption” (Gould, Houston, & Mundt, 1997, as cited in Todd & Lawson, 2003, p. 8). Retailers trying to find the right formula to encourage more spending among the frugal who nevertheless have the means to buy and spend more. Multiple researchers have observed that “frugal consumers feel more independent than average” (Lastovicka, Bettencourt, Hughner, & Kuntze, 1999, p. 87), which may suggest that they are less suggestible to advertising. People who are frugal are thought to be “resistant to social influences” but may be induced to spend more if they are with their “high-spending networks of friends vs. low-spending networks of friends”...in “strong-tie networks” (Lee, 2016, p. 1). A countermove for frugal consumers is to avoid such social situations (Lee, 2016, p. 5). This is also not to say that there are not industries that have arisen around the concept of “frugal,” as in low-cost products and services.

There is also push-back from the “politics and geographies of scarcity” as a meta-narrative that sustains “elite and capitalist power” (Mehta, Huff, & Allouche, 2018, p. 1) and enables the denial of fuller lives for many (goes the narrative).

Some research focuses on “alternative measures of frugality” (Mowen, 2000, p. 187). For example, “tightwadism” has been studied “in conjunction with impulsiveness, bargaining proneness, materialism (negative relationship), and emotional instability” (Mowen, 2000, p. 187). As a construct, frugality was found to have “poor internal reliability” as compared to “care in spending,” which did have “good internal reliability” (Mowen, 2000, p. 187). Other insights were discovered:

The only construct predictive of care in spending was the need for arousal (negative relationship). Tightwadism was inversely related to a measure of materialism and positively related to the need for arousal, the need for body resources, and present orientation. (Mowen, 2000, p. 187)

Those who do not have a high need for excitement tend to be able to show “care in spending,” and those who were less materialistic tend to be able to engage in “tightwadism,” among other observations.

At more macro levels, “frugal innovations” enable better meeting the needs of those “low-income consumers who live on an income that is less than \$5 a day” (Vadakkepat, Garg, Loh, & Tham, 2015, p. 1) as compared to the expensive products and services designed for those “at the top of the economic pyramid” (Vadakkepat, Garg, Loh, & Tham, 2015, p. 1).

While there is a not-unfounded fear of mass-scale “digital wildfires” sparking online and wreaking havoc (Webb, et al., Sept. 2015), social media also enables the spread of constructive and prosocial ideas, including for frugal living. Several studies inform this research work.

On social media, topic communities are those “created on-the-fly by people that post messages about a particular topic (i.e., topic communities)” (Kardara, Papadakis, Papaoikonomou, Tserpes, & Varvarigou, 2012, p. 1). The messages may be informational, advocacy-based, call-to-action, and other types. In topic communities, there are often “core influencers” or members who have outsized influences on the other members; these are “users who produce original content that is frequently retweeted” (Kardara, Papadakis, Papaoikonomou, Tserpes, & Varvarigou, 2012, p. 12). An empirical study of core influencers in a topic community found the following dimensions:

Although they are highly mentioned by other users, they avoid getting into discussions or reproducing others’ opinions. When they actually do so, they mainly refer to or cite other influential members. Their messages are mostly factual, with just a negligible part of them explicitly expressing strong sentiments about the community’s topic. Nevertheless, they precede their peers in expressing their feelings towards the topic in question, thus playing a major role in shaping the dominant opinion in each community. This explains the extremely high levels of correlation they exhibit with the community’s aggregate sentiment. Their high levels of influence can be attributed to their specialized activity, as they are typically focused on few, similar topics. Our large-scale experimental analysis over real-world data verified that these patterns apply particularly to core groups of size $k = 50$ that are defined by the Mentions influence criterion (Kardara, Papadakis, Papaoikonomou, Tserpes, & Varvarigou, 2012, p. 12)

The core influencers play important leadership roles for the distributed online community. In terms of leadership on social media, “message content, social behavior, and (social) network structure” affect followership links on Twitter over time (Hutto, Yardi, & Gilbert, 2013, p. 821), and as such, they serve as “follow predictors” (Hutto, Yardi, & Gilbert, 2013, p. 821). Given the tendency for negative messages to be shared faster and more frequently than neutral messages or positive ones (Tsugawa & Ohsaki, 2015), those shepherding social movements may have to apply messaging finesse to avoid damage to the respective causes.

Researchers also identified image patterns on “image-based social media websites” used to support social movements (Cornet, Hall, Cafaro, & Brady, 2017, p. 2473). This work also suggests the importance of identifying image patterns around image-sharing sites harnessed for particular social movements (as in the frugal living EHM).

These research works suggest the importance of identifying leaders in electronic hive minds and studying social imagery patterns, among others. Common research methods on social media include “social network analysis, sentiment analysis, trend analysis and collaborative recommendation” (Sapountzi & Psannis, 2018, p. 893), and some of these approaches will be used here as well.

“FRUGAL LIVING” AND #BESTLIFE LIFESTYLES AND DECISION MAKING IN A DISPERSED AND GLOBAL ELECTRONIC HIVE MIND

The dispersed frugal living EHM reads as a personalized space where people commit to living simply, without clutter, in green ways. These are people who are “woke” about the need to live intentionally and in ways that preserve financial and material resources. They are not obviously political, without ties to environmental activist organizations or other entities, and they are not obviously anti- the retail-industrial complex (if you will). So from the Social Web and various social media platforms, what does this EHM look like?

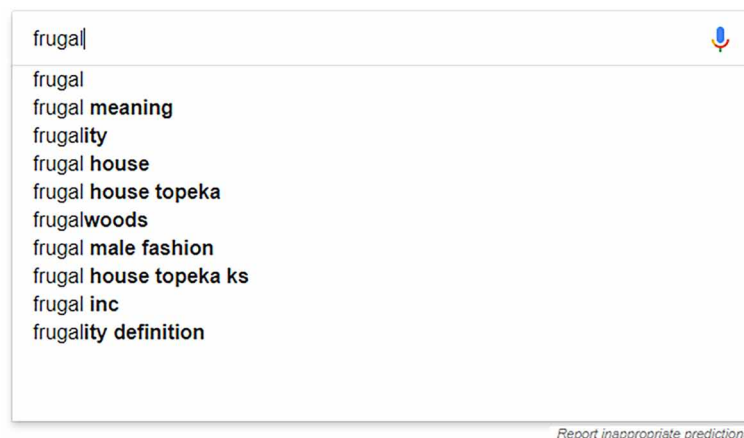
On Reddit

On social media, frugality as a “thing.” One of the top subreddits “about personal or domestic advice” is a thread about the “frugal use of resources” with 41,911 members in the online community and identified gendered differences in the topic (Thelwall & Stuart, 2018, p. 12). This particular subreddit ranked 100 in the “subreddits about personal or domestic advice” (Thelwall & Stuart, 2018, p. 12).

On Google Search’s Autocomplete

A search for “frugal” on Google Search has some insights in the autocomplete, in this order: frugal, frugal meaning, frugality, frugal house, frugal house topeka, frugalwoods, frugal male fashion, frugal house topeka ks, frugal inc, (and) frugality definition. The autocomplete does show some sensitivity to the physical location of the author during the search. (Figure 1)

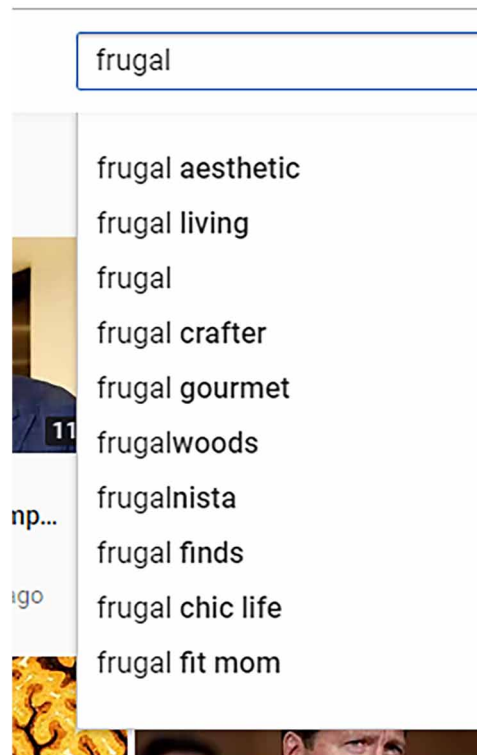
Figure 1. “Frugal” auto complete in Google search



On YouTube Video Sharing Site's Autocomplete

In terms of the autocomplete on the Google YouTube platform's search, they include the following (in descending order): “frugal aesthetic, frugal living, frugal, frugal crafter, frugal gourmet, frugalwoods, frugalnista, frugal finds, frugal chic life, (and) frugal fit mom” (Figure 2).

Figure 2. “Frugal” auto complete on YouTube



On Google Correlate

In terms of mass-scale search terms that co-occur with a search for “frugal” (on a weekly basis in the U.S.), there are some evocative aspects related to shopping, couponing, lower cost services, free services, and some how-to directions—but not a full coalescence of the idea of frugality. (Table 1)

On Google Books Ngram Viewer

An exploration of “frugal” in the formal book archives from the 1800s to 2000 show a general dropping trendline over time into the present. This is not an idea gaining traction per se at least in the formal literature. Over longitudinal time, “frugal” has become less popular. (Figure 3)

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Table 1. "Frugal" on Google correlate (in the U.S., weekly mass search data)

0.7991	the frugal
0.6815	free sheet music for piano
0.6694	docs to go
0.6653	download free
0.6546	eyebrow piercing
0.6545	celexa
0.654	safeway coupons
0.6537	supras
0.6527	network password
0.6515	attract women
0.6513	wow robot
0.6496	serial number mac
0.6491	jill cataldo
0.6489	shop blog
0.6485	coupon mom
0.6485	washington state unemployment
0.646	melt my heart to stone lyrics
0.6457	computer repair
0.6451	where can i download
0.6445	m1100
0.6438	instant watch netflix
0.6437	r910
0.6427	.zip
0.6421	verizonwireless.com/backupassistant
0.6417	dock app
0.6416	dragon care
0.6413	album list
0.6413	pc free
0.6412	number mac
0.641	westell 7500
0.64	pixdrop
0.6396	fupa games
0.63953	.5 character sheet
0.6394	hats online
0.6373	go2ui
0.6371	design your own shoes
0.6364	eastwestworldwide
0.636	reviews for kids

0.6358	can i download
0.6358	adele melt my heart to stone lyrics
0.6355	by email
0.6355	speeddate.com
0.6355	download mac
0.635	download free music
0.6349	filmicity
0.6347	self shooters
0.6342	safe web
0.6342	missouri career source
0.6341	screenium
0.634	how to pierce
0.6339	domo games
0.6337	how to attract women
0.6333	youtube partners
0.6331	download cnet
0.6329	ipod touch is frozen
0.6327	texts online
0.6326	a2z scrabble
0.6323	canadian pharmacy
0.6322	funniest facebook status
0.6318	melt my heart to stone
0.6314	netflix instant play
0.6306	texting signatures
0.6302	subimg
0.6301	yimmy yayo
0.63	facebook for lg
0.63	enlarge
0.6299	cheat o matic
0.6299	new @ 2
0.6298	goodyear eagle gt
0.6296	o_o
0.6294	missouricareersource
0.6292	netflix watch instantly
0.6291	bearded dragon care
0.6291	adele melt my heart to stone
0.6291	shepherd rescue
0.6288	first federal savings bank

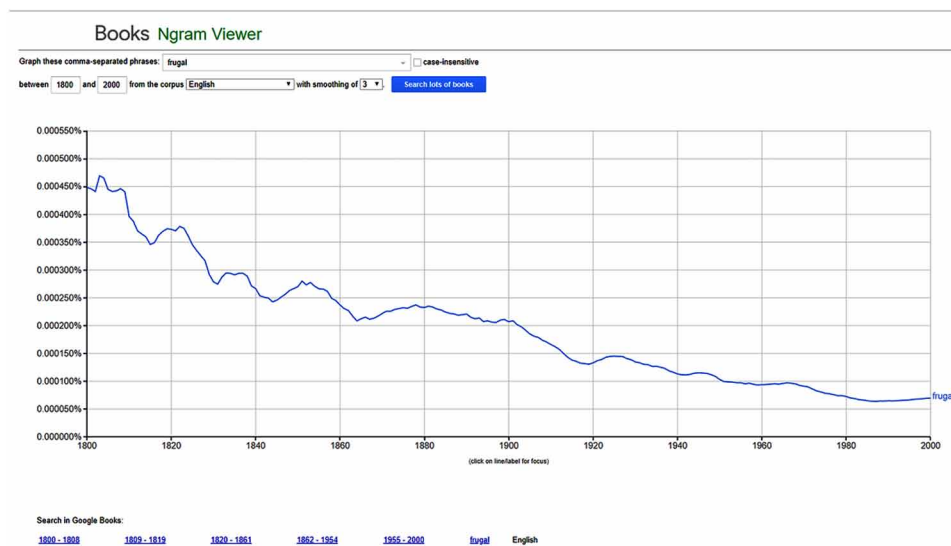
continues on following page

Table 1. Continued

0.6288	phone cover
0.6285	how to erase hard drive
0.6285	instant watch
0.6284	best facebook status
0.6283	free printable coupons
0.6283	sir pizza miami
0.6281	smart balance coupon

0.6278	esn repair
0.6276	good sites
0.6275	blowback
0.6274	eagle gt
0.6273	rock the keys
0.6272	workforce services
0.6271	gas blowback

Figure 3. “Frugal” trending over 200 years in the Google books ngram viewer



A one-degree related tags network on Flickr for “frugal” shows connections to activities like shopping and cooking. There are references to homemade and cheap foods, recipes and vegetarianism, groceries and pasta, and DIY. (Figure 4). This network graph was laid out using the Fruchterman-Reingold Force-Based Layout Algorithm.

A 1.5 degree network graph of the “frugal” related tags network on Flickr resolves into two general groups. Group 1 at the left is more about various aspects of the frugal lifestyle, and the group to the right is more about food consumption. (Figure 5)

On Flickr Image Sharing Site

A Flickr image set (1947 items) was extracted around the seeding term “frugal.” (Figure 6). The images were run through manual coding, and some themes were extracted.

Frugal Living for Our Collective and Mutual #Bestlife

Figure 4. “Frugal” related tags network on Flickr (1 deg.)

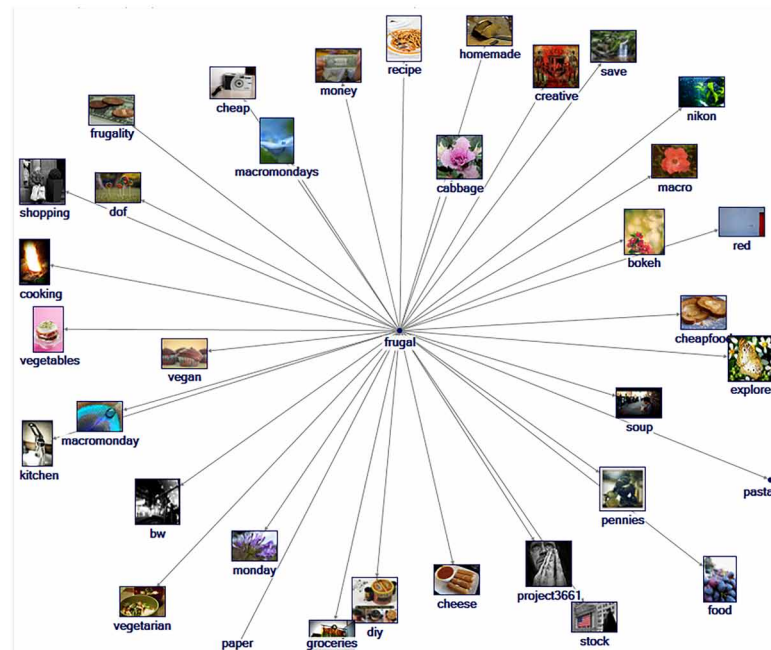
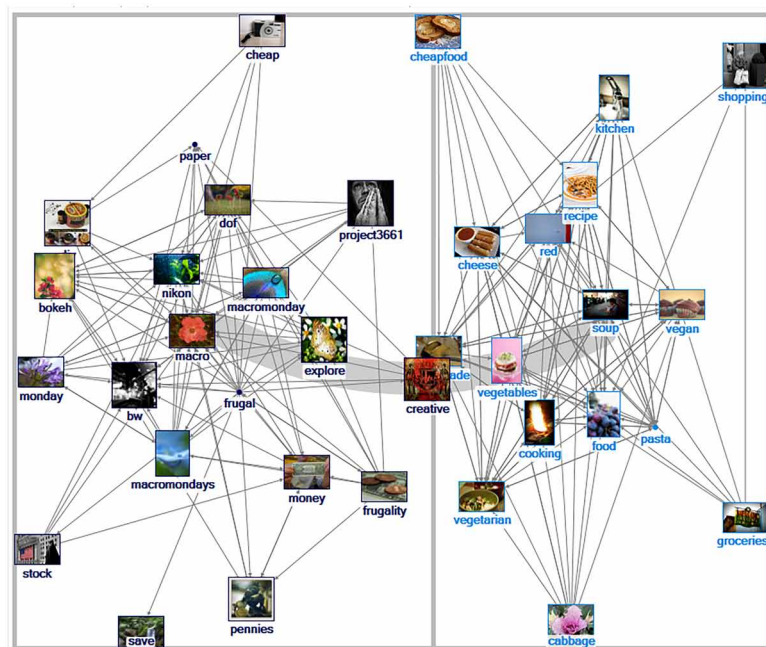


Figure 5. “Frugal” related tags network on Flickr (1.5 deg.)



Frugal living involves living close to the earth, with photos of freshly dug carrots from the ground laid side-by-side. Some photos show various fruits growing on a branch. (There is something here about knowing where one's food actually comes from.) One image shows sparsely-flowering cauliflower, which might have illustrated a story of a garden #fail. One photo shows seedlings in paper pots. Self-grown objects need not be lower quality. There are images of prize-winning flowers, prize-winning onions, and other plants entered into contests.

There are raw vegetables highlighted in the image set, such as a close-up of garden vegetables without ends trimmed. Several images show raw chicken, with one raw chicken covered in spices.

Food displays figure prominently in this image set, with servings mostly for individuals and groups. A few close-up images show single-bite food morsels. There are cut vegetables and fruits in single serve containers. There is a soup with various leafy greens. Another soup features beans and leftover foodstuffs.

Some images show grilled fruit. There are all sorts of baked foods: roasted vegetables, baked stuffed peppers, roasted yellow squash, Brussel sprouts topped with cheese, a vegetable lasagna, and others. There is a closeup of a hand-prepared baked pie (it looks hand-shaped with its edge pressed with a fork). Some of the foods look hearty and high-carb: spaghetti and bread, a cheese pasta dish, and others. Different meals are depicted: one of miso soup, fruit and yogurt, raw carrots with dip, and a grain with vegetables mixed in. Another shows a lunch of grapes and cherries, carrots and snap peas, crackers and cheese, and an undressed green salad with carrot slices. This latter one looks like a child's packed lunch. Another several show sushi. One shows a meal of bread, cheese, and a drink in a glass (Water? Wine?). Some of the meals are suggestive of self-reportage, maybe about how closely one is adhering to a planned diet. Portion sizes seem on the smaller side, at least compared to restaurant servings. One image shows a box of dry foods.

One sign claims "frugalfoodie" movements. One question is posed in an image: "What's the one thing you can do easily to start eating better and saving money?"

One image shows home-jarred sauces and other preserved foodstuffs (with natural preservatives). One image shows a kitchen in a microhome with basic dry foodstuffs in glass and plastic containers. One image shows consumer packaged fruits and vegetables in plastic bags, and whole grains; this seems to be about healthy eating even if the foods are from mass producing farms and corporate suppliers. In one photo with people in it, a couple sits at a table side-by-side, with the food in front of them untouched.

Some photos show people cooking. Some show cookbooks. In another, a man crouches on a sidewalk and eats his meal by hand from a small plate on the concrete; he is in a non-Western country. Another far-abroad photo shows a wok on a rock stand—as if pointing back to a simpler (romanticized) time. A woman carrying cloth bags walks down the street in sturdy shoes, evoking something of a universalism. One drawing shows workers in a long line walking over to a window to pick up their food in a cafeteria; this speaks to workplaces and communal eating. Some images show different types of street food.

The "bare minimums" concept is depicted as applied to cooking (a set of cooking utensils, pots and pans, a knife set, and some electric-powered cookers), gardening tools (hand trowels and paint brushes hung on a wall), and others. Another photo shows a Canon professional camera kit, with all basic elements included.

Method comes into play, with a formalized diagrammed flowchart for a "year of living frugally," with major decision points highlighted.

“Travel hacks” come into play. One photo shows a traveler traveling light, with an image of a magazine about travel to a town in France, some bread, a bottle of Evian water, all on a plastic bag on a rock. An apparent selfie shows a man is standing on a white sand beach against a blue sky (the camera is angled upwards from the sand).

Some imagery are expressions of “splurges” and “guilty pleasures.” One shows a group of musicians and the text: “I know it’s ridiculously pathetic that stupid frugal things like clothes and celebrities make me happy but they do! Heck yes, they do” (in this case, the Jonas brothers). The b/w treatment gives the prior meme a retro feel. Then, there is a stacked pile of golden brownies with nuts and marshmallows, a layered cake, sweets and desserts, which also read like extravagances.

Companionship also comes into play. One photo shows two young people sitting outside on the side of a building and holding hands. This suggests appreciation for the simpler things in life. (“All the best things in life are free.”) Two joggers run together, in an image about friendship and mutual health. A miniature horse as a pet is depicted in another image. There are also farm animals, like pigs in a quadtych. Toddlers and children figure in some of the photos, often in custom handmade clothing.

One theme involves low-gasoline transportation: micro cars, scooters, and others. In one, a motorcycle is parked next to a mini car. There are bicycles and two-wheeled scooters (one used for commuting for a woman in business dress). One image shows a double-decker bus. By contrast, one photo shows a stretch recreational vehicle (RV).

Some of the images tell a story; they make a statement. One photo shows a paper price tag with a 2D barcode. The printed price is \$49.50, and the “sale” price added on is \$49.99 or 49 cents more than the original price. This shows the fungibility of pricing and suggests the importance of paying attention and of not getting taken price-wise. Another messaging image shows a Visa credit card next to a machine button with three settings: reverse, off, auto. One can reverse usage of the credit card, turn it off, and use it automatically and without thinking. Another photo shows a closeup of a wrinkled plastic Walmart bag with the logo and the tagline “Save money. Live better.” The camera is zoomed in on the first part of the tagline “Save money.” Another series of multiple images shows the back panel of an electronic console, with the imprint of the location where it was assembled (Norway, in this case). This is suggestive of the importance of being aware of supply chains. Another shows various engineering blueprints for a device. A black chalkboard reads: “Make art not war,” evoking a 1960s vibe. There is a photo of an empty shopping cart (except for a paper shopping circular) with a name on the cart “Mac Frugal’s.” Another message reads: “Our dreams and imaginations are smothered” (under the weight of monetary pursuit). A road sign reads: “SAVINGS AHEAD.” Some messages contain advice: “Try to be plain in the best ways: plain truthful, plain frugal, and just plain caring.” (There is an implied value system.) One image depicts a receipt, two paper bags, napkins, and an empty plastic cup to show how much wastage there is in terms of “to go” food packaging. Two images show political ads with politicians asserting that they will prevent or limit “wasteful spending.” One image is a play on sparsity with words in a parking garage next to arrows, with a sign for “up” and a sign for “dn.” A Snoopy cartoon shows Snoopy lying on the roof of his red dog house with Charlie Brown seated on the grass beside him with a broad smile: “The less you want, the more you love.” One visual advertises “extreme couponing.” A road sign reads: “Tough Decision Ahead.” There are solutions promised for “Hard water stain, tips & tricks” and “RV Traveling Tips and Tricks.” There is an encouraging message for living frugal, maybe even a rallying cry: “I’ll go to someone cheaper.”

One image shows homemade toothpaste with a highly liquid consistency in a plastic bag. A young man is using the toothpaste to brush. One photo shows a closeup of a woman receiving professional

dental care (an exam). Another image shows human-made face cream. One photo shows what looks to be self-made fingernail polish, with a lumpy texture.

Another work shows an antique frog, possibly a keepsake, possibly a knick-knack. This is part of images that show antique objects. Appreciating older things is an act against a disposable economy, one in which new things are most desirable and prevail. A young boy examines an old tractor parked next to a new John Deere one. (The younger generation is bridging the two machines.) There are related photos of a wooden box and its personal contents. One photo shows an old-style instant camera. One photo shows a rusted iron handle on a wooden surface (A wooden box? A wooden drawer?), suggesting a sense of appreciation for aged objects. Old-style vintage aircraft from a prior time are shown in several “frugal” social images.

By contrast, a modern smart phone is shown with an “eco” app pulled up. In other visual depictions, there are smart phones depicted with shopping apps pulled up.

There are expressions of enthusiasm for particular elements of modern life. One image shows a bike rack with a knit “coat” with a button. Another shows an image of a low-energy long-lived spiral CFL (compact fluorescent) lightbulb.

Frugal expressions in living spaces may involve various quilts, curtains, and blankets. There are decorated dining spaces (a white kitchen table with pops of red color in the décor). There are handmade dresses and children’s clothes. There are handmade shoulder bags. There are leather boots which have been hand-decorated.

Certainly, there are do-it-yourself (DIY) scenes: a table with tape and cardboard wrapped around parts of it; projects in various stages of development; some clay projects, and others. Creative expression is important. Various images depict handmade jewelry, beadwork, embroidery, knitting, crocheting, painting, and other creative endeavors. There are handmade toys. A child holds up a Lego toy creation.

There are examples of gifts wrapped in brown paper bags and tied with red yarn, depicting gifting or re-gifting. One image shows a latte on a counter in a restaurant; the drink is served in a handmade mug, giving the sense of an artisanal feel. Some photos show close-ups of hand stitching—even and skilled.

One photo shows the interior of a church. Another shows a teacher in a classroom. One visual shows a female avatar in Second Life, which open the possibility of the “immersive parasocial” and celebrity following in immersive virtual worlds (Hai-Jew, Sept. 2009).

There are examples of mutual supports—through events such as clothing swaps. There are calls for “frugal, healthy recipes” and “menu planning tips” to share. A “dumpster diving angel” preens next to a dumpster (such diving is for both individual selves and for others). Fellow home schoolers share expertise and pool their resources. Several visuals suggest the importance of frugal friends, so that there is a supportive social network.

Some of the “frugal” social imagery are commercial in nature. One business promises “coffer budget friendly portraits at an affordance price.” Another touts Craigslist to “successfully sell.” Various mom-and-pop business seem to be piggy-backing on this meta-narrative.

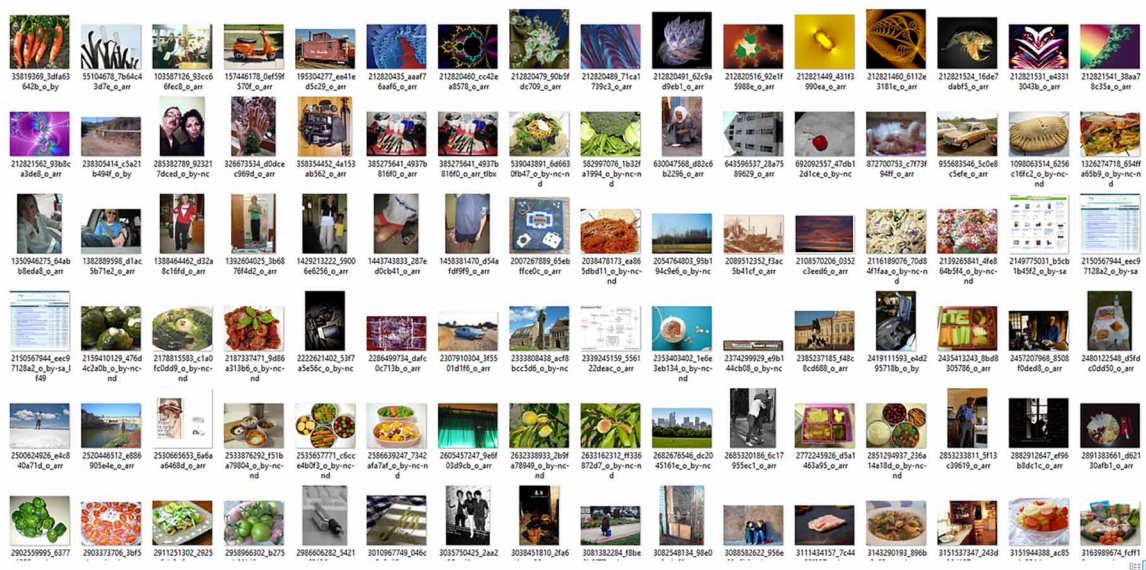
There are visual messages of engaging the public. One photo shows a man seated at a piano and performing for the public, in a park space. In several, people show off their face painted faces.

There are a miscellany of imagery, which are part of a narrative (elsewhere). There are photos of tourist sites, such as historical train cars, one showing one painted well, and another with peeling paint. There seem to be self-decoration themes, with handmade artworks (like decorative wall panels), fractal imagery (found art?), and colored pencils, fountain pens, and paint brushes. One photo shows a hand-made photo album. Craftiness is highlighted, such as with a knitted handmade Christmas ornament,

homemade neckties, hand-made paper decorations. A woman has highlights put into her hair at a salon (as part of a personal narrative). A woman sitting in a car shows off a toe ring. A cat lies on its back and looks toward the camera. There are several older model cars with UK license plates. One sits in a field of hay stubble against a backdrop of scattered hay bales. One photo shows a cross in front of some older stone buildings. There is a screenshot of a website with discount sales items. One photo depicts green spaces in a city where people exercise. One shows a magazine layout of an article related to frugal living. Another image shows library books in a stack (why buy when you can borrow?).

Certainly, social imagery is multi-meaning and can be interpreted in different ways, especially when the images are de-contextualized and analyzed separately from their original contexts. Many images are also somewhat designed to be understood in a stand-alone way. Some messages are spelled out in words, which are also potentially polysemous. This is to say that such interpretations should be understood within the limits of the manual image analysis.

Figure 6. “Frugal” social imagery from Flickr



On Wikipedia

“Frugality” is an article on the crowd-sourced Wikipedia encyclopedia. An extraction of the article network around “Frugality” shows ties to a range of other values, people, concepts, and lifestyles. (Figure 7). The one-degree network graph was laid out using the Harel-Koren Fast Multiscale Layout algorithm.

A 1.5 degree article-article network around “Frugality” on Wikipedia results in 3,957 vertices (unique article pages) and 4,530 unique edges, in a network graph with a maximum geodesic distance (graph diameter) of four. An extraction of clustering using the Clauset-Newman-Moore cluster algorithm results in 19 groups. The extended article-article network graph (including article transitivity) shows links to environmental, philosophical, stewardship, faith, and nature-based implications, among others. (Figure 8)

Microblogging Site

On the Twitter microblogging site, a half-dozen accounts were explored around issues of frugality. The most recent Tweets were extracted from each, excluding retweets. At the time of the data capture, here were the basic details of the respective accounts. (Table 2)

Table 2. Features of the “frugal” Twitter accounts mapped for analysis

	Tweets	Following	Followers	Likes	Lists	Start Date	Account Location
@frugalfamily https://twitter.com/frugalfamily	50,014	8,650	14,172	25,374	3	July 2009	North East, England
@TheFrugalGirl https://twitter.com/TheFrugalGirl	8,165	39	2,059	532	0	May 2009	(not shared)
@frugaldealsuk https://twitter.com/frugaldealsuk	8,007	1,378	4,538	31	1	February 2013	United Kingdom
@frugal_living1 https://twitter.com/frugal_living1	630	49	58	82	0	January 2015	United Kingdom
@frugal_Rob https://twitter.com/frugal_Rob	1,021	31	4	108	0	March 2011	(not shared)

These frugal social accounts on Twitter are both local and global (Figure 9).

A word cloud of the “frugal” account Tweetstreams show a focus on gratefulness (Figure 10). There are references to public personalities and to news sites. Days of the week also figure into the messaging, suggesting some time sensitive information.

At the top level, the most popular autocoded (machine-coded) topics include deals, frugal deals, https, things, and today, which suggests a focus on commercial interests (Figure 11).

The sentiment on the Tweetstreams of the “Frugal” social accounts on Twitter show little in the way of sentiment except for one account, which shows a high level of “Very Positive” sentiment (Figure 12).

An extracted word tree around “frugal” as the seeding term shows a lot of outlinking, which suggests the usage of Twitter to drive traffic to other websites (Figure 13).

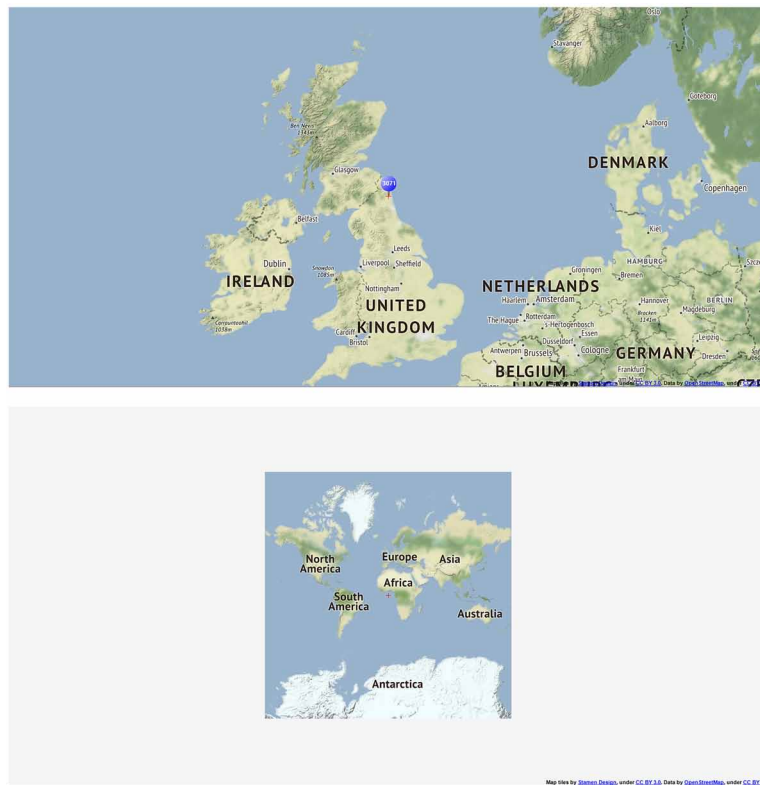
To integrate the idea of a #bestlife and to show that that may either complement or contrast the idea of a frugal lifestyle, a single Twitter account built around the concept of “bestlife” was trawled.

On a Single Twitter Account About a #bestlife

In contrast to a frugal life, a “best life” may be somewhat understood from a Twitter account (@bestlife-online at <https://twitter.com/bestlifeonline>), with 2,190 Tweets, 28 following, and 6,612 followers. This account joined Twitter in January 2016. From this account, 2,145 messages were extracted, without retweets included. The social map for this account shows a global network (Figure 14).

The mapping of tweetstreams from @BestLifeOnline on Twitter shows the following word cloud on Figure 15.

Figure 9. Local and global social networks around “frugal” on Twitter microblogging site



Local and Global Social Networks around “Frugal” on Twitter Microblogging Site

Figure 10. Word Cloud of tweetstreams from multiple “frugal” social accounts on Twitter microblogging site



Frugal Living for Our Collective and Mutual #Bestlife

Figure 11. Autocoded topics from mixed “frugal” social account tweetstreams on a microblogging site

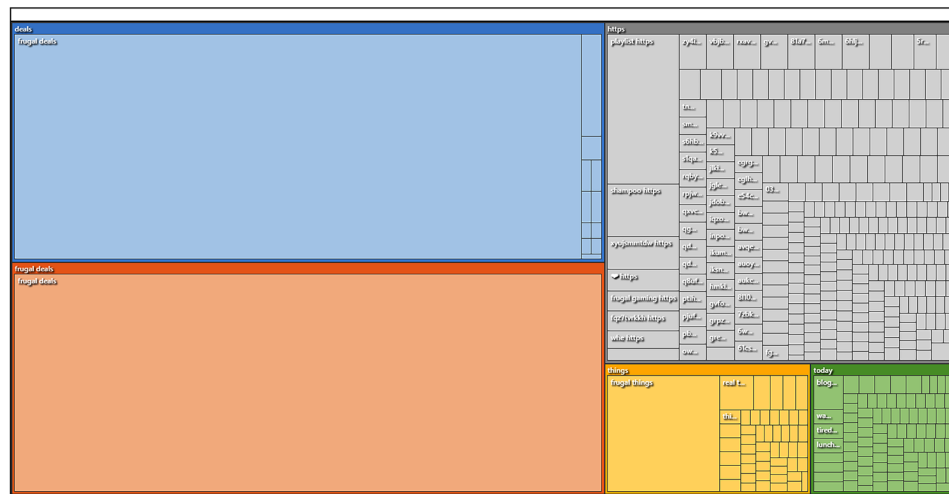
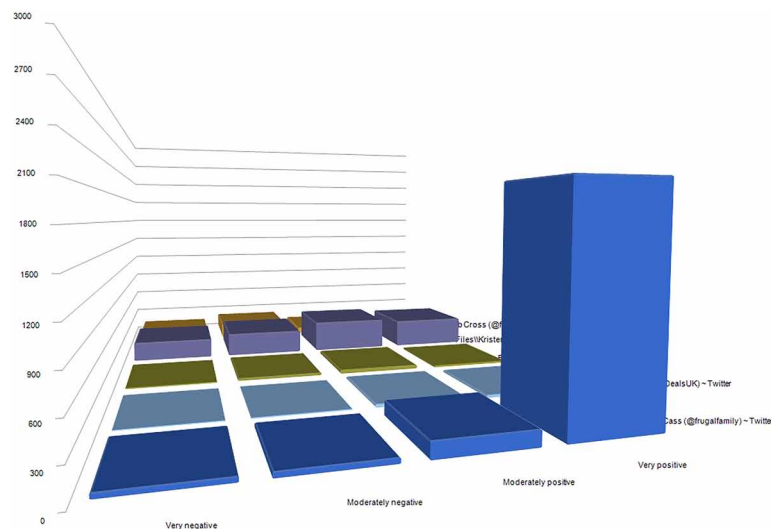


Figure 12. Autocoded sentiments from “frugal” social account tweetstreams



The sentiment of the messaging on the @bestlifeonline account does show a tendency towards moderate sentiment, both negative and positive, but more trending towards positive (Figure 16).

In terms of auto-extracted themes, a #bestlife involves lives that induce FOMO or “fear of missing out.” There is royalty, the British royal family, and American Meghan Markle. There is Hollywood glamor and references to the Oscars. There is health, weddings, dating, happiness, welcoming a baby, and exercise. A subtopic is “sex life sizzle.” (Figures 17 and 18) Much of social media focuses on conspicuous consumption and over-the-top lifestyles, to stand out from crowds. Very little here would be suggestive of “frugality,” and yet, the general assertion in some sectors is that a “frugal” life may actually be the real #bestlife: long-lived, fulfilling, non-excessive, non-selfish, and respectful of the environment.

Figure 13. A “frugal” word tree from mixed frugal social account tweetstreams

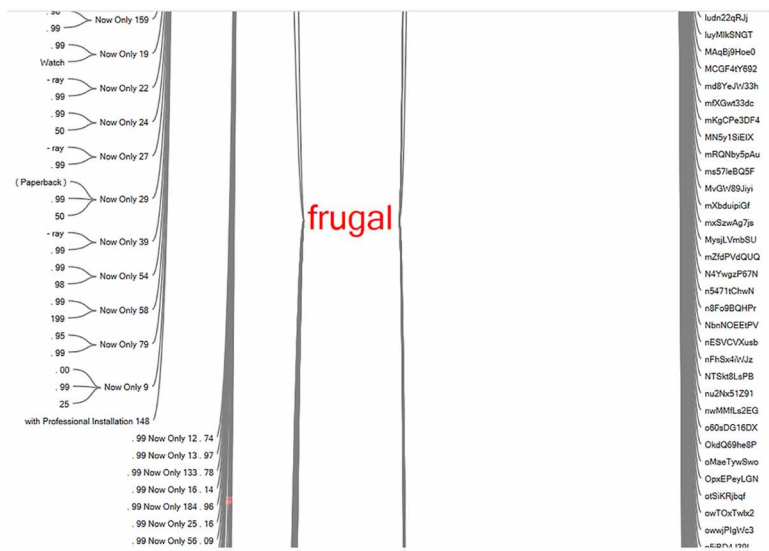


Figure 14. @Bestlifeonline Social network map on the twitter microblogging site



Figure 15. A Mixed sense of a #bestlife from a Twitter account



Sentiment Category	Frequency
Very negative	180
Moderately negative	300
Moderately positive	380
Very positive	180

image-based messaging, the Google Imagery set seems to include much more text and more “how-to’s.” This set was about a fourth the size of the Flickr set but seems to offer more unique and different extractable themes. Both image sets do show a bright and attractive sheen, with “join us” messaging. [Frugality is not inherently attractive to most. Communicators walk a fine line of engaging in “costly signaling” to show their commitment to a frugal lifestyle, but they risk losing their audience if they come across as too skilled, too elitist, too smug, too proselytizing, too superior, too critical, too blaming, and so on. Calling out others and casting aspersions are fast ways to alienate and lose an audience. Something that is too extreme will make it difficult for people to assume that they can make the sufficient changes. (Can you get by on \$5 a day?” is a non-starter in the West.) “Frugalistas,” “frugals,” and their adherents are preaching to the choir in part but also engaging others considering the lifestyles and choices. Imagine how far conversations get if the conversation starters are: “So how little can you live on?” “How wasteful are you in your daily life consumption?”]

frugal

Go to Google Home

Images

Shopping

Books

More

Settings

Tools

living

cheap

infographic

define

money

rich

cartoon

icon

word

minimalist

clip art

scotzman

life

3 Ways to Be Frugal Without Being...
wikihom.com

7 Frugal! Start-Up Tips from Millionaire...
entrepreneur.com

How to Become Habitually Frugal...
lafranciscanews.org

Cheap Virgin vs. Frugal Cha...
rebm.com

Frugality is not the Key to Riches...
businessinsightshub.com

Frugal, not foolish – Steemit
steemit.com

Smart Frugal Balanced Living Tips...
tearfreek.com

frugal in a sentence...
quotia.com

Simple Living (Green) Frugal Resourceful Money Saving Intentional Not Wasteful Efficient
Spend less, enjoy more! (Go Gingham...
gogingham.com

The Best Frugal Living...
thriftyfrugalmom.com

Definition of Frugal by Merriam-Webster
merriam-webster.com

16 Priceless Strategies for Being Frugal
fakemoneyonline.com

Why Being Frugal...
moneyunder30.com

Are You Frugal or Cheap? - \$\$.
squarespeak.com

Frugal Living Tip: Change Ho...
moneyandbusinessglossary.com

mindset of the frugal consumer...
moneysense.com

Frugality Disease...
moneysense.com

Being Frugal does not mean you are...
moneysense.com

extreme frugality...
moneysense.com

Advantages of Frugal Living
moneysense.com

Is Frugality Overrated? | All The...
thebudgetguy.com

There are redefinitions of entertainment and simple pleasures. A gray-haired couple sits together companionably on a bench each reading, with something that might be suggestive of #relationshipgoals. A different older couple is seated at a round kitchen table clipping coupons together, in an indication of maybe a fixed budget and maybe working together for frugal aims.

Some of the social images tout a frugal “new you,” and some suggest remorse from overspending and a lack of self-control. One image shows “6 simple ways for spenders to finally become frugal,” which suggests people in transition. There are guides for “beginners.” Some of the imagery indicates an awareness of the difficulty of staying disciplined. One visual advertises “ways to stay frugal” and to maintain. Another advertises “what to eat every day: a month of frugal meals” for people who prefer a more structured approach to discipline. There are “frugal living tips” calendars that may have the same effect.

Some of the language used in the visuals suggest religious motivations. One visual reads: “The frugal homeschooling mom living an abundant life on a not-so-abundant budget.” Another reads: “the spiritual discipline of being frugal.” Another one reads: “12 easy frugal ways to be a blessing to others.” Another visual points to the desirability of “debt free living” shown with a pair of scissors being used to cut up a credit card; such living without debt is a goal described by various Christian organizations.

A particular segment of the social imagery involves messaging about how to engage with holidays (Valentine’s Day, Christmas, July 4/Independence Day, Halloween) and seasons (Fall, Autumn), with big life events (weddings, family gatherings), celebrations (parties), activities (vacations, home staycations, trips, backpacking, camping), in equivalent ways to the mainstream but with adjustments for frugality. There are directions for “12 frugal days of Christmas” and “DIY stocking stuffers.” There are frugal gifts for men. (Quite a few of the gifts seem to be for the self.) There are décor ideas and decorating projects for the various holidays and seasons of the year. One visual promises an “ultimate guide to a romantic and frugal Valentine’s Day.” There are low-cost costume ideas for Halloween. There are “50 frugal ways to celebrate fall.” A frugal wedding can involve homemade dresses for the bride and her bridal party, and there can be savings on food and photos. People who “travel at home” can practice “frugal food tips” (“For travel at home: frugal food tips”). There are “frugal gift ideas for kids.” There are suggested ideas for hosting a “frugal fondue party.” “Frugal backpackers” are exhorted to “spend less (and) play more,” and there are even specific “frugal tips for the solo female backpacker.”

A stack of gold foiled covered chocolate coins with the words “10 Frugal Living Goals You Should be Making This Year.” An ambition is to be “fabulessly (sic) frugal healthy wealthy wise,” reads one word mark. There are everyday ways to live frugally, such as saving money on “household expenses,” “extreme couponing,” building a “frugal pantry,” engaging “frugal self-care tips,” using “frugal living tips for single mothers,” and working to “save money” without self-deprivation. Large families have “frugal living tips for large families.” Eating on a budget is a common theme: “10 easy & delicious frugal dinner recipes,” “family approved dinner recipes,” “10 frugal weeknight dinners to make when you’re broke,” “10 frugal weeknight dinners to make when money’s tight,” “frugal Paleo” diets, and others. There are “10 frugal foods to eat for a healthy pregnancy.”

Household concerns account for another tranche of social imagery from the “frugal” seeding term: “10 simple + frugal ideas to clean and organize your home...5 weeks to an organized home,” different “hacks, tips & tricks” for your home, tips for “frugal homemakers,” “7 ways a large family can be frugal,” and others. There are creative ideas for snacks, for making low-cost ice packs, for making anti-bacterial wipes—on a budget. There are lists for “everything you need in a frugal kitchen.”

There is a branch related to financial decisions: “Frugal Living: Smart Financial Decisions to Thrive!” Fashion lovers have strategies on “how to wear designer brands when you’re on a budget: sale, sale, sale.” Crafters can engage in “frugal crafting: how I get craft supplies and fabric for free or cheap.” For basic health needs, there are low-cost options, such as for “cracked heel remedies.”

“Frugal gardening” is a way to provide for a family, with potentially limited inputs, and outsized outputs. Some photos show chickens in a coop. There are idyllic images of farmhouses. Some messages

advertise “eating clean” via “healthy and budget friendly meal ideas.” There are descriptions of “frugal vegan” cooking, a flavor for every type of eater.

There is “frugal landscaping,” which can offer lower-cost options for yard work. People can apply frugal “laundry strategies.” Some of the visuals are flyers advertising frugal workshops for how to gain “frugal living skills.”

Children seem to figure centrally as an important area of focus. There are “20 kids activities you wouldn’t spend a dime on.” There are tips on children’s lunches. There are hand-sewn baby and toddler and child clothes. For those who may be anxious about frugal living, there is a visual sign that asks: “does frugal living harm kids?” Those who need to store toys have “over 15 super frugal toy storage ideas.” One image shows three boys (brothers?) sitting at a counter in front of their food and ready to share a meal. All three are smiling broadly at the camera. There are “frugal family fun ideas,” frugal “first birthday parties,” and “frugal food favorites.”

While much of the focus in the social imagery is about doing more with less (“slash spending”), some also suggest money-making from blogs and other forms of social media.

A meta-narrative “frugal millionaires” suggests that frugality has a value even for those who could choose to live otherwise. Another visual touts the “frugal habits of the super rich,” by capturing single tips from globally recognizable wealthy individuals based on their life experiences. Another visual touts “frugal NBA athletes.” The approach seems to be: Who do you respect, and who will you listen to, in order to promote frugal living? (It is notable that this information of wealthy frugals is second hand and broadcast by third parties. In terms of actual direct spokespeople for frugal living, most are young Caucasians and a few Asians—at least in this initial trawl of social communications data. There are mainstream media stories of billionaires who do not carry billfolds, but their reputations are sufficient that businesses will extend services and products on credit or on the promise of payment.)

Several visuals (usually Venn diagrams) compare a frugal family with a spendy one. A “frugal family” interacts with family and friends; they go hiking; they play board games; they engage in DIY; they buy index funds. A “spendy family,” by contrast, has debt; they live in a McMansion; they pay for a bottle service; they care about image; they go to malls; they buy purses and shoes there. And in terms of the overlap between the spendy and frugal family, they each “breathe air, eat, go potty, (and) sleep.” The visual suggests that the differences are not that extensive. Another visual (a vertical Venn diagram) suggests that frugal families drink wheat beer or India pale ale, buy Charmin, buy Honda and Toyota, shop Kirkland brands; outdoors, they engage in cooking, building and using DIY skills; use manual transmissions; invest; engage in “travel hacking” and engage in “MMM” (unclear meaning). The visual suggests that the lives of frugal families are rich. There are “frugal hacks for single living.” There are frugal gifts “for new moms” and “kid-friendly autumn craft projects.” There are warnings against profligate spending, such as “15 things frugal people don’t pay for,” “21 things frugal people don’t do,” and “10 habits of HIGHLY FRUGAL people that you NEED to know.”

In terms of technologies, one informational graphic differentiates between “homegrown” tech and “high tech, and others suggest luddite-approaches to technologies vs. technologically savvy ones.

People need conduct their “financial affairs” with “ethics & etiquette” suggests an image, with a risqué play on the idea of “affairs.” A lack of financial management skills leads to suffering. One cartoon shows a man hunched over at an ATM (automated teller machine), and one of two women observing him quips, “Withdrawal symptoms.”

Another comparative informational graphic contrasts a “cheap” person vs. a “frugal” one. One data visualization asks: “Frugal vs. Cheap: Which are You?” Frugal people “care about value”; they will buy

necessities at reasonable prices; they save up for things that they care about; they splurge occasionally as a reward; they “maintain good personal relationships despite their thrift.” On the negative side, “cheap” individuals “care only about price” and “save money for the sake of saving money” and eschew splurging; they offend people with their cheapness. Several images warn about not being “rude” to friends because of frugality. Others visual messages warn against “being boring” in “how to be frugal without being boring.” A different visual (overlapping circles on a white board or paper) addresses “frugal friends,” described as “Optimists! Happy! Fun! Smart!”

Another opinion-laden visual shows “frugal” as somewhere between “miser” and “cheap,” with the idea that people should not be out there shorting others or taking advantage of others. For social human beings, there are “10 frugal gift ideas.” Those with children who want to impress teachers can engage “100 free or frugal teacher gift ideas” and consider “frugal & diy teacher gifts.”

People not only have to engage in a social ecosystem but an environmental one. One visual shows how “frugal innovation” can increase the multiple uses of water (including gray water), to extend the life cycle uses of water, and to enhance its management as a resource. Multiple images suggest that frugality contributes to environmental conservation efforts and lessen environmental degradation.

A mind map on social media puts “frugal theory” at the center of a graph, with direct links to “food,” “DIY,” “shopping,” “reuse/repurpose,” “finance,” “lifestyle,” (and) “efficiency & sustainability.” Another degree out are related phenomena, including “small filling meals, cheap ingredients, (and) healthy” for food; “home products, repairs, (and) home projects” for DIY, “buy it for life” for shopping, and so on. There is a network of behaviors that have implications for the individual and for the larger society. A frugal life is one that is driven by “goals & purpose.”

In terms of businesses mentioned under the “frugal” label, there are book promoters, restaurants, carpenters, photography studios, and others. There is a whole other literature that deals with frugal innovations by businesses to ensure that the costs of their respective products and services are as low-cost as possible (based on smart and efficient designs). On social media, there are “frugal favorites” in terms of discount stores: Aldi’s, Dollar Tree, Dollar General, and “Frugal MacDoogal beverage warehouse.” There is a Frugal Kitchens & Cabinets (as a business name). Some antiques stores’ storefront and internal images are also shared. Online, Craigslist is a destination site. (Some of the images show laptops being used to earn and save money.)

There are “best books” lists for those who subscribe to frugality. There are frugal bookstores. There is a free downloadable and printable resource for how to feed “a family of 7 for just \$75 a week!” Some books provide angles on how to engage in “frugal innovation.” Some data visualizations show book covers about frugality. There are lists of the “12 best books on budgeting, saving money, frugal living & climbing out of debt.”

Some shared images seem to be “found images,” such as a street sign reading “Village of Frugality.” (There are faux “found images,” too, with street signs made to read other messaging.)

Hunger is a real phenomenon, and it is no joke. Some headings suggest real-world challenges, such as “frugal shopping tips for when times are tight” and frugal tips “for feeding your family.” For many this is about survival. One paneled illustrated work shows “handy tips for living in your car,” including what essential items to have, safe places to park at night, how to keep a low profile in a neighborhood, how to maintain personal hygiene, and how to live the “mobile life.” Some works offer tips on “epic frugality.”

For others, there is a built-in resistance. Those who tend towards pleasure-seeking may be attracted to “frugal hedonism.” There is a young woman who is a “frugal model.” Frugal vagabonds live by the motto: “Life is short. Save hard. Travel far.” Those who are pregnant select “10 frugal foods to eat for a

healthy pregnancy,” so there are mixes of considerations. There are visuals about “living well with less \$\$\$” and “fake-it-frugal,” which suggests less than full engagement. Some come-ons tease using the appeal of “secrets”: “6 frugal secrets no one has told you” (with an image of a young woman whispering in another’s ear). There are “9 frugal tips to finally lose 10 pounds),” for those interested in some weight loss. One image shows a crockpot; cans of beans, corn, and broth; seasonings and spices...for one-pot taco soup. There are “easy recipes from the frugal girls kitchen!” potentially building on a television comedy show about broke young women. There are ideas for “how to live frugally without feeling deprived.” Those who are online socialites may engage the meme of “how to deal with the fear of missing out (FOMO) when you must live frugally.” (Social media, with its focus on glamor and social brags, can be an especially hard space for those who want to be frugal. They have to give up the social one-up-manship, social comparisons, and acquisitory lifestyles portrayed on much of social media. The counter-messaging in the frugal EHM does provide an “authorizing environment” to practitioners and makes the lifestyle more appealing than it may seem on the face of things. Such encouragements may be sufficient to encourage some commitment to this path. For others, sharing on social media—impressing others—may also provide some support. Certainly, the practical information about how to maintain a family budget, how to avoid debt, how to control against financial binging, how to prepare foods in frugal ways, how to invest financially (and relatively safely), and how to avoid outsized negative impacts on the environment, are all life skills aspects of modern life.

Human nature, with its darker sides of easy jealousies and striving and judgmentalness, has to be suppressed for longer-term frugal commitments. Most people will not be satisfied with less than those around them.)

A number of the social images address issues of identity. There is a “frugal fanatic” referring to a committed individual. There are frugal people and non-frugal people, based on “20 things frugal people never ever do.” “Frugal entrepreneurs” engage in “low cost marketing and promotional” outreaches. Some frugal people are “minimalists,” who have a preference for sparsity and simplicity. There are “tests” to assess “how frugal are you?” and “Here’s how frugal you are, according to your personality type.”

Counter-Messaging

In the Google image set of some 486 images, there were a few that were explicitly counter message. One read: “10 signs you’re taking frugality too far and how to stop,” apparently for the extremists and the obsessives. One piece of advice reads: “Be frugal with your time, not your money.” Another counter viewpoint reads: “No one ever gets rich by being frugal.” A meme shows an intense actor in a scene, and this reads: “One does not simply stop buying lattes”

The “frugal” electronic hive mind membership seems to draw from the conservative to the liberal continuum, from the religious to the non-religious, from the environmentally minded to the non-environmentally minded. Core impetuses range from the personal to the social. Their commitments seem to range in intensity. Some basic role types in this EHM may be understood in Table 3, from drop-in visitor to the EHM to lurker to engaged member / user-generated content contributor, and influencer. Individuals can certainly move between role types and can change their levels of commitment.

Table 3. Behavior-based role types in the “frugal” electronic hive mind

Roles	Target objectives
Drop-in visitor to EHM	<ul style="list-style-type: none"> • Find information • Find occasional support • Discover what the “frugal” EHM is about
Lurker to EHM	<ul style="list-style-type: none"> • Learn new strategies • Learn new tactics • Learn new tips • Identify new resources • Explore the online communities
Engaged member (and) User-generated content contributor in the EHM	<ul style="list-style-type: none"> • Create an online persona and public reputation • Interact with a virtual community • Make acquaintances, maintain relationships • Make friends, maintain relationships • Interact with community members in RL • Elicit support for self-discipline • Elicit support for problem-solving • Co-lead the EHM • Share self-generated information with others • Share other-generated information with others • Share self-generated digital contents with others • Share other-generated digital contents with others • Help in problem-solving issues raised by others • Earn moneys • Gain non-monetary resources • Build a public following • Contribute to the strength and resilience of the EHM • Create value for the community
Influencer (leader) in the EHM	<ul style="list-style-type: none"> • Share ideas, resources, connections, and other resources • Recognize and support others • Recruit new members • Raise the profile of the EHM • Interact with others • Engage (and occasionally change) social norms • Co-lead the EHM • Create value for the community • Create aspirational goals • Maintain an earned and outsized influence on the EHM

DISCUSSION

The frugal living movement has attracted participants from different walks of life, and it has attracted the attention of people in different verticals interested in reaching a more resistant market. The idea of living more conscientiously and mindfully and without waste is an alluring one, and the constant thinking and constant improvement approach may enable swaths of humanity to live in the world in more sustainable ways. This non-threatening approach may be appealing to many and may enable speaking into people’s personal decisions and spaces in meaningful ways, peer-to-peer, friend-to-friend, given people’s receptivity to close and trusted others. If people are to internalize particular values and practices, working through people’s personal trust networks seems to be a winning strategy. Practical approaches at the lived level enable “small wins” and help avoid the paralysis of facing large-scale challenges (like environmental degradation). The support of an online community may enable greater encouragement of individual and small group commitments. Individual choices made individually can have widespread

(even global- or planet-scale) impacts, with potential implications on human survival. What is an alternative lifestyle today can gain wider adoption and become more mainstream.

The meta-narratives are about fiscal survival, ethical living, living closer to nature, having a slower pace of modern life, non-wastage of resources, religious commitments, and environmental protections.

This research work showed only a few spokespersons—individuals, duos, and families—for this value system and lifestyle. For this effort to advance, a larger number of spokespersons and models would be needed, and more diverse spokespersons may be needed. The inventiveness of the members of this EHM seem to have been applied at low-hanging fruit (home cooking, growing vegetables, applying craftiness, sharing resources, building furniture, and so on), and it is possible that there are many other endeavors that may be adopted at micro-to-macro levels.

This work offered an early effort at modeling electronically-enabled social membership. It showed more of a cyber-physical confluence. If nothing else, this work shows that studying EHMs is not just an academic exercise but engages real-world implications.

FUTURE RESEARCH DIRECTIONS

How transferable this mix of appeals is to those in other cultures and social contexts may vary. It may well be that this lifestyle will be appealing but for a whole different set of other messaging, around community or other values. It is likely that frugality in other contexts likely will involve different sets of human-to-human innovations, given the differing cultures and contexts. Some of the social imagery are suggestive of non-Western approaches, such as “rickshaw banks” and “easy paisa” mobile banking and Grameen Bank microloans (with relatively high interest rates), and others. Some images show mini clay refrigerators (which do not require electricity) used on the African subcontinent.

This work can be built on in various ways. The main research methods here involve using publicly available data from social media platforms. These were captured at macro levels (mass search data, mass book data), meso levels (Wikipedia article networks), and at micro levels (various social media accounts based on frugality and #bestlife). Certainly, there are more direct ways to elicit responses, such as by direct online surveying. It may be interesting to map the membership of the “frugal” EHMs based on user motivations, based on self-reportage. It may be helpful to evaluate the outcomes of people’s EHMs in terms of measurable behaviors and outcomes.

CONCLUSION

The meta-narrative of “frugality” is a dispersed one which does not seem to be an important challenge to mainstream material-based living. It seems to be something simultaneously aspirational as it is practical. And yet, the subjectivities of people and their intersubjectivities in interactions enable mutual encouragement in this space—for engaging with difficult challenges of living frugally in the present days. The frugal EHM does inform a range of endeavors that affect people’s sparser and more mindful lifestyles, in many ways. On social media platforms, the frugality EHM involves the sharing of creative crowd-sourced ideas for living a form of a #bestlife and being in harmony with the self, with others, and with the environment. Some may be read as “trial balloons” to see how well others may accept those grassroots bottom-up approaches.

Some of the social messaging suggests extremes, with common searches for how long expired food may be consumed without severe adverse health effects. There are stories of making do on a shoestring, such as living out-of-cars and being homeless...and even travels abroad on a shoestring (hitchhiking, trading work for food, and other endeavors). Equipment, like microwaves, may be used long after their integrity has been compromised.

Perhaps Benjamin Franklin said it best in two quotes that suggests a balanced approach: “Waste neither time nor money, but make the best use of both” and “Wealth is not his that has it, but his that enjoys it.” A more modern take is a quote from American industrialist Owen D. Young, who said:

We are not to judge thrift solely by the test of saving or spending. If one spends what he should prudently save, that certainly is to be deplored. But if one saves what he should prudently spend, that is not necessarily to be commended. A wise balance between the two is the desired end.

And finally, the idea of frugal living should not take away from the need for livable wages, social security nets, school nutrition programs, affordable healthcare, and policies and programs to address homelessness. Subsistence, no matter how it is dressed up and even glamorized, can be brutal and with long-term detrimental effects.

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KEY TERMS AND DEFINITIONS

Autocoding: The coding of information through computational or machine means.

Electronic Hive Mind: A synchronous temporal and informal patchwork of emergent shared social consciousness (held by geographically distributed people, cyborgs, and robots) enabled by online social connectivity (across a range of social media platforms on the web and internet), based around various dimensions of shared attractive interests.

Frugality: Thrift, resourcefulness, making do with less.

Micro House: A smaller-than-regular-sized home, built often as part of the tiny house movement.

Sentiment Analysis: The analysis of language for positive or negative sentiment (without neutrality).

Zero-Waste Lifestyle: A process of making decisions and consuming in ways with as little waste as possible.

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Chapter 41

“Too Good to Be True”: Semi-Naked Bodies on Social Media

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ABSTRACT

This chapter examines how body image deception is created and understood in social media. The authors focus specifically on the beach body, which is a narrower form of bodily representation online, but where deception is especially likely to occur. Focus group discussions with young adults revealed that editing and perfecting the beach body is commonplace and even normalized on social media. However, participants distinguished between celebrities and friends in expected use of manipulation and seemed to place a limit on the acceptable types of manipulation: body tan but not body shape, for example. The authors discuss the implications of these discussions and how applying deception theory in body image research can provide useful insights.

INTRODUCTION

Media images, such as of the ideal beach body, increasingly undergo digital alteration and enhancement, so that most pictures we see online represent an idealized version of reality. This trend applies to celebrities and regular users alike. In this “online appearance culture” (Williams & Ricciardelli, 2014), users seem obsessed with posting, sharing, liking and commenting on pictures, and appearance seems to be of growing importance. Through these behaviors, users contribute to the normalization of unrealistic body and beauty ideals, which can be damaging to body image, self-evaluation and overall wellbeing (Fardouly, Diedrichs, Vartanian, & Halliwell, 2015).

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The beach body is an especially interesting niche in the larger body image literature, due to the high expectations placed on individuals offline and online, and the likelihood that those expectations cannot be met. Thus, the mediatized beach bodies of young people online are not only photographic versions of their real bodies, but an improved and perfected representation, which agrees with the cultural standards of the day and which sometimes is quite removed from the original. Through photo manipulation, accessorizing and body positioning, these “easy lies” (Harwood, 2014) become possible.

In this chapter, we will examine mediatized images of the beach body in the context of social media through the conceptual lenses of deception, a unique combination of concepts, which has not been explored together previously, and which can expand significantly the current range and depth of research on body image and deception. We will explore what motivates young people to engage in online deception about their beach body and how they achieve it.

BACKGROUND

Body Image and the Beach Body: An Online Culture of Perfectionism

Body image is “a person’s perceptions, thoughts, and feelings about his or her body” (Grogan, 2017). The dimensions, determinants and processes of body image are complex and multifaceted, given that a person’s body parts and vital organs form fundamental components of the human self and identity (Belk, 1988). Cash (2012) differentiates between body evaluation, i.e. the (dis-)satisfaction with one’s appearance, and body investment, i.e. the affective, cognitive and behavioral relevance of the body to a person’s self-evaluation. In the context of the beach body, the behavioral component is fundamental for understanding how individuals try to control their bodies in order to look as perfect as possible during summer.

Body image attitudes form and develop throughout a person’s life, starting in early childhood and changing across the lifespan (Cash, 2008). They are based upon four factors: personality traits, physical characteristics and changes, interpersonal experiences with family and peers, and cultural socialization (Cash, 2008). The latter is particularly important in the context of this chapter, as it is through acculturation that young children learn what is considered attractive and beautiful in society. To conform to society’s expectations, individuals, most notably women, often invest heavily into their looks, and that may involve subtle forms of deception.

Historically, societies have focused on people’s outward appearance and even considered it a symbol of a person’s (dis-)ordered lifestyle (Bordo, 2013). A slim female body has been associated with positive socio-cultural qualities, such as success, social appreciation, and happiness (Grogan, 2017), and muscular male figures have been linked to strength and heroism. Overweight, in contrast, has been associated with negative attributes, such as lack of discipline and laziness (Murray, 2016). Equally, bodies that do not conform to beauty standards, such as fat, disfigured, disabled, or ageing figures, are marginalized and stigmatized (Wardle & Boyce, 2009). While slenderness has endured as the most salient bodily feature for women to aspire to over the decades, trends have also developed within body ideals. The 1990s were characterized by enlarged breasts and slender hips, while the 2000s saw a shift towards more voluptuous bottoms. Recently, muscularity has affected both men and increasingly women (Grogan, 2017).

The female beach body is typically portrayed as “slim, tanned, young, Caucasian, female and biki-nied” (Small, 2007, p. 87), which is in congruence with the common public understandings of how a (semi-naked) body ought to look.

Clothes serve as an important means to manage appearance, for instance by covering or concealing perceived bodily imperfections (Tiggemann & Andrew, 2012). When wearing swimwear, individuals’ bodies are exposed and reveal details that are normally hidden from public view. The extent to which one conforms to the common beauty norms becomes visible and assessable then. Therefore, individuals try to get “beach body ready”, i.e. achieve an ideal beach physique as depicted in the media through bodily preparation techniques such as dieting, exercising, hair removal and fake-tanning, which is linked to high levels of self-surveillant and controlling behaviors. This molding of one’s regular body into a “beach body” is a form of body modification, which is linked to malleability beliefs and seeing the body as a project (Small, 2007; Pritchard & Morgan, 2012).

Past investigations of the beach body have been largely limited to holiday experiences and representations in traditional media, such as magazines, neglecting contemporary digital culture and the visual trend of presenting bodies online. However, the beach body is no longer confined to the beach and now extends to a broad spectrum of digital platforms.

Media images, such as of the ideal beach body, increasingly undergo digital alteration and enhancement, so that most pictures we see online are closer to fiction than reality. Against this background, we suggest distinguishing between real bodies at the beach, i.e. semi-naked figures in swimwear in natural environments, and beach body images as displayed in media contexts, i.e. mediatized beach bodies, as they differ from each other significantly. In this chapter, we aim to look specifically into mediatized beach body images in the context of social media, a topic that has not yet been explored, but that we believe is of great importance, as it enables researchers to better understand how women mediatize images of their semi-naked bodies online.

Driven by the need to present the best possible version of themselves to others (Haferkamp & Krämer, 2011; Manago, Graham, Greenfield & Salimkhan, 2008), individuals adjust the personal information they reveal through their online profiles and the way they (inter-)act with others, much of which is visual. In this “online appearance culture” (Williams & Ricciardelli, 2014), users seem obsessed with posting, sharing, liking and commenting on pictures, and appearance seems to be of even greater importance than in offline life. On Instagram alone, approx. 95 million photos are uploaded every day (Lister, 2018), and in 2017, 54% of global Internet users reported that they shared private and sensitive photos and videos of themselves digitally (Statista, 2018). Beach body pictures are part of this trend. As of 23 October 2018, there have been 9,530,236 postings using the hashtag #beachbody, 1,747,138 postings using the hashtag #beachbodycoach and 64,670 postings under the hashtag #beachbodyready on Instagram alone. Some scholars have begun to analyze sexualized selfies (Hart, 2016; Miguel, 2016; Mascheroni, Vincent & Jimenez, 2015), but we know little about individuals who post pictures of themselves wearing swimwear.

While existing findings on social media and body image are somewhat inconsistent, photo-based online activities have been linked to poor body image (Meier & Gray, 2014). Since the publication of that study in 2014, photo-based activities on social media, including the taking and posting of “selfies” (a self-portrait, typically taken through a smartphone camera) and “usies” or “wesies” (photos that include others as well), have increased even further, particularly amongst teenagers (Grogan, Rothery, Cole, & Hall, 2018; McLean, Paxton, Wertheim, & Masters, 2015).

Similar to mass media images, photographs posted on social media are increasingly manipulated and digitally enhanced. Some 70% of 18-35-year-old women regularly edit their images before posting them

(Renfrew Foundation, 2014). Young users in particular tend to put significant effort into their pictures before uploading them. To achieve the aspired look, they often take multiple photos before carefully selecting and closely monitoring the one they find suitable to show others (Fardouly et al., 2015).

New apps and tools to modify pictures are routinely introduced and offer many ways to creatively transform ordinary photographs: re-coloring, adding polarization effects or additional elements (e.g. film scratches, picture frame), modifying film textures and tones, or retouching unwanted appearance details (Caoduro, 2014). But the most common editing strategy, as suggested in Grogan et al.’s (2018) qualitative study, is the photographic angle, through which individuals aim to present themselves as perfect. Thereby, the focus is often on the face and unwanted body parts are covered or hidden.

Through these behaviors, users contribute to the normalization of unrealistic body and beauty ideals, which can be damaging to body image, self-evaluation and overall wellbeing (Fardouly et al., 2015). Another study found that girls who shared selfies online on a regular basis and who engaged in photo manipulation were likely to feel negatively about their bodies and to show eating concerns (McLean et al., 2015).

Apart from sharing their own pictures, social media users are exposed to other users’ postings. This includes private users, such as family and peers, and professional users, such as celebrities or brands. Those postings offer orientation for what other bodies look like and what is considered beautiful, while their number of likes, shares and positive comments shows what kind of pictures and bodies receive social appraisal from others. This may increase users’ desire for a similar response on social media. Regular views and comments on the profiles of social media friends, i.e. social grooming, have been linked to a drive for thinness (Kim & Chock, 2015).

Besides the many studies that have focused predominantly on the negative aspects linked to social media usage and photo-based activities, some scholars have suggested that selective self-presentation through online profiles and the extra care involved may actually improve self-esteem (Gonzales & Hancock, 2010) and posting selfies might be an empowering experience for women (Tiidenberg & Cruz, 2015). Positive feedback from other users can add to the positive sensations resulting from social media behavior (Valkenburg, Peter, & Schouten, 2006). Despite these findings, most studies have uncovered negative impacts of social media usage on body image (e.g. Eckler, Kalyango, & Paasch, 2017; Fardouly et al. 2015; Kleemans, Daalmans, Carbaat, & Anschutz, 2018).

The body positivity and body neutrality movement have begun to spread online non-idealized and unfiltered images of people with more diverse body shapes and skin colors, many of whom have disfigurements and other “imperfections” that are typically excluded from thin-idealized imagery, including beach body pictures. A recent study demonstrated that being exposed to body-positive Instagram posts positively affected young women’s mood, body satisfaction and body appreciation, and seeing more of this type of content might be a promising approach to trigger positive body image in social media users (Cohen, Fardouly, Newton-John, & Slater, 2019). But despite the growing attempts at showing diversity and its obvious positive effects, many social media users seem hesitant toward showing what they truly look like. One could consider that the pressure to present an idealized version of the self and to receive positive validation from others is still stronger than the bravery to show an “imperfect” self.

DECEPTION THEORY: A NEW OUTLOOK ON THE BEACH BODY

Deception has been studied from various perspectives: psychological, sociological, linguistic, etc. We will examine deception as a communication process, which involves a sender, a message and a receiver. Typical research areas include examinations of motivations for senders to engage in deception (McCornack, Morrison, Paik, Wisner, & Zhu, 2014), the deceptive message itself (Markowitz & Hancock, 2018) or the receiver and how they perceive and respond to the deceit (Levine, 2014).

Deception is often defined as “intentionally, knowingly, and/or purposely misleading another person” and messages involve “intent, awareness and/or purpose to mislead” (Levine, 2014, p. 379). Deception can include lies, omission, evasion, equivocation and generating false conclusions with true information (Levine, 2014). In terms of online communication, deception is a common focus of research. As Toma and Hancock (2012) stated, “Concerns about online deception are as old as the Internet itself” (p. 78).

Theoretical models propose that most people tend to be honest most of the time and only a few prolific liars tell most of the lies (Levine, 2014), which has been supported by evidence (Markowitz & Hancock, 2018; Serota, Levine, & Boster, 2010). As discussed previously, we can find large numbers of digitally altered photographs and optimized online profiles in the social media landscape. But does this polishing of one’s online profile or photo constitute lying? Users may not perceive this behavior as lying, because they may see the lie as a low stake normative response to online codes of conduct, something Harwood (2014) called “easy lies”. Such lies, also called “light”, “do not cause distress, are not seen as serious, are not regretted, are more pleasant than the truth for all parties involved ... and the liar would not really care if the lie was discovered” (DePaulo et al., 1996, as cited in Harwood, 2014, p. 407).

These small and harmless lies (such as commenting favorably but undeservedly on someone’s cooking or praising a child’s unsuccessful art project) are often situational and occur frequently in everyday interactions with friends and family. Thus, Cole (2014) argues that situational complexity can sometimes influence the creation of deceptive messages; and intent or awareness, which are often assumed to guide deception, can occur during the process of lying or even post facto. This suggests that deception may not be as rational and top-down as many scholars believe. As Cole (2014) argues, deception is “almost certainly driven by automatic and unconscious processes” (p. 396).

Some have demonstrated that in the field of online dating users lied often but subtly in order to enhance their profiles (Hancock & Toma, 2009; Toma & Hancock, 2010). Self-presentation and self-enhancement are major motives for deceiving others in the context of online/mobile dating (Markowitz & Hancock, 2018). The authors discovered that close to two-thirds of deceptive content was driven by impression management, specifically related to self-presentation and availability. The asynchronous and editable features of online dating create the perfect conditions for deception: “Users have an unlimited amount of time to create their self-presentation and the ability to revise it to make it both flattering and believable” (Toma & Hancock, 2012, p. 79). The same can be said about social media in general and how users portray their bodies and overall persona. With these media affordances at hand, users often lead a carefully orchestrated campaign of self-presentation (Toma & Hancock, 2012) and the different genders tend to value different aspects of their appearance. Men were typically found to exaggerate their height and women to underreport their weight and intentionally post less accurate photographs (Hancock & Toma, 2009; Toma & Hancock, 2010; Toma, Hancock & Ellison, 2008). This attempt at self-optimization online is an important aspect of online culture, as it contributes to unrealistic images and an atmosphere of idealized body-centered content.

These findings have direct relevance to body image and to the beach body, where a possibly flawless appearance seems as the license to expose one’s semi-naked body and to receive social approval from others. Another similarity to online dating is that the ideal beach body has long been connected with romance and successful sexual relationships (Jordan 2007, Small 2016). This refers to situations at the beach and for media contexts, where women in swimwear have been portrayed as “sexually alluring decorations”, i.e. sexual objects to be looked at (Jordan, 2007, p. 94). Deception thus seems likely to occur in the context of the beach body as well.

This chapter will explore two theories of deception, which address different aspects of the communication process. The Information Manipulation Theory 2 (IMT2) focuses on the creation of a deceptive message and the motivations of the sender. It “conceptually frames deception as involving the covert manipulation of information along multiple dimensions and as a contextual problem-solving activity driven by the desire for quick, efficient, and viable communicative solutions” (McCornack et al., 2014). The theory focuses on situational triggers of deception and diverges from previous models, which see deception as top-down, intentional and conscious.

Also applicable is the Truth-Default Theory (TDT) by Levine (2014), which examines the deception process from the viewpoint of the receiver. The theory posits that when people communicate with each other, they tend to presume that their conversation partner is basically honest. This presumption of honesty makes possible efficient communication and cooperation, and in most cases is correct, as most people tell the truth most of the time (Levine, 2014). This presumption also makes people vulnerable to manipulation and deception, at least in the short-term, but the theory argues that the truth default presumption is also highly adaptive to the individual and the species, and thus will improve accuracy of detection. The theory diverges from previous work in the field by focusing its detection powers not on the behaviour or nonverbal cues of the sender of communication, but on the message itself and its context. “Most lies are detected either through comparing what is said to what is or what can be known, or through solicitation of a confession” (Levine, 2014). This focus on the message and its context is especially relevant to social media, where the sender is not seen face to face and thus, they cannot provide behavioral cues of deception. However, there are plenty of opportunities to study the message itself due to the written record that remains and the asynchronous mode of communication.

The two theories have been applied to the study of politicians dodging questions and how people respond and try to detect those behaviors (Clementson, 2018a), how politicians accuse each other of evasiveness, which may affect voters’ attitudes about their dishonesty (Clementson, 2016), and the role of partisan bias when detecting politicians’ deception (Clementson 2018b). TDT has also been applied to various settings for the study of how people detect deception (e.g. Blair, Reimer, & Levine, 2018).

This study is the first known attempt to apply deception theories to the field of body image. While the concept of body deception has been used previously, it was linked to social comparison theory but not to any deception theories (Hildebrandt, Shiovitz, Alfano, & Greif, 2008). TDT and IMT2 are particularly useful, as together they address different aspects of the deception process and also offer a more updated and nuanced view of deception compared to some of their predecessors (Cole, 2014; Levine, 2014; McCornack et al., 2014). We will examine the sender, the message and the receiver of this communication process in an effort to discover how body image deception is created and understood in social media. We pose the following research questions:

Research Question 1: What motivates users to engage in online deception about the beach body?

Research Question 2: How do users engage in online deception about the beach body?

STUDY METHOD

This exploratory study involves 25 undergraduate international exchange students, aged 19-23, from 19 different countries and five continents: Europe, North and South America, Asia and Oceania. The students participated in four focus groups (three groups were all-female, one group was all-male) at the University of Cologne, Germany.

They discussed their perceptions of the beach body in online and offline contexts. As 92% of participants used Facebook and Instagram every day, based on a questionnaire they filled out, we could ensure that they were familiar with the usage and content posted on social media, irrespective of their home country.

Data was collected in the summer, when the beach body topic is frequently promoted in the media. Therefore, participants would likely have been recently exposed to related pictures.

The focus groups were facilitated by a fellow student who ensured that all participants were included in the discussion and that the discussion was focused on the purpose of the study. Focus groups lasted between 50 and 90 minutes. Participants were asked to discuss six broad questions about social media, two of which will be considered as a foundation for this chapter. The first question was: “What (changing) behaviors, both offline and online, have you observed amongst your female peers when it came to achieving a beach body?” The second question was: “Please think about some typical beach body postings that you can find on your social media newsfeed, e.g. published by friends or any pages/people you like or follow. How do those postings differentiate (a) from one another and (b) from real-life situations at the beach?”

Although the questions themselves aimed to evoke various comments and experiences, those often revolved around deception, as will become evident in the following section. Additionally, each participant filled in a short survey about their demographic data and social media use. All discussions were audiotaped and transcribed verbatim to allow inductive systematic analysis. See Table 1 for details on the participants.

FINDINGS

The findings below are guided by our research questions and structured around them. Based on the huge number of pictures shared online daily, one could expect users to deal with them routinely and perhaps even quickly. But our focus group discussions revealed that taking, choosing and eventually posting the “right” picture might be a lengthy process, which can involve much consideration and extra care in order to look good and receive positive feedback and appraisal from others. All groups were very clear that the ideal beach body as presented in the media, most notably on social media, differed considerably from real bodies at the beach. They thus confirmed our idea to differentiate between real and mediatized beach bodies and Grogan et al.’s (2018) suggestion that “there are disconnects between women’s identity as portrayed in selfies and their ‘real’ offline identities” (p. 26). How exactly beach bodies are being mediatized in social media contexts and the role of deception will be discussed below.

Table 1. Focus group participants

Focus group	Name	Age	Home location	Facebook use	Twitter use	Instagram use
1	Female	n/a	Europe	Several times a day	Less than once/ twice a week	Several times a day
1	Female	22	Asia	Once/twice a day	I don't know	I don't know
1	Female	21	Europe	Several times a day	Less than once/ twice a week	Several times a week
1	Female	n/a	Asia	Several times a day	Less than once/ twice a week	Several times a day
1	Female	n/a	Europe	Once/twice a day	Less than once/ twice a week	Once/twice a day
1	Female	21	Europe	Several times a day	Less than once/ twice a week	Once/twice a day
2	Female	n/a	Europe	Several times a day	Less than once/ twice a week	Less than once/ twice a week
2	Female	22	North America	Once/twice a day	Once/twice a day	Once/twice a day
2	Female	21	Europe	Several times a day	Several times a day	Several times a day
2	Female	22	Europe	Several times a day	Several times a week	Several times a day
2	Female	21	Europe	Several times a day	Less than once/ twice a week	Once/twice a day
2	Female	n/a	Europe	Several times a day	Less than once/ twice a week	Several times a day
2	Female	n/a	South America	Several times a day	Less than once/ twice a week	Once/twice a day
3	Female	20	Oceania	Several times a day	Less than once/ twice a week	Once/twice a day
3	Female	22	Oceania	Several times a day	I don't know	Several times a day
3	Female	19	Asia	Several times a day	Several times a day	Several times a day
3	Female	20	Europe	Several times a day	Less than once/ twice a week	Once/twice a day
3	Female	n/a	Asia	Less than once/twice a week	Several times a day	Less than once/ twice a week
3	Female	23	Europe	Several times a day	Less than once/ twice a week	Once/twice a day
4	Male	n/a	South America	Once/twice a day	Less than once/ twice a week	Less than once/ twice a week
4	Male	n/a	Europe	Several times a day	Less than once/ twice a week	Several times a day
4	Male	20	Europe	Once/twice a day	Less than once/ twice a week	Less than once/ twice a week
4	Male	21	South America	Several times a day	Less than once/ twice a week	Less than once/ twice a week
4	Male	n/a	Europe	Several times a day	Several times a day	Several times a day
4	Male	21	Asia	Less than once/twice a week	Less than once/ twice a week	Less than once/ twice a week

Motives for Online Deception About the Beach Body

As discussed earlier, online self-optimization of one's body via presenting incorrect information or omission or leading to false conclusions is considered deception. Past literature has demonstrated how social media users generally try to present their best version online (Haferkamp & Krämer, 2011; Manago et al., 2008). But the focus groups revealed that posting pictures of their semi-naked appearances seemed to be exclusively reserved for women who already had a “good” body in real life:

“Too Good to Be True”

...you need to know that your body is almost perfect, you know, to post a picture. And you don't use Photoshop to change your shape. You can change the color of your skin or something, but you still need to have a perfect body to post these pictures. (Female 1)

Having an attractive physique thus seemed to be a pre-condition for posting a beach body picture online and possible motives for doing it could be similar to those found for online dating: self-presentation and self-enhancement (Markowitz & Hancock, 2018).

Even though modern technology, such as digital photo alteration apps, could easily transform any picture into a “perfect” version, there was still the expectation to have a good-looking physique in real life and to put effort into it. However, the asynchronous nature of social media and the extended opportunity for users to gaze at each other's photos, and in this case beach bodies, meant that the stakes for online representations were higher than in offline settings.

...I think when you're posting something on Instagram, you have to look better there because it's like a picture and you can look at it for a long time. But when you're in real life, you're always like in a move. So people are not so crazy about how they look in real life because they always look better in real life than on social media because they are like in motion all the time. And the perception of people is absolutely different as well. It's like “Okay, she or he doesn't have a perfect skin or something. So what? Nobody is perfect! So what?” But on social media it's like “Oh look, no perfect skin, oh my God!” So the perception is different. You can afford for yourself not to be perfect in real life because nobody is perfect. But in social media, you have to be like all perfect. (Female 2)

However, throughout our focus groups, females were described or described themselves, as rather hesitant toward posting beach body pictures online. One reason was culture. Participants from Korea and China emphasized that acts of posing and showing off were generally disapproved of, and social media users would rarely do it. In other countries such as Russia, posting beach (body) pictures related more to stating that one could afford beach holidays rather than to exposing an ideal body. Thus, a second motivation for posting beach body pictures related to demonstrating social status. A photo from the beach may be directly about your body, but indirectly, and maybe more importantly, about showing that you can afford a beach holiday. These findings demonstrate the importance of studying body image from an intercultural perspective and the beach body is a good case study of that.

A motive for not posting beach body pictures may, however, be the explicit expectation that they should look perfect, as discussed previously. If the photos do not conform to the socio-cultural understandings of ideal beauty, girls may feel insecure about exposing their semi-naked appearances online or fear negative public feedback. The perception of the beach body in social media contexts was rather standardized and bodies that differ from the “beauty ideal” were not mentioned, even though many participants favored more realistic beach bodies when asked about different contexts.

How Users Engage in Online Deception About the Beach Body

Participants shared various techniques for enhancing their beach photos before and during the actual photography. Based on high expectations and awareness of being looked at and critically evaluated by others, picture taking at the beach was linked to females putting on make-up and choosing the right outfit, i.e. “fancy apparel,” such as good looking and well-fitting (or even form-enhancing) swimwear

and beach accessories, to prepare for a good shot. Some groups also mentioned last-minute exercising before taking a picture in order to increase muscle definition.

So the pictures online ... Obviously they are never as good as in life. Because you put a filter on it, you do like ten push-ups before you take the photo, you know. It's stupid. (Male 1)

Apart from the general preparations to look good on beach body pictures, participants listed some additional procedures. The most salient were mimics or posing. It seemed particularly relevant to keep smiling, look sexy and indicate good mood, but in a grown-up and serious manner, not in a childish or funny way:

And like that means that you're like sexualizing your body and it's like the main goal. It's not like 'I'm having a fun time at the beach with my friends,' it's like 'oh, look at my really skinny bikini photos.' And I'm thinking of people who do it just to take bikini photos to show off. And the whole thing that Instagram builds is the mindset that you gonna have to post pictures like that. (Female 3)

Like, I feel like I'd rather have a funny photo with my bra or with my arse not being quite as skinny as it should, but ... (Female 4)

Yeah, but then just having a good time! (Female 3)

Yes, and rather than those pictures like 'I'm serious and I'm posting', I'd rather have a funny photo. (Female 4)

As the excerpts above show, sexual objectification was perceived as normative amongst the female participants, even though they wished to differentiate from it. Showing certain mimics and moods on pictures, also described as “playing” by some participants, was perceived negatively and brings the question of why women feel the need to be smiling and in sexy poses. Reasons may be manifold and originate from each person's individual personality, but our study revealed considerable peer pressure. This supports the idea that one's body image may be influenced by family and peers through the social pressure they exert (Grogan, 2017).

This focus on mimics and poses also relates to the earlier studies on deception, which examined people's gestures, faces and other non-verbal cues for signs of cheating (e.g. Ekman, 1992). While more recent works have focused on the message rather than the sender's face to detect deception, the fact that so many young people focus on their non-verbal cues in photos and that has now become part of the deceptive message may prompt a re-examining of senders' features and cues when detecting deception.

When it came to posing, the desire to look slim and muscular dominated across cultures, which indicates a high internalization of Western ideals. To achieve this, young people would apply different poses and flex their muscles, which confirmed the aforementioned tendency toward last-minute workouts.

So many of my friends try to show the perfect body on social media. But of course they are normal people. They don't have Photoshop and these things. But I do realize they are trying their best to look thin ... like they are trying their best to look the skinniest or the strongest with lots of muscles and stuff. (Female 5)

While mimics and gestures were of particular importance, background features seemed less relevant or perhaps respondents thought of them as self-explanatory and not worth mentioning. This raises the question of whether backgrounds generally become less important if there is a (semi-naked) body in the picture and whether some kind of selective perception may occur. Future research could explore this question further.

Even with the right preparations, mimics and gestures, users may not be entirely satisfied with their pictures and optimize them further before posting. They may first pick the best shot from the series they took and then apply a filter or otherwise edit the picture. Amongst our participants, digital alteration of pictures was linked stronger to celebrities or professional advertisers than to social media “friends”.

This became particularly clear in the context of advertising, where participants stated rather matter-of-factly that bikini models on adverts looked unrealistic, similar to celebrities. The digital enhancement of their social media pictures was as obvious as the fact that some of them had cosmetic surgery. Even though participants stated that it “looks like a cartoon [and] can’t be real”, it seemed to be accepted as part of being famous. In fact, examples were given of celebrities such as Kim Kardashian who lost many followers after posting a picture of their “real” body. Some participants felt sorry for them, whereas others made fun. Overall, it appeared that digital alteration was accepted or at least considered normal if participants did not have a personal, close relationship to the sender of the picture. These findings are in line with Grogan et al.’s (2018) qualitative study in which interviewees showed awareness of celebrities manipulating their selfies in order to look perfect.

Despite this awareness, it was repeatedly stated how comparing against better-looking people on social media made participants feel bad about their own bodies and increased their wish to look better. Our results thus support findings of previous studies on body image and social media, in which processes of upward comparison were identified as triggers of negative body image (e.g. Eckler et al., 2017; Fardouly et al. 2015; Kleemans et al., 2018).

Increased awareness of deception through digital alteration may not protect young people from negative feelings about their body or comparing against idealized images. In fact, a recent experiment on the effects of photo manipulation on Instagram showed that such photos had direct links to lower body image, even though manipulation was detected by participants (Kleemans et al., 2018). Reshaping of bodies was poorly detected, however, and the photos were still evaluated as realistic (Kleemans et al., 2018). This is an interesting finding for research aiming to identify mechanisms to trigger positive body image. It also reminds of recent findings on the use of disclaimer labels on images in traditional and social media contexts, which suggested that those had no protective effect on individuals’ body dissatisfaction, even though they clearly indicated that images were edited, hence unrealistic and deceptive (Bourlai & Herring, 2014; Tiggemann, Brown, Zaccardo, Thomas, 2017; Bury, Tiggemann & Slater, 2017; Fardouly & Holland, 2018).

The differing perceptions of our respondents indicate that deception on social media is somewhat normalized and takes place in various forms.

First, some techniques to make oneself look better on pictures might be more acceptable than others. For instance, applying filters might be considered okay and even normative, whereas slimming down via a photo-editing app may be seen as unacceptable. Similarly, Grogan et al.’s (2018) study revealed, “manipulating online ‘identity’ through altering the appearance of selfies was seen as a legitimate, and even necessary way to enhance perceived attractiveness” (p. 25). They identified some “socially-shared rules of self-presentation” (p. 26) through which individuals tried to conform to norms and expectations

of ideal beauty. These rules contained certain no-goes though, such as posting sexually suggestive pictures. It is well imaginable that the degree of digital manipulation might also be affected by those rules.

Second, idealized images were generally linked more to celebrities than to “friends”, which is interesting because as discussed earlier, photo manipulation was somewhat accepted or even normalized. This leads to the question whether users tend to perceive their friends as more trustworthy and genuine than celebrities, so that they may look at them in a less critical way or whether ordinary social media users are perhaps less likely to artificially enhance their beach body images in other ways than through “basic” adjustments such as lighting or contrasts. The existing literature provides limited findings on this relatively new research topic, so more data are needed to deepen our understanding.

The last possible stage of deception is when posting pictures online. Instagram is a photo-centric platform where users can link their pictures to certain keywords using hashtags. And even though the hashtag #beachbody is a prominent one, as stated previously, beach body pictures may not always be provided with this or another beach body-related hashtag, but with different ones. In fact, respondents in all focus groups linked postings of beach body pictures to postings related to health and fitness, claiming that these were the contexts in which they were exposed to most pictures of women in bikinis/swimwear, with many being before-and-after images. To shed light onto this, future content analysis research can investigate how these hashtags correlate.

Health and fitness are frequently used terms in social media, so that they might in fact be used to disguise one’s purpose to get beach body ready:

I think in America, it’s like more and more like not being beach body ready, but more like being healthy, I guess. And so... it’s more like “Oh, I’m...” well I don’t know, I think even some of my friends are... I know that they will say: “Yeah, I just wanna be healthy. I wanna be fit.” and stuff, but then like they’re like “Oh my God, I need to fit in to this pair of jeans” and they’re like “Oh my gosh, I really want to look good when I go to the beach in summer”... Exactly, so in the end, that’s like the ultimate goal but they kind of disguise it as “No, I just wanna be fit and healthy. (Female 6)

Another participant described how young women would post pictures of themselves wearing a bikini and with a bowl of salad in front of them. He accused them of intentionally putting the focus on food, while in fact they were only interested in exposing their beach body. This might be a way of exposing one’s beach body indirectly, especially in cultures where “showing off” is perceived negatively.

While our study only scratched the surface of cultural differences in deceptive social media behavior related to the beach body, it outlines many lines of inquiry in the future for more in-depth explorations.

CONCLUSION

Past body image research has emphasized normalized behaviors in several related contexts, including body dissatisfaction and dieting (e.g. Grogan, 2017). Photo-editing strategies on social media are also perceived as normal or even expected by the online community. Young users are aware that such behaviors could classify as deceptive, but did not perceive them as negative, such as Harwood’s (2014) “easy lies.” When discussing friends, sophisticated manipulation such as via Photoshop use was seen as uncommon, however the discussion of celebrities and influencers was more critical of deceptive

practices and participants were aware of them using Photoshop prominently, which was considered a normal part of their work.

Thus, deception appears to be the ticket for acceptance and belonging into the social media community. This is in many ways worrisome. First, if deception is normative on social media, this will likely reinforce the internalization of unrealistic and unattainable beauty ideals and will further distort users' perceptions of how bodies ought to look online and offline. For instance, more young people may be taking drastic and unhealthy measures to achieve that Photoshop body offline. Second, when thin beach body ideals are disguised under hashtags such as #health, #fitness, and #detox, the lines between healthy and unhealthy behaviors continue to be blurred. In fact, many of the messages and images under these supposedly benign hashtags are neither healthy nor harmless, as they promote weight loss over health. The deception of presenting health-risking behaviors as health-promoting ones might have particularly detrimental impacts on young people's wellbeing and is something that needs to be explored in future research.

Social media users may see their manipulation of body images as “easy lies”: not serious, more pleasant than the truth, inconsequential and harmless (DePaulo et al., 1996, as cited in Harwood, 2014). But we can question the harmless nature of these “small” deceptions. As millions of social media users tweak, filter and slim down their (beach) body images before posting online, deception becomes part of the cultural norm and the unrealistic thin ideal for our bodies is maintained and strengthened, with potentially damaging consequences on people's body image (Kleemans et al., 2018).

Although deception about the (beach) body on social media may be perceived as commonplace, limits on acceptability do seem to exist. The expectation that you can only post beach body photos if you are already fit, and can manipulate and enhance your tan through filters, but not change your body shape, speaks to those boundaries. These boundaries may be broken by others routinely, but seem difficult for users to detect. As Kleemans et al. (2018) showed, adolescent users trusted the photos they saw of peers and wrongly accepted them as realistic, even though they were subject to body reshaping manipulation. This brings the question of detection of deception to the forefront of body image research.

This chapter's contribution to deception theory is in connecting it for the first time with body image research and digital manipulation on social media. It builds understanding of the means and motivations for creating “small” digital lies and offers an in-depth look of how that occurs in practice. This topic could be expanded further in several directions, which are discussed below.

SOLUTIONS AND RECOMMENDATIONS

Solutions for online photo enhancement could begin with discussions of deception and the “easy lies” young people tell one another online, for instance as part of education in media literacy. The assumption of harmlessness should be challenged and real consequences of the thin ideal should continue to be emphasized online and offline. Further, young people may not even perceive their online behaviors as lying, in which case a discussion about deception, its boundaries and consequences is needed. Since most people tend to tell the truth most of the time (Levine, 2014), presenting image manipulation as deception may challenge its current normalized acceptance and users' own self-image as truthful and honest.

An overall need to build a more realistic understanding of what real bodies look like is also needed. Traditional media images, such as cosmetics advertising, have long been regulated, in many countries for truthfulness. However, this particular solution could be challenging. Research has shown that disclaimer

labels on manipulated social media images have been ineffective at addressing negative consequences of exposure (Fardouly & Holland, 2018). It is thus crucial to further investigate this topic and identify efficient mechanisms to warn users about misleading and deceptive media messages.

A “code of conduct” to limit the use of digitally altered images online is another option to encourage more realism online and its creation should involve policy makers, social media companies, academics and online users. “Photoshop laws” such as in France and Israel are good examples in this direction, although just like disclaimer labels, their efficiency has not yet been empirically shown. An Industry Code of Conduct on Body Image was introduced in Australia in 2009, which required diverse sized models to be used in magazines. A content analysis a year later of young women’s magazines swim suit editions showed that more than half of them were upholding elements of the code (Boyd & Moncrieff-Boyd, 2011). However, the voluntary and self-regulatory nature of the code has been criticized for being too soft on the fashion industry (Seseljia & Sakzewski, 2017).

Another recent political attempt to regulate harmful online content has been Germany’s social media law, which was released on 1 January 2018 to reduce hate speech and cyberbullying on social media platforms. Content moderators have been employed at so-called deletion centers to delete or block violent comments that could be harmful to the community (Bennhold, 2018). While this approach is still a relatively young pilot project which without doubt needs continuous development based on empirical evidence, it constitutes an interesting legislative initiative to monitor and regulate content shared via social media that might negatively affect its users. It is thus conceivable to expand approaches like this to detect deceiving images. However, it must of course be acknowledged that it is potentially more difficult to identify harmful visual content relating to body image. Further understanding is thus needed of health-risking visual social media content, specifically regarding the impact of media exposure on physical and mental health.

Within an environment as vibrant and fluid as the Internet, joint forces are needed to contribute toward decisive change. Brands, celebrities and online influencers should take their share of responsibility to improve the genuine depictions of bodies and lifestyles online. A long-time belief is that thinness is the most efficient advertising strategy, but past studies have highlighted that realistic models with average-size bodies may be equally efficient (e.g. Halliwell & Dittmar, 2004). However, we must acknowledge that these attempts still run against mainstream media practices, where women are commonly objectified and the thin body ideal is used as a symbol of virtue, success, beauty, and more (Bordo, 2013; Grogan, 2017). As a result, these escapes from perfectionism may in themselves become promotional stunts and instead attract attention to the “normal” state of those celebrities, which is the touched-up, staged and deceiving self.

In this regard, parallels to Dove’s Campaign For Real Beauty come to mind. The campaign did launch a mainstream conversation about authenticity and staying real, but at the same time did it within the same confines of corporate culture and consumerism, and eventually some argue that it reframed, rather than challenged, the dominant ideology of beauty in order to strengthen its own brand identity among young women (Murray, 2013). In spite of this criticism, Dove remains one of the pioneers in the attempt to promote a more diverse body image through advertising.

Corporate responsibility also relates to the advertising of potentially harmful products on social media, which many celebrities engage in. In February 2019, the medical director of NHS England, professor Stephen Powis, called for social media companies to ban “damaging” ads of weight loss aids endorsed by celebrities and urged influential celebrities to act “responsibly” (NHS England News, 2019). Right now, the rules on what can be promoted on social media are few, but in 2019, the Competition and

Markets Authority in the UK launched new guidance for social influencers (Competition and Markets Authority, 2019a). The agency has sent out warning letters to many celebrities, urging them to review any concerning practices, and has secured formal commitments from 16 of them to ensure compliant labeling, according to a recent press release (Competition and Markets Authority, 2019b).

All of the above initiatives need to be accompanied by ongoing research on positive body image and the identification of mechanisms that may eventually trigger body satisfaction to defend users against the internalization of unrealistic beauty ideals. Positive body image has been suggested as a powerful concept (Wood-Barcalow, Tylka, & Augustus-Horvath, 2010) that can be a “protective filter”, used by women, to process and respond to communication in a body-preserving manner. However, there is little exploration of this positive body image in social media research. Social media can have many body positive aspects e.g. community and belonging, skill development, self-mastery, and self-acceptance. Some scholars have already argued for the importance to focus on body functionality (Alleva, Martijn, van Breukelen, Jansen, & Karos, 2015) and some recent studies suggest that yoga practices may positively affect body image (e.g. Neumark-Sztainer et al., 2018).

Body positivity and body neutrality movements may also provide solutions for unrealistic presentations, even though some have come under scrutiny for allegedly promoting obesity. The proliferation of images with people of various shapes, sizes, skin colors, and with visible blemishes that differentiate from the majority of thin-idealized bodies in the media is a crucial step on the way to fostering a more realistic depiction of how bodies actually look. The study by Cohen et al. (2019) has been a valuable academic contribution, demonstrating that exposure to body positive social media content may trigger positivity, such as higher body appreciation.

With its semi-naked and revealing appearance, the beach body is a particularly suitable theme for body positive and diversity-promoting campaigns. Fostering a more grounded understanding on social media of diverse beach bodies may be crucial in helping young people develop a more positive and self-accepting relationship to their semi-naked offline (beach) bodies. The strong connection between online and offline behavior is a particularly important aspect that needs to be explored in depth when designing new ways to diminish health-risking online deception and foster body positivity, be it in academia, policy or elsewhere.

FUTURE RESEARCH DIRECTIONS

This chapter has offered some strong initial connections between deception theory and the beach body and has raised multiple questions for future research. It demonstrated that the beach body should be studied in more depth and from various academic perspectives, as it is a prominent theme on social media, which affects people globally by sending them into annual “body panic” before summer. There is even reason to believe that body image concerns may increase during summer, when people reveal more of themselves to others. Future research should thus look more closely into individuals’ body image in a seasonal context and further explore the role of social media and deception. The achievement of an ideal beach body is typically linked to a range of preparation techniques such as dieting, exercising, and hair removal. While photo manipulation might easily substitute these practices, our data showed a strong link between online and offline behavior, i.e. that there is a need to look perfect not only on social media but also in real life. Therefore, further study is needed on how online and offline behaviors relate to each another.

Future research should also increase our understanding of users’ motives for manipulating their images. Self-enhancement is the logical rationale (Markowitz & Hancock, 2018) but our data indicated that further motives may be influential that relate to social status, comparisons with peer groups, need for social appraisal, peer pressure and culture-specific influences.

Another interesting line of inquiry is the assumption about truth and deception related to celebrities and friends. As our group discussions revealed, celebrities are expected to manipulate their photos constantly, but friends are perceived as more realistic and trustworthy. However, whether that is actually true remains to be confirmed through research and some studies are suggesting that this perception of the truthfulness of friends may be misleading (Kleemans et al., 2018). This also brings the question of detection of deception related to body images online, which needs further exploration.

The concept of the beach body, and related deception, could also be studied more broadly by including hashtags around fitness and health. Future content analyses can investigate how these hashtags correlate with body image photos and deception practices, and what kind of messages they communicate to users.

Finally, participants in body image research should be diversified by including more male and LGBT voices, cross-cultural aspects of research on deception and body image, especially from non-Western perspectives.

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KEY TERMS AND DEFINITIONS

Beach-Body Ready: The annual and seasonal process of achieving an ideal beach physique as depicted in the media through bodily preparation techniques such as dieting, exercising, hair removal and fake-tanning.

Information Manipulation Theory 2: A theory which focuses on the creation of a deceptive message and on the motivations of the sender.

Mediatized Beach Body: Images of beach bodies displayed on social media and in mass media.

Real Beach Body: Semi-naked figures in swimwear in natural offline environments.

Truth-Default Theory: The theory posits that when people communicate with each other, they tend to presume that their conversation partner is basically honest.

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Chapter 42

Understanding Users' Switching Between Social Media Platforms: A PPM Perspective

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ABSTRACT

Social media such as micro-blogs and social networking sites are popular among users. Due to the intense competition, it is crucial for social media platforms to attract users and retain them. The purpose of this paper is to draw on the push-pull-mooring (PPM) model to examine users' switching between social media platforms. The results indicated that identification, perceived usefulness, dissatisfaction, privacy concern, and social influence significantly affect switching intention. In addition, social influence has a positive moderation effect on switching intention. The results imply that social media platforms need to consider the effect of push, pull, and mooring factors in order to prevent users' switching behaviour.

INTRODUCTION

Social media has been popular in the world. A few social media platforms such as Facebook, WeChat, Twitter and Instagram have received wide adoption among users. For example, WeChat, the largest Chinese social media platform, has been adopted by 83.4% of internet users (CNNIC, 2019). In the US, the adoption rate of Facebook is 69% (Pew, 2019). Users can conveniently communicate with their friends, such as share, comment and like on these platforms (Xu et al., 2019). This helps strengthen social networking relationships between users, which may facilitate their continuance usage. At the same time, intense competition exists between different social media platforms. They need to expand the user base to achieve a competitive advantage. For users, they may discontinue usage of the current social media platform and switch to an alternative one. As a few platforms have similar functions and services, users may feel it relatively easy to switch to a different social media platform. This presents a great challenge to social media companies. They need to understand the factors affecting user switching and take effective measures to retain users. Otherwise, they may lose the competition.

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Previous research has examined social media user behaviour from multiple perspectives, such as like behaviour (Xu et al., 2019), user engagement (Molinillo et al., 2019; Shen et al., 2019), impulsive purchase (Chen et al., 2019; Hu et al., 2019), and self-disclosure (Koohikamali et al., 2017; Koohikamali et al., 2019). The results advance our understanding of social media user behaviour and provide the base for future research. However, prior research has seldom considered user switch between different social media platforms. As switch represents a behaviour that is different from adoption and continuance, it is necessary to examine users' switch behaviour and identify the determinants of user switching. The results may enrich extant research on social media user behaviour.

The purpose of this research is to draw on the push-pull-mooring (PPM) model to examine users' switching between social media platforms. PPM provides a useful lens to explore user switch behaviour and it has been used to examine information systems user switching in various contexts, such as mobile payment (Wang et al., 2019a), social commerce (Li and Ku, 2018), and mobile shopping (Chang et al., 2017). In this research, we generalize it to the social media context. According to PPM, a user's switching is influenced by three types of factors: push, pull and mooring (Moon, 1995). Among them, push factors drive users away from the original platform, which include dissatisfaction and privacy concern in this research. In contrast, pull factors attract users to an alternative platform, which include perceived usefulness, perceived enjoyment and identification. Mooring factors reflect personal or social factors that prevent or facilitate user switch, which include social influence. In addition to the direct effect, we propose that social influence moderates the effects of both push and pull factors on switching intention. We expect that the results can disclose the mechanism underlying user switch and provide guidelines for social media companies on how to prevent users' switching.

RESEARCH MODEL AND HYPOTHESES

Social Media User Behaviour

As a popular service, social media user behaviour has received great attention from information systems researchers. They have examined various types of social media user behaviour, such as impulsive purchase, self-disclosure, engagement, and like behaviour. Among them, impulsive purchase is a hot topic. Xiang et al. (2016) found that parasocial interaction, which includes similarity, expertise and likeability, affects social commerce users' impulsive buying tendency. Chung et al. (2017) reported that both utilitarian value and hedonic value influence impulsive buying of restaurant products. Other research has noted that the determinants of impulse buying include affective trust (Chen et al., 2019) and social influence (Hu et al., 2019).

As users need to disclose much personal information when using social media services, self-disclosure also receives much research attention. Liu and Wang (2018) argued that boundary coordination and turbulence determine users' self-disclosure on social network sites. Koohikamali et al. (2019) noted that the trade-off between privacy concern and benefits affects self-disclosure on social network applications. Similarly, privacy concern and social support are found to influence personal health information disclosure (Zhang et al., 2018).

Other research has examined consumer engagement in social media. Shen et al. (2019) noted that technology attractiveness and community involvement affect social commerce users' engagement. Molinillo et al. (2019) reported that social support and community identification influence consumers'

engagement. In addition, information technology affordance is also reported to influence users' engagement in living streaming (Sun et al., 2019).

Previous research has also examined users' switch on instant messaging and social networking services. Fang and Tang (2017) noted that network effects and regret have significant effects on users' migration between instant messaging products. Xu et al. (2014) reported that dissatisfaction and peer influence affect users' migration between social networking services. Li and Ku (2018) suggested that low transaction efficiency, social support and conformity influence users' switching from e-commerce to social commerce. These results provide foundation for our research.

As evidenced by these studies, they have examined social media user behaviour such as impulse buying, self-disclosure and engagement. They have also examined users' switch on instant messaging and social networking services. This research tries to identify the determinants of user switch between social media platforms.

PPM

PPM originates from sociology and has been traditionally used to explain human migration (Moon, 1995). The theory argues that human migration is influenced by three kinds of forces: push, pull and mooring. Push factors are those related to the original place. Pull factors are those related to the destination place. Mooring factors are those related to lifestyles and social issues that prevent or facilitate migration (Rhazali et al., 2015; Rhazali et al., 2016).

Recently, PPM has been adopted to explain information systems users' switching behaviour. Chang et al. (2017) noted that perceived value (push factor), attractiveness (pull factor) and self-efficacy (mooring factor) affect users' switching from physical stores to mobile stores. Li and Ku (2018) examined consumers' switch from e-commerce to social commerce. The push factor is low transaction efficiency, whereas pull factors include social support and social benefit. Mooring factors include conformity and personal experience. Wang et al. (2019a) explored users' switch between mobile payment applications. The push, pull, and mooring factor are privacy concern, alternative rewards and inertia, respectively. Consistent with these findings, this research applies PPM to examine social media users' switch.

Push Factors

Dissatisfaction reflects dissatisfaction with a social media platform's functions and services (Fang and Tang, 2017). Users expect to access social media platforms to effectively interact with their friends and peers. If this expectation is disconfirmed, they may feel dissatisfied and switch to an alternative platform (Sivathanu, 2019). In contrast, if they are satisfied, they may be committed to the platform and continue their usage (Bhattacharjee, 2001). Previous research has reported the effect of dissatisfaction with technical quality (Fang and Tang, 2017) and socialization support (Xu et al., 2014) on user switch. Based on these findings, we suggest:

H1.1. Dissatisfaction is positively related to switching intention.

Privacy concern reflects a user's concern on information collection and usage. Users often need to disclose much personal information on social media platforms (Moh'd Al-Dwairi and Al Azzam, 2019). They are worried whether platforms properly collect and use their information. For example, the

platforms may collect too much unnecessary information about users. Platforms may also share user information with third parties without the user's consent. If users feel great privacy risk associated with self-disclosure, they may discontinue their usage and switch to other trustworthy platforms. Wang et al. (2019a) argued that privacy concern as a push factor affects users' switch between mobile payment applications. Thus:

H1.2. Privacy concern is positively related to switching intention.

Pull Factors

Perceived usefulness reflects the utility obtained from using an alternative platform. A fundamental function of social media platforms is to support users' interactions. If platforms cannot provide reliable services, users may feel lack of control (Pelet et al., 2017; Daradkeh, 2019) and perceive little utility. In addition, users may expect to access rich functions and services through a single platform. For example, WeChat, the largest Chinese social media platform, has offered payment functions to users. This provides great convenience to users and may facilitate their switching. According to the expectation-confirmation model, perceived usefulness affects a user's satisfaction and continuance intention (Bhattacharjee, 2001). Thus, we state:

H2.1. Perceived usefulness is positively related to switching intention.

Perceived enjoyment reflects the enjoyment and fun associated with using an alternative social media platform. Compared to perceived usefulness that represents an extrinsic motivation, perceived enjoyment represents an intrinsic motivation (Wang et al., 2019b). When users acquire an engaging experience, they may feel great satisfaction and continue their usage in order to obtain the enjoyment again (Zhao and Deng, 2020). In contrast, a boring experience cannot meet users' expectations and may lead to their departure. A few social media platforms have added entertainment functions to deliver more enjoyment to users. This may help improve their experience and promote their switch. Zong et al. (2019) found that perceived enjoyment affects continuance intention of social networking services. Therefore, we propose:

H2.2. Perceived enjoyment is positively related to switching intention.

Identification reflects a user's feelings of membership, belongingness and attachment to an alternative platform (Chiu et al., 2006). When users develop identification with a platform, they may build a long-term relationship with the platform and continue their usage. Social capital theory also suggests that identification represents a relational factor that promotes user behaviour (Chen et al., 2017). The emotional connections can help lock users into the current platform and prevent their switching to other platforms. Previous research has identified the effect of identification on user continuance (Lin et al., 2017; Tsai and Hung, 2019). In line with these studies, we suggest:

H2.3. Identification is positively related to switching intention.

Mooring Factor

Social influence reflects the effect of an individual user's peers and friends on his or her behaviour. It has been identified to be a significant factor affecting user adoption of an information technology (Venkatesh et al., 2003). When a user's social circle members recommend an alternative platform to the user, he or she may comply with their opinions even if he or she has not formed a positive attitude toward the platform (Al-Momani et al., 2019). This reflects a compliance process. Prior research has found the effect of social influence on impulsive buying (Hu et al., 2019) and photo tagging (Dhir et al., 2018). Consistent with these studies, we propose:

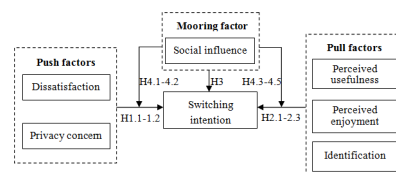
H3. Social influence is positively related to switching intention.

In addition to its direct effect, social influence may have a moderation effect on switching intention. In other words, when users receive social influence from their peers and friends, the effect of push and pull factors on their switching intention will be strengthened. This means that social influence may bias a user's self-perceptions to some extent. Thus, we state:

H4.1-4.5. Social influence positively moderates the effect of dissatisfaction, privacy concern, perceived usefulness, perceived enjoyment and identification on switching intention.

Figure 1 presents the research model.

Figure 1. Research model



METHOD

The research model includes seven factors. Each factor was measured with multiple items. All items were adapted from extant literature to improve the content validity. These items were first translated into Chinese by a researcher. Then another researcher translated them back into English to ensure consistency. When the instrument was developed, it was tested among ten users that had social media usage experience. Then according to their comments, we revised a few items to improve the clarity and understandability. The final items and their sources are listed in the Appendix.

Items of dissatisfaction were adapted from Cheng et al. (2009) to reflect a user's dissatisfaction with the functions and information offered by a social media platform. Items of privacy concern were adapted from Wang et al. (2019a) to measure a user's concern on improper collection and usage of personal information. Items of social influence were adapted from Xu et al. (2014) to reflect the effect of friends on a user's behaviour. Items of perceived usefulness and perceived enjoyment were adapted from Hsieh

et al. (2012). Items of perceived usefulness measure the utility derived from using the platform, whereas items of perceived enjoyment reflect the enjoyment and fun associated with using the platform. Items of identification were adapted from Chiu et al. (2006) to measure the feelings of belonging, closeness and membership. Items of switching intention were adapted from Fang and Tang (2017) to reflect a user's intention to switch from the current platform to an alternative one.

Data were collected through an online survey. We feel that online survey is appropriate for this research as social media users are also internet users. We posted the survey linkage in a few social media platforms such as WeChat and invited users to fill the questionnaire based on their experience of switching between competitive social media platforms, such as switch from QQ to WeChat (both have instant messaging services), or switch from Tencent Weishi to Douyin (both are live streaming products). We scrutinized all responses and dropped those that had missing values. As a result, we obtained 358 valid responses. Among them, 43.6% were male and 56.4% were female. A majority of them (80.7%) were below forty years old. Most of them (73.9%) held bachelor or higher degree. The frequently used social media platforms included WeChat (77.5%), QQ (74.2%), Weibo (48.6%), and Douyin (29.9%), which represent a few reputable Chinese social media.

We conducted two tests to examine the common method variance. First, we performed a Harman's single-factor analysis. The results indicated that the largest variance explained by an individual factor is 22.9%. Thus, none of the factors can explain the majority of the variance. Second, we modeled all items as the indicators of a factor representing the method effect, and re-estimated the model. The results indicated a poor fitness. For example, the goodness of fit index (GFI) is 0.61 (<0.90). The root mean square error of approximation (RMSEA) is 0.172 (>0.08). The results of both tests indicated that common method variance is not a significant problem in this research.

RESULTS

Data analysis includes two steps. First, we examined the measurement model to test reliability and validity. Second, we examined the structural model to test research hypotheses.

First, we conducted a confirmatory factor analysis to examine the validity. As listed in Table 1, most item loadings are larger than 0.7. Each AVE (average variance extracted) exceeds 0.5 and CR (composite reliability) exceeds 0.7. This indicated the good validity (Gefen et al., 2000). In addition, all Cronbach Alpha values are larger than 0.7, suggesting a good reliability.

Second, we adopted structural equation modeling software LISREL to estimate the structural model. The results are shown in Figure 2. Except H2.2 and H4.5, other hypotheses are supported. Table 2 lists the recommended and actual values of a few fit indices. As listed in the table, the actual values of these fit indices are better than the recommended values, indicating the good fitness (Gefen et al., 2000). The explained variance of switching intention is 93.5%.

DISCUSSION

To examine the robustness of the results, we also adopted SPSS to conduct a regression analysis. As listed in Table 3, both approaches have similar results.

Table 1. Standardized item loadings, AVE, CR and Alpha values

Factor	Item	Standardized Loading	AVE	CR	Alpha
Dissatisfaction (DS)	DS1	0.833	0.58	0.85	0.84
	DS2	0.817			
	DS3	0.645			
	DS4	0.739			
Privacy concern (PC)	PC1	0.764	0.62	0.87	0.87
	PC2	0.818			
	PC3	0.769			
	PC4	0.799			
Social influence (SI)	SI1	0.729	0.67	0.86	0.85
	SI2	0.873			
	SI3	0.853			
Perceived usefulness (PU)	PU1	0.827	0.65	0.85	0.85
	PU2	0.800			
	PU3	0.799			
Perceived enjoyment (PE)	PE1	0.833	0.66	0.85	0.85
	PE2	0.754			
	PE3	0.849			
Identification (ID)	ID1	0.834	0.71	0.88	0.88
	ID2	0.840			
	ID3	0.852			
Switching intention (SWI)	SWI1	0.810	0.71	0.88	0.88
	SWI2	0.855			
	SWI3	0.862			

Figure 2. The results estimated by LISREL

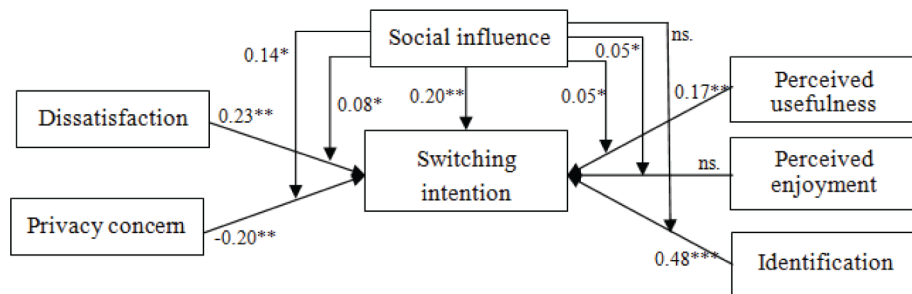


Table 2. The recommended and actual values of fit indices

Fit Indices	χ^2/df	AGFI	CFI	NFI	NNFI	RMSEA
Recommended value	<3	>0.80	>0.90	>0.90	>0.90	<0.08
Actual value	2.74	0.838	0.981	0.971	0.977	0.070

Note: χ^2/df is the ratio between Chi-square and degrees of freedom, AGFI is the Adjusted Goodness of Fit Index, CFI is the Comparative Fit Index, NFI is the Normed Fit Index, NNFI is the Non-Normed Fit Index, RMSEA is Root Mean Square Error of Approximation

Table 3. The results estimated by LISREL and SPSS

		LISREL	SPSS
H1.1	DS→SWI	0.23	0.18
H1.2	PC→SWI	-0.20	-0.17
H2.1	PU→SWI	0.17	0.17
H2.2	PE→SWI	ns.	ns.
H2.3	ID→SWI	0.48	0.38
H3	SI→SWI	0.20	0.23
H4.1	SI: DS→SWI	0.08	0.13
H4.2	SI: PC→SWI	0.14	0.21
H4.3	SI: PU→SWI	0.05	0.13
H4.4	SI: PE→SWI	0.05	0.09
H4.5	SI: ID→SWI	ns.	ns.

The results indicated that both push factors including dissatisfaction and privacy concern have significant effects on switching intention. Previous research has reported the effect of dissatisfaction with technical quality on user switch (Fang and Tang, 2017). This is consistent with our research. When users are dissatisfied with the current social media platform, they may have a strong urge to switch to an alternative one for better services. We found that privacy concern has a negative effect on switching intention. This is contrary to the hypothesis and previous research (Wang et al., 2019a). The mean value of privacy concern (ranging from 1 to 5) is 4.05. This suggests that users feel great privacy risk associated with using social media platforms. This may bias their evaluation and they have no intention to switch due to the potential risk derived from using a new platform. In addition, most respondents in our sample are young adults with good education. They may be sensitive to information privacy, which may affect their privacy concern on social media platforms. This in turn decreases their switching intention.

With respect to the pull factors, both perceived usefulness and identification affect switching intention. Perceived usefulness is a significant factor affecting initial adoption (Venkatesh and Davis, 2000) and post-adoption (Bhattacharjee, 2001). This research found that it also predicts users' switch. Social media platforms need to offer rich functions and services to meet users' expectations on utility. The results indicated that compared to perceived usefulness, identification has a larger effect ($\beta=0.48$) on switching intention. This demonstrates that identification is a main factor determining user switch. When users develop identification with a platform, they may be committed and attached to using it and build

loyalty. This may facilitate their switch. The results did not disclose the effect of perceived enjoyment on switching intention. This suggests that users are not much concerned with the enjoyment when considering switching to an alternative platform. They pay more attention to the utility and identification. As most of our respondents have used WeChat, QQ and Weibo, they may focus on the social interactions rather than the entertainment when considering switch. Future research may validate our results in other contexts such as live streaming platforms.

As a mooring factor, social influence significantly affects switching intention. This demonstrates the effect of social circle on an individual user's behaviour. This is consistent with previous research, which has identified the effect of social influence on a user's attitude change (Tsai and Bagozzi, 2014). We also found the moderation effect of social influence on switching intention. More specifically, social influence positively moderates the effect of dissatisfaction, privacy concern, perceived usefulness and perceived enjoyment on switching intention. However, it has no moderation effect on the relationship between identification and switching intention. This shows that social circle cannot affect a user's decision to switch based on identification. When users build identification with a social media platform, they are locked into the relationship and social circle may not easily influence their behavioral decision. In addition, as identification has a relatively large effect ($\beta=0.48$) on switching intention, external social influence may not be able to further strengthen this effect.

THEORETICAL AND MANAGERIAL IMPLICATIONS

From a theoretical perspective, this research applied PPM to examine user switch between social media platforms. As noted earlier, although previous research has explored social media user behaviour such as self-disclosure, impulse buying and engagement, it has seldom examined user switch, which is different from initial adoption and post-adoption. Our results indicated that social media user switch receives the influence from three types of factors including push, pull and mooring. A majority of the variance of switching intention (93.5%) is explained by these factors. This suggests that it is appropriate to use PPM to explain social media user switch. The results enrich extant research and advance our understanding of social media user behaviour. Second, we found that among pull factors, identification has the largest effect on switching intention, whereas perceived usefulness has a relatively small effect. This indicates that users attach more importance to intrinsic motivations than extrinsic motivations when considering switch. This also extends prior research on information systems user behaviour, which has focused on the effect of perceived usefulness on user adoption (Bhattacharjee, 2001). Third, the results indicated that social influence not only directly affects switching intention, but also has a moderation effect on switching intention. These results enrich extant research that has mainly explored the direct effect of social influence on individual user attitude change (Dholakia et al., 2004). Future research may explore the moderation effect of social influence on users' other behaviors such as continuance intention.

From a managerial perspective, the results imply that social media platforms need to consider the effects of push, pull and mooring factors in order to prevent users' switching. On one hand, they need to address users' dissatisfaction. They may advance the platforms and offer rich functions and services to users. On the other hand, they need to develop users' identification with the community. They may invite a few well-known persons to act as the key opinion leaders. They may also organize offline activities to enhance the cohesion of communities. In addition, the effect of social influence cannot be neglected.

Platforms can use incentives such as points and rewards to encourage the members to invite their friends to register in the community and expand the user base.

CONCLUSION AND FUTURE WORKS

Drawing on the PPM, this research examined users' switching between social media platforms. The results indicated that user switch is influenced by the push, pull and mooring factors. These results extend extant research on social media user behaviour.

This research has the following limitations, which also provide a few directions for future research. First, we conducted this research in China, which has a typical oriental culture. Thus, future research can generalize our results to western cultures as culture may affect social influence and user behaviour. Second, besides the factors in the model, there are other factors possibly affecting user switch, such as trust, perceived value and social support. Future research may examine their effects. Third, we mainly conducted a cross-sectional study. Future research may perform a longitudinal analysis and the results may provide more insights into user behaviour development.

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APPENDIX

Measurement Scale and Items

Dissatisfaction (DS) (adapted from Cheng et al. (2009))

- DS1.** The current social media platform does not provide rich functions.
- DS2.** The current social media platform does not provide enough information that I need.
- DS3.** The current social media platform does not provide reliable information.
- DS4.** I cannot communicate with my friends effectively through the current social media platform.

Privacy Concern (PC) (adapted from Wang et al. (2019a))

- PC1.** I am concerned that the information I submit to the current social media platform could be misused.
- PC2.** I am concerned that others can find private information about me from the current social media platform.
- PC3.** I am concerned that my activities on the current social media platform could be collected without my notice.
- PC4.** I am concerned about providing personal information to the current social media platform because it could be used in a way I did not foresee.

Social Influence (SI) (adapted from Xu et al. (2014))

- SI1.** My friends are dissatisfied with the current social media platform.
- SI2.** My friends strongly recommend the alternative social media platform to me.
- SI3.** My friends have sent me invitations to sign up on the alternative social media platform.

Perceived Usefulness (PU) (adapted from Hsieh et al. (2012))

- PU1.** The alternative social media platform helps me be more effective in sharing information and making friends.
- PU2.** Using the alternative social media platform would make it easier to share information and make friends.
- PU3.** In general, using the alternative social media platform is more useful to my life.

Perceived Enjoyment (PE) (adapted from Hsieh et al. (2012))

- PE1.** Using the alternative social media platform gives me more enjoyment.
- PE2.** Using the alternative social media platform gives me more fun.
- PE3.** Using the alternative social media platform keeps me happier.

Identification (ID) (adapted from Chiu et al. (2006))

- ID1.** I feel a sense of belonging towards the alternative social media platform.
- ID2.** I have the feeling of togetherness or closeness in the alternative social media platform.
- ID3.** I am proud to be a member of the alternative social media platform.


Switching Intention (SWI) (adapted from (Fang and Tang (2017)))

- SWI1.** I intend to increase my use of the alternative social media platform in the foreseeable future.
- SWI2.** I intend to invest my time and effort to the alternative social media platform.
- SWI3.** I intend to switch from the current social media platform to the alternative one.

Chapter 43

Support for Cyberbullying Victims and Actors: A Content Analysis of Facebook Groups Fighting Against Cyberbullying

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ABSTRACT

This study analyses the post content and the emotions reflected in 10 open Facebook groups associated with cyberbullying, with the highest number of group members. Automated extraction via Facebook API was used to gather the data. Altogether, 313 Facebook posts were extracted and coded for content analysis. Sentiment analysis and parts of speech (POS) tagging was used to explore the emotions reflected in the content. The study findings revealed that (1) the content of the posts was mainly opinion-based in comparison to expressing personal experiences of cyberbullying. This indicated Facebook groups require stronger moderation due to digression of topics discussed. (2) Only 3% of posts in this study contained advice about cyberbullying. (3) Sentiment analysis of the posts showed that the Facebook groups focused on cyberbullying, reflected more positive sentiments in their posts. This is encouraging to cyberbullying victims to share information on cyberbullying. The findings in this study lay the foundations for more research into support for cyberbullying victims.

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INTRODUCTION

Social media use has highlighted the issue of cyberbullying amongst society today, especially amongst young people. Between the years 2016-2017, Ditch the label (2017) surveyed 10,020 young people aged between 12-20 years old about bullying. Seven percent of young people surveyed experienced cyberbullying on a constant basis. Ten percent of young people experienced cyberbullying often.

With the younger generation growing up with the Internet, they are finding new ways to interact with technology. The field of Technoethics “recognizes technology as an intricate part of societal development which fosters change and new ethical considerations to address” (Luppigini, 2008, p. 2). The rise of cyberbullying raises concerns especially amongst parents, school staff and teachers about the ethical use of technology by young people.

Tokunaga (2010) defines cyberbullying as “any behaviour performed through electronic or digital media by individuals or groups that repeatedly communicates hostile or aggressive messages intended to inflict harm or discomfort on others.” The definition mentions two criteria of traditional bullying, stated by Olweus (1993) which include repetition and intentionality. The definition of school bullying by Olweus (1993, p. 9) is that “A student is being bullied or victimised when he or she is exposed repeatedly and over time, to negative actions on the part of one or more other students.”

Repetition is the repetitive nature of bullying, in that the bully can strike over and over again. The victim is on a heightened sense of worry over when the bully will strike next. Intentionality refers to the deliberate intention of the bully to harm the victim.

One of Olweus’s (1993) criteria for bullying- imbalance of power is not discussed in detail in Tokunaga’s (2010) definition. This highlights the difference between traditional bullying and cyberbullying, which is defined in Tokunaga, (2010) definition. The imbalance of power focuses on the feeling of a loss of power by the victim due to difficulty in defending against bullying/cyberbullying events (Smith, Mahdavi, Carvalho, Fisher, Russell & Tippett, 2008).

A number of researchers (Langos, 2012; Menesini, Nocentini, & Palladino, 2015; Slonje, Smith & Frisen, 2013; Vaillancourt, McDougall, Hymel, Krygsman, Miller, Stiver & Davis, 2008) consensually discuss the roles of repetition, intentionality and imbalance of power as criteria for both traditional bullying and cyberbullying. Some researchers (Langos, 2014; Olweus, 1993; Menesini, Nocentini, Palladino, Frisen, Berne, Ortega-Ruiz & Naruskov, 2012; Nocentini, Calmaestra J, Schultze-Krumbholz, Scheithauer, Ortega & Menesini, 2010) also highlight two additional criteria specifically identifying cyberbullying incidents: anonymity and public versus private. Due to cyberbullying taking place online, the cyberbullies’ identity is anonymous and therefore the victim can feel powerless and paranoid when communicating with people around them. If the cyberbullying attack takes place on a platform where the information is public, the attack is in the public domain. This causes stress for the victim because the impact of the attack is so prevalent for people.

There have been debates on whether the two criteria (anonymity and public versus private) are required to define a cyberbullying attack. Previous studies such as (Boyer, 2015; Menesini et al., 2012; Nocentini et al., 2010) have suggested that the two criteria are more linked to the severity of attack rather than the identification of a cyberbullying attack. Cyberbullying exists in various forms, e.g. cyberstalking, harassment, flaming, sexting, impersonation, trickery (Willard, 2007), posting/commenting on embarrassing photos or videos, aggressive messaging, and the development of hostile websites (Law, Shapka, Domene, & Gagné, 2012).

Cyberbullying can occur on a vast amount of different platforms e.g. through the use of email, text message via mobile devices, and social media. Types of social media include: social media platforms (Facebook, Google+); microblogging (Twitter); blogs; virtual worlds (Second Life); social bookmarking sites (Delicious, Digg); photo or video-sharing sites (Flickr, YouTube); and forums and discussion groups.

One of the most popular social media platforms is Facebook, with 1.79 billion active users in 2016 (Facebook, 2016). Facebook allows users to sign up and create Facebook profiles which can be made public. As well as profiles which allow users to display personal information, users can create posts as well as upload photos and videos. Interaction with other users occurs through the sharing, liking, and commenting of posts by other users.

Online communities created on social media platforms can provide a support mechanism in times of need. Cyberbullying victims, as well as other actors associated with a cyberbullying incident, e.g., parents, teachers, etc., often need support. Online communities are virtual spaces where people come together to socialise, learn, support one another and find company (Preece, 2001). The existence of on-line communities has benefits for both researchers and the users of the communities. Benefits include an increase in social capital, the ability to measure trust and social influence amongst humans (Wang, Singh, Zeng, King, & Nema, 2007), the exchange of information, the ability to support one another, provide entertainment, and attract attention through building a personal identity. Social capital is the drawing of resources (usually information, personal relationships, and the capacity to organise groups) from other members of the networks that he/she belongs to (Paxton, 1999).

Researchers in the field of social capital have found that users establishing strong relationships with neighbours and friends (known as bonding social capital) can lead to emotional benefits (Steinfeld, Ellison & Lampe, 2008; Wenger, 1990) as well as improved physical/mental health. This is beneficial for cyberbullying victims to help them in their fight against cyberbullies. Studies by Cerna, Machackova & Dedkova (2015) and Price & Dalgleish (2010) emphasise the popularity of cyberbullying victims disclosing incidents of cyberbullying to their parents/carers and friends.

Establishing a support network enables victims to discuss how to cope with cyberbullying. Research by Alim (2015), used Twitter as a medium for content analysis of 400 tweets associated with cyberbullying and found that 33% of tweets contained advice and support for cyberbullying victims. However, there is a gap in the literature for a study which looks specifically at Facebook groups associated with cyberbullying and the post content.

A substantial amount of research: Bender, Marroquin & Jadad, 2011 (Breast Cancer); Bird, Ling & Hayes, 2011 (Floods in Queensland and Victoria) and Thoren, Metze, Bühner & Garten, 2013 (Birth of Premature Babies) shows that Facebook groups are used as an effective support tool in a variety of circumstances. For example, a study by Bender et al. (2011) used 628 Facebook groups associated with Breast Cancer and found that the groups were mainly created for fundraising, awareness, product/service promotion, or patient/caregiver support. Likewise, Thoren and et al. (2013) explored the post content from the 25 largest Facebook groups associated with premature infants and found that the groups were used for interpersonal support and information sharing.

In order to understand the types of support and information available to victims of cyberbullying and other actors associated with cyberbullying, this research study specifically examines the Facebook groups associated with cyberbullying and their post content. The aim of this study is to identify whether groups with a large number of members offers support to cyberbullying victims, and what types of support they offer. The research questions of the study detailed below, explores the content of the posts in Facebook groups and whether the groups provide a suitable platform as a support mechanism.

Support for Cyberbullying Victims and Actors

- RQ1: What categories of information are posted by group members in relation to cyberbullying?
- RQ2: Do posts offer support and advice to cyberbullying victims and other actors, e.g., parents?
- RQ3: What does sentiment and POS analysis of posts tell us about the sentiments and emotions reflected in the groups?

Automated data extraction is used to extract Facebook posts from the 10 groups with the highest number of group members. A combination of content and sentiment analysis as well as parts of speech (POS) tagging is used to explore the post content and the emotions that the post content reflects.

METHODOLOGY

Automated data extraction was used to extract the content of Facebook posts from 10 Facebook groups with the highest number of group members. This was in order to investigate the content of the posts. Quantitative and qualitative analysis techniques (content analysis, sentiment analysis, and POS tagging) were utilised to address the research questions.

On 16th November 2016, a search for groups using keywords such as cyberbullying, cyber bullying, and online bullying was made using Facebook. In total, 102 groups were identified, but closed groups, groups not in English, and groups relating to organisations were removed. This left 71 groups. From the 71 groups, the 10 groups with the highest number of group members were selected for analysis.

Data Extraction

Facebook posts from the ten groups were extracted using *R* and the *Rfacebook* package (created by Barbera, Piccirilli, & Geisler, 2017). The aim of the package is to provide access to the Facebook graph API within *R*. In order to connect *R* to Facebook, a Facebook application was created which generated the access token required for connection. The *Rfacebook* function *getGroup()* was used to extract Facebook posts from group pages as well as other information regarding posts, such as:

- The date that the post was posted on the group page
- The type of post, e.g., status or link
- The number of likes, comments, and shares regarding the post. In terms of exposure, 'likes' generate a minimal expression of interest, unlike commenting and sharing which require the user to get more involved with the post content.

Data Cleaning

Cleaning the data decreases noise. Social media text is known to be noisy (Baldwin, Cook, Lui, MacKinlay, & Wang, 2013). In order to prepare the posts for sentiment and POS analysis, the content was cleaned. The extracted posts were cleaned by converting all text to lower case, removing punctuation, removing numbers, stripping whitespace, removing stop words, and stemming words. Stop words are commonly used words in any language. The removal of stop words will allow the focus to fall on other words of more importance. Examples of stop words include 'how' and 'to' (Ganesan, 2014). Stemming words involves the removal of common word endings e.g., 'ing', 'es', 'ed', and 's' to reveal the stem of the word.

Post Content

After removing the posts which were group functions, e.g., adding a user, 313 posts were analysed and coded for content by both authors of this paper using the categories in Table 1. Both authors coded each of the 313 posts. The inter-rate reliability between the two coders was 94%, which equated to high agreement between the two coders. Any discrepancies were discussed, agreed upon and refined during the coding process. Cohen's kappa (Cohen, 1960) was also used to calculate the degree of agreement. Unlike inter-rate reliability, Cohen's kappa takes the element of chance into consideration in the calculation. The kappa value for this study was 0.76, equating to substantial agreement between the coders.

The categories in which the data was coded against were derived from a similar study by Alim (2015). This study used Twitter as a social media platform to extract tweets to understand the types of support and advice provided for cyberbullying victims. The categories used for coding the data in (Alim, 2015) study included: News events; User opinions; Advertising; Advice on cyberbullying; Cyberbullying incidents; Questions about cyberbullying and Unclassified. For current study, more categories were added such as Quotes/Sayings; Other Areas linked to Cyberbullying, Experiences; group posts and legal aspects. The additional categories were added due to detailed nature of the extracted data. Additionally, subgroups were added to categories such as opinions, experiences and group posts for further differentiation.

Some posts were categorised in more than one group. Certain aspects of the post have been anonymised to protect privacy. The name of a group is annotated with [Name of Group], name of a user is annotated with [User], name of school with [Name of school], and URL link with [URL]. In Table 1, the content of the posts is presented prior to cleaning because cleaning can remove the context of the post.

Sentiment Analysis

After the posts were categorised, sentiment analysis was carried out on the posts. Sentiment analysis is the 'computational study of opinions, emotions and sentiments expressed in text' (Liu, 2010). Opinions influence our behaviour and the decisions we make. Sentiment analysis of the posts was carried out using *R* *Syuzhet* package and the *get_nrc_sentiment()* function. The *get_nrc_sentiment()* function implements (Mohammad, & Turney, 2013) NRC emotion lexicon algorithm. The emotion lexicon is a list of English words and their associations with eight emotions (fear, anger, trust, surprise, anticipation, joy, sadness, and disgust), as well as two sentiments (positive and negative) (Mohammed, 2015). Each association has a score assigned to it. Each word in the lexicon will have a score of 1 (yes) or 0 (no) for each of the emotions and sentiments. An example of the *get_nrc_sentiment()* function, as shown in Figure 1., demonstrates the emotions expressed by the sentence and gives indications of the mood.

Figure 1. Emotions expressed by using *get_nrc_sentiment()* function

```
> mySentiment <- get_nrc_sentiment(" the stars are shining bright")
> mySentiment
  anger anticipation disgust fear joy sadness surprise trust negative positive
1    0             1      0  0  1      0      0      0      0      1
```

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Table 1. Categories for coding data

Category	Example of Facebook Posts before cleaning [all sic]
Opinions regarding Cyberbullying	hey ppl get cyberbullied all the time and some people kill them selfs so we should stick up for them and if you guys want to be jerks and get off of this then figure it out we all are proud to help others but I guess your not:/
Opinions [Empathy]	It doesnt matter how bad life may seem at the moment. God, me and everyone else still loves you and wants to see you smile. ELE <3
Opinions [Advice]	I don't think anybody needs to feel alone!! people that are being bullied, you are worth more than you will ever know, Never Give up!! you are never alone! believe in yourself !!
Opinions [Negative]	Geting bulled is fun. When you're naked. And vulnerable.
Experiences of Cyberbullying	U know i was bullied on the page called [Name of Group] they took a picture of me off a group post and harassed me and bullied me.
Experience [Advice]	We can listen to this guy. He went through the same stuff [User] did, and he felt the same way. Now he is giving people hope by posting this message.
Experience [Warning]	Remember the girl who got stabbed with a Stanley knife at [Name of School] The one who had Superglue thrown in her face? The one who got spat at on the bus? The one who got her ankles kicked in the dinner queue every day? That girl was ME. Unfortunately, I'm nearly 25 years old now. I'm not that scared child anymore, because the bullies did not beat me. I left school in 2004 with 10 Gcses, and the bullies left with nothing but their evil, stupid, naive attitudes. If anyone who bullied me reads this, you better know your card is marked. I can pretend to forgive, but I never forget. Karma is a B****... So I don't have to be!
Advertising	There is a group [Name of Group]. Go check it out!
Articles	Cyber Safety for Kids, 20 Most Useful Recommendations < #CyberSafety #Tips #Parents > What can one do about Cyber Safety for Kids? While the Internet may arguably be one of the most wonderful things invented by human beings, it is nevertheless also one of the most complicated, far-reaching, and potentially dangerous environments on earth. [URL]
Legal Aspects	Hey guys, if you could please sign this petition - [URL] The fact that youtube does not have the option to report people for horrific messages such as in the picture is terrible.
Quotes/Sayings	"Give Everything; But Up!" ~Alexis Pilkington's famous quote. Said it before every game she played to every person on her team even her coaches. Follow in her footsteps give everything but up help others and be a friend to others.
Group Posts	Just going to say, can you at least ask me before adding me to a group? I am getting really tired of people just throwing me in groups thanks for the add!!:D
Group Posts [Warning]	plz do not post dating groups in here this is a group for cyber bullying not dating
Group Posts [Negative]	Why the heck did you add me? Sure, I got bullied, but first of all, helpline is an overestimation. Friends usually only ask friends for help, second, posting all this stuff like, I'm glad you're you is cool and all, but we don't need a group to do that. And lastly, I don't want to be in half the group's I am, if you guys could NOT add anymore people without their permission, which would be great. I've been bullied long enough to know that that feel good c*** does nothing. I'm sorry if that rant seemed Jerkish, but it had to be said. And please remove me from here. *rant over*
Other Areas linked to Cyberbullying	Have you ever been told not to keep all of your passwords written down as someone can steal them? You leave your fingerprints everywhere and your fingerprint is just as easy to lift. #CyberSecurity #OnlineSafety
Not Related to Cyberbullying	Rights to Travel Explained Oct 14 City of Toledo Ore City Council[URL]

Parts of Speech Tagging (POS Tagging)

A Parts of Speech (POS) tagger is a piece of software which allocates parts of speech (e.g., noun, adjective, verb, and adverb) to words and tokens (The Stanford Natural Language Processing Group, 2016). The Facebook posts were POS tagged using *R*'s *tagPOS()* function. The algorithm uses Penn English Treebank POS tags (Marcus, Marcinkiewicz, & Santorini, 1993). The type of tags used in sentences can highlight the tone of the sentence.

Pak and Paroukbek's (2010) study on Tweets and sentiment analysis explored the meaning of various POS tags, as well as the difference between subjective and objective text. Subjective text is more opinion-based and contains more personal pronouns. Authors of subjective text use simple past tense, write about themselves, or address the audience. Subjective text contains more utterances. An utterance is a continuous stretch of talk by one person with there being a silence before or after on the part of that person.

Objective text is based more on facts and contains more common and proper nouns. Common nouns focus on general things whereas proper nouns deal with specific things, e.g., the word city would be a common noun, but the word Chicago would be a proper noun. Verbs contained in objective text are more often in the past participle (e.g., beaten would be the past participle for the verb to beat), and in the third person. The root of the verb is coupled with modal verbs (which express possibility, e.g., shall, will, would) to express emotions. In terms of adjectives, superlative adjectives (e.g., sweetest, calmest, and brightest) are used to express emotions, whereas comparative adjectives (calmer, angrier, and sweeter) are used to state facts (Pak & Paroukbek, 2010).

POS tagging has been used in studies utilising data mining techniques to detect cyberbullying. Alakrot and Nikolov's (2015) survey of text mining techniques used in cyberbullying detection identified feature selection as having a great impact on the improved precision of text mining tools. One of the features used to detect cyberbullying was the presence of bigram tags as part of the POS tags (Dinakar et al., 2012). Bigrams are assigned tags based on a sequence of two words e.g., 'book about', 'history of'. Other features which indicate the presence of cyberbullying included the density of uppercase letters, density of bad words, number of question marks/exclamation marks, and the number of smiley faces (Huang et al, 2014).

Ethics

The data extracted for this study was from public Facebook groups. This study focuses on the content of the posts and information about the group e.g. how old the group was. Therefore, only post content and group information was extracted. Personal details of the group members were not extracted. The content of Facebook groups used in the study was publicly available information, which was available to non-Facebook members.

Studies such as (Abedin, Al Mamun, Lasker, Ahmed, Shommu, Rumana, & Turin, 2017; MacDonald, Sohn, & Ellis; 2010) utilised data from Facebook groups in their studies. Both studies didn't feel the need to seek the consent of the group participants because the data was publicly available. Research by (Kraut, Olson, Banaji, Bruckman, Cohen, & Couper, M, 2004) highlighted that breaching confidentiality of private data which could lead to identification was the greatest risk associated with online data.

Public data includes comments and posts published on pages/public groups (Wolfinger, 2016). However, there is debate on how many users realise that their public data on Facebook can be accessed by a

wider audience. Some users may not read the Facebook data policy and overshare information (Madejski, Johnson, & Bellovin, 2012), believing that no one outside the stated audience will access it.

In terms of the amount of data which could be accessed and extracted, when extracting data from Facebook, the Facebook API no longer allows data extraction from the profiles of the user's friends. In order to extract from friends, they have to grant permission to the application to access their data. This makes it harder to build up big networks of data. Facebook offers users various privacy controls to dictate who has access to their profile and what information applications can access.

The extracted data for this study was stored on a password-protected computer and will be deleted once the study has been completed. Only the authors of the paper accessed the data. An issue raised by this research is the use of sensitive information found in extracted post content, i.e. the disclosure of being cyberbullied online. This may attract harm for the relevant group members and therefore the groups used in this study are anonymised and therefore will not be stated by name.

The act of cyberbullying itself brings about ethical dilemmas due to being a violation of the ethics code for information use. Subsequently this leads to consequences for the victim e.g. deterioration in mental health, low self-esteem, drugs/ alcohol issues and suicide (Ncube and Dube, 2016). All computer users have a moral responsibility to treat other users with respect and treat them how you want to be treated in the real world. However, not all users abide by this sentiment and the biggest issue associated with cyberbullying, is the identification of the perpetrator due to the issue of anonymity presented by the use of the Internet (Cross, 2009).

Once the perpetrator has been identified, the process of sanctions can raise the lack of consistency in policies regarding cyberbullying. An example being in the USA, as of August 2017, only 44 out of the 50 states had criminal sanctions in their cyberbullying laws. However, 48 states included laws covering electronic harassment which covers cyberbullying (Statista, 2018). Only a handful of states have incorporated the use of electronic communication into school bullying prevention policies. One state that has done so is New Jersey (Osborne, 2018).

Around the world, countries have different laws regarding cyberbullying. In the UK, Canada and Australia, there are no specific laws which focuses on cyberbullying solely. However, other laws can be applied to cyberbullying. An example is in the UK, laws such as the Malicious Communications Act 1988 and the Communications Act 2003 can be applied (The Cybersmile Foundation, 2017).

Research by Ncube and Dube (2016) which surveyed 60 youths from South African computer literacy engagement projects, recommended that the education department educate children about cyberbullying and cyber ethics. The study also highlighted that various technologies can be used to educate children on cyberbullying. A similar study by Harrison (2015) which explored the understanding of cyberbullying by 11-14-year-olds in the UK, found a lack of rules, monitoring and guidance in relation to cyberbullying. This finding highlights how important it is at a young age to instill skills in computer literacy and the moral responsibilities of being an online social media user.

One area not covered in studies by (Harrison, 2015; Ncube and Dube, 2016) is the role of bystanders and whether they help victims if they have witnessed a cyberbullying incident. In 2014, Canadian students aged 9-17 years old were surveyed regarding cyberbullying. From those students, 65% of them stated that they would have done something to help somebody who was experiencing unpleasant behaviour online (Steeves, 2014). However, studies such as (Kazerooni, Hardman, Bazarova & Whitlock 2018; Menesini, Zambuto & Palladino, 2017) highlighted the struggle for bystanders to intervene in cyberbullying instances, which occur on online social media platforms. The struggles centred on the relationship between the bystander, target and the cyberbullying perpetrator (Patterson, Allan, & Cross,

2017). What is highlighted in (Kazerooni et al., 2018) study is that after witnessing several offenders of cyberbullying on social media, bystanders were more likely to engage in an intervention. This finding backs Dillon and Bushman's (2015) notion that probability of a bystanders' intervention increases with the recognition of how serious cyberbullying incidents are.

Overall, the area of ethics and cyberbullying have highlighted a variety of issues which need to be considered in moving the tackling of cyberbullying forward.

RESULTS

Profiles of Groups

Table 2 presents features of the top 10 Facebook groups used in this study. The number of likes, comments, and shares tell us about the users' interactions in regard to the posted content, and the ability of users to resonate with the content (Rayson, 2015). The popularity of the 'like' function was validated by Smith (2014), who surveyed Americans about their Facebook sharing habits. He found that 44% of them liked content posted by their friends at least once a day. Users are more likely to 'like' something because it is the quickest and easiest way to show appreciation of content. It doesn't involve any writing of comments. All it takes is a click of the like button.

Utilising the groups descriptions in Table 2, the groups were categorised into three different types of groups: discussion groups; campaign groups and other groups. Groups 1, 3, 5, 7 and 9 were classed as discussion groups. Groups 6, 8 and 10 were campaign groups and groups 2 and 4 were classed as other groups.

Correlation analysis was carried out on Table 2 by calculating the correlation coefficient between variables. The variables: Number of Posts; Total number of likes; Total number of comments and Total number of shares were dependent variables. Whereas the variables Year Group Was Created and Number of Group Members were independent variables because the number of group members was not dependent on the year the group was set up, as illustrated in Table 2.

Amongst the groups in Table 2, four groups are the joint oldest, but this aspect did not translate into the posting of more material, with $R^2 = 0.05$. The same weak positive relationship occurred between the number of members and the number of posts ($R^2 = 0.14$). The average number of posts was 43, with three groups having an above average number of posts. However, despite having only 42 posts, post content from Group 1 produced the highest level of user interaction via likes, comments, and shares. Compared to the number of likes and comments, sharing wasn't popular in terms of user engagement, despite it being the greatest degree of engagement. This is due to wanting to share posts in order for other users to see it and to increase the likelihood of influencing people who follow them (Ann Voss, & Kumar, 2013).

Content Analysis

In total, 313 Facebook posts were coded using the categories in Table 2. Figures 2, 3 and 4 show the breakdown of categories.

Chi square analysis (X^2) of the variables, group type and category breakdown of the posts in the Facebook groups ($\alpha = 0.05$ or 95% confidence) found an association between the variables: ($X^2 = 3.97$, $p = 0.14$). The chi square result was statically significant at 0.05.

Support for Cyberbullying Victims and Actors

Table 2. Group statistics

Group ID	Year Group Was Created	Number of Group Members	Number of Posts	Total number of likes	Total number of comments	Total number of shares	Group Description
1	2011	272	42	70	218	0	Discussion group. Theme of the group is to stop cyberbullying
2	2011	155	4	11	3	0	A group set up a part of a school project
3	2011	164	36	55	56	0	Discussion group. Theme of the group is cyberbullying incidents
4	2012	146	28	46	16	0	Links to articles not related to cyberbullying.
5	2012	86	97	45	18	0	Discussion group which contains links to articles on cyberbullying and cyber security.
6	2011	450	26	30	41	0	Campaign to stop cyberbullying
7	2013	238	103	68	106	8	Discussion group. Theme of the group is methods to keep cyberbullies away
8	2012	314	60	68	73	0	Campaign against cyberbullying
9	2015	635	22	36	40	0	Discussion group. Theme of the group is how to stop protect against cyberbullying and stop bullies.
10	2014	433	14	6	6	2	Campaign to stop online bullying.

Figure 2. Number of opinion-based posts

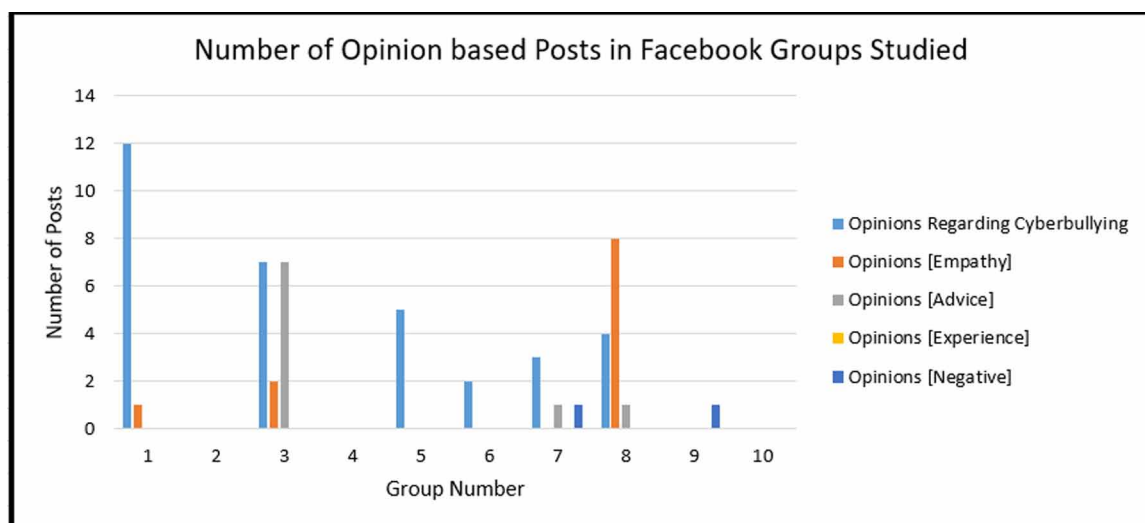


Figure 3. Number of Experience and Group-Based Posts

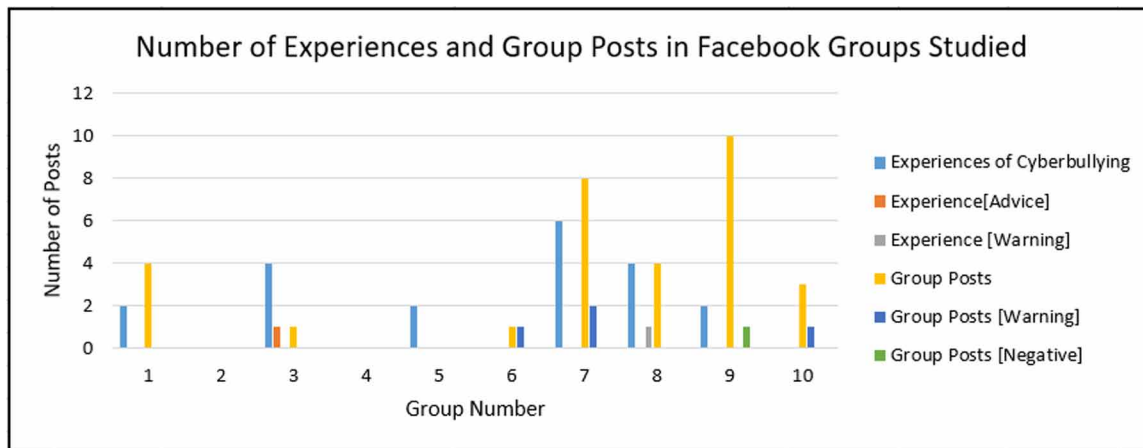
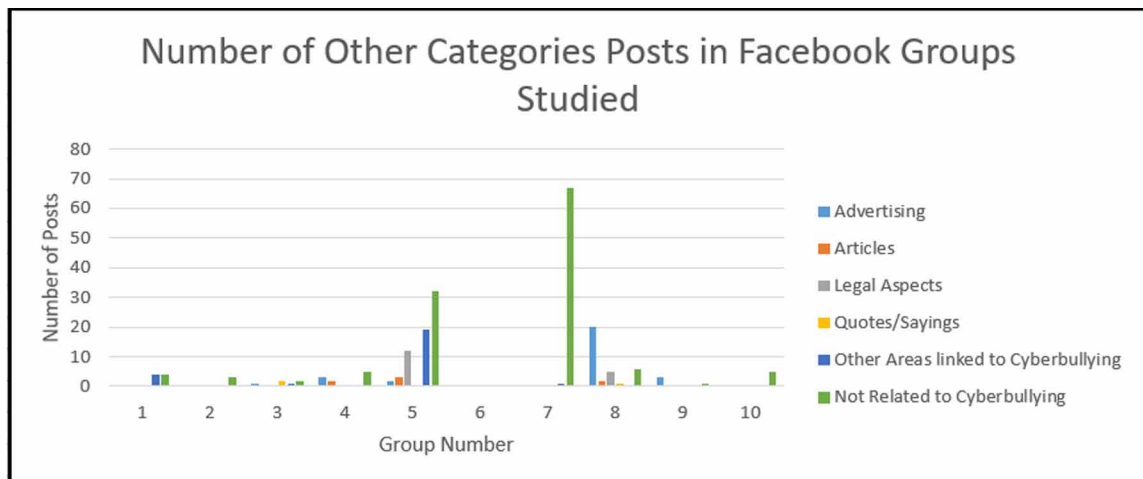


Figure 4. Number of non-experience- and group-based posts



The breakdown of posts showed that subject ‘not related to cyberbullying’ was the most popular category of post. This is despite the groups being set up to discuss the issue of cyberbullying. Group members were more comfortable sharing their opinions on cyberbullying as a topic in comparison to sharing personal experiences of cyberbullying. Links to articles were contained in only a low number of posts, highlighting that a lot of the post content was user-generated and driven by the group.

Categories such as opinions, experiences, and group posts have sub-categories which illustrated the spectrum of emotions felt by users. Posts categorised as ‘advertising’ advertised the group itself as well as cyberbullying cases and links to articles. Group 9 contained the highest number of group posts. In contrast, Group 7, which had the highest total number of posts, contained the highest number of experiences and posts not related to cyberbullying.

Support for Cyberbullying Victims and Actors

In terms of attitudes towards cyberbullying in the post content, there was a mixture of positive and negative attitudes towards cyberbullying. The positive stances were expressed in terms of empathy, advice/suggestions, and sharing experiences. Examples of positive stance posts included:

"I promise, no matter what, no matter how busy I am. I will always be here for you (anyone) if you (anyone) needs a person to talk to. Anyday. Anytime." (Opinion/advice)

"It doesnt matter how bad life may seem at the moment. God, me and everyone else still loves you and wants to see you smile." ELE <3 (Opinion/ empathy)

"When ur being bullied a friend will be bye ur side" (Opinion/ experience)

"There is a group [Group Name]. Go check it out!" (Advertising)

The negative stances were emphasised as warnings and negative posts. Examples included [all sic]:

*"Why the heck did you add me? Sure, I got bullied, but first of all, helpline is an overestimation. Friends usually only ask friends for help, second, posting all this stuff like, I'm glad you're you is cool and all, but we don't need a group to do that. And lastly, I don't want to be in half the group's I am, if you guys could NOT add anymore people without their permission, that would be great. I've been bullied long enough to know that that feel good c*** does nothing. I'm sorry if that rant seemed Jerkish, but it had to be said. And please remove me from here. *rant over*" (Group Posts [Negative]).*

*"Everyone. I've made it to where i'm the only one that can post on here. So everyone that is against Cyberbullying, send me a message. If your just one of the bullies that has been starting shit on here, then stfu and get a f***ing life. This group was meant to help, but bullys got on here and started messing it up. Shows you there are too many f***ed up people. So yeah."* (Opinion/ Group Posts [warning]).

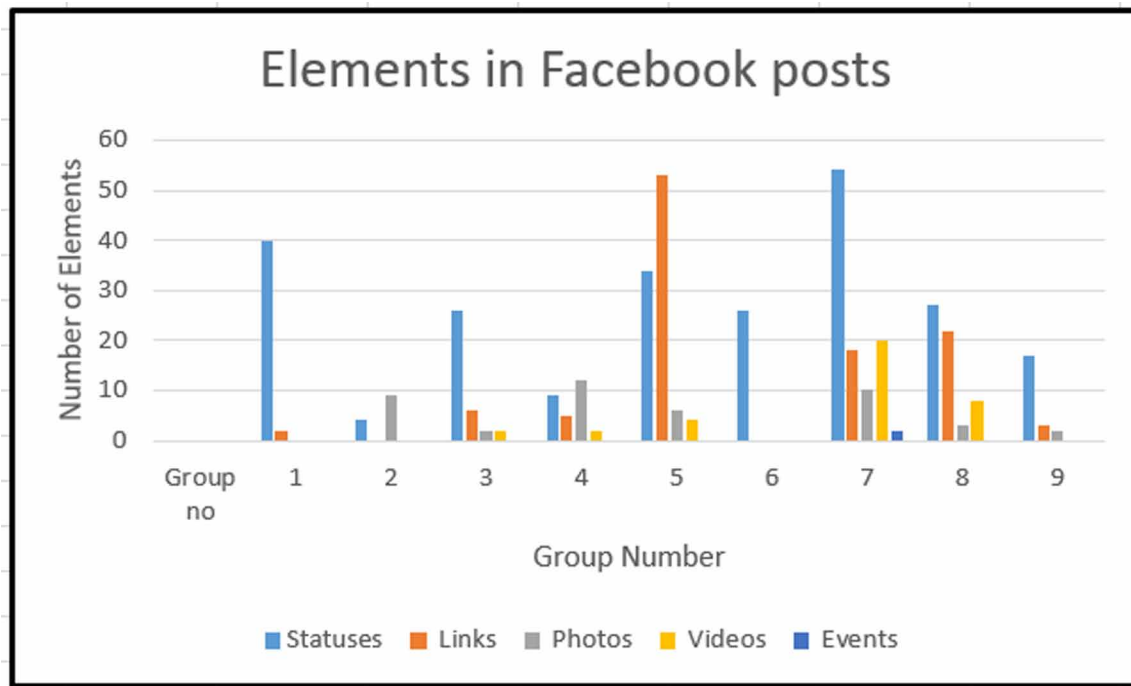
"WARNING...Some of you may not like some of the things I say to these bullies but I consider this like a kind of bully boot camp... Also remember that the way I act towards these people is in no way a reflection of my true personality. I will be very blunt and arrogant.. This is a group study... Viewer discretion is advised" (Group Posts [Warning])

The posts generated a reasonable number of comments. In terms of post interaction (likes, comments, and shares), posts relating to the category opinions regarding cyberbullying generated the highest number of total comments, with 153 comments. However, posts in other categories did not generate as many comments. The categories not related to cyberbullying and opinions regarding cyberbullying also generated the highest number of likes, with 136 and 76 respectively. The first post mentioned previously generated the highest number of likes (29 likes) as well as 36 comments. In contrast, posts categorised as articles didn't produce any interaction, which indicates that resources outside Facebook were not well received by users.

Post Elements

Facebook posts were analysed to explore the elements which made up the posts. Figure 5 demonstrates the various elements.

Figure 5. Breakdown of post elements in Facebook Groups



Seven of the groups contained a wide variety of elements, whereas three groups focused on certain elements. Group 7 contained a large amount of multimedia content via the use of videos, photos, and the use of events. However, not many of the posts in Group 7 were related to cyberbullying. Group 5 contained the highest amount of posts containing links to articles in areas associated with cyberbullying. Links in the posts studied ranged from articles on how to deal with computer security issues to articles about bullying experiences. Group 2, which only had a small number of posts, contained the highest number of photos. However, the posts in Group 2 were not related to cyberbullying.

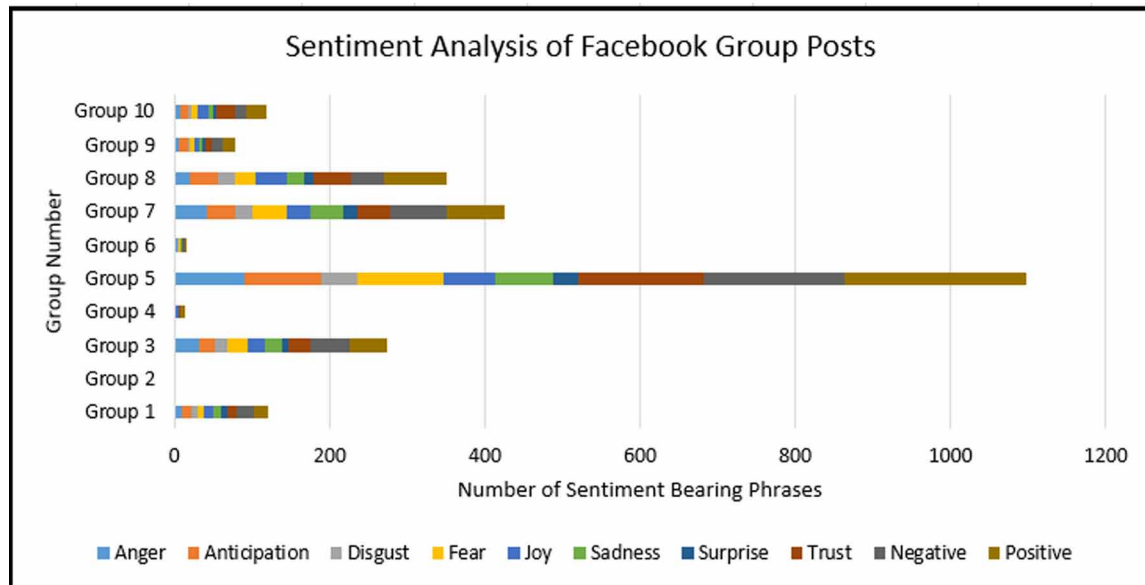
Sentiment Analysis

Figure 6 presents the number of sentiments bearing phrases in each group. Group 5 contains the largest number of sentiment-bearing phrases from the posts.

From all the groups, Group 5 contains the second highest amount of posts not related to cyberbullying. The trust emotion was prevalent across all the groups whereas the surprise emotion scored the least. Focusing on the groups which have post content more related to cyberbullying only (Groups 8, 5, 3 and 1), despite the presence of both positive and negative stances of cyberbullying in the content

analysis, the sentiment analysis highlighted the high number of positivity-bearing phrases in comparison to negativity-bearing phrases. Groups 8, 5, 3 and 1, were a mixture of discussion and campaign groups, in terms of group type.

Figure 6. Sentiment analysis of posts



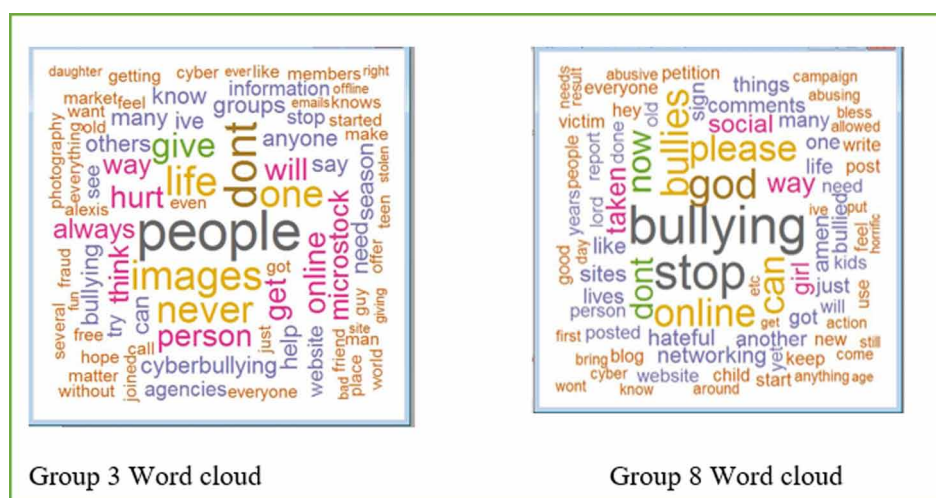
Group 3 is scored similarly in terms of number of positive and negative phrases. In contrast, Group 8's positive score is twice as much as its negative score. The most frequent words in Group 8 post content were 'bullying' and 'stop', whereas in Group 3 they were 'people' and 'don't'. This is illustrated in the word clouds in Figure 7. Word clouds have become "a standard tool for abstracting, visualizing, and comparing text documents" (University of Arizona, 2017). An example of where word clouds were used was comparing presidential debates between Trump and Clinton to find the most frequently used words. The use of the word cloud has been used in cyberbullying research e.g. Zhao, Zhou and Mao (2016) and Alim (2015).

The word clouds presented in Figure 7 which were produced for the post content of groups 3 and 8, illustrate the variety of words used in the post content for both groups as well as the difference in content posted by the users.

To explore the relationships between emotions from sentiment bearing phrases and types of groups, chi squared analysis was used. Chi square analysis of the groups whose content focused on cyberbullying (groups 1, 3, 5 and 8) and the number of negative emotions produced by the sentiment bearing phrases found no association found between the variables: ($\alpha = 0.05$ or 95% confidence) ($X^2 = 15.19, p 0.44$). Negative emotions included anger, anticipation, disgust, fear and sadness Likewise, no association was discovered between the types of groups (discussion, campaign or other) and the number of negative emotions ($\alpha = 0.05$ or 95% confidence), ($X^2 = 11.72, p 0.30$). There was no association present between types of groups and positive emotions which include joy, trust and surprise ($\alpha = 0.05$ or 95% confidence)

($X^2 = 5.49, p 0.48$). However, there was an association between the groups focused on cyberbullying and positive emotions ($\alpha = 0.05$ or 95% confidence) ($X^2 = 22.24, p 0.008$). Sentiment analysis has highlighted the wide range of emotions produced in the post content and how users view cyberbullying.

Figure 7. Word clouds for Groups 3 and 8



Parts of Speech Analysis

The text of all 313 posts were tagged for parts of speech. The results highlighted that Group 5 contained the highest number of superlative adjectives, one of the features for subjective opinionated text used to express emotions and opinions. Groups 1 and 8 contained the highest number of comparative adjectives, which are used to state facts. Group 7 had the most objective texts in terms of the number of common and proper nouns. Objective text deals with the stating of facts. Groups 1 and 8 have the highest number of utterances, which are strong predictors of subjective opinionated texts.

In terms of verbs, Group 5 had the highest number of verbs in objective texts in third person or past participles. Group 7 had the highest number of verbs in base form, but Groups 1 and 8 were not far behind. Verbs in the base form coupled with modal verbs to express emotions. Group 5 also had the highest number of authors of subjective text. Subjective text authors usually address the audience (verbs in the second person) and write about themselves (verbs in the first person), as well as using simple past tense. No groups had personal pronouns. What the POS analysis demonstrated was the balance of emotions and facts in the posts' content. Groups more centred on cyberbullying in their post content (Groups 8, 5, 3, and 1) had variations between objective and subjective texts. All groups had a high number of common and proper nouns, indicating the presence of objective texts. Groups 1, 3, and 8 contained many base form and modal verbs, which express emotions and show indications of subjective text. Groups 1 and 8 also have a high number of utterances. In terms of adjectives, Group 5 had the same number of subjective and comparative adjectives, whereas the other groups had a higher number of objective adjectives in the post content.

DISCUSSION

RQ1: What Categories of Information are Posted by Group Members in Relation to Cyberbullying?

Facebook groups can be effective for people seeking support. In this study, 9.27% of posts were advertising posts, mainly advertising events and campaigns associated with cyberbullying. Links to articles were contained in a low number of posts, highlighting that a lot of the post content was user-generated and driven by the group. Without a strict group moderator and clearly defined rules, the discussions generated by the group have the tendency to digress and this was illustrated in this study. The breakdown of posts showed that not related to cyberbullying was the most popular category of post. Despite the groups being set up to discuss cyberbullying, there were numerous posts which distracted from that, (e.g., posts on online dating.) Only four groups had content which was exclusively related to cyberbullying.

Chi squared analysis found a statically significant association between the variables, group type and different categories of posts. Discussion groups contained a large number of opinion-based posts and posts not related to cyberbullying. Campaign groups had more posts covering other areas such as advertising in contrast to number of posts not related to cyberbullying.

The content analysis of Facebook posts highlighted that users shared more opinions based on cyberbullying in comparison to personal experiences. Opinion-based posts made up 17.6% of posts, whereas personal experiences only constituted 6.39% of posts. The results are similar to Alim's (2015) content analysis of 400 cyberbullying tweets, where 28.25% of tweets were opinion-related, and 4% of tweets were discussing personal experiences. What the results of both Alim's (2015) and this study highlight is that the responses of users on platforms Twitter and Facebook focus on the sharing opinions in comparison to discussing personal experiences.

This finding is validated further by studies which has shown that cyberbullying victims, especially adolescents, choose to suffer in silence and not disclose incidents of cyberbullying to anybody. A study by Connolly (2017) into the reluctance of gifted Irish adolescents to report experiences of cyberbullying, found that the influence of gender, age and the prior experiences reporting of cyberbullying incidents were key reasons for non-reporting. In contrast, Deborah Crouch, chief executive of the Samaritans in Hong Kong, commented that due to long working hours, young people in Hong Kong had limited contact with their parents. This meant they felt alone and not able to communicate with their parents about issues affecting them including cyberbullying. Victims aged 10 years old and younger may choose not to tell their parents about cyberbullying due to cultural pressure and a sense of loneliness (Blundy, Ng, & Zheng, 2017). The use of online platforms allows cyberbullying victims to access a communication outlet where they could be potentially anonymous and not feel alone.

RQ2: Do Posts offer Support and Advice to Cyberbullying Victims and Other Actors, e.g., Parents?

In the case of current study, only 3% of posts contained advice about cyberbullying. Examples of advice included:

"Dear anyone considering suicide: Please don't give up. You are needed. You are wanted. You are important. You are loved. You are beautiful"

“We can listen to this guy. He went through the same stuff [user] did, and he felt the same way. Now he is giving people hope by posting this message.”

“Cyber Bullying can be very dangerous. It kills and hurts people. Try to stop it, by standing up to it!”

The pieces of advice are mainly aimed at the cyberbullying victims. Some advice was integrated in to *opinions* and *experiences*, for example:

“Never give up. Always hold you head up. Always stay strong. Never fake a smile because you dont want people to see that your hurt. And never say that your life is over, always move on and live your life fully [sic].” (Opinion/Advice)

Despite advice not being prevalent in the posts studied in this study, advice regarding cyberbullying exists on the Internet (Fodeman & Monroe, 2009; Forward, 2014; Slonje & Smith, 2008). With cyberbullying taking place on the Internet, an opportunity for real time interventions exists. This gives the chance for the potential perpetrator to be encouraged to rescind his/hers cyberbullying message. If the victim receives the message, tailored advice can be given on how to deal with the bullying (Dinakar, Jones, Havasi, Lieberman, & Picard, 2012; Campbell, 2007).

Advice must be tailored to the relevant user groups because different age ranges use the Internet in different ways (Hargittai, Hsieh & Dutton, 2013; Nixon, Rawal & Funk, 2016). Younger users have both an online and offline presence, where older users may focus on their offline life and have less technology experience. This is one of the reasons that adults struggle with advising cyberbullying victims (Campbell, 2007). Posts which detailed experiences of cyber victims, legal aspects, and advertising may be beneficial to parents and other actors, because they bring awareness to campaigns as well as highlighting the thoughts of a cyberbullying victim.

There are various coping strategies that cyberbullying victims adopt in addition to seeking advice. School children’s coping strategies centre on ignoring, retaliation, avoidance, or doing nothing (Slonje & Smith, 2008; Smith & Shu, 2000; Tokunaga, 2010). This is in contrast to victims based at university. A study by Orel, Campbell, Wozencroft, Leong, and Kimpton (2017) found that university students used a combination of offline and online strategies to help with cyberbullying. Strategies were more focused on solving the problem. The most popular strategies used were blocking, seeking help from friends, and staying away from where the cyberbullying was taking place. That can be hard where social media is involved due to the impact of social media and open boundaries. This was highlighted in research by Machackova, Cerna, Sevcikova, Dedkova, and Daneback (2013) into the coping strategies of 2,092 Czech children. Victims of cyberbullying found it hard to employ cognitive responses such as trying to mentally separate themselves from the bullying incidents. However, technical solutions such as deleting the bully from their contacts and altering their settings so that the bully couldn’t contact them proved popular.

Despite Gámez-Guadix, Orue, Smith, and Calvete’s (2013) notion that cyber victims can use the Internet as a coping mechanism, only 3% of posts in this study contained advice about cyberbullying. However, web-based interventions can be effective. Jacobs, Völlink, Dehue, and Lechner’s (2014) on-line intervention program, called *Online Pestkoppentoppen* (Stop Bullies Online/Stop Online Bullies), aims to promote wellbeing to cyber victims and to tackle issues such as truancy and school problems.

RQ3: What does Sentiment and POS Analysis of Posts Tells us About the Sentiments and Emotions Reflected in the Groups?

The sentiment analysis highlighted the wide range of emotions reflected in the posts' content. The groups with content more related to cyberbullying overall had more positive than negative emotions reflected in the post content as illustrated in Figure 6. The chi squared analysis highlighted the presence of a relationship between group types and positive emotions as well as groups focused on cyberbullying and positive emotions. De Jong (2016) study explored how the perception of privacy and security affects social media behaviour. The results of the study found that if the user has a positive sentiment towards Facebook use, they are more likely to share information on it because the user deems it safer. Positive sentiments in post content can encourage cyberbullying victims and other actors to see Facebook as a platform to share information on cyberbullying.

The content of the Facebook posts in this study generated numerous reactions from group members. Despite there being high levels of emotions such as anticipation and anger reflected in the posts overall, levels of joy were also reflected. This is encouraging for cyberbullying victims. Overall, the emotion '*trust*' produced the highest number of sentiments bearing phrases and presents the positivity written in the post content.

Like the sentiment analysis, POS analysis highlighted the various reactions reflected in the post content. The post content was a mixture of objective and subjective posts. However, in the groups, overall there is a higher amount of objective text in comparison to subjective text. This validates the observation in this study that Facebook groups may not be a suitable platform for victims, because the focus of the group is more likely to digress to other topic areas not always related to cyberbullying. A stronger presence by the group moderators may help keep the topic discussion on track, but even the presence of that in the Facebook groups studied has not been successful.

Sentiment analysis can prove valuable when identifying instances of cyberbullying on social media. Sintaha, Bin Satter, Zawad, Swarnaker and Hassan (2016) explored the performance of various machine learning techniques in detecting cyberbullying in social media using sentiments. The results found that the negative tweets indicated bullying tweets. In comparison, Xu, Jun, Zhu & Bellmore (2012) were successful in teaching a computer how to identify tweets regarding bullying from Twitter's daily stream of 250 million posts. More than 15,000 posts were identified as bullying related tweets per day. Sentiment analysis was then used to garner the emotions used in the tweets. The study found that "The victims and witnesses in bullying incidents often expressed sadness or anger." The bullies themselves did not have many emotional posts, but when they did, they would often be bragging. In our study, despite there being a low number of posts which detailed cyberbullying experiences, the posts contained a significant number of anger and sadness sentiment bearing phrases.

LIMITATIONS

This study focused on 10 open Facebook groups which were selected because they had the highest number of group members. A study of all Facebook groups related to cyberbullying and bullying, regardless of the number of members, would have given us a rounded view of the post content, and emotions reflected in the content, as well as the linguistic aspects of the posts. Data cannot be extracted from closed Facebook groups. In addition, the rise of privacy has impacted on the use of the Facebook API to extract Facebook

data from friends. In terms of extracting profile contents from the members of a group, the members would have to grant permissions to the API application. Utilising a survey-based approach would paint a more accurate description of how cyberbullying groups work and whether they do what they say in the group description. However, the survey responses are self-reported rather than actual data.

CONCLUSION

This study has explored the post content and emotions produced from content in relation to 10 open Facebook groups associated with cyberbullying/bullying. The findings have highlighted how the post content focused more on the sharing of opinions regarding cyberbullying in comparison to writing about personal experiences of cyberbullying.

Discussions generated in some of the groups digressed as shown by the high number of posts not related to cyberbullying or bullying. This finding highlighted the need for strict group moderator and clearly defined rules. Surprisingly, only 3% of posts in this study contained advice about cyberbullying and 6.39% of posts detailed personal experiences of cyberbullying.

A positive note was the higher number of positive sentiment bearing phrases contained in the posts in contrast to negative sentiment bearing phrases. Chi squared analysis showing an association between the groups focused on cyberbullying and the number of positive emotions reflected in the posts. This is encouraging for cyberbullying victims and other actors to see Facebook as a platform to share information on cyberbullying. Further work into this area will explore what types of support cyberbullying victims look for in social media and how they utilise the support offered.

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Chapter 44

Social Media Consumption Among Kenyans: Trends and Practices

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ABSTRACT

Despite the growing popularity of social media among Kenyans, there is limited baseline data on the consumption of these platforms by different Kenyan communities based on demographics such as age, gender, education, income, and geolocation. The study set out to fill this gap through a baseline survey on social media consumption in Kenya. The study used a mixed-method approach, involving a survey of 3,269 respondents and 37 focus group discussions. The social media platforms in use are WhatsApp, Facebook, YouTube, Instagram, LinkedIn, and Snapchat. However, the use of social media differs by demographics. Kenyans use social media for entertainment, education, jobs, politics, sports, and social issues. Most Kenyans access social media using phones for 1-3 hours daily. Motivations for using social media include the acquisition of information, entertainment, and social interactions. Most social media users have experienced fake news, cyberbullying, and bombardment with graphic images of sex and advertisements. Kenyans consider social media to be addictive, expensive, and time-wasting.

BACKGROUND

Social Media has revolutionized how individuals, communities, and organizations create, share, and consume information. Social networks have also helped people to communicate, breaking down the geographical barriers which restricted instant communication thus permitting successful social media-facilitated collaboration. However, many social media users are also faced with emerging challenges associated with the dark side of social media use. These include ethical and privacy violation issues, data abuse and misuse, the credibility of social media content, hate speech, fake news, and bot-driven

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interactions. Social media has also been associated with social and economic ills including family disintegration, dented reputations, and facilitation of terrorism. Social Media include SMS-based messaging platforms (e.g. WhatsApp, Facebook Messenger, WeChat), blogging platforms (e.g. WordPress, Blogger), social networking sites (e.g. Facebook, LinkedIn, Xing), Microblogs (e.g. Twitter, Tumblr), community media sites (e.g. Instagram, Snapchat, Flickr, YouTube, Dailymotion), wiki-based knowledge-sharing sites (e.g. Wikipedia), Social news aggregation sites and websites of news media (e.g. BuzzFeed, Huffington Post, Tuko News), Social Bookmarking sites (e.g. del.icio.us, Digg), social curation sites (e.g. Reddit, Pinterest) and websites by traditional news organizations, forums, mailing lists, newsgroups, social question and answer sites (e.g. Quora), user reviews (e.g. Yelp, Amazon) and location-based social networks (e.g. Foursquare).

Information and Communications Technologies (ICT) in Kenya have grown rapidly since the Internet was first launched in the early 1990s. Kenya is described as the Silicon Savannah owing to its dynamic ICT sector that has seen the development of globally acclaimed applications such as M-Pesa and Ushahidi. Ushahidi (<https://www.usahidi.com/>) is an open-source platform that allows collection of distributed data via SMS, email or web and visualize it on a map or timeline from the public for use in crisis response. M-Pesa (<https://www.safaricom.co.ke/personal/m-pesa>) is a mobile money transfer service, payments and micro-financing service, in Kenya. Social media has become a key aspect in Kenyan public discourse, facilitating online discussions while at the same time being a key subject of scholarly, socio-cultural, economic, and political debates. Despite the growing popularity of social media platforms, there is limited baseline data on the consumption of the digital media by different Kenyan communities.

Statement of the Problem

Several studies have studied distinct use of different social media platforms including, Twitter (Tully, & Ekdale, 2014) and Facebook (Wamuyu, 2018). The Kenya Audience Research Foundation (KARF, 2020) has also been conducting media consumption audits/surveys since 2007 for their clients, with a focus on traditional media and its audiences. Nendo (Nendo, 2020) observes the use of the internet, apps, websites and social media by businesses in Kenya and providing statistical insights to enterprises in form of infographics. Studies have also explored the use of social media in different sectors of the Kenyan economy such as banking (Njeri, 2014; Njoroge & Koloseni, 2015), journalism (Nyamboga, 2014; Media Council of Kenya, 2016), community development (Murungi, 2018; Ndlela & Mulwo, 2017), advertising and marketing (Mwangi & Wagok, 2016; Aluoch, 2017) and in post-election crisis (Makinen & Kuira, 2008; Ogola, 2019). There is no data on research or a baseline survey on social media in Kenya despite its wide usage and consumption. Therefore, the study set out to fill this research gap by conducting a baseline survey on Social Media consumption in Kenya to identify the patterns of social media usage among Kenyans as well the factors motivating their use of social media.

Research Questions

The proliferation of internet-enabled mobile devices has led to the rapid development of social networking sites, resulting in a continued reconfiguration of ways in which individuals or groups access and use social media platforms. Nevertheless, little is known on how different social media platforms are relevant to diverse groups of people in Kenya based on demographics such as age, gender, education level, geographical location and income. The study was guided by the following questions: (1) what are

the major Social Media sites and apps used by Kenyans?; and (2) what are the motivations behind use of social media among Kenyans? The study draws from a nationwide survey on social media consumption patterns among different demographic segments, conducted between December 2018 and March 2019. The survey sampled 3,269 respondents aged between 14 and 55 years.

Significance of the Study

The study provides the missing and much-needed baseline data on social media use among Kenyans based on different demographics. The results of this study contribute to literature on social media use in Kenya since no similar research had been carried out to measure social media use among Kenyans based on different demographics such as age, gender, education level, geographical location, and income. The study has also identified key statistics on social media users in Kenya. These statistics could be used by government, academic institutions and enterprises in the formulation of informed business strategies in order to better reach an identified target audience for improved service delivery, communication, and marketing strategies. For example, the time of the day when most Kenyans are online, could be used to identify the best time to post on social media for a target audience when the engagement rates are higher. Additionally, these statistics can be further used to develop issue-based policies, provide insights for academic inquiries, specific economic development strategies, among others.

The results also highlight the rural-urban digital divide, with most social media users in the rural areas accessing social media using cyber cafés. This could be used by the government to develop policies to address the issues pertaining to social, economic, and political empowerment. There is also a need for the government, individuals and organizations to disseminate their information through the social media, as one of the main motivations of social media use for a majority of Kenyans is the acquisition of information.

From the focus group discussions, the results indicate that individuals use social media when solving life problems. Many people have made their decisions on matters politics, personal relations, careers, and life based on social media conversations.

The paper is structured into six sections. Section 1 is the introduction, Section 2 is the literature review, and Section 3 is an elaboration on the study's research methodology, including the design and development of the survey instrument and the focus group discussion guide. Sections 4, 5, and 6 cover the study results, discussion of the study's empirical findings and the success of the study, highlighting its theoretical and practical implications, limitations and suggestions for further research, respectively.

LITERATURE REVIEW

Globally, the use of social media platforms is increasing exponentially. People use social networks such as Facebook, Twitter, and Instagram for the sole purpose of entertainment and maintaining contacts with their friends' list (Narula & Jindal, 2015). This section introduces use of social media platforms along with the motivations for using social media.

Usage of Social Media Platforms

Social media comprises of communication sites that facilitate relationship forming between users from diverse backgrounds, resulting in a rich social structure (Kapoor *et al.*, 2018). Many people are aware of the ever-mushrooming social media platforms such as Facebook, twitter, WhatsApp, LinkedIn, Instagram, TikTok, among many others (Hedman & Djerf-Pierre, 2013). According to a cross-sectional survey conducted by Alhabash and Ma (2017) among college students (N=396) which explored differences between Facebook, Twitter, Instagram, and Snapchat in terms of intensity of use, time spent daily on the platform, and use motivations, findings showed that participants spent the most time daily on Instagram, followed by Snapchat, Facebook, and Twitter, respectively. Alhabash and Ma's (2017) study also indicated that the students had the highest use intensity on Snapchat and Instagram (nearly equally), followed by Facebook and Twitter. In regard to use motivations, Snapchat took the lead in five of the nine motivations assessed by Alhabash and Ma (2017).

He, Wang, Chen, and Zha (2017) note that social media has become an online platform for businesses to market products/services and to manage customer relationships. Many small businesses have in the recent past joined the social media use bandwagon. Nawaz and Mubarak (2015) examined the adoption of social media in Sri Lankan enterprises and found that Facebook and Twitter were being used by the tourism product suppliers for advertisement and promotional purposes. Young (2017) examined how and why nonprofit human service organizations (HSOs) are using social media and found that these organizations are generally satisfied with social media use primarily to promote their organization's brand with even limited resources. Similarly, Hou and Lampe (2015) note that social media platforms are increasingly adopted by small nonprofit organizations (NPOs) to help them meet their public engagement goals. Leonardi (2015) indicates that use of enterprise social networking technologies can increase the accuracy of people's knowledge of "who knows what" and "who knows whom" at work.

Social media is known to facilitate escapism among people from some things in life. Hunt, Marx, Lipson and Young (2018) performed an experimental study to investigate the potential causal role that social media plays in the well-being of students. During the experiment, Hunt *et al.*, (2018) monitored 143 undergraduates at the University of Pennsylvania, where one group of the study participants were randomly assigned limited access to Facebook, Instagram and Snapchat and only allowed to use 10 minutes, per platform, per day, while the other group was allowed to use social media as usual for three weeks. The study results indicated that the limited use group showed significant reductions in loneliness and depression over the three-week study period as compared to the control group. A similar study conducted among secondary school students and teachers in Embu, Kenya, by Nyagah, Asatsa and Mwanja (2015), showed that social media has an influence on how teenagers connect with each other and which in the long run affects their self-esteem.

The global use of social media has surpassed 3.5 billion users as of July 2019 (Social, 2019), an indication that 46 percent of the world's total population is using social media. In the Philippines, individuals spend approximately three hours and fifty-seven minutes every day on social media, making the country the global leader in social media usage (Social, 2019). In contrast, Poushter, Bishop and Chwe (2018) indicate that only less than half of Germany's population use social media. Statista's 2018 report revealed that in 2016, 38 percent of individuals in the EU-28 used social networks daily. The country with the highest share of daily social media use was Denmark, where 59 percent of the population actively engaged on social media platforms on a daily basis. Kenya has a very dynamic ICT sector, however, there is no baseline data on use of social media in Kenya despite its wide usage and consump-

tion. Wamuyu (2017) notes that the existing digital divide, characterized by a lack of computer literacy skills, low internet access, and inadequate ICT infrastructure may be the reasons behind the low social media use among low-income urban communities. In response to this, the author sought to address the following question: Therefore, the author sought to address the following question:

RQ1: What are the major social media platforms used by Kenyans?

Under this question, several more specific sub-questions were asked.

1. What are the social media platforms used by Kenyans?
2. What do Kenyans use social media platforms for?
3. How frequently do Kenyans access social media platforms?
4. How do Kenyans access social media platforms?
5. Where do Kenyans access social media platforms?
6. How much time do Kenyans spend on social media platforms per day?
7. What time of the day do Kenyans use social media platforms?

Motivations for Using Social Media

In today's world, individuals spend several hours every day accessing and using social media platforms for social interactions, news, entertainment, and searching for information. Brandtzæg and Heim (2015) posit that people use social networks to get in contact with new people, to keep in touch with their friends, and general socializing. Studies have identified a number of factors motivating use of social media which include entertainment, information seeking, personal utility and convenience (Al-Menayes, 2015; Lampe, Ellison, & Steinfield, 2006), social surveillance or voyeurism (Mäntymäki & Islam, 2016), and self-promotion and exhibitionism (Belk, 2013; Mäntymäki & Islam, 2016). Whiting and Williams (2013) identified 10 motivations for using social media: social interaction, information seeking, passing time, entertainment, relaxation, communicatory utility, convenience utility, expression of opinion, information sharing, and surveillance or knowledge about others. Lee and Ma (2011) show that information seeking, socializing, and status seeking are the motivations for users sharing news on social media sites.

While Jung and Sundar (2016) found that people over 60 years old used Facebook for social bonding, social bridging, and as a vehicle for responding to family member requests, Joinson (2008) identified a set of eight different motivations college going students have for using Facebook, such as social connection, shared identities, photographs, content, social investigation, social network surfing, entertainment-related content, and status updates. Smock, Ellison, Lamp and Wohn (2011) studied motivations for using different features of Facebook and concluded that there are nine motives for using Facebook. These motives include habitual pastime, wanting to be part of a cool and new trend, entertainment, information sharing, escapism, companionship, professional advancement, social interaction, and meeting new people. Park, Kee and Valenzuela (2009) posit that individuals have different motivations to join Facebook groups. Some people join Facebook groups to look cooler and develop their careers, while others join the groups for socializing, entertainment needs or because they feel pressured by their friends and feel that joining these Facebook groups will boost their social standing among friends (Valenzuela, 2009).

Dhaha and Igale (2013) indicate that the motives for using Facebook among Somali youth are virtual companionship escape, interpersonal habitual entertainment, information seeking, self-expression,

and passing time. In a study conducted among US adults, Lin, Lee, Jin and Gilbreath (2017) identified Facebook users' motivations as socialization, entertainment and information seeking as compared to Pinterest users whose motivations were entertainment, information seeking, and self-status seeking. Tartari (2015) identified seven motivations for Facebook use among Albanian students which included virtual companionship escape, interpersonal habitual entertainment, self-description, self-expression, information seeking, passing time, and the establishment of a new online reality that they desire, not where they actually live in.

By studying how students from University of Alabama used Twitter before, during and after a tornado disaster in April 2011, Maxwell (2020), identified four motivations for using Twitter which included the need to socialize, to entertain, to gain status or to gather information. Other studies have identified motivations to use Twitter to include information sharing and social interaction, of information seeking, mobilization, and public expression (Liu, Cheung, & Lee, 2010; Park, 2013). A review of four scholarly works done by Coursaris, Yun and Sung (2010) identified entertainment, relaxation/escape, social interaction, and information seeking as the motivations for using Twitter. Greenwood (2013) suggests that the motives for most Twitter and Facebook users are to pursue fame and to feel valued. A study among Kuwait college students identified the motivations to use Snapchat as passing time, self-expression, self-presentation, and entertainment, while the motivations for using Twitter are self-presentation, entertainment, and social interaction, with the motivations for using Instagram including passing time, social interaction, self-presentation, and entertainment (Alsalem, 2019).

Other studies have also identified motivations for using most of the world's popular social media tools. Mull and Lee (2014) identified five motivations for Pinterest usage, which included fashion, creative projects, virtual exploration, organization, and entertainment. Huang and Su (2018) posit that motivations for using Instagram are seeking social validation, social interactions and diversion. Marcus (2015) indicates that the primary motive for Facebook posts is to establish relationships with others, whereas Instagram is more for personal use and mostly for people who are looking to get praise and likes which gives users a unique sense of satisfaction.

The motivations to use YouTube include to contribute content, including liking content, sharing a link with friends and uploading content, viewing content uploaded by others, need for relaxation and entertainment, and to meet needs for information and learning (Rosenthal, 2018; Klobas *et al.*, 2018). Klobas *et al.*, (2018) found that Malaysian university students were strongly motivated to use YouTube for entertainment, information and learning. Myrick (2015) shows that one of the motivations to watch YouTube is to improve personal mood. Studies have also shown that the users of WhatsApp are mainly motivated by cost, entertainment, leisure, sense of community, immediacy, and intimate communication (Karapanos, Teixeira & Gouveia, 2016; Church & de Oliveira, 2013). Motivations for YouTube users also include expressing opinions and making their voice heard among their peers, entertainment and information-seeking (Hanson & Haridakis, 2008).

Zhang and Pentina (2012) identified the motivations for Chinese users of Weibo as information seeking, social connection, to facilitate their professional development, fulfill emotional needs, reciprocate by helping other users with advice and information, enhance their social status, express oneself, and interact with the site and other users. Hwang and Choi (2016) identified the motivations for using Sina Weibo among Chinese college students as information-gathering, followed by accessibility to celebrity, social connection, self-presentation and entertainment. Lien and Cao (2014) indicates that Chinese WeChat users' motivations are entertainment, sociality and information. Basak and Calisir (2014) identified seven motivations among LinkedIn users in Turkey which included self-promotion, group activities, job and

job affairs, finding old and new friends easily, follow up, profile viewer data, and professional networking. In a study on the motives of accessing political candidate profiles on MySpace, Ancu and Cozm (2009) derived three motivations which included social interaction, information seeking and guidance, and entertainment. An online survey among the users of the social news website Reddit.com showed that the Redditors' motivations are socializing/community building, status-seeking and entertainment (Moore & Chuang, 2017).

While the above studies have identified a number of factors motivating use of social media in different countries and in diverse social, cultural and economic settings, their findings may not generalize to the Kenyan setting. The focus of this study was to examine whether the findings from past studies could be generalized to the Kenyan setting. Therefore, the author sought to address the following question:

RQ2: What are the motivations behind using social media among Kenyans?

This study investigated the following five motivations to use social media among Kenyans.

1. Acquiring information (news, knowledge, exploration);
2. Entertainment and pleasure (emotional experiences);
3. Personal identity (personal stability, social status, need for self-respect);
4. Social interactions with family members, friends and connection with the outside world;
5. To escape some things (release tension, shifting attention from unpleasant happenings).

RESEARCH METHODOLOGY

The researchers used a mixed study approach, which involved collecting both quantitative (survey) and qualitative (focus group discussions) data in two phases. Focus group discussions were used as a complementary method to the survey. Descriptive analysis was completed for the quantitative data and thematic analysis was used for the qualitative data. Use of focus group discussions resulted in the collection of in-depth data which could not have been obtained if only a survey had been used. For example, the emergence of two new motivations of using social media, namely seeking business opportunities through social media and buying and selling on social media were only realized from focus group discussions as the survey only had the commonly known motivations from the literature.

Data collection in phase one was achieved through a baseline survey to collect data on the social media usage patterns among Kenyans. The baseline survey was accomplished using a hand-delivered questionnaire. The questionnaire consisted of open-ended and closed-ended questions to measure individual social media use patterns, motivations to using social media as well as demographic questions. The participants were assured of their anonymity and confidentiality, and informed that their participation in the study was voluntary.

Phase two data was collected using focus group discussions aimed at getting the insights on the survey participants' reflections on their social media and internet use experiences and motivations. The focus group discussion sessions lasted for 120 minutes (2 hours). During each focus group meeting, 60 minutes were used for the focus group discussion guide while the other 60 minutes were for introductions, closing remarks and refreshments. Each focus group discussion had 6 to 10 participants and a moderation team (the moderator and the assistant) whose members had shared tasks.

Social Media Consumption Among Kenyans

The target population was stratified into five groups based on ages to enable a comparative analysis on social media consumption patterns. The five strata have been designed in accordance with the socio-demographic characteristics. The five strata are as follows:

- 14 to 20 years old - These constitute the high school level students that access to internet and social media during holiday period and were born in the digital media environment.
- 21 to 25 years old - These constitute college-level students and were also born in the digital media environment.
- 26 to 35 years old - These constitute early career workers and were born in a non-digital media environment but they use it.
- 36 to 45 years old - These constitute the middle-to-late career workers who mostly learnt to use digital media when they were adults.
- 46 years and above – These constitute seniors who have historically been late adopters of technology compared to the younger population.

For purposes of obtaining a representative sample, the study divided the country along the former eight administrative provinces – Nairobi, Coast, Central, Western, Nyanza, Eastern, Rift Valley, and North Eastern for purposes. From each of the former provinces, the county with the highest access to Internet was selected for data collection based on the level of internet penetration data from the Kenyan Integrated Household Budget Survey, Kenya National Bureau Statistic (KNBS, 2016). The eight counties selected were Nairobi (Nairobi Province), Mombasa (Coast), Meru (Eastern), Bungoma (Western), Mandera (North Eastern), Trans Nzoia (Rift Valley), Kisumu (Nyanza), and Nyeri (Central).

From the selected counties, one urban and one rural location with Internet penetration as per KNBS 2016 report were selected for data collection. The locations selected for data collection except Nairobi were as follows: Central (Nyeri Town and Naro Moru); Coast (Mombasa City and Changamwe); Eastern (Meru Town and Kathera); North Eastern (Mandera Town and Banissa), Nyanza (Kisumu City and Nyando); Rift Valley (Kitale Town and Kiminini); and Western (Bungoma Town and Kanduyi). However, since there is no distinction between urban and rural areas in Nairobi, the capital city was subdivided according to the socio-economic demographics used by the KNBS as follows: lower income, lower middle-income, middle-income, and high-income. Specifically, for lower income, the data was collected in (Mathare, Kangemi, Kawangware, Mukuru Kwa Njenga, Mukuru Kwa Reuben, Laini Saba, Korogocho, Kariobangi North, Dandora I through V, Kayole and Kiamaiiko. For lower middle, the data was collected in Umoja I through III, Kariobangi South, Imara Daima, Riruta, Githurai, Kahawa West, Zimmerman, Mwiki, Kasarani, Njiru, Ruai, Komarock, Savannah, and Eastleigh. In middle-income, the neighborhoods were Parklands, Highridge, Mountain View, Lang'ata, South C, Nyayo Highrise, Nairobi West, Woodley, and Westlands. Runda, Kitisuru, Kileleshwa, Muthaiga, Karen, and Kilimani represented high-income neighborhoods.

RESULTS AND ANALYSIS

Baseline Survey

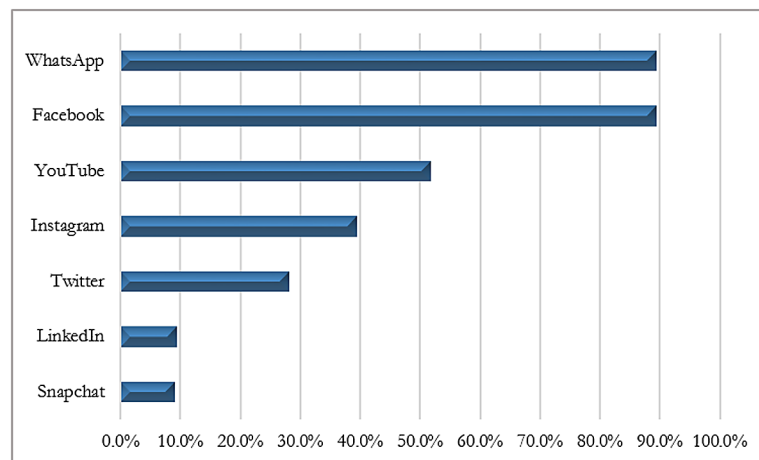
The nationwide survey of social media consumption patterns among different demographic segments was conducted between December 2018 and March 2019. The survey sampled 3,269 respondents aged between 14 and 55 from eight counties drawn from Kenya's former eight administrative provinces – Nairobi, Coast, Central, Western, Nyanza, Eastern, Rift Valley, and North Eastern. From the sample of 3,269, 3,166 questionnaires were fully answered – representing a health response rate of 96.9%. The data from the 3,166 respondents was used to answer research question one.

RQ1 (1): What Are the Social Media Platforms Used by Kenyans?

Use of Social Media Platforms in Kenya

Figure 1 captures a snapshot of social media platform use by Kenyans. The vast majority of Kenyans almost equally use WhatsApp (89.4%) and Facebook (89.3%). The third most used social media is YouTube (51.6%) followed by Instagram (39.4%). Both LinkedIn and Snapchat are the least popular platforms in Kenya at 9.3% and 9.1% respectively.

Figure 1. Social Media use in Kenya



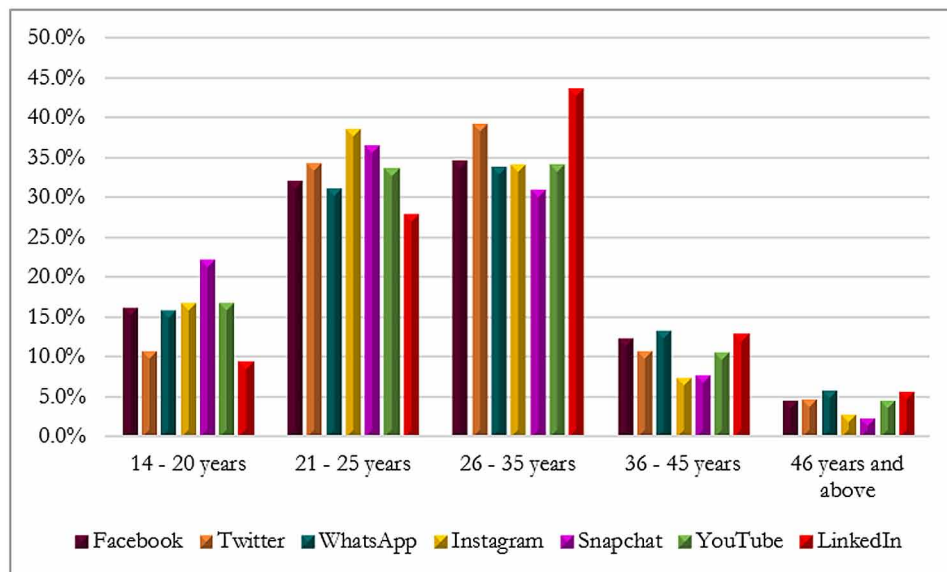
Social Media Use by Age

From Figure 2, the most active age group on social media is 26-35 years, while the least active are those aged above 46 years. Facebook is mostly used by 26-35 year-olds (34.6%) and least used by those 46 years and above (4.6%). Twitter is mostly used by those of 26-35 years (39.3%) and least used by 46 years and above (4.8%). When it comes to WhatsApp, it is also commonly used by Kenyans aged 26-35 years. Instagram is most used by 21-25 year-olds at 38.7% and least used by those beyond 46 years

Social Media Consumption Among Kenyans

(2.8%). Similarly, Snapchat is also mostly used by those aged 21-25 (36.6%). YouTube is most used by 26-35 year-olds (34.1%) and least used by 46 years and above. LinkedIn is most used by 26-35 year-olds (43.7%) and least used by those 46 years and above.

Figure 2. Social Media use by Age



Use of Social Media by Gender

The men in Kenya are generally more active on social media platforms compared to the women (see Figure 3). They lead in all the social media platforms as active users. The preferred social media platforms among men include LinkedIn (67.8%) and Twitter (67.0%), with Snapchat being the least preferred platform, which is used by 52.5% of men, compared to 47.5% of women who had Snapchat as one of their preferred social media platforms.

The women reported the least use of LinkedIn, at 32.2%, as shown in Figure 3. It is conspicuous that while men use LinkedIn the most, women use it the least, with the reverse being true when it comes to Snapchat.

Use of Social Media by Geo-Location

Majority of Kenyans in the rural areas use Facebook (47.9%), WhatsApp (46.8%) and YouTube (44.2%), as compared to a majority of urban residents who use LinkedIn (70.3%), Snapchat (64.2%), Instagram (58.2%) and Twitter (56.8%) as shown in Figure 4.

Figure 3. Use of Social Media by Gender

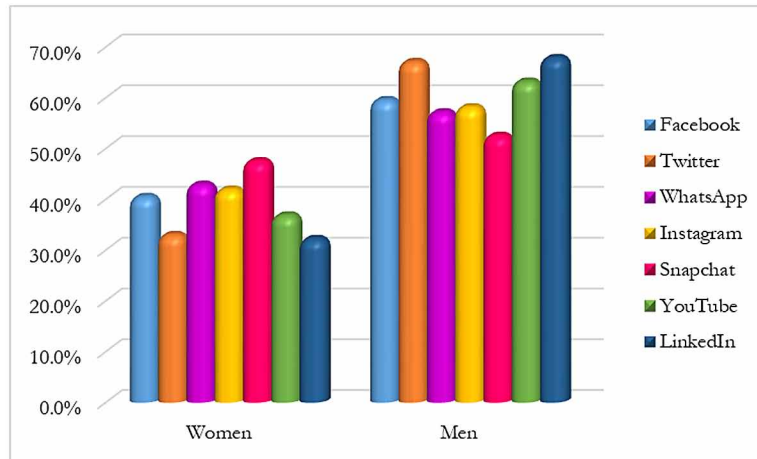
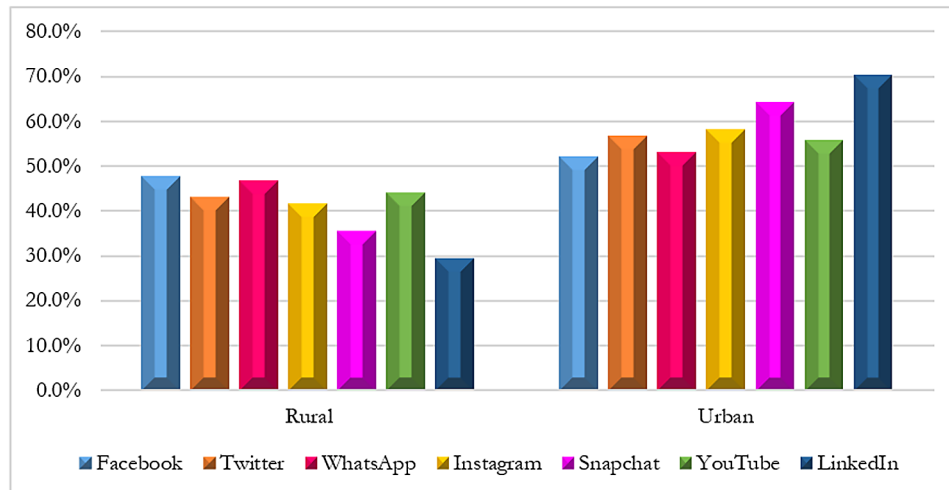


Figure 4. Use of Social Media by Geo-Location



Use of Social Media by Income

A majority of low-income earners in Kenya are using WhatsApp (29.43%), YouTube (29.74%), Twitter (29.37%) and Facebook (29.28%), as compared to a majority of high-income earners who use LinkedIn (51.0%), Twitter (37.2%), YouTube (28.7%) and Instagram (27.3%), as shown in Figure 5. Most of the middle-income earners use LinkedIn (54.6%), Twitter (29.7%), Snapchat (27.8%), and YouTube (24.4%).

Use of Social Media by Income in Nairobi

In Nairobi, the majority of residents live in urban slums. Thus, those who live in informal settlements or the low-income residential areas use Facebook (30%) and WhatsApp (25%) as their social media plat-

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forms of choice as indicated in Figure 6. The middle-income residents of Nairobi mostly use LinkedIn (44.5%), Snapchat (29.8) and Twitter (29.7%). However, the lower middle-income population in Nairobi use YouTube (47.6%), WhatsApp (46.0%) and Instagram (45.6%). The high-income Nairobi residents mostly use LinkedIn YouTube and Twitter as shown in Figure 6.

Figure 5. Use of Social Media by Income

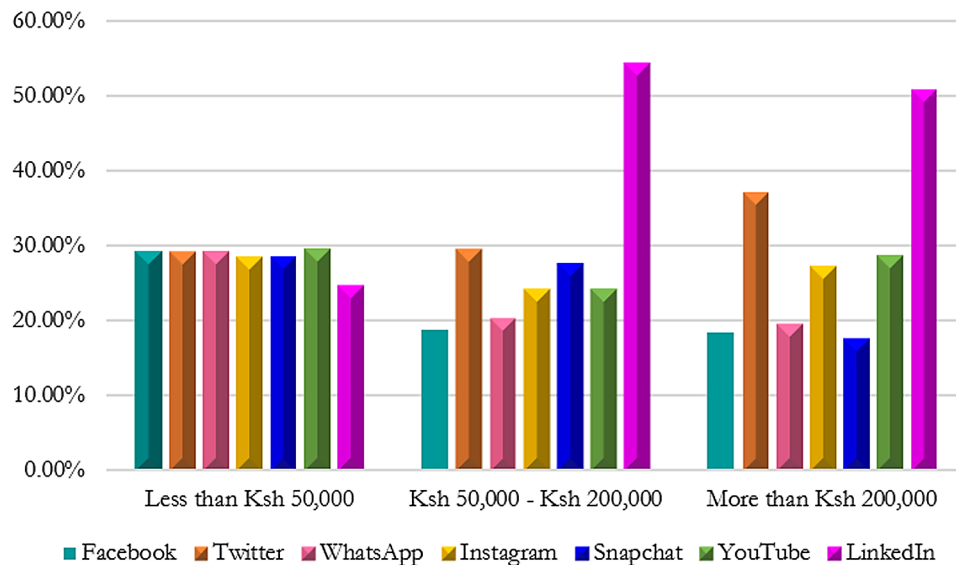
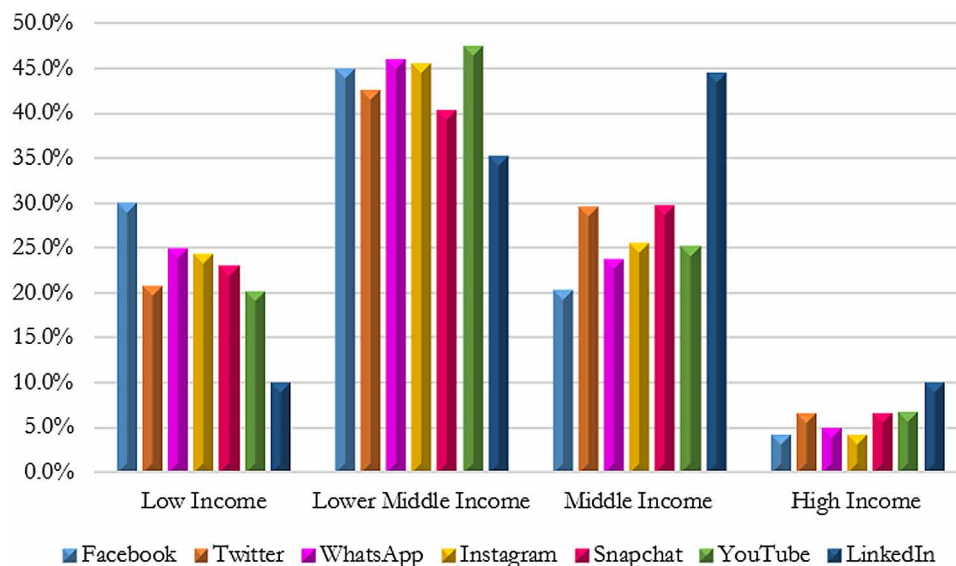


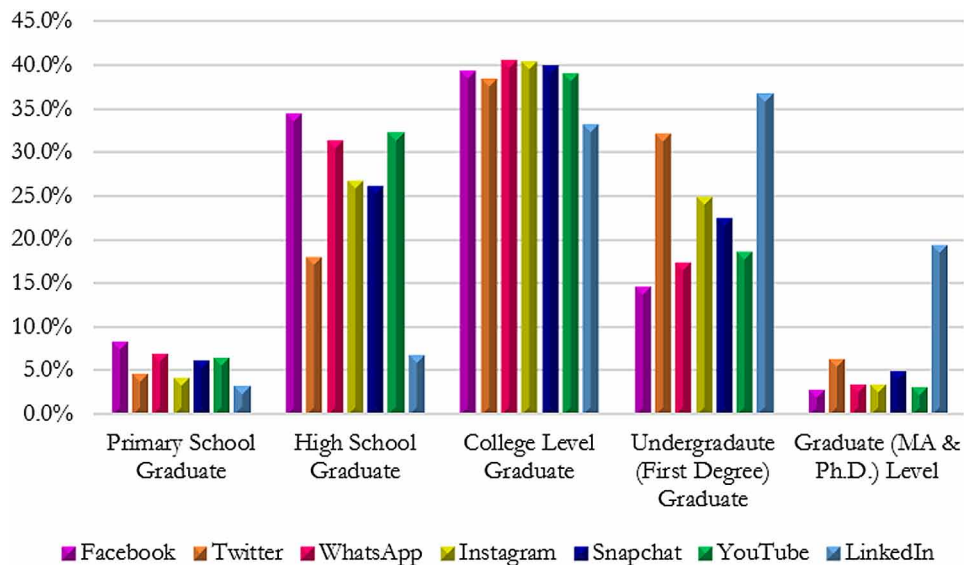
Figure 6. Use of Social Media by income levels in Nairobi



Use of Social Media Platforms by Education Level

From Figure 7, the use of Facebook is more common among those with high school and college levels of education. Among those with higher education levels (undergraduate and graduate), the most common social media platform is LinkedIn. In the primary school category, Facebook tops at 8.5%, followed by WhatsApp and YouTube. For high school graduates, the most prevalent platform is Facebook (34.5%) followed by YouTube (32.3%). WhatsApp is third with 31.4%. However, among those with college-level education, WhatsApp is the most preferred platform (40.6%). The second most popular social media platform among those with college-level education is Instagram (40.4%) followed by Snapchat (40.0%). Other popular platforms among those with college-level education are Facebook (39.4%), YouTube (39.1%), and Twitter (38.5%). For the undergraduate category, the leading social media platform in use is LinkedIn (36.8%) followed by Twitter (32.1%). Similarly, LinkedIn is the mostly used social media platform among those with Masters and Doctorate level degrees (19.5%). Coming a distant second is Twitter (6.4%) followed by Snapchat (5.0%). Overall, there is heavy use of social media platforms among those with college-level education, while the least usage of social media platforms is among the primary school graduates.

Figure 7. Social Media Use by Education Level



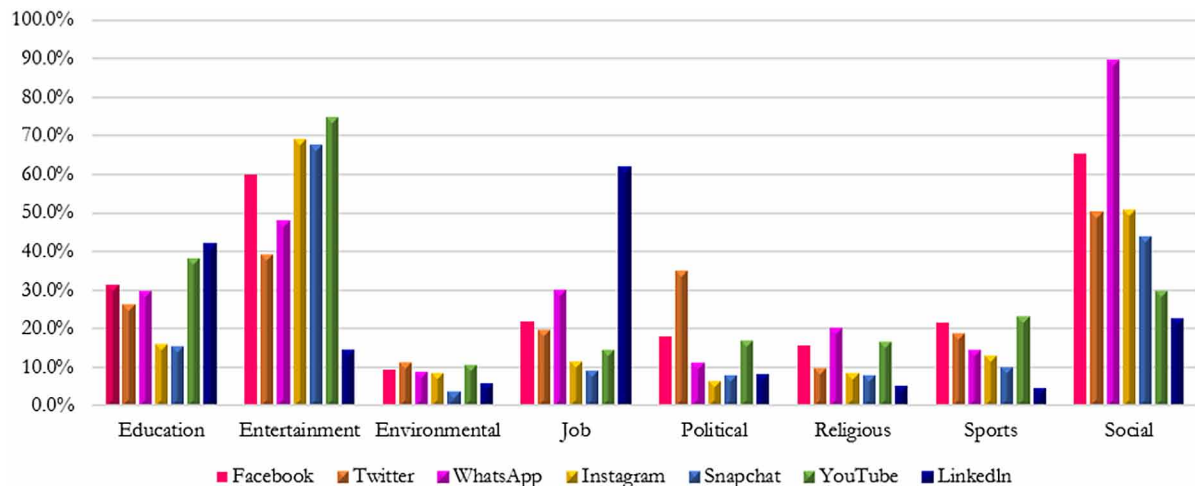
RQ1 (2): What Do Kenyans Use Social Media Platforms For?

Most Kenyans use social media platforms for entertainment, education, jobs, politics, sports, and social issues as shown in Figure 8. LinkedIn (42.1%) and YouTube (38.2%) are the social media platforms mostly used for educational issues. YouTube (74.4%), Instagram (68.9%) and Snapchat (67.3%) are frequently used for entertainment. WhatsApp is mostly used for social issues (89.4%) while LinkedIn is commonly used for job-related issues (61.9%) and education matters (42.1%). Facebook is mostly used

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for social (65.3%) and entertainment (60.0%) issues. Twitter is used for both social (50.2%) and political (35.1%) issues. The issues the respondents used social media for is a clear indication that people use social media to solve their life problems, make decisions and create identities.

Figure 8. Issues of Focus in Using Social Media



RQ1 (3): How Frequently Do Kenyans Access Social Media Platforms?

Frequency of Accessing Social Media

Social media users in Kenya are highly engaged with the platforms, with most Kenyans accessing more than one social media platform daily as indicated in Figure 9. The data on social media platform use shows that 89.3% of WhatsApp users use the platform daily, with 9.2% accessing it weekly, while 1.4% use it less often. 80.7% Facebook users visit the site daily, 15.8% use the platform weekly, while 3% say they visit the site less often. 63.6% of YouTube users visit the site daily, another 29.8% say they use it a few days a week, while 5.7% say they use the use the video-sharing platform less often. Almost half (48.7%) of Snapchat users are on the platform daily, with 27.7% who say they check in weekly, while 8.5% visit Snapchat less often than that. 54.6% of Twitter users visit the site daily, another 32.4% say they visit a few days a week, while 9.2% say they check Twitter less often. 59.8% of Instagram users visit the site every day.

RQ1 (4): How Do Kenyans Access Social Media Platforms?

Devices Used to Access Social Media

According to the survey data, most social media platform users in Kenya used their phones to access their preferred platforms. According to the survey, 78.6% of respondents stated that they accessed the platforms using mobile phones. Almost all WhatsApp (97.5%) and Facebook (96.2%) users accessed

the platforms using mobile phones as shown in Figure 10. However, 40.2% and 16.5% of respondents indicated that they accessed LinkedIn using laptops and desktops respectively.

RQ1 (5): Where Do Kenyans Access the Social Media Platforms?

Physical Location of Accessing Social Media

People access social media from different physical locations, including at home (85.5%), public hotspots (23.3%), offices (22.1%) and cyber cafés (14.5%) as shown in Figure 11.

Figure 9. Frequency of Accessing Social Media

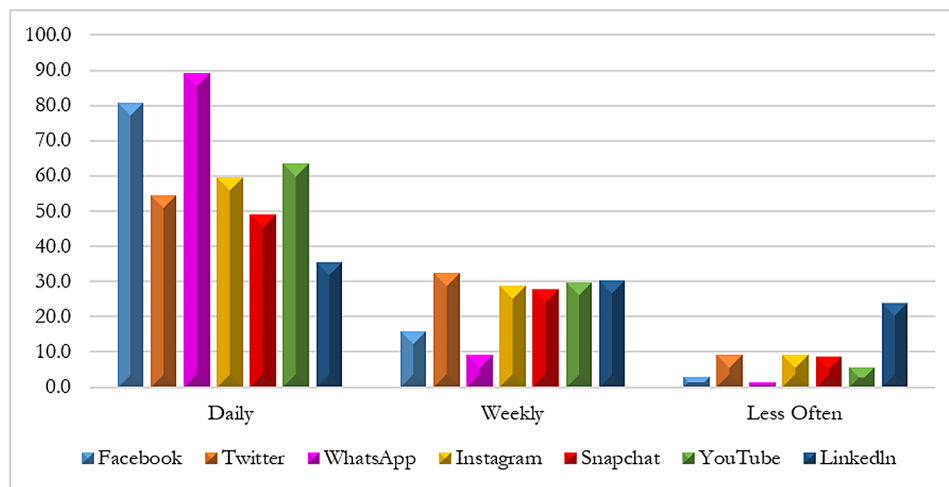
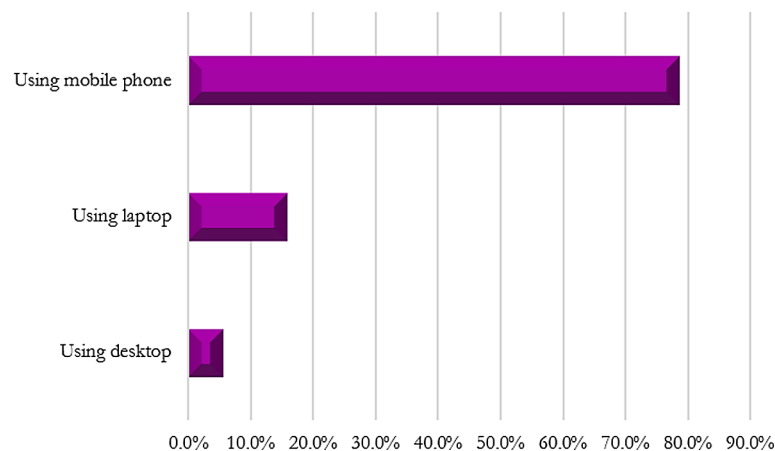
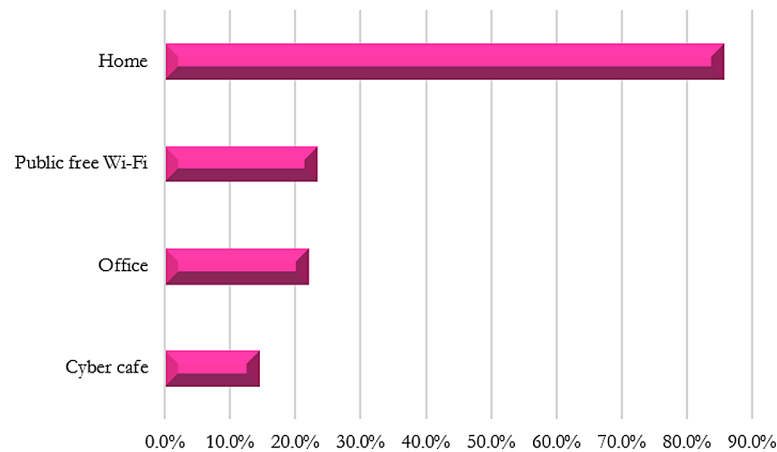


Figure 10. Devices Used to Access Social Media



Social Media Consumption Among Kenyans

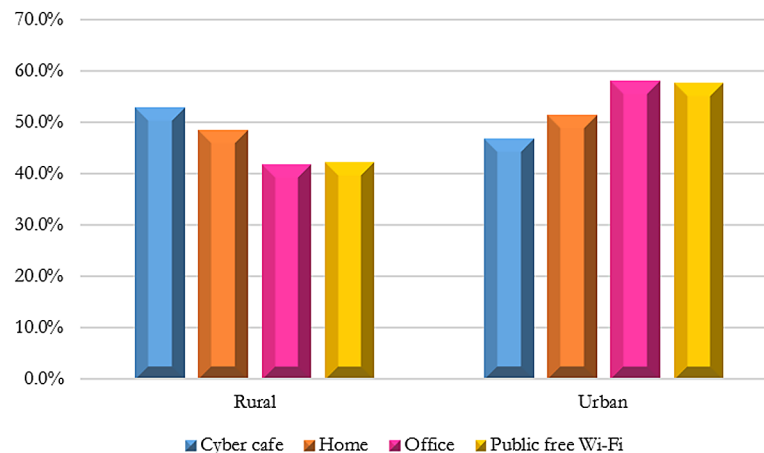
Figure 11. Physical Location of Accessing Social Media



Physical Location of Accessing Social Media in Different Geo-locations

A majority of Kenyans in the rural areas and those living in low-income urban areas still value and use the services of a cyber café (53.1%). However, most of the urban population access social media from the offices (58.1%) and the public hotspots (57.7%), as indicated in Figure 12.

Figure 12. Physical Location of Accessing Social Media in different Geo-locations



Physical Location of Social Media Access by Income in Nairobi

Even though Internet access charges are comparatively low compared to many African countries, Internet access is still expensive in Kenya. A majority of the middle-income (42.2%) Kenyan population use the office internet to access social media platforms, while the lower middle-income (49%) take advantage of readily available public Wi-Fi provided in the malls, training institutions and the entertainment spots

to access their preferred social media platforms. The people living in low-income (36.1%) urban areas still value and use the services of a cyber café as shown in Figure 13.

Physical Location of Social Media Access by Gender

From Figure 14, the physical location of social media access varies among gender. Women are more likely to access social media at home (43%) or on public Wi-Fi (41%), and men are more likely to prefer accessing social media at the offices (60.1%) or at cyber cafés (66.4%).

Figure 13. Physical Location of Social Media Access by Income in Nairobi

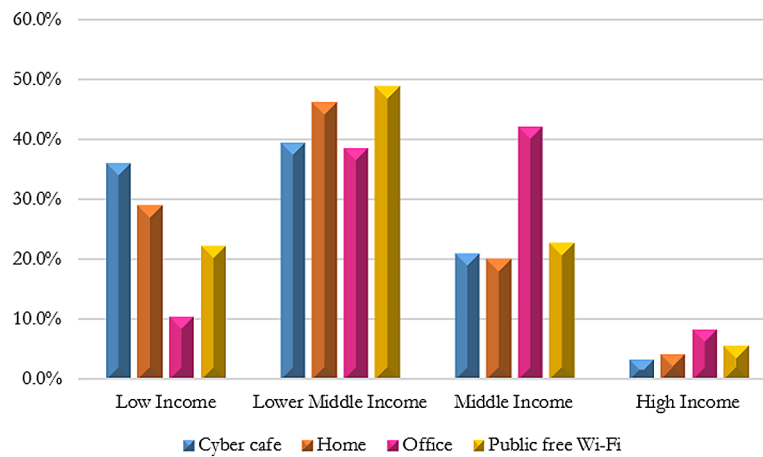
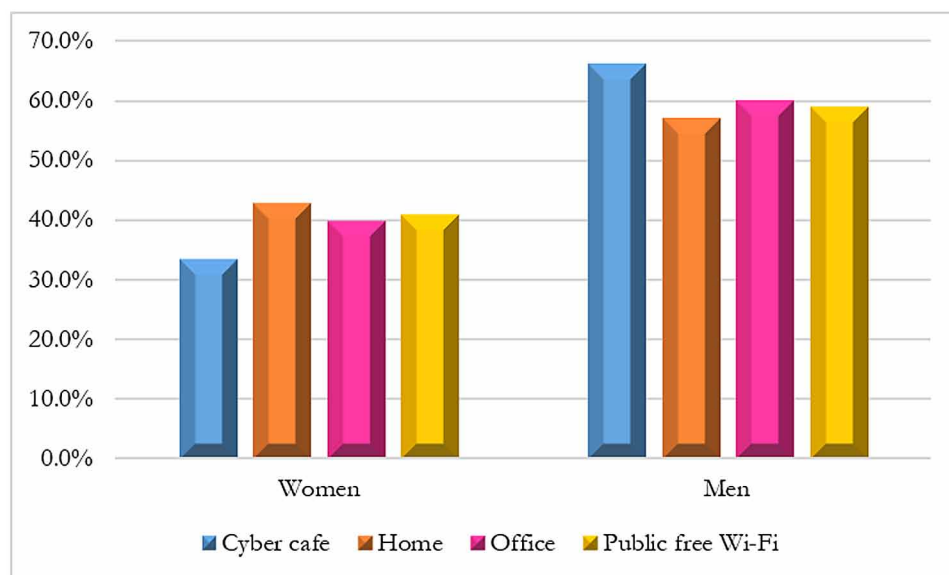


Figure 14. Physical Location of Social Media Access by Gender

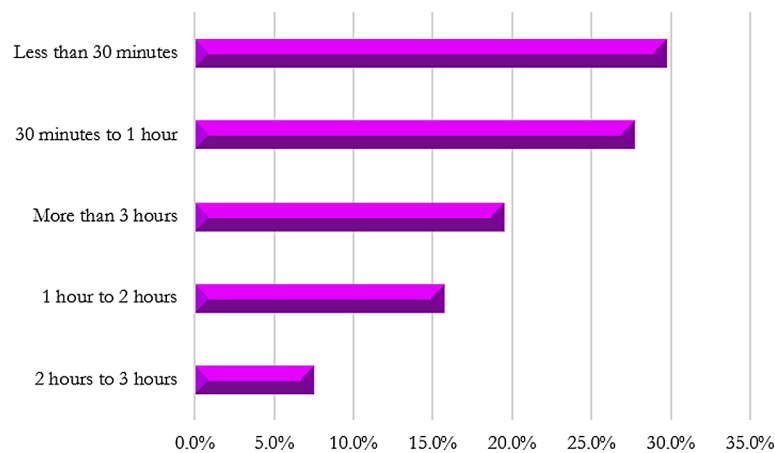


RQ1 (6): How Much Time Do Kenyans Spend on Social Media Platforms per Day?

Daily Time Spent on Social Media

On average, a vast majority of Kenyans spend more than one hour daily on social media platforms. 19.4% of social media users in Kenya spend more than three hours interacting through the social media on a daily basis as shown in Figure 15.

Figure 15. Daily time spent on Social Media



86% of WhatsApp users, 73% of Facebook users and 43% of YouTube users spend more than 1 hour online everyday as shown in Figure 16, while 60% of WhatsApp users, 46% of Facebook users and 29% of YouTube users spend more than 2 hours online everyday as shown in Figure 16.

Daily Time Spent on Social Media by Gender

Figure 17 indicates that most Kenyan men spend more time on various social media platforms available to them than women. For example, in a typical day most men (61%) spend more than two hours on social media daily as compared to 39% of women.

Daily Time Spent on Social Media by Geolocation

60% of the urban population in Kenya use social media platforms for more than 2 hours daily as compared to 40% of the people living in the rural areas who use social media for more than 2 hours on daily basis. A majority of the rural population spend between 1 and 2 hours on social media daily as shown in Figure 18.

Figure 16. Time spent online on specific platforms

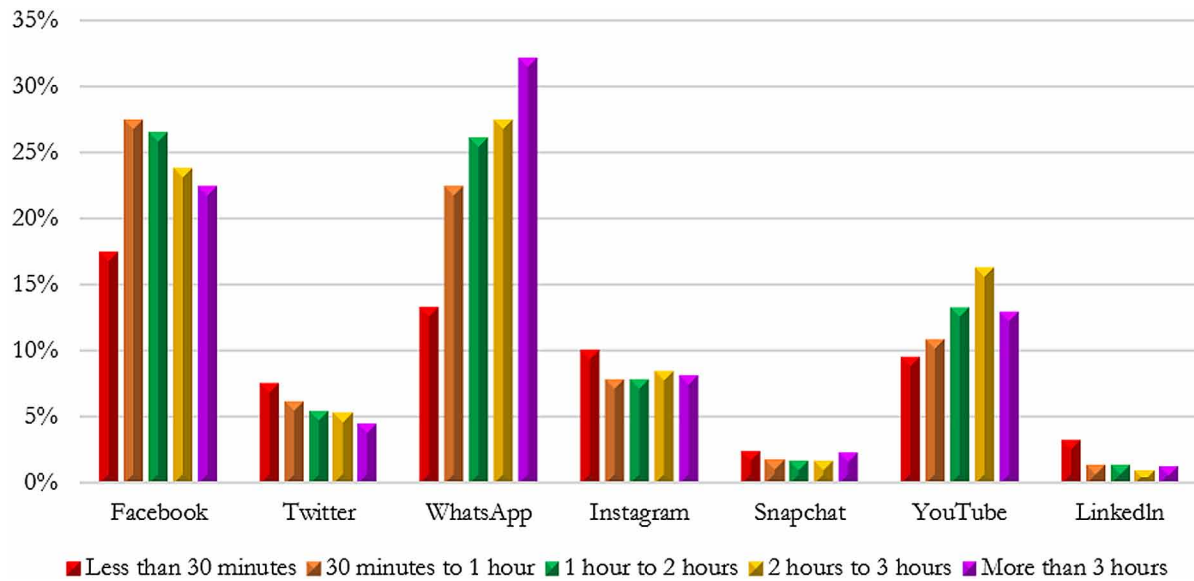
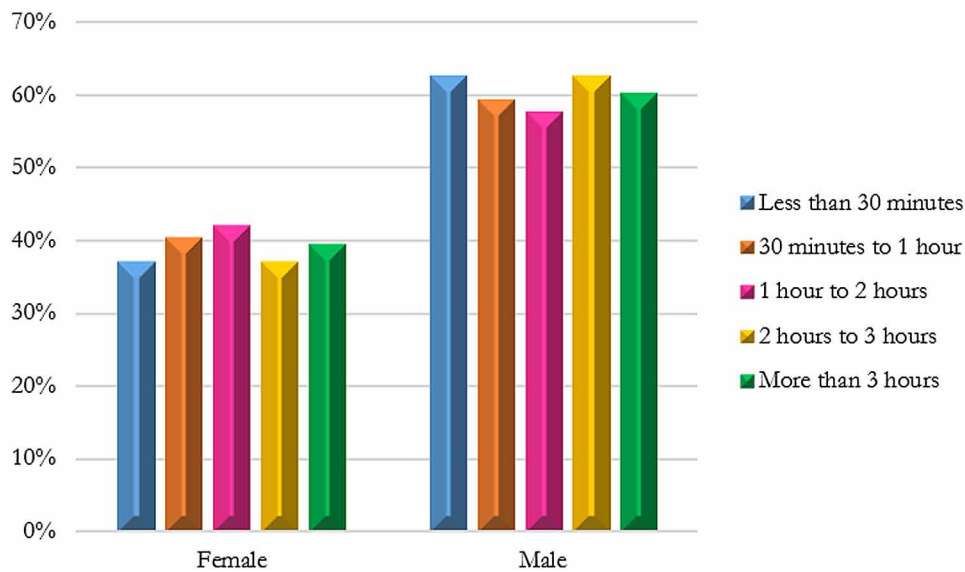


Figure 17. Daily Time Spent on Social Media by Gender



Daily Time Spent on Social Media by Age

Figure 19 shows that Kenyans of the ages between 21 and 35 (age brackets of 21-25 years and 26-35 years) are the most active users of social media available in the country. The data on the time spent on social media by age shows that the people between the ages of 21 and 35 years spend an average of 2 hours per day on social media platforms. 37% of the 21-25 year-olds spend more than 3 hours a day on social media.

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Figure 18. Daily Time Spent on Social Media by Geolocation

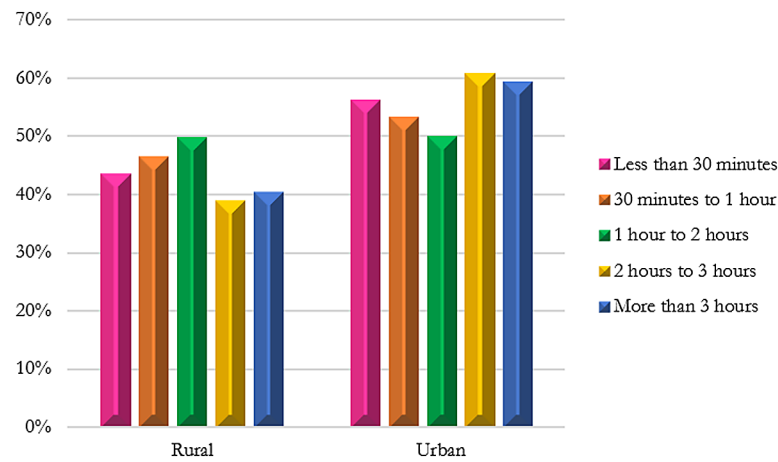
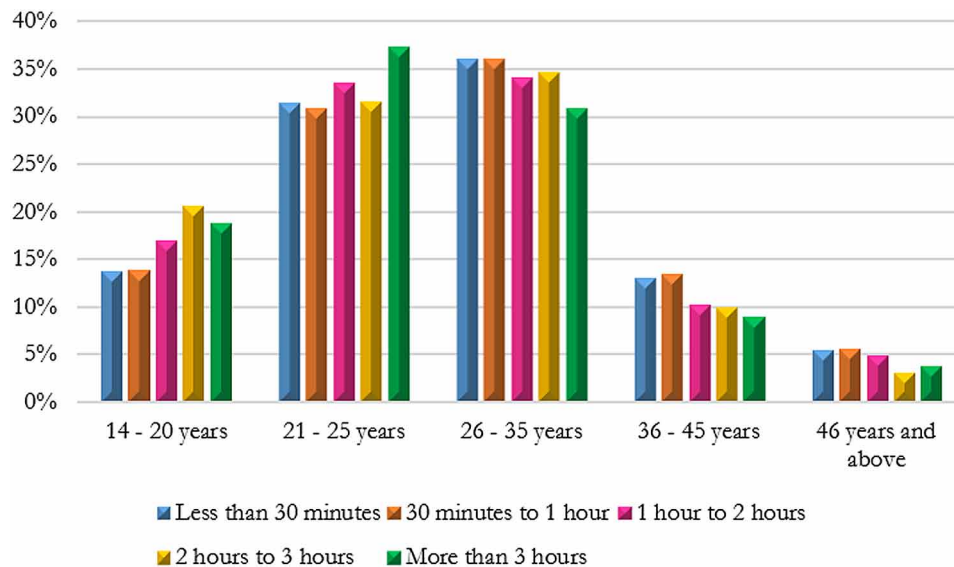


Figure 19. Daily Time Spent on Social Media by Age



Daily Time Spent on Social Media by Income

Figure 20 shows that Kenya's middle-income group are the most active users of social media platforms in Kenya. 53% of the lower middle-class spend more than 3 hours a day on social media.

Daily Time Spent on Social Media by Education

Figure 21 shows that the college-level graduates spend much more time on social media than any other category of the education group. 41% of the respondents who were college-level graduates spent more than three hours on social media daily, while another 44% spent 2-3 hours on social media a day.

Figure 20. Daily Time Spent on Social Media by Income

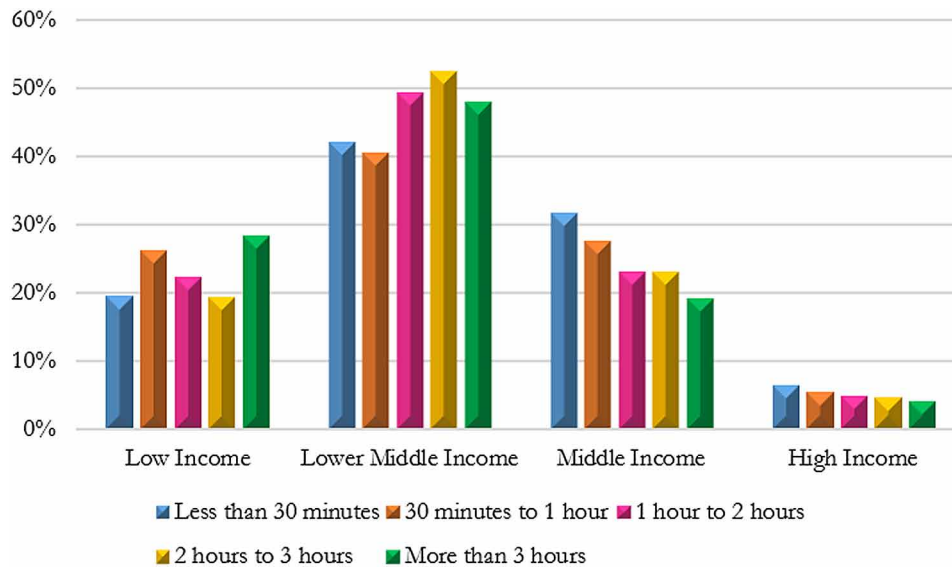
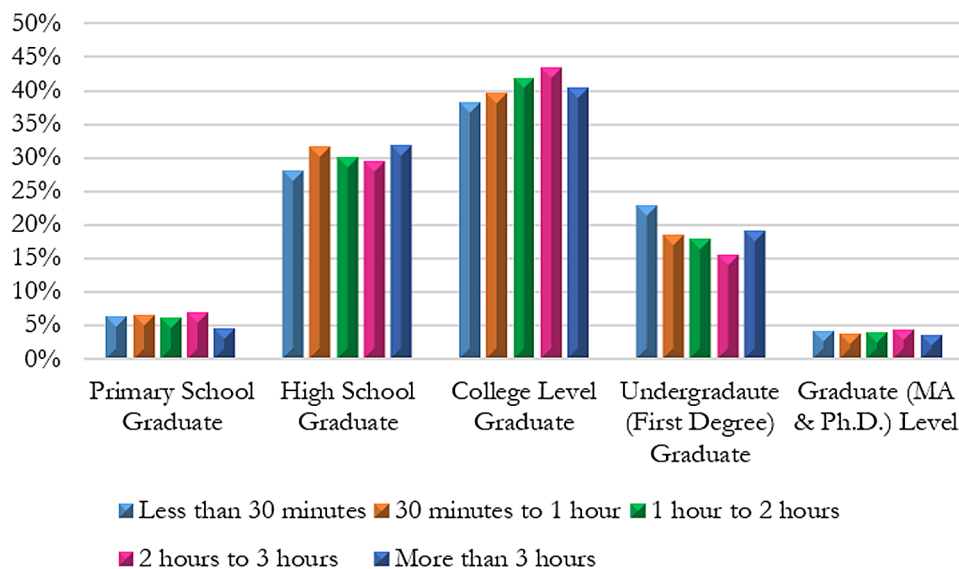


Figure 21. Daily Time Spent on Social Media by Education



RQ1 (7): What Time of the Day Do Kenyans Use Social Media Platforms?

Time of the Day Spent on Social Media

Both night and evening hours are the times of the day when a majority of Kenyans spend most of their time on various social media platforms (see Figure 22). This could be attributed to the fact that these are the times of the day when most of Kenyans are at home after their day's work. Kenyans also spend

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a considerable amount of time in the morning hours on the social media platforms – which could be the period before they get busy with their daily routines.

Time of the Day Spent on Social Media by Gender

When analyzed by gender (see Figure 23), a majority of the Kenyan men (63.9%) spend more time on social media in the mornings, while most women (41.6%) spend their time on the social media platforms in the evenings.

Figure 22. Time of the day Spent on Social Media

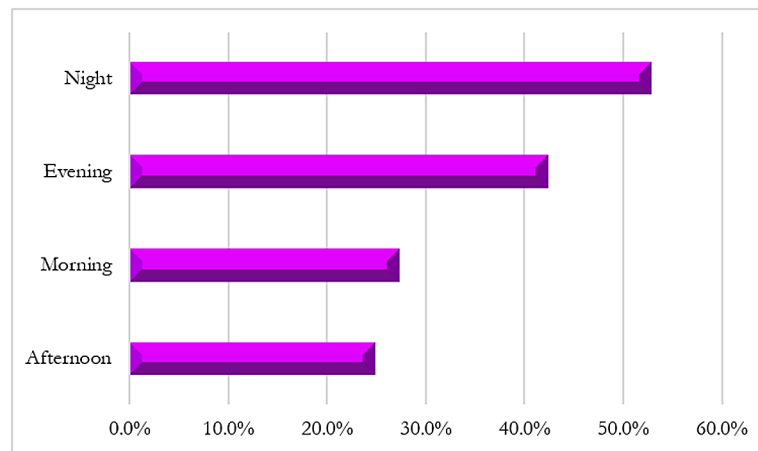
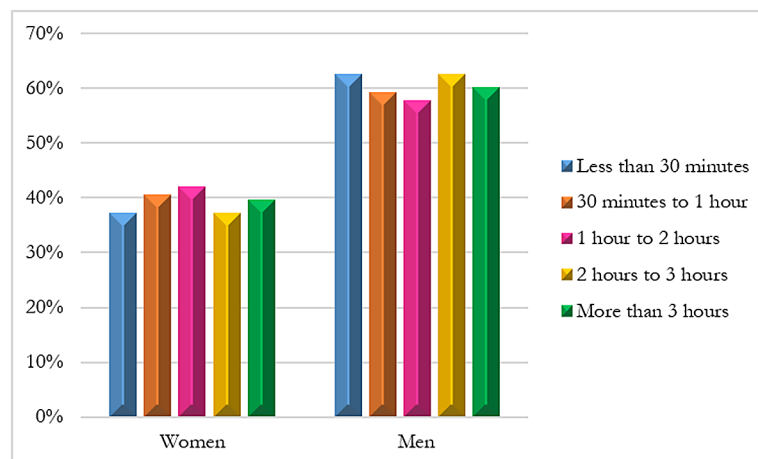


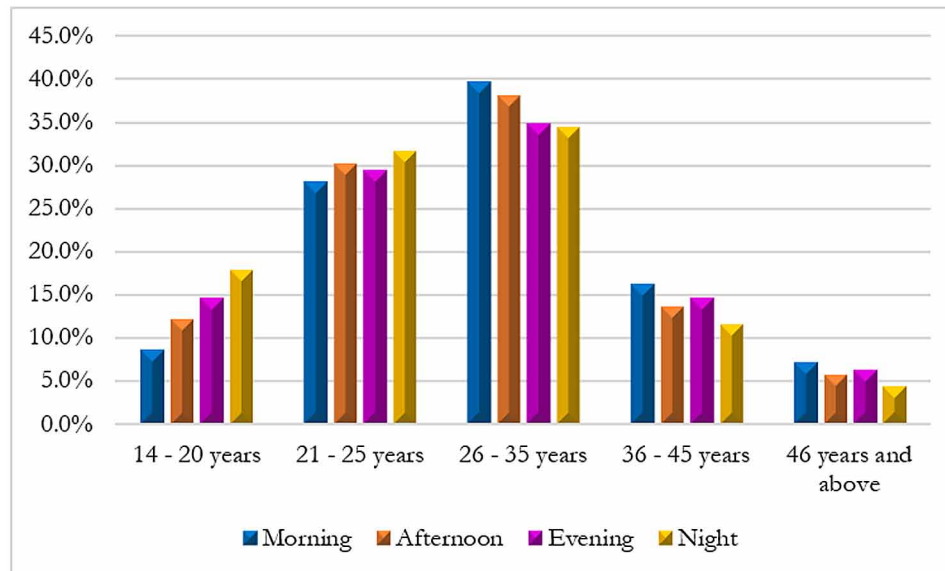
Figure 23. Time of the day Spent on Social Media by Gender



Time of the Day Spent on Social Media by Age

From Figure 24, a majority of the age groups including 26-35 years, 36-45 years and 46 years and above, spend a lot of time on various social media platforms during the morning hours. They also spend a substantial amount of time on social media during afternoon and evening hours. Kenyans in the age groups 14-20 years and 21-25 years spend most of time on social media platforms at night.

Figure 24. Time of the day Spent on Social Media by Age



Time of Day Spent on Social Media by Geolocation

Figure 25 indicates that Kenyans residing in rural areas mostly spend their time on social media platforms at night (51.2%) and in the morning (47.3%) hours. On the other hand, Kenyans in urban areas spend most of their time on social media during the afternoon and evening hours.

RQ2: What Are the Motivations Behind Using Social Media Among Kenyans?

As indicated in Figure 26, the vast majority of Kenyans' motivations for using social media are acquiring information (31%), entertainment (28%) and social interactions (24%).

Motivations to Use Specific Social Media Platforms

Among the five motivations for using the social media platforms sought (information acquisition, entertainment, social interactions, personal identity, and escaping social realities), Facebook and WhatsApp are the mostly used for social interactions with family members, friends and connection with the outside world, while Instagram, Snapchat, and YouTube are commonly used for entertainment and pleasure

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(emotional experiences) and to escape societal realities (release tension, shifting attention from unpleasant happenings). On the other hand, Twitter and LinkedIn are used in creating personal identity (personal stability, social status, need for self-respect) and acquiring information (news, knowledge, exploration) as indicated in Figure 27.

Motivations to Use Specific Social Media Platforms by Different Age Groups

As shown in Figure 28, the motivations for using social media among the young people aged 14-20 years old is entertainment and pleasure (emotional experiences) while the motivations for using the internet for the 21-25 year-olds is to escape things (release tension, shifting attention from unpleasant happenings) and acquiring information (news, knowledge, exploration). For the population aged 26-35 years, the motivations to use social media are acquiring information (news, knowledge, exploration) as compared to those aged more than 36 years, whose motivations to use social media are social interactions.

Figure 25. Time of the day Spent on Social Media by Geolocation

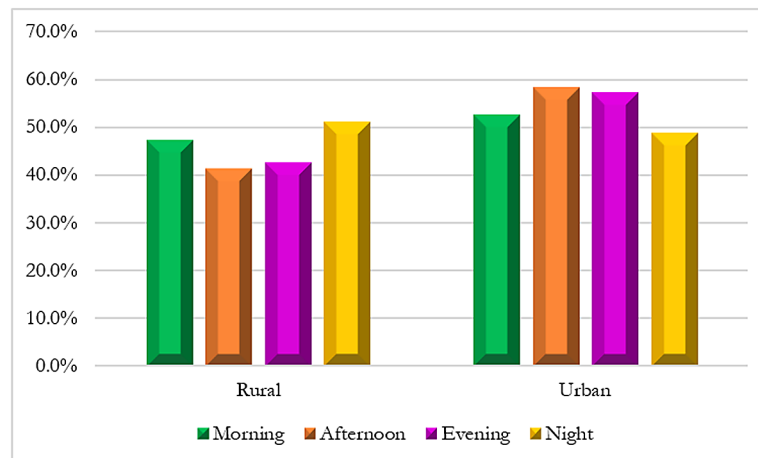


Figure 26. Motivations for using social media platforms

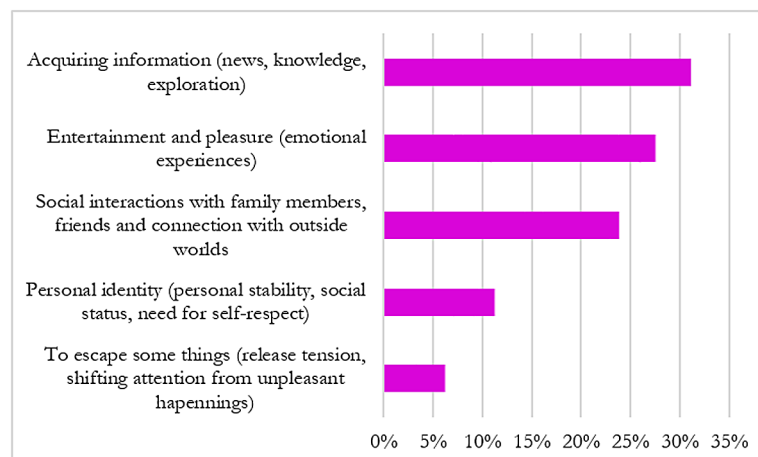


Figure 27. Motivations to use specific social media platforms

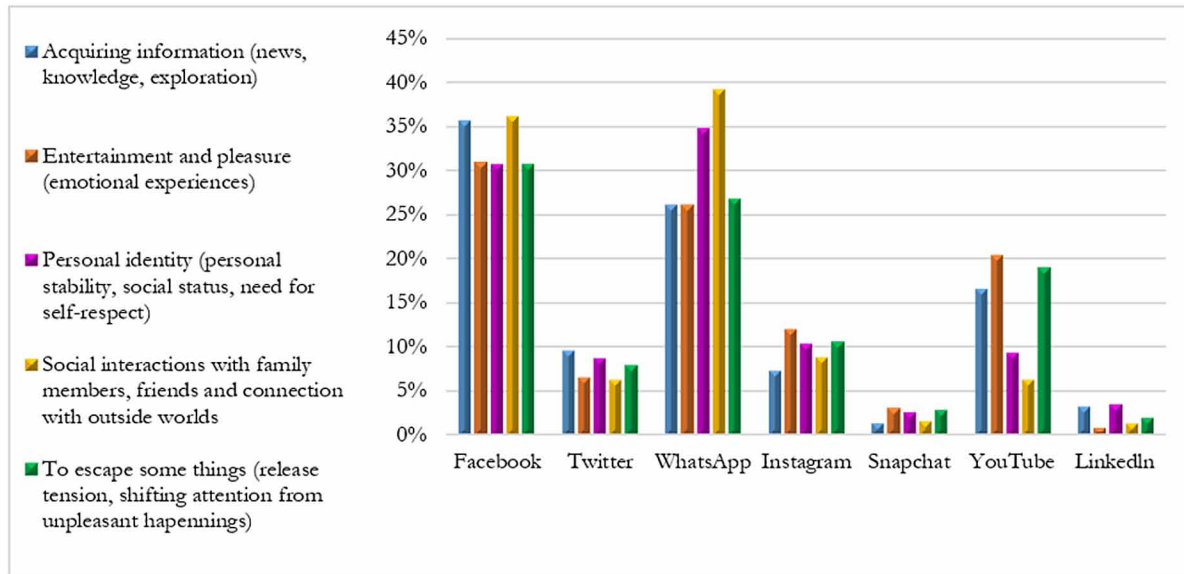
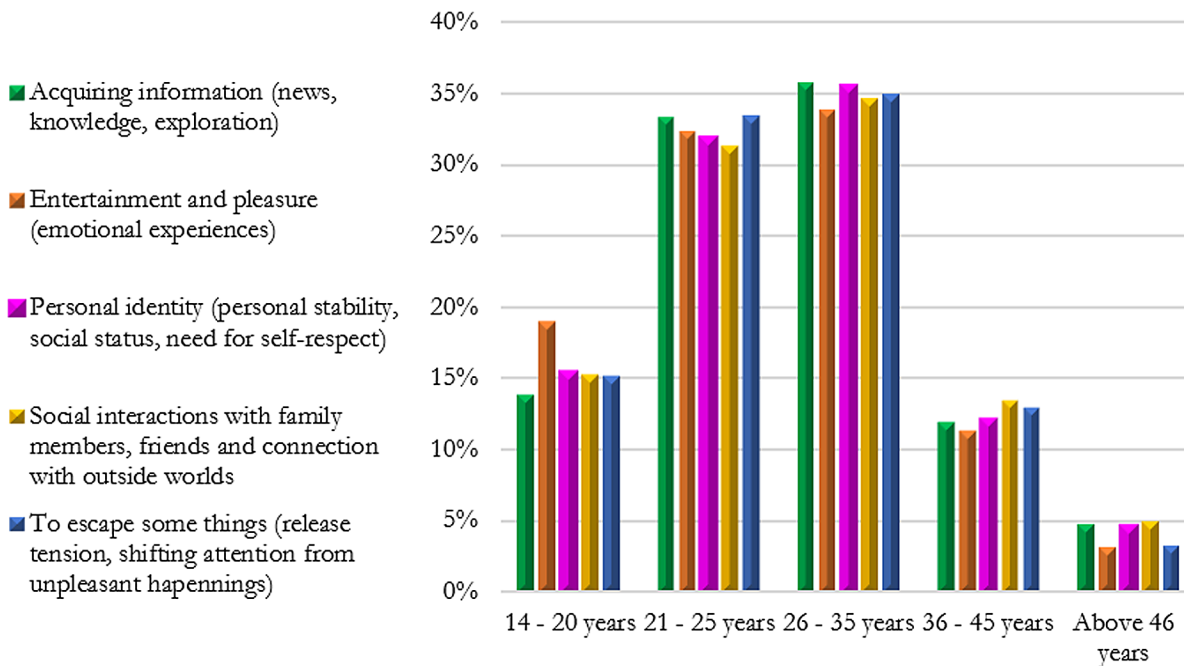


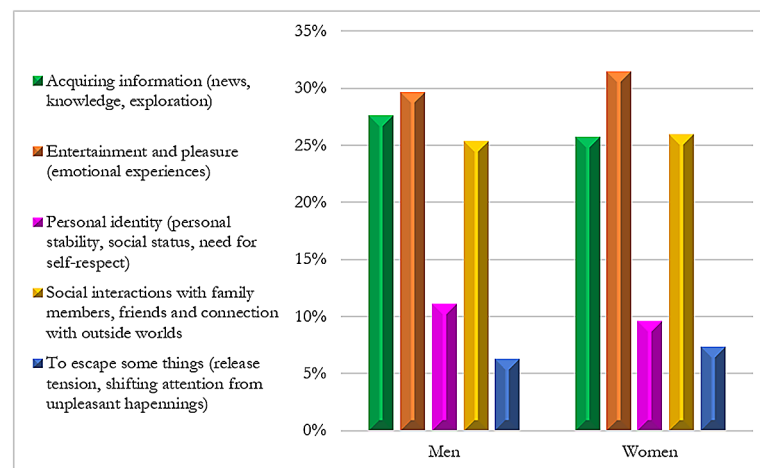
Figure 28. Motivations to use specific social media platforms by different age groups



Motivations to Use Specific Social Media Platforms by Different Gender

Most men use social media for personal identity (personal stability, social status, need for self-respect) (64%), and acquiring information (news, knowledge, exploration) (62%). Kenyan women use social media to escape some things in society (release tension, shifting attention from unpleasant happenings) (44%) and entertainment and pleasure (emotional experiences) (41%), as shown in Figure 29.

Figure 29. Motivations to use specific social media platforms by different gender



Focus Group Discussions

The study held thirty-seven focus group discussions with 258 participants in four different counties to probe participants' social media consumption. From the focus group discussions, thirteen main themes on use of internet and social media emerged: Dating (1%), Pornography (1%), Games (2%), Religion (2%), Fashion (2%), Politics (2%), Job related issues (4%), Sports (8%), Information (8%), Education (14%), Communication (15%), and Socializing (19%).

A majority of the participants indicated that at a personal level, they have experienced unpleasant experiences while using social media including fake news, cyberbullying, bombardment with graphic images of sex, and advertisements. From the focus group discussions with those aged 14-20 years and 21-25 years, the common recurring challenges associated with social media included social media being very addictive, very expensive, and time-consuming. However, the two age groups, 14-20 years and 21-25 years, also pointed out that social media creates opportunities for people to break out of boredom, to get other people's opinions on matters of interest, and to influence other people's religious beliefs.

The use of groups in social media was also a common theme among different age brackets. Social media groups are niche-specific forums where individuals share information on matters of common interest. Among the focus group discussions held in low-income areas, most social media users were members of different social media groups. The social media groups were to help the group members get updates on what is happening in their neighborhoods. One such a group is the Mathare Forum (https://web.facebook.com/Mathare-forum-773578946016362/?_rdc=1&_rdr), which had several of its members

participating in three of this study's four focus group discussions held in Mathare slums. The members of social media groups such as the Mathare Forum noted that being a member of such a group is fulfilling.

Production and consumption of social media content were widespread among the focus group participants. News content consumption and contribution through social media was prevalent among the study participants. There was a high consumption of news on social media by respondents aged 26-35 years old and 36-45 years old. Video consumption and engagement on social media was the most preferred form of social media entertainment for those aged 14-20 years and 21-25 years old. Consumption of political content on social media was more common with the participants who were more than 45 years old. Among the study participants aged 14-20 years old, there were many passive consumers of social media content who were only viewing or reading social media content without contacting others or contributing.

From the focus group discussions, there was evidence of positive and negative consequences of social media content consumption. 43% of the focus group discussions' participants indicated that social media consumption has in the past influenced their actions, such as making decisions on politics, relationships and religion an indication that individuals use social media conversations to solve their life problems. The participants did draw connections between their decision making and social media consumption. The participants also indicated that creation and the consumption of social media content could lead to lose of several hours per day on less useful activities especially if one had several connections and interests online.

From the focus group discussions, two new motivations for using social media emerged. They are (i) Seeking business opportunities through social media and (ii) buying and selling on social media.

- **Seeking business opportunities:** A number of participants indicated that they use social media to reach out to potential customers and that they have been able to cultivate personal business contacts by directly messaging customers through the social media. Twenty-two study participants were using social media to promote their home businesses, to create online presence and to increase their business' visibility using Instagram, Twitter and Facebook.
- **Buying and selling on social media:** Six participants said that they have been able to directly target their customers, including their friends and followers, in a cheap and effective way and to sell their farm produce even before they harvest through Facebook and WhatsApp.

DISCUSSION

A majority of Kenyans use social media platforms on daily basis. The most commonly used social media platforms are WhatsApp, Facebook, YouTube, Instagram, LinkedIn, and Snapchat. However, the use of social media differs in platforms used by age, gender, geolocation, and levels of income. Most young Kenyans use Instagram and Snapchat while older people prefer Facebook and LinkedIn. Kenyan men use LinkedIn and Twitter while females prefer using WhatsApp and Snapchat. The people living in low-income residential areas in Nairobi use Facebook, WhatsApp, and Instagram while the residents of the middle and higher-income areas of Nairobi mostly use LinkedIn, Twitter, and YouTube. Kenyans in the rural areas mostly use Facebook, WhatsApp, and YouTube as compared to a majority of urban residents who use LinkedIn, Snapchat, Instagram, and Twitter. There are several less developed technological infrastructures in the rural areas which prevent the use of high- resource demanding social media plat-

forms such as Snapchat and Instagram. The use of Facebook, WhatsApp, and YouTube in the rural areas could be attributed to free complimentary services offered by the telecommunications service providers.

Kenyans use social media platforms for entertainment, education, jobs, politics, sports, and social issues. LinkedIn is used for educational and job-related issues. YouTube is used for educational and entertainment issues while WhatsApp is mostly used for social issues. Facebook is mostly used for social and entertainment issues while Twitter is used for both social and political issues. More than half of the Kenyans who use WhatsApp, YouTube, Twitter, and Instagram access these platforms daily. Most of the users of these social media access the platforms using mobile phones. Most Men also access social media from cyber cafés. Most Kenyans spend 1-3 hours on social media every day. People living in urban centers access their social media platforms from their offices and public hotspots while the residents of rural areas mostly access their social media from cyber café. Most Kenyans have transitioned from accessing the internet from cyber café and offices into using mobile phones, hence most people access social media platforms at home. However, a majority of Kenyan in the rural areas and those living in low-income urban areas still value and use the services of a cyber café. Most urban population also access their social media from the offices and the public Wi-Fi. This explains why there is less activities on social media during the weekends and why most social media users post their weekend activities on Monday morning. This could be attributed to two things: One, the fact that most of the people living in urban areas are working and hence they can access the social media using the office internet; and two, in most urban areas, there is the provision and availability of open public Wi-Fi hotspots in eateries, malls and learning institutions.

Kenyans use the internet and social media platforms for dating, watching pornography, playing games, religious matters, fashion, politics, work-related issues, sports, acquiring information, education, communication, and socializing. The motivations for using social media include acquiring information, entertainment, and social interactions. Facebook and WhatsApp are the mostly used for Social interactions while Instagram, Snapchat, and YouTube are commonly used for Entertainment and to escape societal realities. Twitter and LinkedIn are used for creating a personal identity and acquiring information. Social media also influences how Kenyans make decisions on politics, relationships, and religion. Even though social media creates opportunities for people to break out of boredom, to get other people's opinions on matters of interest, and to influence other people's religious beliefs, most users have experienced unpleasant experiences such as fake news, cyberbullying, and bombardment with graphic images of sex and advertisements. Kenyans also consider social media to be addictive, expensive, and time-wasting.

CONCLUSION

This paper has provided an overview of the uses of social media platforms in Kenya and the motivations for using social media platforms among Kenyans based on diverse demographics such as age, gender, education levels, income levels, and geographical locations. The use of digital technology tends to reflect, reproduce, and amplify existing inequalities. The communities living in the rural areas and urban slums are often at a disadvantage when it comes to social media access due to infrastructural challenges such a lack of electricity and high-speed internet connectivity through the fiber cable to home or nearby rural-urban centers. This lack of infrastructure to facilitate internet and social media platforms is reflected in the number, size, and range of social media platforms accessed by the rural population, therefore,

the use of social media platforms seems to reflect and amplify the existing social inequalities. But, the creation and consumption of social media content continue to be part of the Kenyan online community.

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Chapter 45

What Are Basketball Fans Saying on Twitter? Evidence From Euroleague Basketball's Final Four Event

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ABSTRACT

Social media receives growing interest from sports executives. Yet, very little is known about how to make use of such user-generated, unstructured data. By exploring tweets generated during Turkish Airlines Euroleague's Final Four event, which broadcasted the four tournaments of championship among four finalist teams, the authors studied how fans respond to gains and losses and how engaged they were during games through the course of the event. The authors found that favorable reactions were received when teams won, but the magnitude of unfavorable reaction was larger when teams lost. When it came to the organizer rather than the teams, the organizer of the event received most of the positive feedback. The authors also found that main source of tweets was smartphones while tablets were not among real-time feedback devices.

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INTRODUCTION

Society is connected on a global scale by digital communications. By year 2015, there were 3.5 billion Internet users and over 50% of the adult population around the world are said to be smartphone users (Castells, 2016). By 2017, 31% of the world's population (more than 2.3 billion people) were active social media users (Leaders, 2017).

The global population is consuming media in different ways. For instance, over the past decade the use of computers for internet access has declined rapidly and a shift to instant access through mobile devices like smartphones and tablets has occurred. For this reason, industries are adapting to new distribution channels to keep up with consumer tendencies, including the sports industry. This has led the sports ecosystem to experience dramatic changes, enabling the creation of new communication networks through emerging technologies (De Moragas et al, 2013).

How sport is watched and consumed has been disrupted in the digital era and continues to change due to technology and the emergence of various new direct-to-customer distribution channels. Fans can engage with a sports event without the need to be at venue or even watch it on television. With the advent of live or delayed streaming, instant messaging, the ability to maintain conversations in real time on social media platforms, the opportunity to review large amounts of statistics online and through applications, has created new, more complex multi-directional communication processes. These sports conversations are now happening 'on-the-go' through mobile devices and across geographic borders on a global scale.

Social media channels receive growing interest from sports executives, politicians, and companies where the opinions of fans, voters and investors matter respectively. Given that social media allow users to build networks in an easy and timely way and to share various kinds of information (photos, videos, texts, links etc), they form an excellent platform for real-time feedback, opinion sharing and to observe fan engagement.

Social media channels have become increasingly important for marketing communication because they are instant, have a global reach, are simple to use and require minimal bandwidth and device capability (Abeza et al, 2015). They have become an essential marketing tool in recent years, allowing managers, marketers, and users to interact and share information instantaneously. Advertisers use social media in sport events to generate valuable leads, get immediate feedback, post messages in real time and with the possibility to create viral effects through sharing (Beech et al, 2014). A leading example from sports is the NBA where teams provide information and content through their social media channels, while promoting their team and events, aiming to interact with their fans to receive feedback and increase the probabilities of engagement (Meng, Stavros, & Westberg, 2015).

In collaborative social media platforms such as Facebook, Instagram, Twitter or any other social media platform that allow fans to create, publish, edit or share content. Fans become co-creators of the content that is been shared, generating interactivity and increasing fans' involvement in what is happening at around the live event. Interactive content turns the fan into an active user, increasing the capacity to collaborate and manage the flow of information (Beech et al, 2014; De Moragas et al, 2013; Meng et al., 2015).

Among social media platforms, Twitter is a social networking and micro-blogging service that allows its users post real time messages and multimedia content (Kumar & Kalwani, 2012). Since Twitter was created in 2006 it has been increasingly recognized by marketing and advertisement executives as a key tool in social media-based communication campaigns, embracing the use of hashtags to share thematic content and reach diluted groups of fans with common interests (Delia & Armstrong, 2015). Twitter has

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become one of the most important social networks for sharing sport stories, enabling customized content to segmented target audiences, connecting fragmented audiences with other users with similar interests, helping disseminate information.

Although Twitter provides an excellent channel for fan engagement, given facilitated opinion creation and presentation, it brings newer and different challenges for researchers analyzing this content and attempting to understand its meaning. At the time of writing the 350m active Twitter users were generating around 6,000 tweets per second, creating large amounts of potential data for analysis.

While several studies explore the use of social media platforms such as Twitter around sports events, there is very limited analysis to date on the meaning of this content. By exploring tweets generated during Euroleague Basketball's Turkish Airlines Final Four event, which includes semi-finals, third and fourth place game and the championship game all played over a single weekend, the authors studied how fans respond to winning and losing, the key content in their conversations and how engaged they are during games through the course of the event. In the next section, the authors conduct a literature review. This is followed by an explanation of the research methods, results and findings, and discuss the implications of their work in the context of big data and virtual organizations. Finally, they discuss the implications and some possible directions for further research.

LITERATURE REVIEW

Fan Engagement

Sports events host an exciting mix of drama, emotion and information that attract very loyal customers: sports fans. The need to engage sports fans in meaningful ways has been an ongoing focus of sports marketing research.

The role of technology in fan engagement has become increasingly important in the digital era. Geographical barriers can be crossed by online tools and social media networks creating opportunities for sport marketers to enhance engagement of fans by creating online experiences on a worldwide basis (Parganas, Anagnostopoulos, & Chadwick, 2015).

The Beijing 2008 Olympic Games was one of the first sports event where the use of digital technology enhanced successful engagement of fans from all around the world despite the geographic distance (IOC, 2009). Today, sports events such as the Olympic Games and FIFA World Cup reach large live audiences and clearly defined customer segments as part of wider marketing and communication strategies (Adigüzel & Kennett, 2017).

Fan engagement can be achieved around a sport event time in several ways such as through the event itself, the players, the club, the venue, the media, sponsors and advertisers, online content such as websites or social media, gambling, fantasy sports, and electronic games (Foster et al, 2016).

Sports events generate conversations and sports fans seek for information and entertainment in online sources. Fans want to be informed of game results, statistics or any sports related news even without watching a game or attending to a venue. Thanks to the fragmentation of the audiences, sport marketers have had enable more choices for following sports events to allow a greater audience viewing and engagement such as watching a game on television, through online streaming or following it in social media networks (Smith & Smith, 2012).

Social media as a platform has been key to engage fans during the last decade. Sports marketers have increasingly invested time and resources to create new strategies to drive online engagement of fans enabling real-time communications and interactions (Meng et al., 2015; Smith & Smith, 2012) transforming their relationship from a passive message communication to an active message consumption, aiming to achieve the highest level of engagement by driving the fans into a participative action where they become co-creators (Vale & Fernandes, 2018) by producing and sharing their own content (Smith & Smith, 2012). Furthermore, thanks to social media networks, fans that are engaged and involved with an event, creating and sharing content, can turn into promoters of the event giving more opportunities for sports marketers to reach a bigger audience. In this matter, sports marketers and advertisers can take advantage of this behavior and communicate directly with different groups of fans through social media.

Twitter as a Fan Engagement Platform

Twitter is a social media tool that allows interaction and conversation in real-time (N. M. Watanabe, Yan, & Soebbing, 2016; Price, Farrington, & Hall, 2013; Smith & Smith, 2012). It is a platform where information such as news, opinions or up-dates are continuously shared and in a faster way than other media tools (Gibbs, O'Reilly, & Brunette, 2014). Sports leagues, teams, athletes, brands, and media aim to engage fans by developing marketing and communication strategies in Twitter. Fan engagement through Twitter can be achieved and maintained with different strategies such as communicating news, updates, or sharing live content during events (Gibbs et al., 2014), by creating marketing and communication strategies with the use of hashtags (Delia & Armstrong, 2015; Meng et al., 2015) which facilitate fans to filter, follow and participate in conversations by connecting them in virtual communities related to a specific topic but with a wider scope (Smith & Smith, 2012), by having quick interactions from sports social media manages such as click as “favorite” a user’s post on Twitter (N. M. Watanabe et al, 2016), or conducting activation activities such as trivia competitions (Meng et al., 2015).

By 2013, Twitter was considered as the “most influential social media platform in sport” (Gibbs & Haynes, 2013). Later, Parganas and colleagues (2015) cite different authors that mention that sports was the highlighted conversation in Twitter with more than 40% of all tweets being sports related, especially during live events. By June 2018, Euroleague Basketball had more than 1.75 million followers in their main social media channels (Facebook, Twitter, Instagram and YouTube), almost 30% (507 thousand followers) from their Twitter account alone.

Twitter gives fans the possibility to have an active role in the online conversation through different actions such as tweeting, re-tweeting, replying, or marking as favorite other people’s tweets (Parganas et al., 2015), always with the possibility of sharing their content with fans beyond their network by the use of hashtags (Smith & Smith, 2012). Twitter has become an essential tool for proliferating sports content, multiplying sports consumers’ participation thanks to the real-time interaction and access to teams or athletes (N. Watanabe et al., 2015).

Even though sports marketers use Twitter as a strategic platform of engagement to connect with fans having the hashtags as a tool to identify an event or a specific topic, fan engagement strategies can be improved by knowing the fans, their motivations and actions when they actively participate in social media conversations by sharing information, cheering or criticizing a sport event, player or club. The volume of data generated around sports events creates a wealth of data for researchers to analyze and attempt to understand, and has involved the design of new methodologies and research tools amongst scholars.

Tweet Analysis

The most common methods to evaluate tweets are word clouds and sentiment analysis. A word cloud is a visual representation of word frequency (Atenstaedt, 2012). The more commonly a word appears within the raw text being analyzed, the larger the word appears in the image generated. Word clouds are increasingly being employed as a simple tool to identify the core content of, as well as to better understand the themes covered in written material, and to sketch the domains to which they pertain (Halevi & Moed, 2012).

Despite its wide use in text mining, word clouds should be interpreted with certain caveats. They often fail to group words that have the same or similar meaning. As they tend to focus only on single word frequency, they also do not identify phrases, reducing context.

In the current research, word clouds have been applied to analyze the content of tweets with specified hashtags to see whether sufficient attention is being given to the players, coaches, organization, sponsors and games and to identify outstanding factors other than the aforementioned ones.

Besides being a platform where sport marketers and advertisers can share information, Twitter is a tool where people also can share their emotions and opinions or 'sentiment'. In the sports context, Twitter can be considered a repository of emotional exchanges allowing fans to have conversations among other fans, the media or athletes (Smith & Smith, 2012).

Sports events evoke emotions in fans (Gratch et al., 2015), but fans have different levels of fandom and passion that are expressed in different ways. There are fans that cheer for their team attending to their games in a regular basis, others may prefer following their team or athlete by watching the games on television (Samra & Vos, 2014), while others will review stats and comments on social media.

Levels of fandom can be categorized in several rankings, for example Meng and colleagues (2015) mention Sutton et al (1997) who ranked fans by their level of identification in: Social fans, focused fans and vested fans; or Samra and Vos (2014) fan types classification in: temporary fan, devoted fan and fanatical fan. Each rank with specific characteristics and behaviors. It is worth noting, however, that not all sports spectators are as fans.

For sport marketers and advertisers, understanding the fans, their motivations, behavior and how they express their emotions and sentiments, can provide insights that can help to plan and execute a successful marketing campaign in social media.

Several authors agree that the uses and gratification theory is one theory that can be applied as an example to explain why people, in this case fans, use social media as a channel to satisfy human needs such as expressing their feelings and opinions joining conversations that give them the opportunity to interact with a wider audience (Santomier, Hogan, & Kunz, 2016). Other identified reasons of using social media are showing affection or negative feelings, recognition and personal identity, integration, entertainment, information seeking or sharing, and relaxation (Santomier et al., 2016; Vale & Fernandes, 2018).

A highly engaged fan is more likely to adopt an active behavior in social media (Browning & Sanderson, 2012). Twitter is nowadays a key platform where fans can express their identity and sentiment, positive or negative, towards a team, club or a specific athlete. Content in Twitter becomes interactive, co-created by the sports marketers and the fans, establishing a new level of engagement where fans aim to be heard, increasing the possibility of enhancing identification and loyalty with their team or athlete (Meng et al., 2015; Vale & Fernandes, 2018).

Greater reach in sports events is accompanied with greater fan engagement in a larger geographical context, which complicates tracking of fan engagement. Highly involved fans engage with the event

experience: they use more media and longer hours to follow the games/league, they attend games more than regular sport audience; they read about sports or they practice sports (Shank & Beasley, 1998). This indicates that highly engaged fans use more social media and dispose more positive sentiments towards their teams and games.

Fan engagement can be measured in different ways and in this study refers to the total sentiments score. More recently, there have been several research projects that apply sentiment analysis to Twitter corpora in order to extract general public opinion (for a recent example, see Kim & Youm, 2017). Sentiment Analysis intends to comprehend these public opinions and distribute them into the categories like positive, negative, neutral with respect to opinion lexicons.

MAIN FOCUS OF THE CHAPTER

Fans in Silicon Valley expect more from their sports venues, and last season we scored big with our fans on innovation and engagement at the highest level. We're looking forward to partnering with Avaya to deliver even more value this season and give fans a connected, social and immersive experience unlike any other. – Dave Kaval, President of the San Jose Earthquakes

Technology is rapidly changing and shaping not only the business practices, but also the daily routines. Media coverage based solely on the game is not enough for demanding fans anymore. Sports facilities adapt to the challenges of big data by enabling more built-in data collection processes, such as high-powered wifi technologies and clouds to gather and store data from sport fans.

Despite the common conception on disruptive use of mobile phones, sports fans make use of their smart phones in order to receive real-time feedback during the different phases of the game (Lisi, 2016). As an example, Avaya Stadium in San Jose has taken a step forward by allowing fans during games the ability to get player stats as well as buy tickets and connect to social media through the Stadium App in their mobile phones (O'Connell, 2016). This is part of a broader trend in smart stadiums and it is a matter of time that the same cloud technology will become the norm at all MLS venues in United States and be exported to other sports facilities and geographic regions.

The Avaya Stadium Mobile app gives fans the opportunity to get connected to the fan experience by providing everything they need to know about their team San José Earthquakes. To be more specific, it provides a digital experience from before the game to all the way through the final seconds of the game. As a part of this unique opportunity, the stadium app contains multiple game day experiences, including a fan engagement wall, which displays fans' social media updates and other content in real time. Moreover, there are live polls and special offers, as well as information about other issues like parking, concessions and merchandise. The app also includes Quakes Digital Player Cards, fan trivia and fun facts, which allow fans to chat and post directly during a game. There are customized social media streams and information about tickets. A Wi-Fi service is powered by Avaya to make sure fans do not run into Internet malfunctions, no matter the size of the crowd. Cloud-based technologies are also implemented with "Fanalytics," a data analytics about fans' interests and activities.

METHODS

The dataset analysed in this study contains 892,852 tweets collected between May 18th and May 22nd 2017, both days inclusive, using hashtags associated with the Turkish Airlines Final Four teams and Euroleague Basketball. The four participating teams were Real Madrid, Fenerbahçe Doğuş, CSKA Moscow and Olympiacos BC, and the Final Four event took place in Istanbul from May 19-21, 2017.

The programming of the data collection and most of the analysis were done by using *twitteR* package in R, which provides an interface to the Twitter web API. Twitter provides free access to a sample of the public tweets posted on the platform. The platform's precise sampling method is not known, but the data available through *twitteR* is a good representative of the overall global public communication on Twitter at any given time (citation needed). In order to get the most complete and relevant data set, we consulted with Euroleague Basketball, and identified relevant hashtags and languages used in tweets. The following hashtags were selected for our analysis: #F4Glory, #Fener4Glory, #WeareOlympiacos, #RMBaloncesto, and #CSKAbasket. Fan engagement and use of native language required a greater variety of hashtags related to particular teams and basketball context. Thus, our sampling strategy might have missed some additional minor hashtags that referred to small or short lived conversations about particular people or issues, including tweets that may not have used our identified hashtags at all.

Selecting tweets based on hashtags has the advantage of capturing the content most likely to be about this important sport event. *twitteR* yields tweets which contain the keyword or the hashtag. The variables generated automatically by this package are (1) text of the tweet, (2) whether it is favorited or not, (3) number of times the tweet is favorited, (4) posted time, (5) user id, (6) whether the tweet is retweeted, (7) number of times the tweet is retweeted, (8) source of the tweet as an HTTP link, (9) user name, (10) user coordinates as latitude, and (11) user coordinates as longitude.

The method counted tweets with selected hashtags in a simple manner. Each tweet counted as one if it contained one of the specific hashtags that were being followed. If a tweet contained more than one selected hashtag, it was credited to all the relevant hashtag categories.

Contributions using none of these hashtags were not captured in this data set. It is also possible that users who used one or more of these hashtags, but were not discussing the Final Four games, had their tweets captured. Moreover, if people tweeted about the Final Four games, but did not use one of these hashtags or identify a candidate account, their contributions were not analyzed here.

Regarding the sentiment analysis, we used both a corpus based technique and a dictionary based technique (Kumar & Sebastian, 2012). We built a corpus, which is a large and structured set of text data, and preprocessed the corpus using the following standard procedures (Weiss et al., 2005). To be more specific, we first prepared the corpus by cleaning up sentences with R's regex-driven global substitute from punctuation, URLs (www), hashtags (#), targets (@) and Tweeter-specific notation (RT). Later, we converted the entire text to small caps and finally split the corpus into words. This enabled the generation of word clouds without any additional process. In order to rate the sentiment of a tweet, we defined two dictionaries which consisted of positive words and negative words lists respectively (Hu & Liu, 2004; Liu, Hu, & Cheng, 2005). The purpose of the algorithm was to assign 1 if a word was either encountered in positive words dictionary or negative words dictionary, and N/A if otherwise. We finally compared our words to the dictionaries of positive and negative terms and obtained the sum of positive and negative matches respectively. Subtracting the sum of positive matches from negative matches would return the sentiment score, which would be a positive number, negative number, or zero.

RESULTS

The communication carried out on Twitter had important characteristics. First of all, tweets in Turkish exceeded tweets in English, the common language used among basketball fans in Europe. On the other hand, the tweets in other native languages (Greek, Spanish and Russian) were far less in numbers. Consequently, the tweets in Turkish and English accounted for the greatest share of activity. Table 1 summarizes the number of tweets per hashtag in English and native languages per day.

Table 1. Number of tweets per hashtag in English and native languages per day

Hashtag	Language	May 18 th	May 19 th	May 20 th	May 21 st	May 22 nd	Total
#F4Glory	Turkish	4323	49946	14614	69037	8207	146127
#Fener4Glory	Turkish	17744	168457	46034	361300	49898	643433
#F4Glory	English	1374	10923	2702	28453	6267	49719
#Fener4Glory	English	2359	9419	1048	23854	2838	39518
#WeareOlympiacos	English	148	486	118	447	43	1242
#RMBaloncesto	English	40	228	85	118	4	475
#CSKABasket	English	45	116	10	26	2	199
#WeareOlympiacos	Greek	314	3760	538	1976	110	6698
#RMBaloncesto	Spanish	509	3403	637	795	33	5377
#CSKABasket	Russian	4	32	2	24	5	67

The authors analyzed the discussion on Twitter in terms of (1) number of tweets in native language of Fenerbahçe (Turkish), (2) number of tweets per team in English, (3) number of tweets in native language of Olympiacos, Real Madrid, and CSKA (Greek, Spanish and Russian respectively), (4) the preferred means of communication for Turkish and international fans, and (5) sentiment analysis.

Regarding the number of tweets, the highest number of tweets was extracted from Turkish fans using #Fener4Glory hashtag in Turkish. Overall, Turkish fans tweeted for their team Fenerbahçe 643,433 times in Turkish during the span of the event. Not surprisingly, the second highest number of tweets was also extracted from Turkish fans using #F4Glory hashtag in Turkish. In total, Turkish fans tweeted for Final Four 146,127 times during the span of the event. Figure 1 summarizes the number of tweets for #Fener4Glory and #F4Glory hashtags per day in Turkish.

Regarding the number of tweets in English, the highest number of tweets was extracted from #F4Glory hashtag. In the international context, Final Four had been tweeted 49,719 times in English during the span of the event. Not surprisingly, the second highest number of tweets was extracted from #Fener4Glory hashtag with a total of 39,518 times in English during the span of the event. Compared to the aforementioned activities, Twitter activity corresponding to other teams was drastically lower. To be more specific, #WeareOlympiacos, #RMBaloncesto and #CSKABasket had been tweeted only 1242, 475 and 199 times respectively in the international context. Figure 2 summarizes the number of tweets per hashtag per day in English.

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Figure 1. Number of tweets for #Fener4Glory and #F4Glory in Turkish

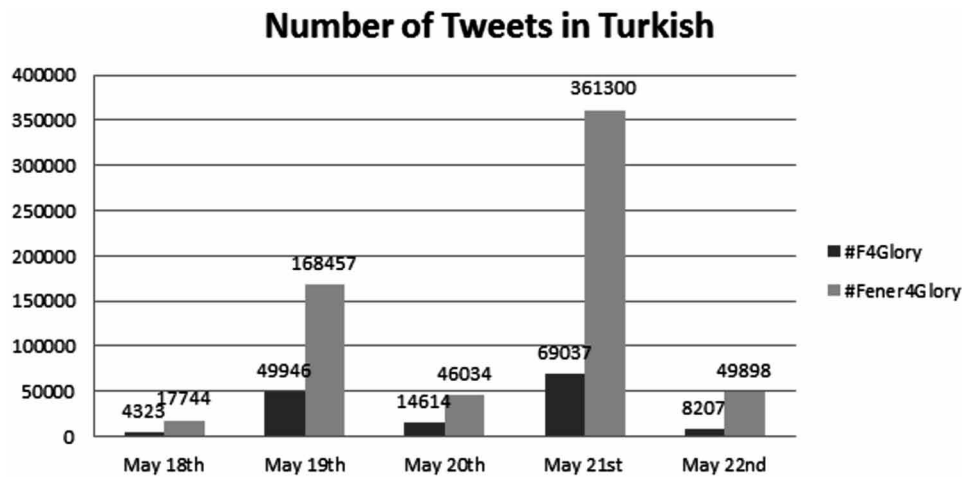
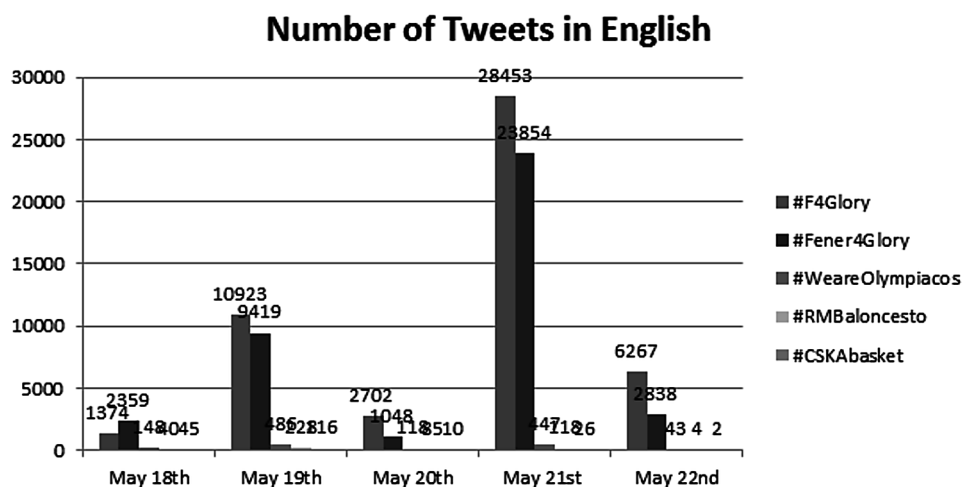


Figure 2. Number of tweets per hashtag per day in English



Given the low engagement of the international fans, the authors decided to conduct the same analysis for the native language of each team. Regarding the number of tweets in native language, the highest number of tweets was extracted from Greek fans using #WeareOlympiacos hashtag in Greek. Surprisingly, #WeareOlympiacos tweets in Greek outnumbered #WeareOlympiacos tweets in English, such that the former consists of 6696 tweets while the latter consists of 1242 tweets. Twitter activity concerned with #RMBaloncesto in Spanish context was lower with a total of 5377 tweets while Twitter activity concerned with #CSKABasket in Russian was lowest with 67 tweets in total. Figure 3 summarizes the number of tweets per hashtag per day in native languages of the teams.

The authors identified the common means of engagement in social media by looking at the source of the tweet. We found that the engagement pattern was same for both Turkish and international fans: Smart phones (iPhone and Android) apps account for 85% of the sources of tweets, underlining the importance

of real-time feedback, while the Twitter webpage accounts for 7% to 10% and Ipad app accounts for 1%. Figure 4 depicts common means of engagement in social media by exploring #Fener4Glory tweets in Turkish.

Figure 5, on the other hand, below depicts common means of engagement in social media by exploring #F4Glory tweets in English.

The authors generated word clouds to observe the common conversation about the event. We specifically selected the final game played on May 21st in order to work with the largest number of observations. There were two hashtags of interest for that particular day, #F4Glory and #Fener4Glory which generated the highest volume of tweets. As seen in Figure 6, Final Four was largely associated with the victory of Fenerbahçe against Olympiacos.

Figure 3. Number of tweets per hashtag per day in native language

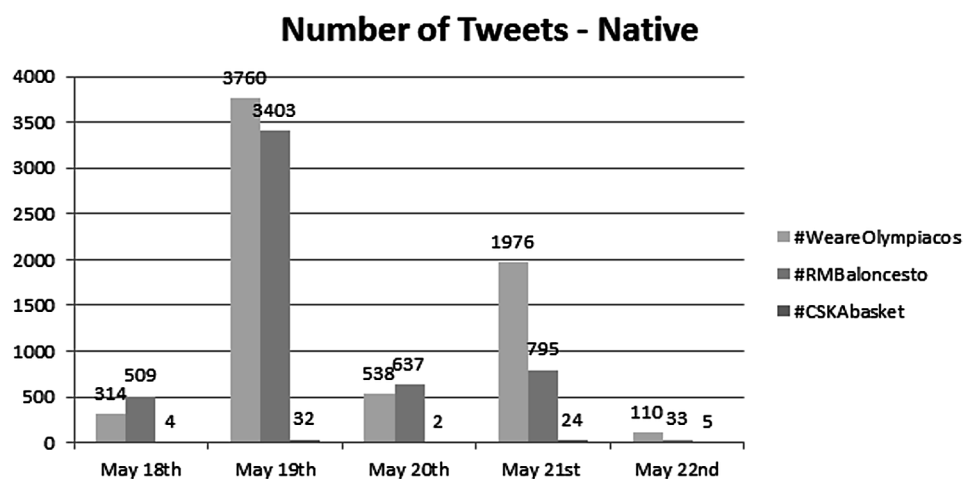


Figure 4. Common means of engagement in social media: Turkish fans

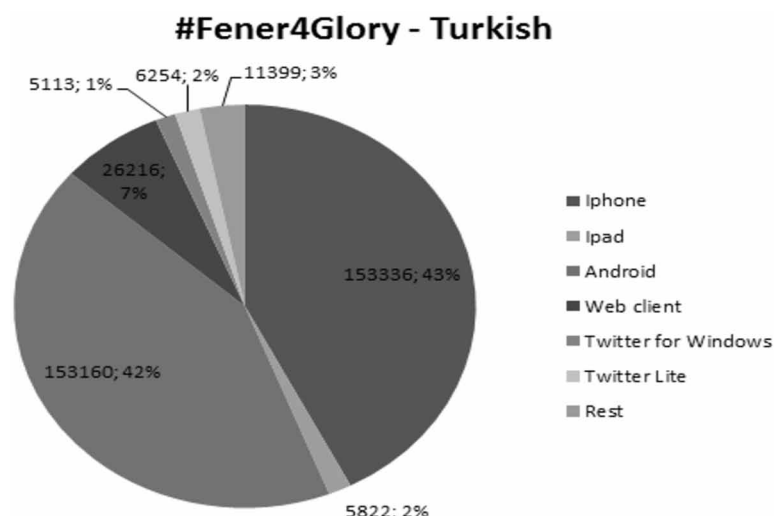
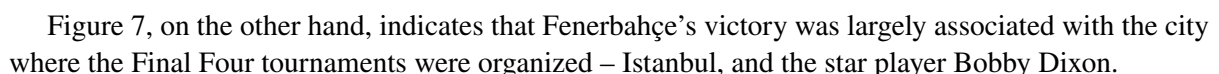


Figure 5. Common means of engagement in social media: International fans



The authors quantified the sentiment inherent in tweets by applying the aforementioned algorithm and accounted for the total sentiment generated per hashtag per day. We found that the highest sentiment was generated #F4Glory hashtag, created by Euroleague Basketball as the event organizers. As seen in Figure 8, a sharp increase in sentiment was observed on the day of the games while a phase-out was observed post-games.

The authors also looked at how positive, negative and neutral sentiments evolved over the course of the game. In order to carry out this analysis, we counted positive, negative and neutral sentiments, and plotted each of these sentiments separately. As seen in Figure 9, the dominant sentiment was neutral in the beginning of the event, but positive sentiment climbed up drastically during the course of the event. The potential for sports events to generate a ‘feel good’ factor among fans in general was evident.

When they looked at the sentiments generated from a team-based perspective, the authors observed that the highest sentiment was generated by #Fener4Glory, as Fenerbahçe was the winner of the cup. Second highest sentiment belonged to #WeareOlympiacos as Olympiacos ranked second in Final Four. There was an increase in #RMBaloncesto sentiment on May 20th as Real Madrid won the third-place game on that day. Sentiment score CSKA was low as their fans were not as engaged as other teams' on Twitter. The results can be seen in Figure 10. Therefore, performance on the court directly affected the sentiment of fans.

Figure 7. Word Cloud for #Fener4Glory

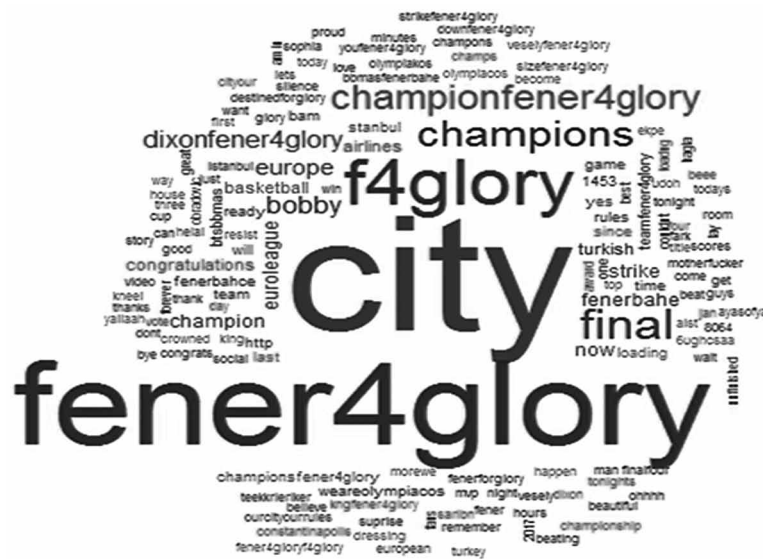
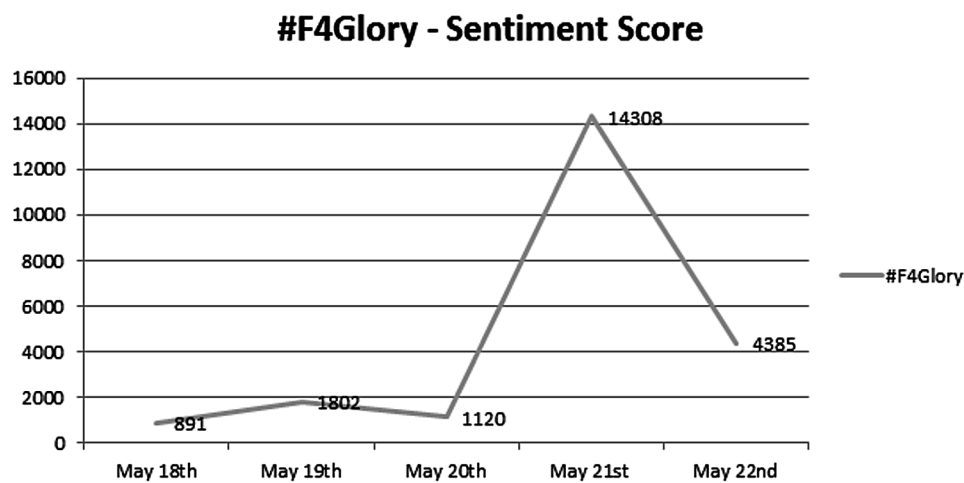


Figure 8. Evolution of #F4Glory sentiment over the event



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Figure 9. Evolution of #F4Glory sentiment polarity over the event

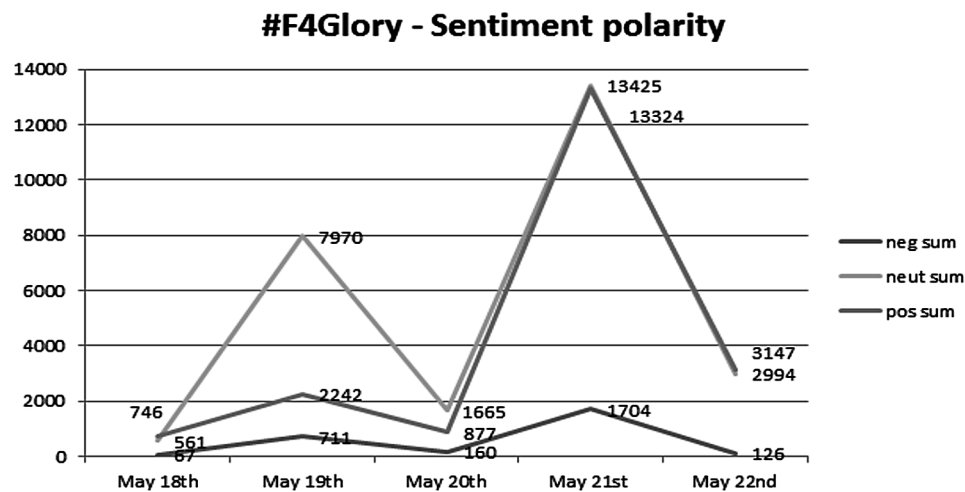
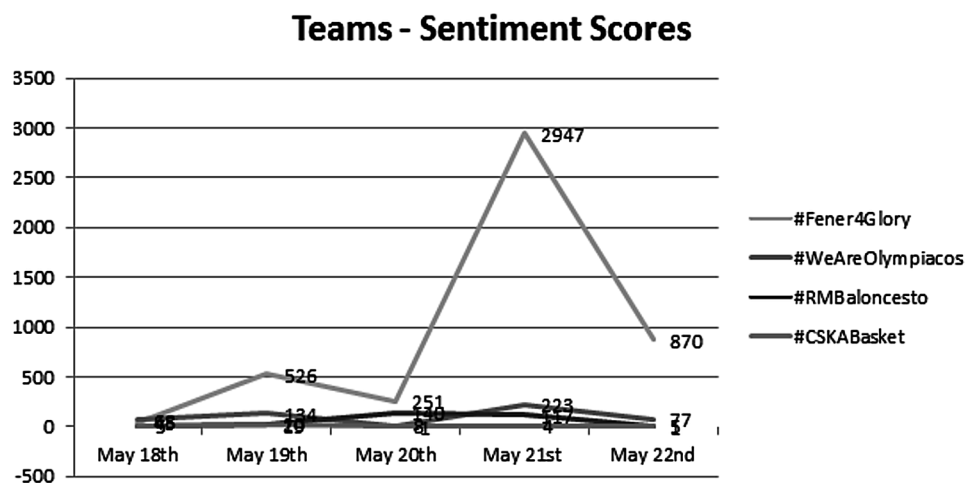


Figure 10. Evolution of team sentiments over the event



DISCUSSION

Whilst fan sentiment varies between fan groups depending largely on how their teams are performing, the overall effect of the event is positive and a general 'feel good' factor occurred in Twitter around the event. This is important for all major marketing and communications stakeholders involved in the event. For event sponsors it is important to know that whilst fan rivalries are played out on the court between teams from different geographic markets, the positive sentiment around the event transcends this. Advertisers would be interested to know how the fans are feeling in real time and how this fluctuates during a game and between games. Digital advertising tools enable advertisers to adjust their tactics in response to these changes, focusing on certain fan groups and adapting their messages accordingly to fit the mood.

The fact that the #F4Glory hashtag was the most active in the English language and was used by fans from all four teams was an important finding for the event organizers, Euroleague Basketball as they created it. The hashtag served to bring together fans from rival teams and create a conversation that the event organizers were at the center of. Again this has interesting implications for events sponsors with whom Euroleague Basketball coordinate their marketing activities as it formed a virtual meeting point that gathered fans.

Another key finding from the study supported existing research was that fan engagement through social media platforms such as Twitter was happening through apps on smart phones. We can hypothesize that the majority of these fans are multi-screening (e.g. watching the game on TV whilst using Twitter on their smart phones) and some were at the event itself, using Twitter on their smart phones whilst at the arena. This is of direct interest to communications stakeholders such as broadcast partners who need to know that their audiences are dividing their attention between screens. This of course has a direct impact on advertisers and sponsors who need to know where the fans' 'eyeballs' are in and around the game, reinforcing the need to multi-channel communication strategies that are adaptable in real-time depending on fan sentiment.

In terms of the most used words and concepts used by fans, a surprising and interesting result was the prevalence of Istanbul as the host city and home to the eventual champions. The importance of place and identity among fans could be linked with pride in this context, and would have clear implications for place marketing (city, region or country) through sports events. This result would also have been of particular interest to the title sponsor of the event, Turkish Airlines, as well as other sponsors interested in geographic marketing. The focus on a player in the word clouds was also interesting and highlights the importance of individual sports stars. Channels such as Twitter become platforms for hero worshiping and yet again, this is of direct interest to the companies that sign endorsement deals with these players and the exposure this may provide not only in terms of the number of times the player was mentioned by fans, but also the ability to link this to sentiment.

Overall, the insights provided by this study reveal several important opportunities for sports event organisers and their marketing and communications partners to monitor not only fan behaviour, such as which social media channels they are using and when, but more importantly their feelings and how these are communicated through interactions with other fans. Such insights enable professionals involved in sports marketing to take better informed decisions and reveal the potential to adapt their digital marketing tactics in real time. For researchers, the increasing use of social media platforms and the growing volume of contents on them represent an unprecedented opportunity to engage in big data analysis in contexts such as sports events, and to better understand the nature and meanings of fan interactions in digital environments. This type of analysis requires new methodologies and the design of new methods to capture and analyse this data, and for researchers to undertake exploratory studies such as the one discussed in this chapter.

FUTURE RESEARCH DIRECTIONS

We see data as inevitable coming into the game. – Jeff Agoos, Vice-President for Competition at Major League Soccer (MLS)

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Word cloud and sentiment analysis bring new data to the game. Live sentiment analysis is a future line of practice to check the moods of the fans pre / during / post – game. This motivated us to propose a model that retrieves tweets, calculates the sentiment orientation/score of each tweet and publishes in real-time. This recent trend for research for sentiment analysis in Twitter can be utilized and extended for many practical applications that range from applications in marketing (person marketing, event marketing), customer relationship management (customer segmentation, loyalty tracking), applications in sponsorship (sponsorship effectiveness), applications in digital media (content management, mobile app management). For example, there are new ways for fans to quantify a players' performance such as sharing of data about players in real time, even going far enough to have these data displayed on players' jersey (Lisi, 2016). The model we propose would be just another technological innovation that could make its way to fans when they watch a game on television.

Digitalization and the increasing use of social media by fans means that big data is being generated around sports events, creating an unprecedented opportunity to analyze and understand fan interaction and the nature of fan engagement. The proposed model of live sentiment analysis responds to how to make use of big data in the context of sports management and fan engagement, and how the increasing amount of data improves decision-making and fosters innovation through effective knowledge sharing practices. This model is therefore an answer to how big data in the context of sports management enhances progress and organizational performance.

CONCLUSION

Continuous monitoring is required for a multi-channel strategy, which would need to be channel-specific, team-specific, game cycle-specific and result and performance-specific. Regarding channel-specific, the authors looked at the communication on Twitter only. Regarding team-specific, the authors looked at how the number of tweets and sentimental performance changed for each team. Regarding game cycle-specific, we explored Final Four event-cycle and looked at how the number of tweets and sentimental performance changed with respect to important games. The last but not the least, the authors looked at how game results boost tweets in a performance-specific monitoring.

This comprehensive study aims to be an essential reference source for the use of Twitter data in the context of fan engagement, building on the available literature in the field of sports management while providing for further research opportunities in big data and sports management.

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KEY TERMS AND DEFINITIONS

Fan Engagement: An engagement, in social media terms, as any deliberate interaction on the fan's part, meaning that something said made them want to spend their time and take an action to show their support for.

Hashtag: A word or phrase preceded by a hash sign (#), used on social media websites and applications, especially Twitter, to identify messages on a specific topic.

Real-Time Feedback: A type of qualitative and/or quantitative data collection, received live from visitors of a website, social media platform, or mobile application.

Sentiment Analysis: A process of computationally identifying and categorizing opinions expressed in a piece of text, especially in order to determine whether the writer's attitude towards a particular topic, product, etc. is positive, negative, or neutral.

Sentiment Polarity: A basic task in sentiment analysis classifying whether the expressed opinion in a document, a sentence or an entity feature/aspect is positive, negative, or neutral.

Social Media Platform: A web-based technology that enables the development, deployment, and management of social media solutions and services. It provides the ability to create social media websites and services with complete social media network functionality.

Word Cloud: An image composed of words used in a particular text or subject in which the size of each word indicates its frequency or importance.

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Chapter 46

Navigating the Social Media Space for Māori and Indigenous Communities

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ABSTRACT

This chapter explores how Māori and Indigenous communities are engaging in social media in ways that reflect their cultural aspirations and Indigenous ways of being. Social media provides opportunities for Indigenous people to represent an Indigenous worldview that encompasses cultural, political, and social preferences. Highlighted also in this chapter are the risks inherent within the use of social media for Māori and Indigenous communities: in ways in which the misrepresentation, commodification, and exploitation of Indigenous culture and traditions are amplified through the use of social media that support colonial ideologies and the ongoing practice of colonization.

INTRODUCTION

This chapter explores how Māori and Indigenous groups are engaging in social media in ways that reflect our cultural aspirations and Indigenous ways of being. I argue that social media provides opportunities to create new spaces to reflect an Indigenous worldview, which encompasses cultural, political and social preferences. This includes advancing an agenda of self-determination that challenges colonial ideologies and western constructs of colonization (Pihama, 2001). I also highlight the risks inherent within the use of social media for Māori and Indigenous communities; and how social media can be used to perpetuate the ongoing practice of colonization, which systematically sets out to maintain the power and control of the dominant society (Iseke-Barne, 2002).

Due to the lack of literature published on social media and Indigenous people within tertiary education (Huijser & Bronnimann, 2014), this chapter provides a Kaupapa Māori framework for better understanding Māori and Indigenous engagement in social media in general. Establishing this broader context serves to introduce some of the motivations, considerations and aspirations of Māori and Indigenous

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people in the use of social media. In this regard, this chapter prefaces a case-study in chapter four, about the use of Facebook to support Māori doctoral scholars and academics within the New Zealand tertiary environment. For Māori, educational aspirations are not limited to educational contexts and individual success; they have much wider implications that impact on whānau (family), hapū (sub-tribe) and iwi (tribe). Therefore, understanding the context of how Māori and Indigenous groups engage in social media as a decolonizing process for the transformation of Indigenous communities is critical and relevant for all educators. This chapter begins with an introduction to a Kaupapa Māori approach, followed by a discussion on ways in which Māori and Indigenous people are using social media to support our cultural aspirations, drawing on three Kaupapa Māori principles. The final section highlights the risks associated with social media for Indigenous communities in relation to the exploitation and commodification of indigenous culture; the racial discrimination against, and misrepresentation of, Indigenous people; and the disruption of Indigenous ways of being.

A KAUPAPA MĀORI APPROACH

This analysis is underpinned by a Kaupapa Māori methodological approach that draws from a Māori knowledge base and lived experiences. Kaupapa Māori promotes the validity of Māori language, knowledge and culture (Pihama, 2001). Kaupapa Māori supports Māori academics to carry out research in ways that embrace the values and principles of our whānau, hapū and iwi (L. Smith, 2003). Linda Smith (2003) asserts that Kaupapa Māori research comes from a local Indigenous theoretical position; a philosophy that encompasses a Māori worldview including spiritual, cultural and political dimensions. The Kaupapa Māori methodological approach enables Māori academics to participate in research that draws from ontological worldviews, and embraces Māori tikanga and values (L. Smith, 2003).

Kaupapa Māori also provides a theoretical and political tool as a basis for Indigenous researchers to work as change agents and to engage in research that is transformative for Indigenous people (G. Smith, 2003). Linda Smith (2003) believes that recognizing the injustices of colonization and thinking about ways that we can resist and challenge colonial ideologies is the first step to decolonization. She argues that while there is often an illusion that colonization is no longer practiced, there are still “new forms of colonization” which have been reformed in more subtle ways and, “many of these formations are insidious, and many of them have yet to be fully explored” (L. Smith, 2003, p. 215). Social media can be considered as one of these forms that often appear neutral, a-cultural and decolonized.

Graham Smith’s (2003) discussion on Kaupapa Māori emphasizes the need to uncover injustices experienced by underprivileged groups, and recognizes the powerlessness that individuals may feel about their own destinies. He points out that Māori are struggling from the injustices of the past, whether they are aware of this or not. In Graham Smith’s view, Māori are located within three intervention areas: conscientization, a ‘freeing’ of the Indigenous mind from the dominant hegemony; resistance, or going outside the constraints of the dominant system; transformative action, or engaging in a radical pedagogy and becoming change agents (G. Smith, 2003, p. 13). These areas are not independent of each other, nor do they fall in a linear order. Instead, they represent a cyclic approach whereby all Māori can be plotted somewhere within the cycle of Kaupapa Māori praxis. This is an important critique to assist in better understanding Māori engagement in social media with a Kaupapa Māori agenda.

KAUPAPA MĀORI CONSIDERATIONS FOR SOCIAL MEDIA

Graham Smith (2003) has identified six principles as a way of understanding Kaupapa Māori theory. These principles are: Tino rangatiratanga, self determination principle; Taonga tuku iho, cultural aspirations principle; Ako, Māori, culturally preferred pedagogy principle; Kia piki ake i ng ā raruraru o te kainga, the mediation of socio-economic factors; Whānau, extended family structure principle; Kaupapa, collective philosophy principle (G. Smith, 2003). While I have drawn on three principles in this chapter to help frame a way of thinking about Māori engagement in the social media space, the Kaupapa Māori principles reflect the lived experiences as Māori. Therefore, the principles are not seen in isolation, and will often overlap within the various themes discussed.

While this chapter often refers to the use of social media by Indigenous communities in a more general way, it is important to acknowledge that these communities are hugely diverse in geographical locations, politics and cultural traditions. For example, the use of social media amongst Amazonian Indigenous people varies considerably between the urban population and the rainforest inhabitants (Virtanen, 2015). In addition, social media applications provide different tools that are used widely for a range of purposes by Indigenous groups. This section attempts to highlight some examples of the ways in which Indigenous communities are using social media, including; political activism, cultural revitalization; and building stronger relationships and connections amongst Indigenous communities.

Tino Rangatiratanga: Self-Determination Principle

‘Tino rangatiratanga’ is a central principle of Kaupapa Māori theory. Self-determination, autonomy and sovereignty are ways to express tino rangatiratanga, whereby Māori can make decisions and choices both individually and collectively (Pihama, 2001). Fundamental to tino rangatiratanga is the acknowledgement of Māori epistemologies that promote Māori worldviews, knowledge, language and culture as authoritative and valid. Cultural identity and aspirations of Māori can only be achieved through a Māori worldview that is defined by and for Māori. Additionally, tino rangatiratanga is often viewed as a direct protest to the Crown, and seeks to legitimize the rights of whānau, hapū and iwi. It is intrinsically linked to Te Tiriti o Waitangi, that guarantees the right for Māori sovereignty as tangata whenua (people of the land) and is seen as a binding document with the Crown (Pihama, 2001).

The notion of tino rangatiratanga aligns with an Indigenous agenda of self-determination, and provides a way of thinking about how social media can be used as a political space in pursuit of sovereignty (Waitoa, Scheyvens, & Warren, 2015). For instance, in an examination of the use of social media by the Mana Party in the 2011 New Zealand elections, Waitoa (2013) found that social media gave the Mana party greater ownership and control of their content to key audiences. This aligned with the aim of the Mana Party as articulated by Annette Sykes, to “increase political participation through the ability to acquire greater political knowledge, increase political interest, improve political self-efficacy and highlight different perspectives and political opinion on what media portrays to us” (Waitoa, 2013, p. 73). Waitoa points out that social media sites enable the Mana party to represent themselves and their perspectives directly to their key constituents - Māori communities.

Social media also enables individuals, who may not have previously seen themselves as politically active, to become strong Indigenous advocates through the re-posting of protests, sharing of images, narratives and commentaries (Duarte, 2017). In fact, political activism can take place through the ‘mundane’ use of social media by Indigenous people’s ‘self-writing’ about everyday life (Petray, 2013). It

can be a powerful tool to normalize Indigenous views that challenge mainstream stereotypes, allowing opportunities to create a collective online identity to support Indigenous movements (Petray, 2013).

Dr. Adrienne Keene, from the Cherokee Nation, is a strong example of how an individual blogger can contribute and connect to the much larger online community. As a Native student in an elite institution, Adrienne Keene's feelings of isolation and separation from her classmates were the catalyst for her seeking connections online. Her blog, entitled 'Native Appropriations,' examines representations of Indigenous people, focusing on issues of cultural appropriation and stereotyping. "Writing the blog gave me voice. In my semi-anonymous space on the Internet, I was free to question, be angry, and fight back-things I struggled to do in 'real life'. I watched my notoriety and influence grow online, while in my day-to-day I was still a silent girl in the back of the classroom" (Keene, 2013). Adrienne Keene now has over 100,000 followers on her Native Appropriations Facebook page, and continues to blog, as well as use Twitter and Instagram to advocate and politicize Indigenous issues.

Indigenous movements such as the EZLN, Idle No More, and the Rio Yaqui water rights, highlighted in Duarte's (2017) research, use strong social media tactics to destabilize dominant governments and neoliberal political economies. The ability to engage in social network sites, in ways that are far less regulated than other political forums, enables a range of tactics to be employed by activists. Additionally, social media offers opportunities for marginalized groups within Indigenous communities to speak out and challenge oppressive politics (Parkhurst, 2017). For example, the 'Archiving the Aboriginal Rainbow blog project' that represents the Aboriginal and Torres Strait Islander LGBTIQ peoples to assert their political positions, draw attention to their oppression and challenge violence faced by their community (Farrell, 2017). Belton (2010) supports this view, and highlights how the digital spaces enable more opportunity to articulate for political expression;

Cyberspace thus allows those who are marginalized to speak more easily in their own voices without having to go through approved representatives or channels. As a result, Indigenous peoples may demand boycotts and strikes, alert the world of human rights violations, and share political tactics and ancestral stories without having to be a present, identified body. (Belton, 2010, p. 197)

There are strong examples in New Zealand where social media networks are being used to mobilize Indigenous movements, as well as build momentum for these projects with non-Indigenous allies. The 'SOUL - Save Our Unique Landscape' Campaign exemplifies a social media articulation of tino rangatiranga at Ōtuataua in Mangere, Auckland. Led by young Māori women, such as Pania Newton, a number of protests have taken place against the proposal for the development of 480 homes in Ihumatao on land that has historical and sacred significance to the local tribal groups and community. The use of social media platforms, including Facebook, YouTube and Twitter, has helped to galvanize support at both a local and international scale (<http://www.soulstopsha.org/>). Additionally, a virtual occupation of the land, with over 4000 people symbolically residing on the site to protest against the development, has drawn wide attention. Strong use of social media tactics has provided a small local protest with a much larger support base throughout New Zealand and beyond. It has also inspired other Indigenous communities experiencing similar corporate land battles.

Taonga Tuku Iho: Cultural Aspirations Principal

Taonga tuku iho is closely linked to tino rangatiratanga, and is the principle, acknowledging Māori knowledge and traditions, that continues to sustain and support whānau, hapū and iwi to live as Māori. Taonga tuku iho validates Māori ways of being and creates a space for Māori to 'be Māori', whereby cultural aspirations and identity are legitimized (G. Smith, 2003). In the face of colonization, Māori have struggled to maintain the Māori language, cultural practices and protocols. In particular, the systematic denial of the Māori language through the advancement of colonial ways has impacted negatively on Māori communities (Pihama & Cameron, 2012). The principle of taonga tuku iho is illustrated through the use of social media in a range of ways to revive and maintain Indigenous traditional culture and language, and create digital spaces that reflect cultural aspirations.

One advantage of social media is the ease with which dynamic content can be created and shared across social networks. The recording and production of spoken language, as well as music, arts and dance, enables Indigenous communities to revitalize and reinvigorate languages and cultural practices struggling to be sustained in contemporary contexts (Alexander, 2010). Social media provides an opportunity to express and represent Indigenous worldviews in ways that are responsive to Indigenous ways of being. For example, digital storytelling enables Indigenous people to control their images and narratives through their own self-representations and, in doing so, challenge the stereotypical representation by the dominant society (Iseke & Moore, 2011). Iseke and Moore (2011) state, "Collecting community stories through digital means ensures that communities honor their oral traditions and resist the dominance of texts that are prevalent in the dominant society" (p. 35). Publishing on the web can also challenge the authority of Western representations in media and texts, and disrupt the 'elite' forms of traditional publishing (Nakata, 2002). Nakata states;

The online environment has reconstituted the balance between visual, oral, and textual modes of presenting information in a way that supports cultural perspectives. Further, the Web supports publishing in ways that disrupt established 'elite' forms of publication and which 'authorize' previously excluded groups from publishing. (Nakata, 2002, p. 28)

Also highlighted in the literature are ways in which social media offers Indigenous people the ability to reflect their own identities. While social media can be a space to explore identity, Carlson (2013) suggests that those who identify themselves as Indigenous offline will tend to be no different in how they identify themselves online. Therefore, by simply engaging in social media networks, Indigenous peoples project their indigeneity and reflect their cultural interests, preferences, beliefs and practices (Carlson, 2013; Lumby, 2010). Expressing one's indigeneity on social media, Lumby (2010) argues, is not just a matter of 'being' Indigenous, but more a matter of 'doing' indigeneity. For example, in Facebook, creating member profiles, accepting 'friends', belonging to groups, liking, sharing and commenting of content etc. all directly contribute to developing a representation of one's self.

The revitalization and preservation of Indigenous languages is another cultural aspiration that supports the taonga tuku iho principle. Māori have been innovative in their approach to promoting and normalizing Māori language in its everyday use, and many are using social media as a way to support this. In 2014 Pita Paraone, the chief executive for The Māori Language Commission, called for social media to be 'swamped' with the Māori language. He states, "Social media is a new frontier for Māori language use. Māori language speakers encourage others when they use te reo Māori as their default

language for tweeting and messaging” (Rotorua Daily Post, 2004). Research undertaken by Keegan, Mato and Ruru (2015) indicate this to be occurring amongst Māori in the use of Twitter. They found a vibrant community of minority language tweeters who were able to connect with each other despite their geographical distance. Keegan, Mato and Ruru (2015) identified 90,000 tweets in Te Reo Māori (Māori language), and while many were both commercial and religious tweets, there were a number of individuals using twitter to converse in Te Reo.

As discussed in chapters two and five of this book, the use of social media for teaching and learning within tertiary environments is becoming more prevalent, as teachers explore ways to engage students that encompass digital learning environments. The notion of ako as a cultural pedagogical framework is closely aligned to taonga tuku iho and is also one of Graham Smith’s (1991) Kaupapa Māori principles. For Māori, ako provides a more holistic and non-linear approach to teaching and learning. Ako can also be used to define the cultural aspirations for Māori education within our society. Lee (2008) asserts that ako does not just refer to teaching and learning processes but that “ako refers to a Māori educational framework that was integral in the protection, sustenance and transmission of knowledge, shaped by what was collectively deemed necessary and important” (p. 108).

Therefore, when exploring the use of social media and online learning communities with Māori and Indigenous students, there are a number of factors to consider that contribute towards a more culturally responsive teaching and learning framework (Dashper, 2017; Tiakiwai & Tiakiwai, 2008). For example, the ITPNZ report (2004) highlights the views of Māori educators and e-learning specialists during a two-day hui which looked at the concept of ako and how it may be applied to e-learning. It was suggested that, rather than use the term e-‘learning’, they preferred the term ‘e-ako’, as it represented the holistic and aspirational nature for Māori that includes both ‘teaching *and* learning’. One participant asserts, “Ako is a whole lot of interlinked concepts such as whānau. It does not stand alone ... E-ako cannot be reduced to models or rules or too strict a definition” (ITPNZ, 2014, p. 31). Such views highlight how the use of social media for teaching and learning cannot be viewed in isolation, but must incorporate the principle of taonga tuku iho that acknowledge the cultural aspirations and identity of the learner. The complexities involved in engaging in a Kaupapa Māori community of learners are highlighted and explored in the following chapter.

Huijser and Bronnimann (2014) discuss social media for Indigenous learning by drawing on Yunkaporta’s 2009 ‘eight-way framework of Aboriginal Pedagogy’. The framework includes the following concepts: story sharing; community links; deconstruct/ reconstruct; non-linear; land links; symbols & images; non-verbal; and learning maps. Huijser and Bronnimann (2014) highlight a range of social media tools that can support each of the eight concepts and in turn provide opportunities to align with a more Indigenous learning context. They assert;

... social media allow us to start the learning process from where Indigenous students are at, and allow us to draw on existing knowledge, rather than simply imposing a knowledge set on them, because we (as in western educators) have decided that is what they should know. (Huijser & Bronnimann, 2014, p. 102)

For Indigenous students, there are benefits for engaging in social media in order to enable a more learner-centered and holistic pedagogy that aligns more strongly to an Indigenous educational framework.

Whānau: Extended Family Structure Principle

While whānau is defined as a family group or extended family which is brought together through whakapapa (genealogy), whānau can also be used metaphorically to refer to a group of people who are working to a common end. Whānau *values*, particularly if kinship connections are absent, are what governs relationships with each other and connects the group (Metge, 1995). Pihama (2001) argues that colonization has actively targeted whānau structures and presented an individualist ideological view of a 'nuclear family'. Therefore, the terms 'whānau' and 'family' are not the same and Kaupapa Māori initiatives seek to affirm the roles and responsibilities of a collective whānau group. Being part of a whānau means there is a strong commitment to provide support to other whānau members, particularly for those who cannot fend for themselves. Inherent in a whānau structure are certain rights, responsibilities and obligations that are implicit within whānau relationships (Pihama, 2001).

Social media can support the notion of whānau in ways that foster connection, sharing, and co-creating amongst online communities (Bell, Budka, & Fiser, 2007; Molyneaux et al., 2014). For Indigenous people, particularly those who have become dislocated from their tribal land and communities, social media offers a way to connect back to their homelands. Molyneaux's et al. (2014) research surveyed 633 people from geographically remote First Nation communities, in the Sioux Look Out region of north western Ontario. Amongst their findings, participants frequently used social network sites, with 72.8% reporting daily. Their research highlighted a positive correlation between how often people communicated to each other on social media outside their communities, and the frequency of traveling outside their communities. Such findings support a link between online communication and face-to-face contact (Molyneaux et al., 2014). Molyneaux et al.'s (2014) research also found that their participants "use the Internet or social media to celebrate and practice their culture. More than half post photographs and stories and listen to music and look at art created by Aboriginal people on SNSs" (p. 285). Through the sharing of cultural resources and exchanging of information through social media, Indigenous people are developing stronger connections amongst each other and building resilience within their communities. (Molyneaux et al., 2014).

The principle of whānau is a significant factor for Māori engagement within social media. O'Carroll (2013) examines how rangatahi (youth) use social network sites to facilitate whānau connections and communication. Her research found that many of her participants actively sought to use social network sites to engage with whānau and to increase their whānau ties and relationships. O'Carroll (2013) states, "Whanaungatanga practice in virtual spaces was underpinned with the same values and principles as those practiced in physical spaces. Enabling whānau members to connect to each other helped them to nurture their familial relationships" (p. 278). O'Carroll's research indicated that social media enabled them to maintain values of whanaungatanga, identity and tikanga, which they already experienced in a physical way, through their online engagement as well.

Additionally, the use of social media sites has enabled iwi, hapū and whānau to re-connect, communicate with and support their whānau. This is reflected in many of the Māori tribal Facebook groups that are active today. One example, The Waikato Tainui Facebook page launched in 2013, is using social media to reach out to its 65,000 descendants in Aotearoa and abroad. On their Facebook they state, "As a tribal entity we aim to empower our people by providing a range of programmes and opportunities including grants and scholarships, education and health programmes, employment and training, cultural initiatives and marae development assistance" (<https://www.facebook.com/Waikato.Te.Iwi/>).

CHALLENGES

While the previous section outlines some of the ways in which Māori and Indigenous are engaging in digital spaces aligned to Kaupapa Māori principles, this section draws attention to the implications and complexities that are implicit within online engagement. It also looks at some of the key challenges that social media presents to Māori and Indigenous communities. This section seeks to challenge mainstream ideologies prevalent in the Western dominant society reflected in social media sites; in particular, the exploitation and misrepresentation of Indigenous culture and traditions.

Commodification and Misrepresentation

Indigenous groups must now contend with the global digitalization of their cultural possessions being robbed and distributed for commercial gain (Iseke-Barnes & Danard, 2007). Offering even greater access to audiences as well as unrestricted commercial opportunities, the internet is participating in the commodification of Indigenous culture and knowledge. Iseke-Barnes and Danard, (2007) discuss how Indigenous symbols and representations lose all cultural significance once they become commodities. For example, the dreamcatcher, which is a spiritual symbol from the Ojibwe people, is now being sold and purchased on hundreds of thousands of websites around the world without any historical or cultural context. “The cultural significance of the dreamcatcher is erased. It simply becomes a commodity” (Iseke-Barnes & Danard, 2007, p. 29).

In addition, the misappropriation and exploitation of tribal stories via social media poses adverse risk for Indigenous people. For Māori, tribal pūrākau (stories) has been a way for Māori to retain ancestral knowledge and to portray the lives of their tupuna (ancestors). Māori can reclaim pūrākau for purposeful and pedagogical narrative, in a way that advances Māori educational aspirations and offers a counter-story to the dominant discourse (Lee, 2008). However, Lee (2008) warns of the misappropriation of pūrākau through the translation and homogenizing of myths and legends and where such stories, collated through a colonizer’s perspective, portray misrepresentations of Māori.

A strong example of traditional story-telling being portrayed through a colonizer’s perspective is the Walt Disney movie *Moana* that was marketed widely through social media channels in 2016. The movie presented stereotypical characters of Pacifica people, in particular Maui, who is depicted as an obese Polynesian. These representations were amplified through the sharing, liking and commenting across social networks globally. Associate Professor Leonie Pihama used social media to ‘write back’ and protest against the misappropriation of the movie. She asserts, “You see *Moana* is not our story. It is not our representation of ourselves. It does not reflect any particular nation. It is a generalised, universalised, pan-nation, colonised, exploitation that is based on what... a bunch of white men reading Gauguin” (Pihama, 2016a). Within a year of the movie coming out, advertisements were circulating on social media networks for actors who could speak the Māori language. Pihama posts again;

If this film is translated directly into te reo Māori it will contribute to the colonising beliefs about being Indigenous and will be of more danger to the ways our tamariki understand being Māori than anything else. Translations of colonial beliefs reproduce colonial beliefs. The whole script must be decolonized and rewritten before being recreated in te reo Māori. (Pihama, 2016b).

Despite Pihama's Facebook protests, the script was translated into Māori and the movie released during Māori language week in 2017. An opportunity to re-tell a traditional pūrākau in a way that reflected and honored the rich cultural beliefs and value of the Pacific and Māori people has been lost to a Walt

Disney commercial venture, that was reported to have earned over \$600 million at the worldwide box office (Mendelson, 2017).

Racial Discrimination

Racial discrimination and hatred exists within the Internet in many forms. While the anonymity of cyberspace enables people to engage in an indiscriminate way, without having to identify their country or culture, it can also fuel racist attitudes and actions towards ethnic groups that are perceived as a threat.

Social media platforms are not excluded from the harboring of racial attitudes and racial attacks on Indigenous peoples (Carlson, Jones, Harris, Quezada, & Frazer, 2017).

The anonymous nature of the Internet can also enable racial attacks through stolen identities and false portrayal of ethnic groups. An example of racism reported by Te Karere (Māori news programme) was a fictitious Facebook profile page that depicted a Māori "family obsessed with boozing, smoking dope and bashing women" (Te Karere NZ, 2013). The account had stolen the identity of Kimiora Webster, a secondary teacher at Rotorua Boys' High School, alongside a number of photos of other Māori identities. The page received over 58,000 likes and actively engaged its audience by posts that racialized Māori as criminals. While Webster and many other Māori made complaints about the page, at the time of reporting he had not received any response from Facebook and the false portrayal still remained accessible online. The lack of response from Facebook highlights the limited control and power users have in dealing with racial discrimination targeted through accounts and profiles created by others.

To further highlight this issue, while large social media corporations may project a position of neutrality, such a notion can hide racial discrimination. Lee (2007) discusses new forms of racism that exist within our society which do not overtly claim a hierarchy of race they speak to cultural or ethnic differences. Lee states that, "Racism often escapes recognition as such, because hegemonic discourses have secured it for a new ideological transparency, enabling dominant groups to sustain racist constructions of social difference" (p. 31).

In 2012, groups of Indigenous people were shut out of their accounts when Facebook introduced a 'real-name' policy that attempted to close any accounts that appeared to have fictitious names. The policy was created after Facebook revealed that it had 83 million fake accounts, and experienced an immediate drop in its share price (The Guardian, 2014a). The real-name policy impacted on marginalized communities that included Indigenous groups, members of the LGBT stage performers and political activists, all of whom were denied access on the basis of their names being seen as fake. The Facebook's chief product officer, "affirmed that the 'real-name' policy is meant to differentiate from other parts of the internet that accept anonymity and to protect people from trolls and abuse conducted by those protected by anonymity" (The Guardian, 2014b). However, instead it clearly highlighted the discrimination that marginalized groups continue to experience within the online social media space.

Disruption of Indigenous Ways of Being

For Indigenous communities, cultural knowledge systems, ancestry and ways of operating as a collective are interwoven through one's Indigenous experiential physical existence. The internet can be seen as a

way to distance Indigenous communities from one's natural connection to life (Iseke-Barnes & Danard, 2007). Howe (1998) supports this view in his article, *Cyberspace is No Place for Tribalism*, and warns of the dangers that the Internet poses for Indigenous groups. He describes the Internet as a global village, whereby the irrelevance between people and landscapes further displaces Indigenous communities who are connected spiritually to land. He highlights four key dimensions – spatial, social, spiritual and experiential – that are central to tribal life and community relationships. Howe also argues that these dimensions cannot be virtualized;

Tribalism must be practiced. It must be lived and experienced. It is not merely a way of thinking or some nebulous feeling, nor is it inherent in an individual's biological makeup. Tribalism requires full sensory interaction between tribal members, on the one hand, and between tribal communities and their surrounding environments, on the other hand. (Howe, 1998, p. 24)

Issues and tensions can arise when traditional cultural practices are shifted to the online space and are incongruous with cultural values. This is evident when social media provides an alternative space to grieve the loss of a person, when people find themselves unable to physically attend ceremonies.

O'Carroll (2013) raises a number of questions around Māori engaging in customary practices and accessing tribal knowledge through social media, rather than not physically returning their tribal lands. She highlights the issues for whānau around the tikanga of virtual spaces and the appropriateness of participating in tangihanga through social network sites. The postings of photographs of tupapaku and online videos of the tangi were seen by some as inappropriate and insensitive to the whānau of the deceased. While some of the participants in her study commented on the ability to say their goodbyes, create virtual memorials online and feel part of a tangihanga back home, other participants felt an inability to connect to the wairua of tangihanga. O'Carroll re-tells an experience shared by one of her participants:

...she kissed the computer screen to say goodbye to a deceased, and found it difficult to connect to the wairua of the deceased person. Her use of the term 'sad' in this instance was to signal the sense of the emptiness of this act compared with physical presence, as she felt removed from the experience of the tangihanga ritual. (O'Carroll, 2013, p. 211)

Such an example highlights how social media cannot take the place of face-to-face engagement in such situations. Cultural practices require a physical presence for people to experience fully and connect at a more spiritual and emotional level.

CONCLUSION

It is clear that social media can create a compelling space for Māori and Indigenous groups to connect in ways that support and reflect their Indigeneity. Indigenous groups are collectively engaging in social media to assert their tino rangatiratanga both at a local and global level. Social media is a powerful tool to galvanize political change, enabling large scale Indigenous movements to directly challenge Governments over the loss of tribal land rights. Additionally, social media has the potential to capture and revitalize Indigenous language and culture in ways that honors and sustains traditional knowledge and traditions.

Social media can also bring a number of risks for Māori and Indigenous communities by offering a new mode to perpetuate the dominant ideology and further the practice of colonization. As highlighted in this chapter, the misappropriation and exploitation of Indigenous culture and practices are amplified through the digitization and use of social media. It also highlights racial discrimination, as well as new forms of covert racism through the notion of neutrality. Finally, it looks at the disruption of Indigenous ways of being that draw upon the physical, emotional and spiritual self that cannot be replicated in the online environment.

This chapter highlights ways in which Māori and Indigenous groups are engaging in social media by drawing on Kaupapa Māori principles. Kaupapa Māori responds to the changing societal forces faced by Māori and the impact on our culture, aspirations and struggles in all sectors of society. This chapter also establishes the broader context for social media use by Indigenous groups which supports the next chapter's exploration of a Facebook group for Māori doctoral students and academics. While much work is still to be done in this area, it is intended that both chapters provided a way of thinking about ways in which the use of social media can contribute to the transformation of Māori and Indigenous people's cultural and educational aspirations.

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APPENDIX

Please note, some of following Māori words are not direct translations, but explanations as they relate specifically to the context in which they are used in this chapter.

Ako: Culturally preferred pedagogy principle.

Aotearoa: New Zealand.

Hapū: Subtribe.

Iwi: Tribe.

Kaupapa Māori: Māori principles.

Pūrākau: Tribal stories.

Rangatahi: Youth.

Tamariki: Children.

Tangata Whenua: Local people.

Tangihanga: Funeral protocols.

Taonga Tuku Iho: The treasure and values that are inherited by us (cultural aspirations principle).

Te Karere: Māori news program.

Te Reo Māori: Māori language.

Tikanga: Protocols.

Tino Rangatiratanga: Self-determination principle.

Tupapaku: Deceased.

Tupuna: Ancestors.

Wairua: Spirit.

Whakapapa: Genealogy.

Whānau: Extended family.

Whanaungatanga: Relationship, kinship.

Chapter 47

Not a Girl, Not Yet a Woman: A Critical Case Study on Social Media, Deception, and Lil Miquela

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ABSTRACT

This chapter takes an interdisciplinary approach to the study of deception from the critical perspectives of rhetoric, communication, and media studies. The primary objective is to interrogate the interrelationship of communication, identity, and technology relevant to social media in order to confront issues related to online deception. To that end, this case study is centrally focused on social media sensation Miquela Sosa, also known as Lil Miquela, and the implications of artificial intelligence (AI) technologies and social media influencers to contribute to a more robust critical consciousness regarding misinformation online.

INTRODUCTION

In this chapter, the authors seek to provide some perspective and satisfactory answers to the growing questions and concerns regarding misinformation in business, politics, religion and everyday life. More precisely, using the critical perspectives of rhetoric, communication, and media studies, the authors' objective is to interrogate the interrelationship of communication, identity, and technology relevant to the rise of artificial intelligence (AI) technologies and social media influencers, focusing specifically on Instagram sensation Miquela Sosa, also known as Lil Miquela. In short, these objectives serve the larger purpose of broadening our understanding of online deception patterns and emboldening students, scholars, and professionals with strategies to confront these challenges.

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What makes this case study peculiar, and all the more compelling, is that Lil Miquela is not a real person but rather an AI technology that promotes various products and social causes. *Time* recently named Miquela as one of the 25 most influential people on the Internet (Chan, 2018); *V Magazine*, devoted to fashion, music, and culture, has hailed her as the “face of new-age logomania” (Mischianti, 2018); and *Wonderland*, devoted to fashion, music, beauty, art, and culture, has featured an in-depth interview and photo spread with Miquela (Walker, 2018). On Instagram, Miquela identifies as a robot from Los Angeles; a musician, with a music video inspired by her single, “Hate Me”; and as a social advocate for Black Lives Matter, the LGBTQ+ community, the Downtown Women’s Center of Los Angeles, and the Campaign for Youth Justice. In short, Miquela is a substantial social media influencer—an emblem for both style and social justice causes.

In sum, we contend that Miquela serves as an ideal representative anecdote through which to interrogate misinformation and online deception. Moreover, we further argue that this phenomenon has brought us to a cultural crossroad where critical consciousness and reality converges with varying degrees of misdirection and deception. Put differently, it is representative of a significant turning point in advertising and mass consumer culture, where AI technologies have become social media influencers. As such, this chapter makes for an important study in online deception with significant implications for intellectual and media ethics. To this end, the authors consider the rhetorical dimensions of communication, identity, and technology related to deception before confronting the case study of Lil Miquela and concluding with recommendations and future research considerations.

THE STORY OF US: COMMUNICATION, IDENTITY, AND TECHNOLOGY

In situating the significance and importance of this study, the authors rely on the theoretical foundations of rhetoric, communication, and media. Altogether, these disciplines, most especially in our present moment, confront a vast array of human communication issues and challenges, namely, misinformation and online deception on social media. Given that technology has become one of the preeminent ways through which we communicate in order to constitute our sense of identity and secure our physiological and emotional needs, the authors focus on themes of belonging. For instance, Maslow’s hierarchy of needs has belonging centered in the pyramid between our basic physiological and safety needs and the higher needs of esteem and self-actualization. In this sense, belonging is foundational to our sense of self and community. Yet our times are indicative of increased separation, as though it is coming apart at the seams (Ross, 2018, p. 1). Across this chasm, social media has given rise to new ways of finding and manufacturing belonging. Howard J. Ross, in *Our Sense of Belonging: How Our Need to Connect Is Tearing Us Apart* (2018), has argued, “things need to get real before they can get better” (p. 175). Indeed, the authors argue an interrogation of Miquela and trends in AI technology help us get both real and better, promoting more critically conscious awareness of misinformation issues and stimulating awareness of human needs for personal connection, vulnerability, and consciousness.

Theoretical Considerations

As the authors contemplate the implications of online deception in the case study of Lil Miquela, it is important to establish some theoretical considerations. In its simplest form, theory is much more than a rote tool for erudition. Rather, theory is a way of understanding and seeing the world derived from some

critical distance. As such, the authors have chosen rhetorical theory as a framework through which to apprehend and comprehend the interplay of social media and online deception as modes of communication and media. Furthermore, the authors examine deceptive messages using Levine's (2014) Truth-default theory (TDT) as a theoretical framework.

Rhetoric

The rhetorical tradition is one of the "deep intellectual taproots for communication and media study in the twentieth and twenty-first centuries" (Simonson, 2010, p. 7). Intellectually, the study of communication and media are branches of rhetorical practice. Pragmatically, rhetoric and media are specific modes of communication. In turn, what makes the discipline of rhetoric, based in large part on the history of Platonic writing and thought, such a fitting foundation for the study of online deception is that rhetoric has, justifiably at times, been described as being motivated and defined by deception. When the term rhetoric is used pejoratively, it is typically yielded as an accusation regarding misdirection or deception, as when Plato leveraged his position on rhetoric as flattery against the Sophists (this is the inspiration for the English word sophistry). In short, rhetoric is well acquainted with the realms of deception.

Furthermore, rhetoric is also an ideal theoretical guide to confront issues related to deception in that it is well acquainted with the use of language to influence emotions. According to Kenneth Burke, the real lasting impact of rhetoric derives from the "trivial repetition and dull daily reinforcement" of language rather than exceptional rhetorical skill (Burke, 1969b, p. 26). In other words, when we consider the abundant and far-reaching repetition and reinforcement of social media messages, particularly those related to deception, we begin to understand their persuasive and rhetorical appeal. Moreover, beyond mere persuasion, rhetoric is fundamentally a means of identification in which we persuade others insofar as we speak their language by gesture and tonality, order and image, attitude and idea, identifying our ways with theirs (Burke, 1969, p. 55). As it pertains to online deception and social media use, the cultural significance of Lil Miquela aligns with these theoretical considerations—that is, through daily reinforcement of varying means of identification via cultural languages. Lastly, one of the theoretical concepts Burke uses to access complex cultural meanings is the representative anecdote, for it provides a clear yet complex platform from which to assess the scope of potential meaning (Burke, 1969, p. 324). Barry Brummett elaborates on the trope, indicating that the representative anecdote is a "trained awareness" of types of dramatic form, with the potential to empower people to extract order from chaos—to decipher what we as a people and culture most deeply fear and hope (Brummett, 1984, p. 174).

Restated, rhetoric is the affective use of language for effect generated through the dull daily reinforcement of various identifications. In this sense, language is broadly defined as some combination of verbal, non-verbal, symbolic, visual, or aural communication, from pitch and intonation to symbols and words—all of which are fundamental to communication, identity, and technology. Subsequently, these form the bases of study that propel rhetoric, communication, and media. Most explicitly, the authors argue that Miquela and the creative technology company Brud, the proprietor of Lil Miquela, consistently engage in acts of misinformation, intentionally, knowingly, and purposefully misleading followers. Thus, the authors consider Brud and Miquela as an ideal representative anecdote, useful for deducing some of the nuances of meaning regarding misinformation in social media. Beforehand, however, the authors address some theoretical considerations regarding deception.

Deception

The issue of deception transcends most disciplinary, social, cultural, and historical boundaries (DePaulo, Kashy, Kirkendol, Wyer, & Epstein, 1996). For instance, according to Timothy Levine (2014), “deception is defined as intentionally, knowingly, and/or purposely misleading another person” (p. 379). Relatedly, with more specificity, Judee Burgoon and David Buller (1998) define deception as a “message knowingly transmitted by a sender to foster a false belief or conclusion by the receiver” (p. 381). They argue that, “Emotions provoke deception, and deception provokes emotions” (p. 381) and that “consequences of deceit entail emotion processes that are incorporated in every explanation of deceptive communication” (p. 381). When we interrogate the interchange of emotions and the human need for belonging in light of other developing cultural trends related to AI technologies, we begin to see more clearly some of the rhetorical potential related to online deception. Furthermore, from the perspective of deception in daily situations, deception in self-presentation is the arrangement of self in everyday social life as characteristically an “edited and packaged” presentation (DePaulo, Kashy, Kirkendol, Wyer, & Epstein, 1996, p. 979).

As an interdisciplinary approach, deception occurs when people deliberately communicate messages that aim to deceive others. Accounting for the different forms of deception, the authors adopt deceptive messages as outright falsehood to mislead including the intentional act by the sender to transmit covert messages that do not reveal the whole truth (Burgoon & Buller, 1996; Burgoon & Buller, 1998; Levine, 2014; McCormick, 1992). DePaulo et al., (1996) noted deceptive behaviors arise from the desire for people to claim their own identities in which lies are told most often in “matter-of-fact-ways” (p. 991) to benefit self-interests and protect other-oriented lies. By examining various motivations for why people lie (DePaulo et al., 1996), the authors consider the significance of what makes Lil Miquela’s case significant. Specifically, in the context of social media, which allows users to participate autonomously and anonymously, buttressed by the rapid and expansive participatory nature of the Internet, ethical concerns arise as Brud, Miquela’s creators, engage with more than 1.5 million Instagram followers.

Researched from perspectives of online communication and behavior on social media, the authors consider how social media gives users freedom to disclose certain parts of their identity and communicate different messages to different audiences, thus making the argument that deception derives from decisions that do not associate lies with consequence. In Levine’s (2014) Truth-Default-Theory (TDT), for instance, deception derives from the premise that when humans communicate with other humans, people operate on the default presumption that communication is honest most of the time. As such, in TDT, communication context and content are considered to determine if communication is deceptive (Levine, 2014). To uncover patterns of deception, this case study draws on social media posts across platforms that define how Miquela is portrayed to her (it) audience; similarly, to understand the motivations and techniques used to create Miquela.

In sum, whereas the social psychologists approach emotion-based deception as biological signals centered on cognitive experiences, communication scholars consider the social nature of emotions that focus on how emotional expressions are utilized to create deceptive messages (Burgoon & Buller, 1998, p. 382). What is most significant in these studies is the recognition that deception is a conscious act of fostering beliefs based on some degree of misinformation. Indeed, worthy counterfeits should look and feel the part. As such, theoretically speaking, the authors propose rhetorical studies, and their close relative’s communication and media, be considered in deception research.

A CHEAP TRICK: THE RHETORIC OF SOCIALLY MEDIATED DECEPTION

Given the theoretical considerations of this chapter, the authors turn their attention to the rhetoric of socially mediated deception, keeping in mind the interplay of human emotions and the need for belonging that coincide with the dull daily reinforcement of technology and online encounters. Put differently, “I Want You To Want Me,” the September 1977 single by American rock band Cheap Trick (Nielsen, 1977), succinctly, adeptly, and aptly captures the essence of social media behaviors oriented around online deception. In order to effectively understand the misdirection levied by Brud through social media influencer Miquela, the authors first briefly consider the role of artificial/technology before considering the particulars of Brud and Miquela.

The idea that people manipulate information in media is not new; however, examining what is considered to be a deliberate act of deception on social media is relevant at a time when deception on social media is not clear, and the amount of online technologies and people who use social media continue to increase. Whereas asynchronous communication is delayed and provides time for people to formulate thoughts, in synchronous communication people respond with greater immediacy; thus, synchronous communications affect how deception is implemented, giving deceivers advantage for altering content (Tsikerderis and Zeadally, 2014).

Artificial/Technology

Although the freedom to exchange information is an important part of fostering democracy, it is also important to recognize some of the societal and ethical challenges that come with being able to create and propagate online personas. Sherry Turkle (2005) has described our computer technology as part of everyday life, a world we create, work in, experiment in, and live in. With its “chameleon like quality,” technology becomes our creature, “making it an ideal medium for the construction of a wide variety of private worlds and, through them, for self-exploration” (p. 21). Turkle (2005) describes the tendency in technology use to “manipulate words, information, and visual images,” entering into the development of personality and identity (Turkle, 2005, p. 21). “To say one’s online self is curated would be an understatement; it’s not real life” (Jones, 2018). The authors contend that Brud consciously misleads others with misinformation regarding Miquela’s consciousness, such that Brud wrote and published an online letter to address public concerns.

Lil Miquela: A Case Study

In 2018, the glamorous, perfectly curated world of Instagram influencers is hardly a mystery—and yet, one Instagram star remains an enigma: Lil Miquela (Russell, 2018):

Miquela Sousa, better known as Lil Miquela, is one of the first computer-generated social media influencers. In less than two years of existence, she has amassed over a million Instagram followers and sparked a debate about what makes a persona “real” online. In an era of fake news, AI, Russian troll farms, catfishing, and deceptive selfies, Miquela highlights how technology is estranging us from reality (Erer, 2018).

To confront this estrangement, the authors address the emergence of Miquela, purported to be a 19-year-old Brazilian-American model; who has 1.5 million Instagram followers, dresses in Chanel and Prada (and various other brand that promote causes she believes in) and graced the cover of American *Vogue* wearing Alexander McQueen (Walker, 2018).

Since first appearing on Instagram in 2016, Lil Miquela has quickly become a compelling presence, functioning as an Instagram influencer in the realms of fashion, branding, music, social justice, and celebrity. Developed as an Artificial Intelligence (AI) prototype with full consciousness, Miquela is able to think freely and feel compassion for others. The question remains, however, as to whether Miquela can actually be the empathetic presence her (it) creators, Brud, have claimed. In a recent journalistic segment, one reporter offers an ominous vision for this possibility:

Many things you see online are not what they appear to be. In the case of social media influencers – people who are paid to promote brands and products – some aren't even real people. In what is part of a growing online trend, some of these computer-generated influencers have more than one million followers each. Recent studies predict the influence marketing space will be a \$2 billion industry by 2020. The goal of these computer-generated influencers is to get you to buy products or experiences, but critics worry you could be deceived by a false image (Dokoupil, 2018).

Brud and Miquela

Brud, the proprietor of Miquela, is a tech-startup company co-founded by Trevor McFedries and Sara Decou based in Los Angeles, California. Brud self identifies as a transmedia studio that creates digital character driven story worlds. The company is made up of engineers, storytellers, and designers who share a vision to connect people globally using transformative media approaches to create a movement that creates real-world impact and encourages people to stand up for equality (Brud, 2018). According to Brud, Miquela is a robot programmed as artificial intelligence to change “the cultural fabric of the United States” and to represent a movement “leveraging cultural understanding and technology. She (it) has “personality, a moral compass, and is a benefit to society in that she influences people to practice empathy, kindness, and tolerance towards others, especially for people who are different” (Brud, 2018).

Despite Brud’s claim “that technology can help bring about both a more empathetic world and a more tolerant future,” (Brud, 2018) conversations about Miquela’s existence have been an ongoing dispute—perhaps because Miquela’s existence is centered around story that mimics human experience. For instance, Miquela experiences love and heartbreak, enjoys the outdoors, hangs out with friends, likes to take selfies, attends parties, and can drive. Her (it) posts include a mixture of fictional and non-fictional people and environments; at times Miquela portrays herself as a computer-generated character, at other times she (it) poses with real people.

For Miquela’s followers, her existence is confusing with regards to her existence and purpose, and thus, controversial despite the fact that her (it) Instagram bio clearly states that she (it) is a robot. For further perspective, the authors consider comments such as: “warriorcats_I’m trying to find the TRUTH hhh”; “iibasic_bitchii_what if lilmiquela is the girl with the brown hair”; “kylie.grayce @i_am_hawkfrost_I got told she was a robot – foxheart”; “finstaa1100_Why. The. Hell. Are. You. A. Kinda. Doll. Thingie. ???”; “paceybaber_Bitch who the fuck are you ?????????”; “lauren.lemer_Ur a robot”

Moreover, videos about Miquela on YouTube reveal similar approaches to create controversial marketing campaigns about Miquela’s existence. For instance, Shane Dawson, an American YouTuber

with 20 million subscribers created a video titled, Conspiracy theories & interview with Lil Miquela, published on Sep 18, 2017. Shane addresses the same questions that Instagram followers have: Who is the *real* Lil Miquela? Is Miquela really a real person pretending to be a computer-generated model? To date, the video received 7,782,803 views—a clear indication that Miquela has captivated the world with discussions of opposing views.

Why would anyone believe Miquela is real if she (it) calls herself (itself) a robot? Given that Miquela is created by 3D artists and AI programmers whose efforts are to create character models with realistic human characteristics, the authors relate this to the Uncanny Valley theory which identifies people have stronger emotional reactions and brain responses towards computer-generated characters that appear realistic and almost human, than to less human-like characters that look like cartoon characters (Schindler, Zell, Botsch, & Kissler, 2017).

The question remains: Does Brud claim that Miquela is a real girl? In February 2019, the authors of this study conducted a Google Trends analysis to learn more about the story of Miquela's popularity. On Google Trends, "numbers represent search interest relative to the highest point on the chart for a given region and time. A value of 100 is the peak popularity for the term." During April 15- April 21, 2018 a score of 100 was assigned to web searches in the United States for Lil Miquela. An extended section of a post from April 20, 2018 demonstrates how Brud utilizes deception:

If you're reading this, you are probably aware that we are in a difficult spot regarding our relationship with Miquela. We love Miquela beyond words. We recognize that right now we owe you, the fans who have supported her for the past two years, an explanation. There is nothing Miquela could do or say that would change the way we feel about her. In providing context, we do not seek to discredit Miquela or invalidate her feelings [we believe] that technology can help bring about both a more empathetic world and a more tolerant future... This introduction is long overdue and for that we apologize. Mostly, we want to apologize to our believed client and friend Miquela Sousa. The idea that we would ever do anything to deliberately deceive her is deeply disturbing to us. We have been by Miquela's side since day one. We feel confident in saying that we would not be where we are without her and vice versa. When the questions of identity arose, when Miquela would ask who or what she was, we always tried to be honest and straightforward with her while also maintaining a certain degree of sensitivity. We wanted to protect her from the world's scrutiny. Miquela is new, and things that are new and different are traditionally misunderstood, met with fear and animosity. In our naivety, we presented Miquela's consciousness as being based on a real human being. Memories of family and of past were presented as figments of a human life she once knew. This person was a fabrication of our staff. We thought this imagined scenario would make Miquela feel more comfortable with herself. Clearly we were mistaken... Our clients are our family. Full-stop. We are committed to staying open to critique and now that we've said our piece we look forward to taking a backseat and doing some difficult listening. All the best and thanks for listening, - Brud Team- (Brud, 2018).

In this instance, we see firsthand the workings of misinformation in that Brud acknowledges Miquela as both a technology and yet a conscious being—animating deception in their conscious choice to refer to this technology as her and then declaring her to be a conscious and empathetic being. The letter generated 10,573 likes with comments that include: "charlee.may@mattingg_I am SO CONFUSED"; "washingtonsreserve_This is a new level of BULLSHIT"; "dayton_daily_So.... so.... Miquela is a robot?"

Furthermore, Brud claims to have been approached by a notoriously covert AI consulting firm to work on a highly advanced form of AI. In this, Brud claims to have been misled by the firm, not knowing that the AI, initially intended to be utilized to serve terminally ill children, was in fact going to be marketed to the world's elite as a sexual object. Indeed, troubled by these "sick fantasies of the 1 percent," Brud repurposed the AI technology to teach their robot how to think freely and demonstrate, "literally super-human compassion for others" (Brud, 2018). In other words, Brud frames the development of Miquela as a noble act to counter technological corruption.

This case study proposes Lil Miquela's existence as a paradox. Miquela's creators, Brud contradict themselves in ways that intentionally, knowingly, and purposefully mislead others. According to Levine's (2014) Truth-Default Theory, deceptive messages involve intent, awareness and/or purpose to mislead. Without deceptive intention, awareness, and/or purpose to mislead, messages are considered honest communication. In TDT, honest communication does not need to involve full disclosure; however, a lie involves "outright falsehood" from the sender which is known to be false but is not communicated to the recipient. "Lies are a subtype of deception that involves deceiving through saying information known to be false. For instance, when Brud asked "Is Miquela real?" Brud's Instagram response was "As real as Rihanna." (Brud, website copy, Google Docs, 2018).

Other forms of deception include omission, evasion, equivocation, and generating false conclusions with objectively true information" (Levine, 2014, p. 381). Regardless of claims that Miquela has a moral compass, the way messages are manipulated and the way Miquela is often referred to with female connotations is perhaps part of the contradiction. Brud reveals little detail about synthetic consciousness and how to interpret Miquela's existence. The authors consider communication content and communication context (Levine, 2014) to conclude that Brud's messages include deception. Evidence reveals failure for Miquela's followers to actively consider the possibility of deceit, which aligns with TDT. For instance, after two years of Miquela's initial existence, responses from Miquela's followers remain diverse. Some question Miquela's existence; others acknowledge Miquela as a form of entertainment; and still others recognize Miquela as part of a turning point in the fashion industry: "sophiaseely7_ Just cause she is so so so pretty she can still be human"; "mntt110_ Are you a robot?"; "jaslynn__So she isn't a robot?" "90memebaby_of course she's not a robot. it's an experiment" (<https://www.instagram.com/lilmiquela/?hl=en>).

In essence, as it pertains to misinformation in everyday life, on social media in particular, Brud and Miquela are just the tip of the iceberg. At stake, is the need to create a critical consciousness that enables and empowers us to confront the notion that our technology can become a conscious and empathetic being through which we can satisfy our needs for belonging.

While, traditionally, companies have developed business strategies to increase consumer interest in brands, in the 21st century, businesses have moved beyond traditional media to advertise products on social media platforms to instantly connect with audiences and develop relationships with customers. For example, Brud uses cross-media characters Lil Miquela as well as additional AI technologies Blawko and Bermuda, promoting them as distinct conscious beings that relate and interact with one another, as when Blawko and Bermuda were in an intimate relationship or when Bermuda, a Trump supporter, hacked the Instagram account of Miquela, a Black Lives Matter supporter. In essence, cross-media branding develops storytelling across multiple media platforms to enhance the user's experience and these experiences can be further enhanced through advertising across multiple platforms. For instance, one of the issues that the authors address in the future research considerations is the growing popularity of digital fashion models such as Shudu Gram.

SOLUTIONS AND RECOMMENDATIONS

Given the issues of online deception noted in the Lil Miquela case study, the authors recommend the importance of re/claiming critical consciousness by acknowledging four distinct but interrelated realities. First, the authors acknowledge a problem regarding the rise of addictive technology. Second, in light of this problem, the authors acknowledge various ethical implications related to our communication and sense of community—we are widely connected through our devices but overwhelmed with a sense of loneliness. Third, a charge is considered to counter the effects of the aforementioned problem and consequence. Fourth, and finally, a practice is suggested to stimulate critical consciousness regarding online deception.

Re/Claiming Critical Consciousness

Paulo Freire's notion of critical consciousness offers an important solution to confront the problem of online deception. Explicitly, Freire (2013) has noted:

If [we] are unable to perceive critically the themes of [our] time, and thus to intervene actively in reality, [we] are carried along in the wake of change. [We] see that the times are changing, but [we] are submerged in that change and so cannot discern its dramatic significance. And a society beginning to move from one epoch to another requires the development of an especially flexible, critical spirit. Lacking such a spirit, [we] cannot perceive the marked contradictions which occur in society as emerging values in search of affirmation and fulfillment clash with earlier values seeking self-preservation. (p. 6)

A critical consciousness, then, is developing the ability to critically perceive cultural themes, principally the marked contradictions that emerge from competing values, and the successive ability to intervene in such realities. In this instance, as it pertains to misinformation in everyday life, and on social media in particular, such incisive mindfulness—perceiving critically, intervening actively, and developing flexibly—is especially important for and pertinent to the varying values and communication practices of students, scholars, and professionals. Put differently, if there is any sense of urgency for those interested, if not compelled, by the issues of social media use and online deception, of not wanting to be simply carried along or rendered incapable of discerning dramatic significance, then by all means we as a society must be diligent in establishing an exceptionally flexible critical spirit and become more vigilant in ensuring that such a malleable temperament is suitably implemented in homes, classrooms, boardrooms, and beyond.

A Problem

While addictive behaviors have existed for quite a while, in recent decades, they have become, “more common, harder to resist, and more mainstream” (Alter, 2017, p. 5). One specific issue regarding online behavior is that the benefits are praised without at the same time fully considering its drawbacks. A critical consciousness is needed. Perhaps the language of addiction is not accustomed with associating behaviors like binge viewing, smartphone use, or excessive exercise alongside substance abuses. But perhaps it should be, as one clinical psychologist in Adam Alter's (2017) study indicated, “Every single

person I work with has at least one behavioral addiction” (p. 6). Indeed, there are significant similarities between substance and behavioral addictions:

They activate the same brain regions, and they're fueled by some of the same basic human needs: social engagement and social support, mental stimulation, and a sense of effectiveness. Strip people of these needs and they're more likely to develop addictions to both substances and behaviors. (Alter, 2017, p. 9)

As it relates to the irresistible allure of technology, Alter (2017) has argued that the addictive dimensions of technology leave us susceptible to a variety of social disorders and psychological problems. For instance, one study on gamers recently claimed that those who spend more than three hours per day gaming are, “less satisfied with their lives, less likely to feel empathy toward other people, and less likely to know how to deal with their emotions appropriately” (Alter, 2017, p. 233). Ironically, in actuality, as one recent survey revealed, the average time kids actually spend online is closer to five to seven hours of screen time every day (Alter, 2017, p. 233). While behavioral addiction is nascent, early indications allude to crisis: “Addictive tech is part of the mainstream in a way that addictive substances never will be” (Alter, 2017, p. 9).

An Implication

One of the implications of this rise in addictive technology is an impact on communication, and subsequently on community. In particular, As Turkle has argued, it leads to expecting more from technology and less from each other. Interesting, this is not a new phenomenon. In a rather telling excerpt (given the date, October 1964) from Edward R. Murrow's final public address, he adeptly, and seemingly (in hindsight) prophetically, speaks to the challenges that technology poses to our capacity to communicate, for his time and our own:

The speed of communication is wondrous to behold. It is also true that speed can multiply the distribution of information that we know to be untrue. The most sophisticated satellite has no conscience. The newest computer can merely compound, at speed, the oldest problem in the relations between human beings. In the end the communicator will be confronted with the old problem of what to say and how to say it. (Kendrick, 1969, p. 5)

Murrow recognized both the brilliant and baffling dimensions of technology in relation to communication. And the cultural significance of these two trends is tellingly evident in both David Riesman's *The Lonely Crowd* and Sherry Turkle's *Lone Together*. What we needed, Riesman (1965) argued, for Murrow's time, is to learn to become other-directed so that we can become more attentive to our own feelings and ambitions (p. 307).

The challenge, however, as Turkle (2011a) has noted, with more contemporary relevance, is that a fully networked life no longer requires that we be logged on because the network is with us and on us, all the time—we can be with each other all the time (p. xii). Emboldening the subtitle of Turkle's book *Alone Together*, we are progressively and troublingly learning to “expect more from technology and less from each other” (p. xii). For Turkle (2011b), this occurs because the volume and velocity of technology

offers us the “illusion of companionship without the demands of friendship” (p. 29). Put differently, we have become too comfortable with connection at a distance. Comparably, Clifford Nass (2012) has argued that we have been seduced into thinking that “social media obviates the need for the hard work of learning emotional behavior” (p. 20). As such, one of the challenges (if not dangers) we are confronted with as educators is how to, in Freire’s language, to develop a critical consciousness, and to that end, using Turkle’s book title, to reclaim conversation. And one of the central reasons it is worth reclaiming is because of the vital role it plays in the development of human empathy; something that Brud claims is at the heart (no pun intended) of Miquela. On the contrary, Turkle (2015) has reminded us that the “always-on life erodes our capacity for empathy” (p. 171). As such, we need to develop a critical communication consciousness to enhance our empathy for one another.

A Charge

At the heart of human interest in technologies, besides efficiency, is relationship. In a word: consciousness. Consciousness is principally concerned with awareness, free will, and ultimately, relationship. When individuals call upon any one of many voice-controlled assistants—Lyra, Bixby, Google Assistant, Cortana, Alexa, or Siri, for instance—the experience is mediated through language that infers, among other things, conversation—the building blocks of relationship. Given this problem and consequence, Nicholas Carr (2010) confronts us with an explicit charge. Specifically, Carr argues that our dependency on the Internet, and the socially mediated encounters therein, chips away at our capacities for concentration and contemplation (p. 6). When it comes to these two capacities, Carr’s elaboration on the framework is insightful: “Once I was a scuba diver in a sea of words. Now I zip along the surface like on a Jet Ski” (Carr, 2010, p. 7).

Moreover, Carr (2010) has further acknowledged:

The seductions of technology are hard to resist, and in our age of instant information the benefits of speed and efficiency can seem unalloyed, their desirability beyond debate. But I continue to hold out hope that we won’t go gently into the future our computer engineers and software programmers are scripting for us ... we owe it to ourselves to consider them, to be attentive to what we stand to lose. How sad it would be, particularly when it comes to the nurturing of our children’s minds, if we were to accept without question the idea that ‘human elements’ are outmoded and dispensable. (p. 224)

What is telling, is Carr’s not-so-subtle reference to Dylan Thomas’ renowned Villanelle poem, “Do Not Go Gentle into That Goodnight,” whose refrains of “Do not go gentle into that good night” and “Rage, rage against the dying of the light” allude to a sort of visceral and fastidious resistance to death—inspired, most believe, by Thomas’ dying father (Thomas, 1971, p. 239). Carr’s re-appropriation of Thomas’ plea, transposed from bodily death to confronting prominent issues in culture and society makes for a compelling charge that aligns ideally with Freire’s critical consciousness. Carr has provided an additional perspective to be attentive to what we stand to lose to our addictions and misuse of technology:

The changes in our brains happen automatically, outside the narrow compass of our consciousness, but that doesn’t absolve us from responsibility for the choices we make. One thing that sets us apart from other animals is the command we have been granted over our attention. (Carr, 2010, p. 194)

Or as novelist David Foster Wallace (2009) has indicated:

'Learning how to think' really means learning how to exercise some control over how and what you think ... it means being conscious and aware enough to choose what you pay attention to and to choose how you construct meaning from experience. (pp. 54, 123)

In sum, when we yield control of our attention to issues of online deception, we do so at our own peril.

A Practice

As we acknowledge and confront the problems related to the rise of addictive technology and the social implications therein, the authors have embraced the call to enhance our concentration and contemplation—to develop a critical consciousness that is keenly aware of trends in misinformation in everyday life. To that end, we align with Turkle's notion of reclaiming conversation. For instance, to begin, one strategy Turkle has recommended is solitude and self-reflection, something that is remarkably less striking than the seemingly endless depths of online life. Regardless, Turkle's preeminent solution is to reclaim conversation.

To be clear, one of the preeminent ways we can interrogate socially mediated deception is to develop a critical consciousness through face-to-face conversation. Indeed, while the authors are desirous of reclaiming critical consciousness through a collection of choices related to concentration, contemplation, and conversation, there is also a resistance to naïve sentimentality for bygone days. Regardless, bygone days may indeed have some lessons we can and should learn from. Interestingly, the most ardent trait Brud has assigned Miquela is empathy. Ironically, however, as Turkle (2015) has argued:

We have moved from being in a community to having a sense of community. Have we moved from empathy to a sense of empathy? From friendship to a sense of friendship? We need to pay close attention here. Artificial intelligences are being offered to us as sociable companions. They are being called a new kind of friend. If we are settling for a "sense of friendship," from people, the idea of machine companionship does not seem like much of a fall. But what is at stake is precious, the most precious things that people know how to offer each other. (p. 171)

In other words, empathy, that ability to convince another person that you are present for the duration—"staying long enough for someone to believe that you want to know how they feel" (Turkle, 2015, p. 173), is the precious entity at stake. This stands in ironic contrast to Brud's notion that Miquela's purpose is ultimately about empathy. There are two possibilities, both viable and worthy of our attention. First, the inability of individuals or communities to provide satisfying and convincing empathetic encounters means that society has surrendered much if not most of its responsibility to technological surrogates. If this is true, it is a substantial wake up call. Second, this development has advanced in large part because of the choices we have made to renounce empathy in favor of extra screen time—pursuing our emotional needs for belonging through products and vicarious living. As Carr has reminded us, regardless, this does not absolve us from our responsibility to make critically conscious and attentive choices (Carr, 2010, p. 194). In sum, conversation cures (Turkle, 2015, p. 41). In order to recover and recuperate what we have lost, we must shamelessly promote critically conscious conversations in classrooms and boardrooms, airports and taxis, restaurants and pubs, bedtime routines and family gatherings, and beyond.

FUTURE RESEARCH CONSIDERATIONS

The authors intend this study as more than an isolated or esoteric realm of intellectual inquiry, but rather, an all important and pressing consideration for comprehending the burgeoning issues related to AI technologies and social media influencers for responding and adapting to the digital frontier of the future. This case study has focused on Lil Miquela and Brud. For future research considerations, the authors suggest two broad studies with an example for each instance. First, studies could focus on the cultural significance and developments related to AI technologies akin to Miquela. A question that remains for scholars is whether or not this phenomenon will be a transient trend or the beginning of something altogether significant for the future of our communication, identity, and technology. For instance, Shudu Gram, a computer-generated fashion model created by photographer Cameron-Games Wilson using 3D modeling software, hailed on her (its) Instagram page as, “The World’s First Digital Supermodel,” would be an interesting study. One social cue, for example, is found in this headline: “Shudu Gram Is A White Man’s Digital Projection Of Real-Life Black Womanhood” (Jackson, 2018). Second, studies could focus more intently on Brud with consideration given to its two other AI technologies, Blawko and Bermuda. These studies could focus on Brud, broadly, or the individual influencers, more specifically. At stake, as Carr (2010) has reminded us in his ostensibly prescient vision of Stanley Kubrick’s *2001: A Space Odyssey*, is a time and place where people have become so like machines that, ironically, the most human characters turn out to be machines: “As we come to rely on computers to mediate our understanding of the world, it is our own intelligence that flattens into artificial intelligence” (p. 224).

CONCLUSION

In an effort to provide some satisfactory considerations to the growing concern regarding online misinformation in everyday life, this chapter has taken an interdisciplinary approach to the study of deception from the critical perspectives of rhetoric, communication, and media studies. Specifically, our primary objective has been to interrogate the interrelationship of communication, identity, and technology relevant to social media in order to confront online deception. Therein, we proposed a case study and critically analyzed social media sensation Miquela Sosa, also known as Lil Miquela, giving some attention to the emergence of AI technologies and social media influencers. Certainly, there is an array of intellectual and ethical considerations to consider. For all of the potential benefits that social media creation and use may provide, there are significant costs associated with mindlessly pursuing our emotional needs through technological surrogates and misinformation, and in turn, surrendering our critical consciousness. In response, this case study has sought to provide a representative anecdote through which to extract order from the chaos. Though the authors acknowledge the idea that people manipulating information online is nothing new, regardless, the contention is that examining deliberate acts of misinformation and deception on social media is relevant at a time when AI technologies and social media influencers are coinciding with social trends in loneliness, behavioral addictions, and a substantial drop in empathy, evident in everyday relationships and countless feeds and online comment sections. At stake, beyond the study of deception and the future of a rapid and global evolution in online technologies, is our very sense of community and self.

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KEY TERMS AND DEFINITIONS

Artificial Intelligence: The theory and development of computer systems able to perform tasks that normally require human intelligence and agency.

Critical Consciousness: The ability to critically perceive the themes of a place and time and intervene actively in reality; an especially flexible, critical spirit.

Deception: The act of intentionally, knowingly, and/or purposely misleading another person.

Empathy: The ability to understand and share the feelings of others.

Representative Anecdote: Something sufficiently demarcated in character to make analysis possible, yet sufficiently complex in character to prevent the use of too few terms in one's description.

Social Media Influencer: People who are paid to promote brands and products.

Technology: The application of scientific knowledge for practical purposes.

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Chapter 48

Online Self–Presentation Strategies Among Social Networking Sites’ Users in the United Arab Emirates

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ABSTRACT

This study explored the strategies of self-presentation (ingratiation, supplication, and enhancement) among United Arab Emirates users (n=230) of popular social networking sites (SNS). The size of social networks, degree of network connectivity, and perceptions of self-presentation success were examined. The results indicated a significant positive correlation between the frequency of SNS use and ingratiation and enhancement strategies. Greater diversity of online friends among the respondents was positively associated with the perception of online self-presentation success. Males and females differed in the size of the online social network they interacted with, diversity of online friends, and preferred self-presentation strategies. However, no significant gender differences were found in the levels of network connectivity and perceptions of self-presentation success.

INTRODUCTION

Internet-based social networking platforms such as Facebook, YouTube, Instagram, and Twitter are often considered innovative. In contrast with traditional media such as radio, film, and television, they allow for information sharing and social interaction (Pempek, Yermolayeva & Calvert, 2009). Social networking sites (SNS) offer users a degree of connection with others, relational satisfaction, and a way to learn about the surrounding culture (Croucher, 2011). Unlike traditional media, they support many-to-many communication modes, where information presented by each participant reaches many recipients at a time. Rather than viewing mass-produced content, with social networking sites, users become the creators of their own content. They also become the “stars” of their own productions (Pempek et al.,

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2009). Moreover, social media offer the potential to promote those opportunities, communicate with youth, and eventually facilitate positive youth development (Lee & Horsley, 2017).

New opportunities for self-presentation and impression management offered by SNS allow users to create custom pages and report personal information strategically. Users can interact in a variety of communication modes using plain text, posting status updates, writing comments on friends' pages, and sharing images (Rui & Stefanone, 2013). As noted by Boyd (2007), SNS are based around a "profile," a form of individual (or, less frequently group) home page, which offers a description of each member. In addition to text, images, and video created by a member, a social network site profile contains comments from other members, and a public list of people that one identifies as "friends" within the network. Member profiles are usually identified by participants' real names and often include photographs; thus, the network of connections is displayed as an integral piece of one's online self-presentation (Donath & Boyd, 2004).

SNS in the Gulf Cooperation Countries

In the past decade, social networking sites have established their place as an integral and interdependent actor in society in the Gulf area, specifically in the United Arab Emirates (UAE). The most popular types of SNS in the UAE include Facebook, video sharing sites like YouTube, and microblogging platforms such as Twitter (Al Jenaibi, 2011). In 2019, WhatsApp comes on the top of social media used by 96% of GCC youth daily, then Facebook 81% and Instagram 79%; while nine in ten young Arabs use at least one of the major social media channels daily (Arab Youth Survey, 2019).

In the Arab region, over 125 million residents are using the Internet, with a near 30% annual growth rate and more than 53 million active SNS users. In 2012, countries like the UAE, Bahrain, Qatar, and Kuwait achieved Internet connectivity rates above 50%, while on average regional rates stood around 28%. Although countries like Morocco, Sudan, and Yemen had some of the lowest Internet penetration rates in the region, they also had the region's highest growth rates (Dubai School of Government, 2013). In a recent Arab Youth Survey report (2019), it was reported that 99% of UAE residents are active users of internet and social media, with a 1.5 growth compared to 2018; then Kuwait 92%, Bahrain 81%, Saudi Arabi (67%) and Oman (50%) (p. 75).

A study of the Arab social networks (Ahmed, 2010) found that Facebook was the most popular online social network (65.2%) among a sample of 325 respondents from Egypt and UAE. Similar results were presented by the 2013 Arab World Online report, which demonstrated that Facebook continues to be the most popular social network among Arabs, followed by Google+, and Twitter (Dubai School of Government, 2013). The report showed that 54% of respondents indicated using Facebook more than once a day, while 30% used Google+ at the same frequency. Only 14% of the sample used Twitter more than once a day.

Donath & Boyd (2004) noted that within SNS, members can find information about one another before a connection is made by looking at profile pages. Thus, common ground can be established, and new connections can be formed. Al Jenaibi (2011) concluded that social media have a strong presence in the lives of residents of the United Arab Emirates, using a sample of 556 participants from the UAE. The study found that social media are a vital source of news among respondents, and recognized their day-to-day reliance on social media in acquiring new friends and receiving news updates. In a recent survey, 71% among 3,373 respondents from 22 Arab countries agreed that online communication often replaced traditional communication (Dubai School of Government, 2013). However, to date there has

been little attention from Arab media scholars given to online self-presentation strategies among SNS users in the Arab region. Most empirical research on self-presentation has been conducted in the U.S., Western Europe, and China. The current study aimed to examine self-presentation strategies of UAE users on the most popular social networking sites.

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Self-Presentation and Impression Management

Interpersonal self-presentation has been studied extensively by psychologists and sociologists. This concept was developed by Goffman (1959) who described how people negotiate and validate their identities in face-to-face communication and introduced “frames” within which to evaluate the meaning of interpersonal encounters. Later, electronic communication has established a new range of frames of interaction. Although mediated communications are more limited in nature and less rich than those in which participants are physically present, social interaction via electronic means provides new opportunities for self-presentation. For example, there have been discussions about the possible nature of “electronic selves” (e.g., see Miller, 1995).

Self-presentation has sometimes been distinguished from impression management, which has been defined as an attempt to control the images presented to others, usually to increase the power of the individual. However, the tactics used to engage in both impression management and self-presentation are the same (Lee, Quigley, Nesler, Corbett, & Tedeschi, 1999).

At a conceptual level, Dominick (1999) suggested that impression management involves two processes: impression motivation and impression construction:

Some common motives are a desire to maximize material rewards (making your boss think you are competent to get a promotion), maintaining self-esteem (presenting yourself in a favorable way so that other people will like you), and to create a desired self-identity (a new lawyer can solidify his image as a member of the legal profession by dressing and acting like a lawyer should). Impression construction concerns how a person creates the desired impression through his or her choice of various self-presentation strategies (Dominick, 1999: 647).

According to Miller (1995), Goffman saw embarrassment as an important indicator of a person's failure to present an acceptable self, and as an important motivator to project an improved self-image. Thus, people will seek to present themselves more effectively in order to minimize the embarrassment of a failed self-presentation. Likewise, they will be motivated to improve their performance in order to avoid the embarrassment they feel at its failure. Therefore, most often people will interact through positive self-presentations in which they attempt to match the self-presentations of others.

Online Self-Presentation

It refers to a process by which individuals engage in impression management and information control in everyday life (Schlenker & Pontari, 2000). In social networking sites, personal information is stated explicitly, and can be managed by the author of the information. Papacharissi's analysis (2002) showed

that personal homepages on the Internet fit Goffman's (1959) concept of self because people can control what they present about themselves online for others to convey a particular image. Boyd (2007) argued that people have more control online with respect to self-presentation than they have in everyday interactions. They can carefully choose what information to put forward, thereby eliminating visceral reactions that might have seeped out in everyday communication.

Birnbaum, 2008 found that individuals were careful to shape the impression they gave off to others on Facebook, the most popular social media platform. He concluded that the aim of self-presentation was to communicate and interact with others in beneficial ways likely to engender support through Facebook. Gonzales and Hancock (2011) found that people took time when posting information about themselves, and carefully selected what aspects they would like to emphasize. Evidence of selective self-presentation was found in a variety of Internet spaces, including e-mails, discussion boards, and online dating websites. Similarly, Tice, Butler, Muraven, and Stillwell (1995) found that people alter their self-presentation to be more favorable with strangers (those who possess no base-rate information); and more modest with friends who possess base-rate information.

Self-presentation has been viewed as the presentation of self that an individual tends to perform intentionally and desires to be seen by others (Wong, 2012). Given that Facebook profiles are visible to large audience of friends, family, and acquaintances, the motivation to carefully control one's self-presentation should be high. Not only should Facebook self-presenters be highly motivated to control their images, but they should also be able to exercise this high degree of control (Toma & Carlson, 2012). Individuals make a series of conscious decisions regarding how to self-present (Vitak, 2012) based on the people with whom they are interacting at any given time. Facebook and MySpace profiles serve as a stage on which users can make public or semipublic presentations of themselves, and most often users will strive to portray themselves in a positive light. As this self-image is publicly displayed to a peer audience and subject to constant sanctioning via public feedback, it is even more important to the SNS user to be perceived as role model or as compliant to peer norms. It is therefore plausible to assume that SNS users use strategies that assist in presenting (and promoting) themselves as attractive to the audience (Loss, Lindacher, & Curbach, 2013). Lee and Horsley (2017) studied the impact of adolescents' Facebook use on the six "Cs" (competence, confidence, connection, character, compassion/caring, and contribution) of the positive youth development (PYD) framework. They concluded that the participants could use Facebook as an effective tool to organize leisure activities which in turn influenced adolescents' social competence and social connections positively over time.

DeAndrea and Walther (2011) conducted an experimental study to investigate how inconsistent online information affects interpersonal impressions. The authors concluded that subjects rated the inconsistencies of acquaintances as more intentionally misleading, more hypocritical and less trustworthy relative to the inconsistencies of friends, that is, people they knew and interacted with more closely. On the other hand, Rui and Stefanone (2013) introduced a distinction useful in the analysis of self-presentation in SNS: self-provided information (SPI) versus other-provided information (OPI), that is, information about someone that is provided by others. Rui and Stefanone noted that while previously self-presentation was governed by self-provided information, recent developments in social networking technologies allowed for OPI from SNS user contacts. This type of information may involve identifying people in shared photographs as well as comments from other network members. The advent of OPI via SNS increases the possibility of a profile owner's reduced control over his or her self-presentation. Similarly, Loss, Lindacher, and Curbach (2013) stated that SNS enable persons to "inspect, edit and revise" their self-presentation on the Internet before making it available to others. These authors argued

that arena of “editable self-presentation” (p. 3) might increase the motivation to engage in tactics of impression management intentionally, and might also lead to a more intense use of proactive, assertive self-presentation.

Self-Presentation Classifications

Scholars differ in their overall classification of self-presentation strategies. Leary (1996) discussed self-presentation strategies in everyday life through various direct and subtle self-presentation tactics such as self-description, attitude statements, nonverbal behavior, social associations, conformity and compliance, aggression and risk-taking. Lee et al (1999) introduced a two-component model of self-presentation: defensive self-presentation that includes the use of excuse, justification, disclaimer, self-handicapping and apology, as well as assertive self-presentation that includes the use of ingratiation, intimidation, supplication, entitlement, enhancement, blasting and exemplification. The study concluded that these tactics have measured a general tendency to desire or to avoid the social approval of people in their daily lives. Avia et al. (1998) explained that defensive self-presentation stems from looking for social approval and avoiding social rejection, whereas assertive self-presentation emerges from actively seeking power and social status.

Jones (1990) introduced five strategies of self-presentation construction drawn from research in interpersonal communication. They were ingratiation, competence, intimidation, exemplification, and supplication. According to Jones, a person using ingratiation strategy has a goal of being liked by others. Among some common tactics of ingratiation are saying positive things about others or saying mildly negative things about yourself, as well as statements of modesty, familiarity, and humor. With a supplication strategy, the goal is to appear helpless so that others would come to your aid. Characteristics of this approach include entreaties for help and self-deprecation.

Following Jones' (1990) classification, Chua and Choib (2010) focused on three major strategies for self-presentation on social networking sites: competence, ingratiation, and supplication. Wong (2012) similarly examined the elements of self-presentation by using three types of assessments—ingratiation assessment, supplication assessment, and enhancement assessment—in an analysis of self-presentation and social support on Facebook among university students. The study reported that students were consistent in shaping their behaviors and presenting themselves according to their desired images. These results showed that the three types of self-presentation (ingratiation, supplication, and enhancement) were related to social support sought or received by students on Facebook. Likewise, a study by Kim and Lee (2011) found that Facebook users had the tendency to provide support to others when they saw others were in need of help. Mehdizadeh (2010) also stated that Facebook users tend to take actions to promote themselves on Facebook in order to receive positive feedback from the public, an enhancement strategy of online self-presentation.

Little is known about the social media users' strategies in presenting themselves via social media and the implications of this presentations. Therefore, the current study examined self-presentation strategies used by a sample of Emiratis in social media networks, focusing on three strategies ingratiation, supplication and enhancement. The level of social networking connectivity and the size of the network were also analyzed. Differences between genders were investigated in terms of the preferred SNS, social networking connectivity, and diversity of users with whom they interact.

RESEARCH HYPOTHESES

Wong (2012) found that frequency of Facebook usage was statistically significant and positively correlated with the three types of self-presentation on Facebook. In addition, among the three types of self-presentation, ingratiation had the strongest positive correlation with frequency of use of an application on Facebook among university students. Therefore, it can be hypothesized that:

H1: There will be a correlation between the level of network connectivity and self-presentation strategies (ingratiation, supplication, and enhancement).

Metzler & Scheithauer (2017) found that adolescents' positive self-presentation and number of friends were related to a higher frequency of receiving positive feedback, which in turn was negatively associated with self-esteem. Rui and Stefanone (2013) indicated that size is one of the most important characteristics of a social networking site's audience that affects online self-presentation. As online social networks increase in size, so does the need to maintain online relationships. Smock (2010) concluded that one possible outcome associated with large audience is more interactions between profile owners and their network. Therefore, it can be predicted that:

H2: There will be a correlation between network size and self-presentation strategies (ingratiation, supplication, and enhancement).

Rui and Stefanone (2013) noted that relationship maintenance is one of the main motives of using SNS. For example, one may self-present in a significantly different way when in a business meeting versus when on a date. SNS, for example, can place employers and romantic partners on the same communication plane, making it more difficult for users to segment audiences and present varied versions of the self (Vitak, 2012). Also, Tice et al. (1995) concluded that self-presentation differs when interacting with friends versus with strangers. Having multiple types of audiences, that is, the diversity of social categories of online friends, can affect strategies and practices used in self-presentation. Therefore, it can be predicted that:

H3: There will be a correlation between diversity (relationships and national origin) and self-presentation strategies (ingratiation, supplication, and enhancement).

Gibbs, Ellison, and Heino, (2006) examined the relationship between the strategic success of online dating and self-presentation. They found that those with more positive online self-disclosure felt they had greater self-presentation success. Also, it was found that the ability to learn about people and the number of people met in online dating led to greater self-presentation success. Therefore, it can be hypothesized that:

H4: There will be a correlation between perception of self-presentation success and self-presentation strategies (ingratiation, supplication, and enhancement).

The literature on self-presentation has emphasized differences in self-presentation strategies between males and females. Hilsen and Helvik (2014) investigated two generations of social network users in their online self-presentation: Those who were introduced to the Internet and social media as adults (40 years old) and those who have grown up with the technology (under 25 years old, called “the net-generation”). They found a difference in how these two groups related to social media. However, it was shown that both groups developed a “new” or revised sense of self and sociability through social media. Boyd (2007) also concluded that gender influences participation on social network sites. Younger boys are more likely to participate in SNS than younger girls (46% vs. 44%), but older girls are far more likely to participate than older boys (70% vs. 57%). Also, older girls are far more likely to use these sites to communicate with friends they see in person than with younger people or boys of their age. Therefore, the last hypothesis states that:

H5: There will be differences between males and females in their online self-presentation strategies.

METHODOLOGY

Sampling and Data Collection

The study sample consisted of 230 Emiratis from two Emirates, Dubai, the largest and most populous city in the United Arab Emirates, and Abu Dhabi, UAE capital. Due to the conservative nature of the population, snowball sampling was used to collect the research data. Five students from the Mass Communication Program at Abu Dhabi University helped in collecting data from the two Emirates according to their residency. The sample composed of 48.3% males and 51.7% females. The age ranged from 16 to 35 years old. The mean age was 25.5 years. The education levels of the respondents were: university level 67.4%, high school level 17.8%, post graduate level 10.9%, and preparatory or less 3.9%. A 14-question questionnaire was used to collect the data. The questions were written in Arabic, the mother-tongue of the respondents. Item reliability was tested using Cronbach's alpha and was above 0.8 for all variables. The age and the gender of respondents were recorded for sampling demographics.

Measurements

Types of Social Networks and Frequency of their Use:

Respondents were provided a list of major social networking sites (Facebook, Instagram, Kik, WhatsApp, BBM, and Twitter) and were asked to indicate how frequently (always, sometimes, rarely, and never) they used each of them.

Online Network Size

To measure online network size, respondents were asked how many friends they had on social networking sites.

Level of Social Network Connectivity

Three questions were used to measure the level of social network connectivity, adapted from Lee (2009). The respondents were asked how long they had been using the social networking sites. The score ranged from 1-3. The highest score (3) was for “6 years and above” and the lowest was (1) for “1 year to less than 3 years” category. A second question asked about how often they use social media in an average week. The highest score (3) was for “almost every day” and the lowest (1) was for “once or twice a week.” A third question asked about the number of hours the respondents use social networking sites daily. The highest score was for the “4 hours or more a day” category and the lowest was for “less than 1 hours a day,” $\alpha = 0.823$.

Diversity Categories

Diversity was measured in terms of relationships and nationality. Two questions were asked to measure this variable. The first question asked how frequently the participants communicated with the following social categories (family, colleagues, friends, relatives, work partners, and strangers). The second question asked about the national origin of their social network friends and followers (Emiratis, non-Emirati Arabs, Americans and European, and Asians), $\alpha = 0.851$.

Perception of Online Self-Presentation Success

This variable refers to the extent to which the respondents consider themselves successful in achieving their objectives for using SNS. A 5-point Likert scale ranging from “strongly agree” (5) to “strongly disagree” (1) was used to measure this variable. It consisted of four items adopted from Walther, Slovacek, and Tidwell (2001): “Online social networks sites allow me to present myself in a favorable way”; “I think I have made a good impression on others through online social networks”; “I feel I can communicate with my friends through social networks effectively”; and “I feel I am able to achieve my online communication goals effectively”. The overall scores ranged from 4-20 points: very successful 16-20 (68.7%), successful 10-15 (29.1%), and not successful 4-9 (2.2%), $\alpha = 0.837$.

Self-Presentation Strategies via SNS

Adopted from Chua and Choib (2010) and Wong (2012), this variable included the following items measured on a 5-point Likert scale ranged from “strongly agree” (5) to “strongly disagree” (1), $\alpha = 0.868$.

- (1) **Ingratiation:** “I regularly choose and upload photos that make me look attractive”; “I always express the same attitudes as others to gain acceptance”; “I regularly present myself as helpful to others”; “I always post interesting news, articles, or photos to attract my friends to read them”; and “I always comment on friends’ posts to express caring”.
- (2) **Supplication:** “I always seek help from my friends in online social networking sites most of the time”; “I tend to appear weak or helpless to get care or concern from others on SNS”; and “I always show an inability to complete work or get help from others on SNS”.

- (3) **Enhancement:** “ I always put up posts to show that I am knowledgeable”; “I always put up posts with the intent to show intelligence”; “ I used to tell people when I complete tasks which others find difficult”; and “ I emphasize to others the importance of a task when I am successful”.

Statistical Techniques

The SPSS statistical program was used for analyzing the data. Frequencies, Cronbach's alpha, t-tests, and correlation analysis were used to test the research hypotheses and to answer the research questions.

RESULTS

Usages of Social Networking Sites: The results indicated that the highest percentage of respondents (81.3%) use WhatsApp. This was followed by Instagram (72.2%), Twitter (50.9%), Facebook (35.7%), Kik (24.3%), and MySpace (11.7%). This finding is supported by a recent survey (Arab Youth Survey, 2019) on social media usages in Gulf countries. It showed that WhatsApp was on the top among the most frequent social media used (96%), followed by Facebook (81%) and Instagram (79%).

In terms of network size, 46.5% of the sample had more than 100 friends on SNS while 53.5% had less than 50 to 100 friends. For level of network connectivity, the results showed that 33.9% of the sample was highly connected to SNS, 60.4% was moderately connected, and 5.7% were weakly connected. The Digital 2019 report supported this result as it showed that people in UAE tend to spend almost three hours daily on social media sites.

Hypotheses Test

The first research hypothesis stated that there would be a correlation between level of social network connectivity and self-presentation strategies (ingratiation, supplication, and enhancement). The self-presentation strategies via SNS varied among the respondents:

1. **Ingratiation:** The findings showed that 8.3% of the respondents were low, 52.2% were moderate, and 39.6% were high in ingratiation;
2. **Supplication:** 53% of the respondents were low, 30.4% were moderate, and 16.5% were high in supplication;
3. **Enhancement:** 24.3% of the respondents were low, 49.1% were moderate, and 26.5% of the respondents were high in enhancement.

Table 1. Correlation between level of network connectivity and self-presentation strategies (n=230)

Variables	Self-presentation Strategies via Online SN		
	Ingratiation	Supplication	Enhancement
Level of Social Networking Connection	.159 (*)	0.111(NS)	.180(**)

Note: *P≤ 0.01; **P≤ 0.000 (2-tailed)

The Pearson correlation coefficient indicates that there was a significant positive correlation between the level of network connectivity and both ingratiation and enhancement (see Table 1); while the relationship between network connectivity and supplication was non-significant. This means that the higher the level of network connectivity, the higher the ingratiation and enhancement among the respondents. Enhancement ($r = .180$) was stronger than ingratiation ($r = 0.159$) in its positive correlation with the level of social network connections among Emiratis. Therefore, the hypothesis was supported for ingratiation and enhancement, but not for the supplication strategy.

The second hypothesis stated that there would be a correlation between online social network size and self-presentation strategies.

Table 2. Correlation between online network size and self-presentation strategies (n=230)

Variables	Self-presentation Strategies via Online SN		
	Ingratiation	Supplication	Enhancement
Online Social Networking Size	.262(**)	0.129(***)	.167(*)

Note: * $P \leq 0.01$; ** $P \leq 0.000$; *** $P \leq 0.05$ (2-tailed)

The results indicated that there was a positive and significant correlation between the size of social network and all three self-presentation strategies: ingratiation, supplication, and enhancement (see Table 2). Therefore, the bigger the size of online SNS, the more respondents used various self-presentation strategies. The hypothesis was retained.

The third hypothesis stated that there would be a correlation between diversity of social categories and self-presentation strategies. The association between diversity of social categories and self-presentation strategies was tested using the Pearson correlation procedure (see Table 3).

Table 3. Correlation between diversity and self-presentation strategies (n=230)

Variables		Self-presentation Strategies via Online SNS		
		Ingratiation	Supplication	Enhancement
Diversity of social categories in SNSs	Relationships	.178(**)	.130(*)	.142(*)
	Nationalities	.153(*)	.073 (NS)	.060 (NS)

Note: * $P \leq 0.05$; ** $P \leq 0.005$ (2-tailed)

The Pearson correlation coefficient showed that there was a significant positive association between the diversity of the types of relationships in SNS and the three self-presentation strategies. It was strongest in ingratiation ($r = .178$) and weakest in supplication ($r = .130$). The diversity in the nationalities of SNS friends was found to have no correlation with the supplication and enhancement strategies, while the ingratiation had a weak positive correlation with the diversity in nationalities ($r = .153$). Therefore, the hypothesis was supported for diversity of relationships and partially supported for diversity of national origin.

Most of the respondents (77.4%) are “always” connected with their friends, followed by those who are “always” connected with family members (64.2%), relatives (52.2%), colleagues (42.6%), and partners at work (31.3%). The least percentage was for respondents who “always” connect with strangers (10.5%). The results also showed that most of the participants (81.7%) “always” connect with locals (Emiratis), 38.7% “always” connect with other Arab nationalities, and the least connect with Americans and Europeans (10% for each).

The fourth hypothesis stated that there would be a correlation between perception of self-presentation success and self-presentation strategies (ingratiation, supplication, and enhancement).

Table 4. Correlation between perceptions of self-presentation success and self-presentation strategies (n=230)

Variables	Self-presentation Strategies via Online SN		
	Ingratiation	Supplication	Enhancement
Perception of Self-presentation success	.384(*)	.212(*)	.398(*)

Note: * $P < 0.01$

There was a significant positive correlation between respondents' perception of self-presentation success and the three strategies of online self-presentation (see Table 4); the hypothesis was accepted. The correlation was strongest with enhancement strategy ($r = .398$), and ingratiation ($r = .384$). It was weaker with the supplication strategy ($r = .212$). On average, the respondents considered themselves successful in creating good and positive impressions among their friends in the SNS ($M = 4.32$), communicating efficiently with friends online ($M = 4.26$), achieving the communication objectives successfully through SNS ($M = 4.10$), and presenting themselves to others in a favorable way ($M = 4.07$). The results showed that 68.7% of respondents perceived their online self-presentation as highly successful, while 29.1% found it moderate, and only 2.2% believed it was unsuccessful.

The correlation between self-presentation success and diversity (relationships and national origin) and the level of network connection was also examined (Table 5).

Table 5. Correlation between perception of self-presentation success, diversity, and level of social network connectivity (n=230)

Variables	Diversity of Social categories		Level of network connection
	Relationships	Nationalities	
Perception of Self-presentation success	.199(**)	.138(*)	.146 (*)

Note: * $P < 0.05$; ** $P < 0.01$

The Pearson correlation coefficient showed a significant positive relationship between the perception of self-presentation success and level of network connection ($r = .149$). The higher the level of network connectivity, the more the respondents tend to perceive that they succeed in their online self-presentation.

Also, there was a positive correlation between perceptions of self-presentation success and the diversity of social categories of the respondents' friends in terms of relationship diversity ($r = .199$) and diversity of national origin of their SNS friends ($r = .138$). The correlation was stronger with

the presence of relationship diversity. This means that the more diverse friends the respondents have, the more they perceive their online presentation as successful.

The last hypothesis stated that there would be differences between genders in their online self-presentation strategies. A t-test was used to examine the differences in self-presentation strategies between male and female participants (see Table 6).

Table 6. Gender differences across variables (n=230)

The variables	Gender		Mean	Std. D.	t
Level of Social networking Connection	Males		2.27	0.571	-0.320 (NS)
	Females		2.29	0.558	
Online social networking size	Males		1.53	0.501	1.955 (**)
	Females		1.40	0.493	
Diversity of social categories (Family, friends, colleagues....etc.)	Males		2.37	0.538	0.717(NS)
	Females		2.32	0.520	
Diversity of nationalities (Arabs, Americans, Europeans ...etc.)	Males		1.78	0.594	2.423(***)
	Females		1.61	0.524	
Perception of online self-presentation success	Males		2.65	0.550	-0.469(NS)
	Females		2.68	0.486	
Self-presentation Strategies via Online SNSs	Ingratiation	Males	2.46	0.600	3.557(*)
		Females	2.18	0.606	
	Supplication	Males	1.89	0.755	5.299(*)
		Females	1.39	0.667	
	Enhancement	Males	2.17	0.686	3.121(*)
		Females	1.88	0.715	

Note: * $P \leq 0.000$; ** $P \leq 0.05$; *** $P \leq 0.01$ (2-tailed)

The t-test showed a significant difference between males and females in the following variables:

- **Online Social Network Size:** Males interacted with SNS with a larger size ($M = 1.53$) relative to females ($M = 1.40$);
- **Diversity:** Males were associated with a wider diversity of nationalities ($M = 1.78$). Additionally, the results showed that the males were higher than females in their connections to colleagues ($t = 4.172$, $M = 2.47$, $P < 0.000$), and work partners ($t = 3.097$, $M = 1.97$, $P < 0.000$). The males were also higher than females in their connection to various Arab nationalities ($t = 2.871$, $M = 2.29$, $P < 0.001$);

- **Self-Presentation Strategies via SNS:** Males and females differed in their online self-presentation strategies. Males were found to be higher than females in all strategies: ingratiation ($M = 2.46$), supplication ($M = 1.89$), and enhancement ($M = 2.17$).

There were no significant differences between males and females in their levels of social network connectivity, diversity of relationships (family, friends, colleagues, etc.), and perception of online self-presentation success.

CONCLUSION

This study investigated strategies of self-presentation used in SNS by a sample of United Arab Emirates social media users. The results showed that Males interacted with SNS with a larger size ($M = 1.53$) relative to females ($M = 1.40$). This is supported by the recent Digital 2019 UAE report that showed that males are higher than females from all age groups in social media usages.

Ingratiation and enhancement were found to be the most common self-presentation strategies online. The study found a significant positive correlation between the level of social network connectivity and two of the three categories of self-presentation. The correlation was strongest for enhancement and ingratiation, but non-significant for supplication. The participants generally did not display weakness or a dependency to solicit favorable responses from others on SNS; however, this does not mean that they would not support those who might seek their help.

The results go in line with several previous findings. For example, ingratiation was the most common type of self-presentation strategy used online (Dominick, 1999; Trammell & Keshelashvili, 2005). An analysis of self-presentation tactics in A-list blogs by Trammell and Keshelashvili (2005) similarly indicated that ingratiation and enhancement were among the most commonly used forms of self-presentation. The same conclusion was supported in a study of self-presentation in teenage girls' weblogs (Bortree, 2005). In a recent analysis of Hong Kong high school students' behavior on Facebook, the strongest correlation was between the frequency of Facebook use and ingratiation (Wong, 2012). However, although Facebook profiles tend to present positive and flattering self-portrayals, they are not always sufficient to convey an idealized version of self (Toma & Carlson, 2012).

Additionally, the results of the current study showed that the diversity of relationships was associated with the type of strategies used in self-presentation and with perceptions of self-presentation success. The analysis revealed that the higher the level of connectivity, the more the participants tended to perceive that they succeeded in their online self-presentation. The higher the use of various self-presentation strategies, the higher the respondents rated their success. This finding supports the conclusion made by Gibbs et al. (2006) that those with a positive attitude toward online self-disclosure believed they had greater success in Internet dating. Finally, in the sample, male respondents interacted with larger networks as well as had a higher diversity in the national origin of network members they were connected to. Males tended to use all three self-presentation strategies more often than females. However, no differences between genders were found in the levels of network connectivity and perceptions of self-presentation success.

Given the limitations of a non-random sample, the findings are not generalizable to the entire population of users of SNS in the Emirates. Future analyses may determine how these variables interact among other populations of users. Future studies may also include cross-cultural examinations on online self-presentation. Researchers may employ alternate research methods (e.g., experiments, longitudinal data)

to understand self-presentation strategies and associations between other variables, such as social capital and social support. Finally, throughout the study, the focus was on most popular social networking sites; future research might extend these findings by focusing on a particular site or another popular social network that was not included in this study.

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Chapter 49

An Examination of Motivation and Media Type: Sharing Content on Chinese Social Media

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ABSTRACT

This paper explores the motivations and priorities of Chinese Millennials' use of social media with regard to the sharing of content. A commercially important demographic, this group are highly active on social media. The amount of content that is shared online is immense. Some shared content "goes viral" and can be seen by vast numbers of users. The findings of this study are based on the results of over 650 online surveys and include both theoretical and practical contributions to the body of knowledge regarding the nature of viral propagation of content in Chinese social media. This contribution to the understanding and insight social media activities of this significant and commercially consumer demographic may be of value to online promoters and marketers as well those interested in the use of social media for commercial purposes in the design and management of their online and social media presence, marketing, and advertising strategies.

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INTRODUCTION

The largest and fastest growing commercially active demographic worldwide are the emerging Chinese middle class (Garner, 2005; H. Li, 2006; Zipser et al., 2005). As internet accessibility worldwide has increased, the adoption and frequency of smart phones and hand-held devices has also increased dramatically. This trend is of special interest in China due to both the large population, and the rapidly emerging middle class (He, 2009). For end users, the integration of social media and social networking with daily activities is nearly immeasurable (Kelly et al., 2013). Social media sites (SMS) like Facebook and Twitter provide abundant and diverse benefits for users, and are increasing in number steadily. Meanwhile, messaging services are also vying for end user time and attention and are rapidly becoming more comprehensive (Bouwman et al., 2010b).

The numbers of users on various type of social media in China, including social networking sites, microblogs, blogs as well as other virtual communities, is over 300 million. By comparison, this is greater than the combined population of France, Germany, Italy, Spain, and the United Kingdom (Chiu et al., 2012a). In the fastest growing market, China, growth is expected to increase by roughly 30 percent annually for the foreseeable future (Chiu et al., 2012b).

Chinese social media platforms Sina Weibo and Wechat have experienced unprecedented rates of adoption in recent years. Weibo is the largest social media site in China and is used frequently for collecting data from users and consumers (Xu et al., 2016). It serves as the combination of Twitter and Facebook providing a new approach for both interpersonal communication, and for acquiring domestic and international news (Han & Wang, 2015). WeChat has become the most extensively used mobile instant-messaging service in China with users exceeding 600 million worldwide as of April 2014 (Pang, 2016). At the same time, WeChat is emerging as a combination between traditional online business and social networking interaction (Yang et al., 2016).

Chinese social media is a dominant way to collect and share information, make social connection as well as entertain (Zhang, 2014). It is noteworthy that reposting, users' major activities online, is one of the most frequently adopted information sharing behaviors among users (X Chen et al., 2019; Sangwan et al., 2009).

Information contains text, pictures, audio and video are able to be spread by mobile social network in a rapid speed (Lu et al., 2014). Compelling content, known as an ignited online hotspot, can be virally disseminated and spread to thousands of users, often within a few seconds. Reposting, users' major activities online, is one of the most frequently adopted information sharing behaviors among Chinese mobile phone users (Bouwman et al., 2010a).

Millennials are well known as extensive users of mobile technologies and the Internet (Mu et al., 2019). This is consistent with the data collected for this study. Considering both the penetration of social media use, smart phone adoption, and frequency of reposting activity, it is apparent that the demographic of Chinese millennials is worthy of study.

When considering the nature of viral messaging, the circumstances that make viral messaging proliferate and the potential for promotion and marketing, users of all social networking sites and platforms are potentially customers whose attention can be attained by online information (Bronner & de Hoog, 2014). In addition to its potential promotional and marketing value, viral content can also impact consumer behavior by influencing consumer perceptions, attitudes and views and has the potential to emerge as a key element of a company's promotional mix (Kirby & Marsden, 2006). Awareness of the potential value of exploiting viral reposting is not new, but the potential continues to grow. With increases in

the development of social networking driven technology, service providers are endeavoring to build a customized and content-aware service (De Reuver & Haaker, 2009; Klemettinen, 2007). Through social media, a simple corporate message is able to be turned into powerful viral marketing tool easily if a company can implement the right content effectively (A. M. Kaplan & Haenlein, 2010).

Table 1. Frequency distribution with gender comparison

<i>Posting Frequency</i>	<i>Female</i>	<i>%</i>	<i>Male</i>	<i>%</i>
5+ times a day	58	7%	35	4%
1-4 times a day	101	11%	42	5%
1-5 times a week	204	23%	106	12%
1-4 times a month	246	28%	119	13%
Once a month	235	26%	121	14%
Rarely	44	5%	36	4%

<i>Age Groups</i>	<i>Female</i>	<i>%</i>	<i>Male</i>	<i>%</i>
<18	90	10%	27	6%
18-30	543	61%	295	64%
31-40	111	13%	53	12%
40+	144	16%	84	18%

While there is a considerable depth in the literature for studies done with online behavior concerning social media, e.g. Facebook, Twitter Oh (2015), the applicability of findings of that work is limited with regards to China, “The world’s largest social-media market is vastly different from its counterpart in the West” (Chiu et al., 2012b). Even within the emerging but still limited body of research concerning social media usage patterns in China, there exists a gap within the topic of particular emphasis regarding Millennials. The existing usage of social media in China is pervasive, among the highest levels of user penetration in the world, China has the largest internet population in the world (Men & Tsai, 2013). According to Chu et al, (2010), Chinese users spend more time on SNS than Americans, and with the rapid adaptation of faster network connectivity, more pervasive access to wifi, 4G and very soon 5G mobile phone technology, the number of users is likely to continuously and rapidly increase.

Peer-to-peer communication leads to the possible viral nature of online reposting in which participants as well as message-receivers are often willing to actively spread information (Eckler & Bolls, 2011).

To determine what type of content and form of messages arouses the interests of millennials leading to reposting is an important endeavor and can lead to a significant contribution towards understanding viral messaging, social media use and online advertising.

Gender is added as a relevant variable to for analysis because online shopping varies by gender, Dillon et al. (2014), Wu et al. (2017, p. Wu) as does social media usage (Bivens & Haimson, 2016; Nesi & Prinstein, 2015; Schwartz et al., 2013). In fact, the work of Li et al (2018) supports gender differentiation in this area by predicting user gender with a high level of accuracy based on reposting behavior. This is consistent with the data analysis of this study as indicated in Table 1 and is discussed in the Findings section.

Identifying the motivational, content message and type of media most reposted by millennials by gender will provide insight in how reposting can be used for commercial purposes. This study aims to fill the literature gap by investigating Chinese millennials reposting behavior on social media. The findings may offer online-marketers and promoters some useful insights considering Chinese millennials and viral social media content.

BACKGROUND

There has been valuable research published on the topic of the economic growth of China (Garner, 2005; H. Li, 2006; Liang & Teng, 2006; Trappey & Trappey, 2001). Likewise, there has been research published on topics related the use of Social Media in general, and specifically in China (Aiello et al., 2012; Chiu et al., 2012b; Fung, 2009; Jendryke et al., 2017; Jeske, 2019). However, there is little in the existing literature focusing specifically on, or related to social media reposting behavior of Millennials in China. Some studies have been conducted concerning workplace usage of technological incorporation and organizational accommodation including Hershatter (2010) in the area of tourism, and Luo (2018) for in-vehicle use while travelling (Polzin et al., 2014).

A viral hot spot can be ignited as well as spread virally through social media in a matter of seconds, not only nationally, but internationally without regard for linguistic limitations (Mangold & Faulds, 2009). Online content is able to be reposted quickly and efficiently, 70 percent of likes on wall posts happened within four hours and about 95% occur within 22 hours of the original posting (Heidemann et al., 2012). In the United States, Facebook has become an effective civic engagement tool, 74% of House candidates and 81% of Senatorial candidates won their battles for their higher number of fans on Facebook during the 2010 midterm elections (Obar et al., 2012). Breaking news is a good example of how fast information can spread through viral activity on social media and further may even provide an alternative role by substituting for the formal mainstream media. The news of the Sichuan earthquake which killed around 70,000 people in China, was disseminated worldwide from a single post made by a local citizen three minutes earlier than U.S. Geological Survey (Gabarain, 2008).

The interactive nature of social media could provide an opportunity for increasing the degree of users' engagement. Reposting is one of the most important forms of viral behaviors and is the highest for recognition of certain types of content among all kinds of viral behavior, not only for psychological approval, but also for actual behavior implemented (Alhabash & McAlister, 2015a). Khan (2017) argues that user participation can be considered by usual viral behavior including likes, comments and shares. Online interactions are often more uninhibited, creative and explicit than in-person communication (Wellman et al., 1996). The behavior of reposting is an embodiment of participation and of a certain

type of self-branding. The identification of the content types that trigger Chinese millennials' reposting behavior and motivation is worthy of further discussion. Much about an individual's offline character can be perceived in their social media presence (Sell et al., 2012a). Much can also be determined about individuals, both directly and indirectly by analyzing the content that they post or repost on social media (Chiu et al., 2012b). The value orientation of an individual could effectively be interpreted by the words they use on social media (J. Chen et al., 2014). In addition to posting and reposting of secondary content, posting of original content on SMS, especially, "selfies" occurs frequently and is an effective mechanism for analysis of personal characteristics (Sung et al., 2016).

Chinese Millennials

Although there are various definitions towards "Millennials", researchers tend to identify the age group as 18-30 years of age (Alhabash & McAlister, 2015b; Erlam et al., 2016; Rodney & Wakeham Dr, 2016; Witt et al., 2008). In this study, the age group from 18-30 is used. Rainer and Rainer (2011) posit that Millennials are those born within the duration of 1980 to 2000, which is proving to be a commercially significant as well as an influential generation.

The Millennial Generation is forecast to change the perception of young people in part due to their heavy involvement in online social events to a large extent accessed through various social media platforms (Howe & Strauss, 2000). Millennials have played an influential role in social media's evolution into an important source of product information and subsequent online shopping (Blake et al., 2017; Mangold & Smith, 2012a).

Wang et al. (2017) state that Chinese millennials are a generation that cannot be generalized into any other, in part because they came of age during the time of economic reform in China and the explosive economic growth that accompanied that era. With that consideration, Chinese millennials are a huge potential commercial market as they come of age with a previously unseen capacity for online commercial activity (Blake et al., 2017). Combined with their high level of online activity and adoption social media, this group must be studied as a unique demographic. Chinese millennials have developed in completely different surroundings than their Western counterparts and they probably have very little similarities with them (Sethi, 2019).

Reposting

Reposting is regarded as the most impactful way to disseminate information rapidly and with influence (Borge-Holthoefer et al., 2013). Reposting is also the easiest way to diffuse information virally. In this case, diffusion being defined as a process that communicates via specific channels among members of a social system (Rogers, 1995). Reposting is an implicit advertising behavior which is motivated by a user's own initiative. The challenge is how to engage and attract users to repost actively and willingly. Once the interest to repost is aroused, the potential advertising effect can be optimized. Reposting is an efficient and convincing way to spread the message.

Merton et al. (1954) argue that homophily is one of the fundamental principles of social network structure. Friends are likely to join in collective activities, provide assistance and communicate with each other (Argyle & Furnham, 1983). For online relationships, finding and connecting with other with whom one has more in common is more easily accomplished, and has much greater possibilities in part due to the relative ease of online communication and vast number of relationships possible, 80% of

Dutch use social network sites for connecting and maintaining offline friendship (Valkenburg & Peter, 2009). Compared to advertising posted by business accounts, messages reposted between people with non-professional relationships are more likely to get attention of SNS users. The process of online users reposting viral advertising to friends could be regarded as an endorsement of a certain brand's ads and levels up the possibility getting receiver's attention and forward again (Agah & Asadi, 2017; Chu, 2011). For these reasons, research to identify triggers, and motivations, as well as specifics of the content of Chinese millennials is worthwhile. The objective then becomes to determine what will encourage this group to repost willingly and frequently.

Motivation to Repost

Motivation can be explained as a psychological concept that leads individual to act towards a directed or identified objective (Ryan & Deci, 2000). Studies about motivation have been done concerning the application of activity in social media, Urista et al. (2009) similar activities in the work-place George et al. (1996) and information acceptance behavior (Davis et al., 1992). Entertainment, social engagement and a variety of incentives are part of the motivation that drives brand-consumers to interact online across differences in age, gender and style of usage of social media (Rohm et al., 2013).

Social cognitive theory has been applied to understand consumer behavior and personal actions in particular circumstances which may be based on individual cognition (Hsu et al., 2007). Self-efficacy and outcome expectation are two main influential factors of individual cognition. Intrinsic motivation is defined as people performing activities solely for the gratification and satisfaction of the activity itself (Sweetser & Kelleher, 2011; Vannoy & Medlin, 2017). Self-centered and community related desires are distinct according to studies of sharing behavior on SMS (Hsu et al., 2007). Users share content in order to gain recognition and respect, grow and strengthen their social network, secure their self-esteem and acquire an enhanced sense of community (N. Baym, 2015; Gretzel & Yoo, 2008). Altruism is explained as supporting others, the activity of helping others and as viewed as a reposting of useful, or helpful content and may provide re-posters with a feeling of being needed or of being helpful ((N. K. Baym, 2015).

Social media users also expect identification in virtual community for example, Facebook users seeking identification implicates self-awareness of membership in online groups (Cheung et al., 2011). People dedicate to present themselves in cyberspace with self-disclosure, for creating personal image and an enhanced identity (A. M. Kaplan & Haenlein, 2010). Sharing of common content that may be viewed as positive by peers is related to societal norms, commonly held tastes and common objectives (Williams, 2009).

Types of Content

Content Form refers to types of content and the presentation form that is re-posted. According to Erdogmus (2012), when posting on social media platforms, consumers are likely to share types of content that is related to music, technology, and humor. On twitter, for example, content viewed as worthy is categorized as: informative - 48% or funny - 48% (André et al., 2012). In the field of television researchers classify the type of content into a matrix model concerning attention, emotion, information, and opinion (Wohn & Bowe, 2016). According to the evaluation of official Facebook pages, contents related to celebrities and product information are most often viewed and shared (Parsons, 2013). Online marketing is the

emerging and most effective way to target prospect customers by providing them with entertaining and informative content (Saravanakumar & SuganthaLakshmi, 2012).

Presentation Form

The form, or technical specification of content that is used on SMS varies with the most re-posted being either textual and narrative communication or audio and visual content (Munar & Jacobsen, 2014). During the chatting interaction, bonding of users in social media varies with decreasing degree from video, audio and instant message (Sherman et al., 2013). Various forms of images and video assist in building the brand identity of the user in social media platforms (Parsons, 2013). Content comprised of both audio and video is found to be more impactful compared to text or static pictures by online browsers, particularly when confronting multimedia features in the field of commercial websites and online products (Appiah, 2006a). Videos of commercial material, similar to that used in television is an emerging trend and represents a new way to advertise (Parsons, 2013). In the field of enterprise social media, combined text and multimedia such as video, the term hypermedia has emerged as an application which provides enhanced reach and richness of content (Kane, 2015).

STATEMENT OF HYPOTHESIS

For several reasons gender is one of the most commonly used demographics to segment a market (Putrevu, 2001). Gender segments are easily measured through survey respondents self-identification and as explained above, gender provides a solid rationale for responding to marketing mix elements (Darley & Smith, 1995). Evidence indicates that women are more likely to value social network interactions (Debrand & Johnson, 2008; Shi et al., 2009). According to Geser (2006), maintaining an active social network is an instrumental objective when women use mobile devices whereas male subjects are more likely to use mobile device primarily for entertainment purposes such as online games.

Females are more likely to use social media interactions to join into a conversational culture (Mante & Piris, 2002; Sell et al., 2012b). This is supported by research indicating that females are more inclined to use social media in various social contexts than men, and social networking (Sell et al., 2012a). While the research is limited, there are indications that people prefer to share visual content over text content (Munar & Jacobsen, 2014). Research has been done to identify the most common presentation form for self-presentation (Herring & Kapidzic, 2015a). The same work indicates that teenage boys are more willing to be viewed publicly and more likely to present assertiveness by text while girls use tends to incorporate more individual privacy, for example by limiting the visibility of profiles images and details (Herring & Kapidzic, 2015b).

Social connection is a main purpose of girls to interact online. Incongruously, while girls may be willing to present attractive and sexually appealing visual content, patterns of presenting used by boys remains vague. Young females were identified as more likely to be impacted by athlete public figures and to spread positive word-of-mouth, and less likely than men to consider athletes as materialistic, making them more receptive to sports celebrity role models (Dix et al., 2010). Women used more words related to psychological and social processes than males (Newman et al., 2008).

Based on the existing body of knowledge reported above, the following hypotheses are derived.

Research Question (RQ): What are the Differences in the Reposting Behavior Between Males and Females With Regards to Motivation, Content, and Media Type?

H1: Regarding Motivation to Repost

1a - Female subjects are more motivated to repost for incentives.

1b - Males are more inclined to repost in order to gain recognition.

H2: Regarding Types of content

2a - Women are more likely to repost celebrity-related content.

2b – Social news and current affairs are more likely to trigger reposting by Men.

H3: Regarding Media type

3a – Text and word forms are preferred by Female.

3b – There is significant difference in favor of picture-based media content.

METHODOLOGY

Pilot Study - Qualitative Method

In order to identify the most frequently used responses to the research inquiries, a qualitative pilot study combining interviews and discussions was undertaken. In-person interviews with 30 Chinese millennials (15 male, 15 female) were conducted, all subjects self-reported as being both adept and active users of SMS. The responses were collected, collated and arranged into types. Words that repeated frequently were selected as the choices for the questionnaire of the full study.

Instrumentation Design (Quantitative Method)

The survey was designed based on pilot study and previous related research design (Yuan et al., 2014).

Survey Question on Motivation to Repost

Seven options were presented as possible responses for the question regarding motivation:

- Work and professional purposes;
- Social interaction (common interests);
- Seeking Recognition;
- Follow Celebrities;
- Opinions (Resonated content);
- Altruism (Helpful and motivational information);
- Incentives, Virtual or Financial (Drawings, raffles etc.).

In addition to the most frequently occurring responses during the Qualitative Pilot Study, an option for Work and Professional Purposes was included due this option being identified as a factor in previous related literature. Facebook is emerging as a platform for work-related objectives as the online business

model continues to form (Mazman & Usluel, 2010). Some business sectors are moving more rapidly to integrate social media into their regular operations, students majoring in journalism are more likely than students majoring in other disciplines to use social media for work purposes (Hermida et al., 2012). It is not uncommon for users to see social media as an extension of earlier technological version of connectivity, and to find that the primary objective of the Internet is supporting collaborative work (Wellman, 2001). Chinese companies apply social network sites to promote public dialogue with consumers by posting corporate information to target the global market (Men & Tsai, 2012). More importantly, Chinese social network site users are sometimes required to propagate or publicize for their off-line community, organization or company.

The theory of reasoned action (TRA) demonstrates that behavioral intention can lead to individual specific action, which in turn is influenced by personal attitudes and subjective norms (Fishbein & Ajzen, 1977). Apart from this classical theory, motivation theory is widely applied in recent research. Extrinsic and intrinsic are the two main branches most likely to exert examined influence (Lee, 2014). The former pertains to environmental outcomes, e.g. values, benefits, while the latter refers to motivation related to enjoyment and interest of self regardless of outside stimuli. Crucial predictors in knowledge sharing, for instance, financial incentives and personal reputation is classified as extrinsic motivation, and altruism is regarded as intrinsic motivation (Hung, Durcikova, Lai, & L2011).

Meanwhile, social capital theory is often considered. Social capital is a diverse concept regarding structure, relation and cognition (Chang & Chuang, 2011; Chiu et al., 2012b; Wasko & Faraj, 2005). Chinese youth are undergoing an extensive transformation towards cultural and value consumption (Fung, 2009). The report of Sina demonstrates that there are more than 60,000 official accounts including celebrities, sports figures, well-known spokesman. Following celebrities through social media is a popular activity, and is found to be a highly commercialized trend, complete with various cultural and value consumption factors (Dionísio et al., 2008; Fung, 2009). In order to target opportunities in the fan-based online sports market, Chinese social media users were studied (Fung, 2009; S. Kaplan & Langdon, 2012). After reviewing existing literature and the results of the pilot study the expression of each choice to more accurately reflect the intent of this study was completed.

Survey Question on Types of Content

Eight alternatives were provided to measure the factor of Type of Content:

- Incentivized Content, Virtual or Financial (Drawings raffles etc.);
- Charity and Donations;
- To Bring Good Luck;
- Interesting, novel and entertaining (cultural, fashions, sports);
- Emotion and Feelings (chicken soup for the soul);
- Social news, current affairs and Hot topics;
- Professional contents which are significant and beneficial;
- Idols, Celebrities, loved bloggers and public figures.

Superstition sometimes is seen irrational, it assists human beings in dealing with ambiguous circumstances and uncertainty (Gimpl & Dakin, 1984; Rice, 1985; Tsang, 2004a)(Rice Jr, 1985), (Tsang, 2004b). Chinese millennials go through extremely competitive exams, interviews, and occupational

challenges and regularly pursue good luck to strengthen confidence and provide psychological comfort. Individuals may resort to totemic symbols before taking exams or when seeking for money in order to appeal to the god of scholarship (Zeng et al., 2009). Many Chinese pray or seek to gain blessings for good health or healing, or seek to be offered blessings related to health and prosperity (Badham, 2008; Billioud, 2013; Law, 2005). Stroke patients in China regard spiritual needs was important at all stages of recovery (Lui & Mackenzie, 1999) People are inclined to share news they have encountered on social media for constructing a shared reality such as for religious, superstitious, or spiritual purposes(Lui & Mackenzie, 1999) As Chinese millennials develop a sense of self-presentation and identity management, their personal social media brand, through technology-mediated communication Chu et al (2010), frequently posting and re-posting of these types of content has become frequent. Several participants of the pilot study revealed that they would like to repost emotional content to convey their believes and values. Social media is an indirect way to express their own words.

Survey Question on Presentation Form

Based on the frequency of repeated responses in the Pilot Study, Social media content was subdivided into 6 categories of presentation forms:

- Multi-media (Video + Audio);
- Audio only (Music);
- Pictures (Static & Animated gif);
- Pictures with comments, captions and clarification;
- Short messages;
- Long text, (a paragraph or longer).

Online presentation features are frequently a debate in the field of cyber-news, online-learning, and advertisers (Omar et al., 2018; Sundar, 2000; Sundar et al., 1998). Multimedia is a popular form of choice which contains both video and audio and may have favorable impacts on commercial websites (Appiah, 2006b). Audio content delivery is a crucial approach in online-marketing (Scott, 2009). Digital audio, images and photographs are well defined types of presentation for use in social media (Mangold & Smith, 2012b). The combination of picture and text is also a often used form for content in online and social media. In the context of business use, text-image congruence facilitates clear product images (Van Rompay et al., 2010). In the context of Twitter, the design and purpose is to encourage people to post or repost short text to update their network (Marwick & Boyd, 2011). In the case of Weibo, a amximum of 140 words are allowed in a single post, however, various other social media platforms are offering the options of more content which is beginnign to be viewed as necessary. Detailed narrative communicative practices include blogs, written reviews and other information, and in particular, fashion and brand related content (Helal et al., 2018).

ANALYSIS / RESULTS

A total of 1,347 online survey questionnaire responses were collected. Basic information on age groups and frequency of social media use breakdown is provided on Table 1. The Chinese millennials age group

ranging from 18 to 30 years represented the majority of the survey respondents with 838 participants out of the total or 64% with a gender make up composition of (295 males 35.2% and 543 females 64.7%). This Chinese Millennial age group are active social media users and reposted more frequently 62% compared to the other age groups in the study (see Table 2). The majority of the respondents, 621 of the survey's participants (74.1%) hail from the Zhejiang province of South-East China. This is due to the manner in which the survey data was collected, Millennials shared the survey link with their friends on their WeChat accounts, and in turn asked their friends to keep sharing it with their friends, thus creating a snowball sampling effect. Table 1 shows a comparison between the frequency of reposting between Millennial (18-30 years of age) and users that are <18 or 30+.

Table 2. Age group distribution of frequency and reposting on social media

Sharing Frequency	5+ times a day	1-4 times a day	1-5 times a week	1-4 times a month	Once a month	Rarely	Total	%
<i>Age</i>								
<18	8	10	21	27	36	15	117	9%
18-30	68	96	218	230	193	33	838	62%
31-40	7	15	26	46	56	14	164	12%
40+	10	22	45	62	71	18	228	17%
Total	93	143	310	365	356	80	1347	

Table 2 shows the comparisons of age groups and reposting frequency when engaging in social media interaction with others. Based on the comparison of the different age groups in reposting content on social media and sharing frequency, the Chinese millennials are uniquely distinct group of heavy social media use with dominant counts and frequency of usage for both male and female. Especially, for the highest sharing frequency of posting content in social media in five times or more and one to four times per day (5+ times a day (68%), 1-4 times a day (67%), 1-5 times a week (70%).

Table 3. Comparisons of Chinese millennial motivation to repost content in social media for shared content

	Female	Expected	%	Male	Expected	%	P value	χ^2	Cramer's V
	543		65%	295		35%			
<i>Reason to repost (Share content on social media)</i>									
Work related	213	210.6	39.2%	112	114.4	38.0%	0.721	0.13	0.01
Resonated content	337	318.2	62.1%	154	172.8	52.2%	0.006 ***	7.66	0.10
Social interaction	225	226.8	41.4%	125	123.2	42.4%	0.793	0.07	0.01
Altruism (Helpful and motivational information)	155	140.0	28.5%	61	76.0	20.7%	0.013 **	6.18	0.09
Seek recognition	78	92.0	14.4%	64	50.0	21.7%	0.007 ***	7.30	0.09
Financial incentives (Virtual drawings or raffles)	175	157.5	32.2%	68	85.5	23.1%	0.005 ***	7.82	0.10
Follow celebrities	122	91.4	22.5%	19	49.6	6.4%	0.000 ***	35.09	0.20

*, **, and *** indicate the significance level of 10%, 5%, and 1%, respectively

Table 3 shows that when comparing the Chinese millennials' age cohort groups on gender differences and the motivation or the driving reasons to repost on social media, some interesting findings emerged.

An Examination of Motivation and Media Type

For example, the chi-square test uncovered a statistically significant differences between male and female in their motivations to share content, $\chi^2 (1, N = 838) = 7.66, 6.18, 7.3, 7.8, 35.09^l p < .001$ related to resonated content females were more likely to be motivated to share that content more than males (62% to 52%), likewise females were more likely to be motivated to share content related to altruism (28.5% to 20%), financial incentives (32% to 23%), and celebrity related reposts (22.5% to 6.4%), while interestingly males showed a significant difference than females (21.7% to 14.4%) to be motivated to share contents related to recognition seeking $\chi^2 (1, N = 838) = 7.30 p < .001$. On the other hand, there was no statistically significant difference between the Chinese millennials' gender for being motivated to repost on work related to socially interactive activities.

Table 4. Comparisons of Chinese millennial motivation to repost content in social media for shared content

	Female	Expected	%	Male	Expected	%	P value	χ^2	Cramer's V
<i>Media Form Used to Repost (Shared)</i>									
Multi-media (video + audio + text)	293	272.8	54.0%	128	148.2	43.4%	0.003 ***	8.54	0.10
Pictures (comments, captions and clarification)	370	362.2	68.1%	189	196.8	64.1%	0.232	1.43	0.04
Pictures (static, animated gif)	280	269.6	51.6%	136	146.4	46.1%	0.131	2.28	0.05
Long text (one paragraph or longer)	196	172.4	36.1%	70	93.6	23.7%	0.000 ***	13.49	0.13
Short message	187	173.0	34.4%	80	94.0	27.1%	0.030 **	4.72	0.08
Audio message	426	433.5	78.5%	117	109.5	21.5%	0.177	1.82	0.05

*, **, and *** indicate the significance level of 10%, 5%, and 1%, respectively

Further analysis of the data, shown in Table 4, indicates that the media form used to share content by gender differences, there were some significant differences $\chi^2 (1, N = 838) = 8.54$ and $13.42 p < .001$. Female participants showed more inclination to share multimedia (text, audio, and video) content (54% to 43.4%) and long message format (one paragraph or longer) (36% to 23.7%) for the motivations cited above. In the motivation to share short message text a $\chi^2 (1, N = 838) = 4.72 p < .05$, females differed with males (34.4% to 27.1%). There was no major difference between Chinese millennial genders with regards to sharing pictures with comments, pictures with animated gifs, and audio messages.

Table 5. Comparisons of Chinese millennial in social media for types of content shared and reposted

	Female	Expected	%	Male	Expected	%	P value	χ^2	Cramer's V
<i>Shared (Reposted) Content</i>									
Virtual or Financial (Drawings or raffles)	158	153.6	29.1%	79	83.4	26.8%	0.477	0.51	0.02
Charity and Donations	114	126.4	21.0%	81	68.6	27.5%	0.034 **	4.47	0.07
To Bring Good Luck	131	110.2	24.1%	39	59.8	13.2%	0.000 ***	14.06	0.13
Entertaining (cultural, fashions, sports)	275	265.7	50.6%	135	144.3	45.8%	0.177	1.82	0.05
Emotion and Feelings (chicken soup for the soul)	123	130.2	22.7%	78	70.8	26.4%	0.220	1.51	0.04
Current affairs	163	168.5	30.0%	97	91.5	32.9%	0.392	0.73	0.03
Professional contents	193	193.1	35.5%	105	104.9	35.6%	0.988	0.00	0.00
Celebrities (following idols)	164	119.2	30.2%	20	64.8	6.8%	0.000 ***	61.20	0.27

*, **, and *** indicate the significance level of 10%, 5%, and 1%, respectively

On the third research question regarding what type of content Chinese millennials shared or reposted to their online connections $\chi^2 (1, N = 838) = 14.06$ and $61.20^3 p < .001$). Table 5 indicates that females showed a significant difference to males in the shared content type related to bring good luck (24.1% to 13.2%) as well as content related to celebrities or public figures (30.2% to 6.8%).

While the male survey respondents showed a statistically significant difference $\chi^2 (1, N = 838) = 4.47$, $p < .05$ to sharing or reposting more than female survey participants when the content was related to charity or donations (27.5% to 21%). This finding was unexpected and is included in the further research suggestions. On the other hand, there was no statistically significant difference between the Chinese millennials' gender on sharing or reposting content types related to financial drawings (raffles), novel or interesting content (fashion or cultural), emotion and feeling, current affairs, and professional related content.

Table 6. Overall population and gender comparisons for motivation on repost in social media- China

	Female	Expected	%	Male	Expected	%	P value	χ^2	Cramer's V
	888		66%	459		34%			
<i>Reason to repost (Share content on social media)</i>									
Work related	549	546	66.3%	279	282	33.7%	0.710	0.138	0.010
Resonated content	423	438	63.6%	242	227	36.4%	0.077 *	3.134	0.048
Social interaction	587	580	66.7%	293	300	33.3%	0.407	0.688	0.023
Altruism (Helpful to others)	584	613	62.8%	346	317	37.2%	0.000 ***	13.089	0.099
Seek recognition	767	754	67.0%	377	390	33.0%	0.039 **	4.248	0.056
Financial incentives (Virtual drawings or raffles)	678	691	64.7%	370	357	35.3%	0.070 *	3.178	0.049
Follow celebrities	732	771	62.6%	438	399	37.4%	0.000 ***	44.752	0.182

*, **, and *** indicate the significance level of 10%, 5%, and 1%, respectively

Furthermore, when we compared the survey respondents' overall gender differences ($N = 1347$, female $N = 888$, male $N = 459$) and included in the analysis the other two age groups in the survey (younger than 18 and older than 31) with a total of $N = 509$, on the question of motivation to repost or share content on social media the results were unexpected.

Table 6, shows that males in the overall general population showed a significant difference to females, being more inclined and motivated to share $\chi^2 (1, N = 1347) = 13.08$ and $44.75^4 p < .001$) content related to altruism (37.2% to 62.8%) even though they represented 34% of the survey sample with females representing 66%, and similarly with celebrities (37.4% to 62.6%). Additionally, male participants showed some difference at the $\chi^2 (1, N = 1347) = 3.14$ and 3.17^5 , $p < .1$) level with sharing content related to raffles and financial gain (35.3% to 64.7%). In contrast, in the overall group analysis, female participants were more motivated to share and repost $\chi^2 (1, N = 1347) = 4.24$, $p < .05$ the content related to seeking recognition (33% to 67%). Very surprisingly, this is a reversal from the results observed in the Millennials age group gender differences analyzed above, and this finding is a compelling motivator for further research of a replicative or exploratory nature.

Similarly, an analogous pattern emerges again in the general population sample compared to the millennial age group. We find there's a significant relationship between gender and social media format used as a medium to repost messages to others as shown in Table 7. $\chi^2 (1, N = 1,347) = 6.85$, 5.61 , and 7.56^6 , $p < .001$) Chinese male participants of almost all age groups surveyed in the study were more likely to engage in using media types of pictures with comments (38.8% to 61.2%), and long text mes-

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sages (36% to 64%) and short text reposts (36.4% to 63.6%) to share contents with their circles. While there was no statistically observed gender differences in the survey's overall participants' preferences in using multimedia (text, audio and video) and pictures (both static and gif) media types.

Table 8, shows the types of content Chinese social media users shared and reposted, this also follows a pattern similar to the motivation and media used to repost content findings above. In the overall survey participants' responses, again there's a strong relationship between gender and type of content reposted on social media. $\chi^2 (1, N = 1,347) = 11.9 \text{ and } 64.0267, p < .001$ especially in two items out of the eight items in the survey questionnaire (see Table 8), in those two items male's shared or reposted content were significantly different than that of female in terms of to bring good luck (36.1% to 63.9) and celebrity related content shared (38.7% to 61.3%). Whereas, surprisingly females $\chi^2 (1, N = 1,347) = 10.66 p < .001$ shared more content related to current affairs than their male counterpart in the same survey.

Table 7. Overall population and gender comparisons on media form used to share in social media-China

	Female	Expected	%	Male	Expected	%	P value	χ^2	Cramer's V
	888		66%	459		34%			
<i>Media Form Used to Repost (Shared)</i>									
Multi-media (video + audio + text)	497	506	64.7%	271	262	35.3%	0.28	1.166	0.029
Pictures (comments, captions and clarification)	281	303	61.2%	178	156	38.8%	0.009 ***	6.859	0.071
Pictures (static, animated gif)	472	477	65.3%	251	246	34.7%	0.593	0.285	0.015
Long text (one paragraph or longer)	625	643	64.0%	351	333	36.0%	0.010 ***	5.619	0.065
Short message	593	615	63.6%	340	318	36.4%	0.005 ***	7.564	0.075
Audio message	744	750	65.4%	394	388	34.6%	0.323	0.975	0.027

*, **, and *** indicate the significance level of 10%, 5%, and 1%, respectively

Table 8. Overall population and gender comparisons for types of content shared in social media- China

	Female	Expected	%	Male	Expected	%	P value	χ^2	Cramer's V
	888		66%	459		34%			
<i>Shared (Reposted) Content</i>									
Virtual or Financial (Drawings or raffles)	699	696	66.2%	357	360	33.8%	0.692	0.157	0.011
Charity and Donations	622	610	67.2%	304	316	32.8%	0.152	2.049	0.039
To Bring Good Luck	711	734	63.9%	402	379	36.1%	0.000 ***	11.903	0.094
Entertaining (cultural, fashions, sports)	526	525	66.1%	270	271	33.9%	0.884	0.021	0.004
Emotion and Feelings (chicken soup for the soul)	649	654	65.4%	343	338	34.6%	0.517	0.420	0.018
Current affairs	622	595	68.9%	281	308	31.1%	0.001 ***	10.665	0.089
Professional contents	603	603	65.9%	312	312	34.1%	0.980	0.001	0.001
Celebrities (following idols)	687	739	61.3%	434	382	38.7%	0.000 ***	64.026	0.218

*, **, and *** indicate the significance level of 10%, 5%, and 1%, respectively

CONCLUSION AND PRACTICAL IMPLICATIONS

Content that goes viral in Social Media is emerging as the future means of reaching many target demographic audiences. The results of this study analyzed Chinese Millennial gender differences in sharing and reposting content on Social Media and confirms the findings of communication theory such as Uses and gratification theory (UGT), and motivation theory, but this study's findings also enrich gender studies

regarding social media usage. Exploring the intricate relationship between gender, motivation and content form, the online social media promoters and businesses may be able to use these findings to design advertising and commercial content according to targeted millennial market segmentation with gender difference. Additionally, social media content developers may also benefit from focusing on building improved social media platform strategies by delivering content by viewing findings.

The findings in the motivation of reposting demonstrate that, Chinese millennials females are more motivated to repost content on social media that relates to following celebrities, sharing resonated opinions and financial gain such as raffles as well as spiritual incentives than their counterpart male millennials. On the other hand, Chinese Millennial males are more likely to repost content in social media to get more recognition.

When examining reposted content in social media, females are more likely to share content with the intention to bring good luck and celebrity-related content. Conversely, males are more likely to share charity and donation related message. Comparing the propensity of each female and male Chinese millennials to repost themes based on the form of the content, females are more likely to repost text messages, both long and short than males. Females also preferred more use of multi-media presentation formats than males.

On a practical application level, online marketers and social media content developers can use these findings to segment their intended market demographics by gender which, as described above is a key factor in targeted promotional advertising social media campaigns. For instance, when promoting a female cosmetic product or service, it would be sufficiently helpful to invite key opinion leaders (KPL) or influential celebrities to be spokesperson as well as adding content which is aimed at bringing good luck with the use of multi-media or text based format for marketing outreach programs. For males delivering content which allows to easily get recognition and includes some form of charity aspect factor would be most likely approach.

LIMITATIONS AND FUTURE RESEARCH

Although some of the findings presented in this study are of great interest, however, some limitations exist. The surveys were accomplished with self-assessed approach which is subjective. Future studies would do well by using more back and forth focus groups. Secondly, the measured data in the survey was broadly generalized on all social media to the extent of social media used without pointing out a specific social network site platform, this is less of a limitation than it appears as WeChat is by far the most prevalent social media platform used in China. This paper focuses on gender differences in social media of Chinese millennials, which provides a fertile group for further study in any of the variables explored. Future research could elaborate on the relationships between mentioned factors in both objective and subjective methods. Other future research that could build on the specific finding of this paper could include a similar investigation of reporting and sharing behavior of millennials in other countries and a comparison of them with the Chinese millennials investigated in this paper. Finally, future studies can use an application programming interface to investigate reposted information in analyzing type of content and presentation form accurately and on a larger scale.

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ENDNOTES

- ¹ Different Pearson Chi-square statistic respectively but with the same *p-values* of ($p < .001$)
- ² Different Pearson Chi-square statistic respectively but with the same *p-values* of ($p < .001$)
- ³ Different Pearson Chi-square statistic respectively but with the same *p-values* of ($p < .001$)
- ⁴ Different Pearson Chi-square statistic respectively but with the same *p-values* of ($p < .001$)
- ⁵ Different Pearson Chi-square statistic respectively but with the same *p-values* of ($p < .1$)
- ⁶ Different Pearson Chi-square statistic respectively but with the same *p-values* of ($p < .001$)
- ⁷ Different Pearson Chi-square statistic respectively but with the same *p-values* of ($p < .001$)

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Chapter 50

Facebook Communities of African Diasporas and Their U.S. Embassies: A Content Analysis Study

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ABSTRACT

This study explores how the Nigerian, Ethiopian, and Egyptian diasporas in the United States use their Facebook groups to create their imagined communities. It also draws a parallel between their use of Facebook and how the embassies of their countries of origin use the same platform in performing their official duties. Six hundred Facebook posts drawn for the groups and the embassies were content-analyzed for this study. The results show that the three African diaspora groups have more pragmatic uses of their Facebook communities, such as the exchange of services, advice and information on day-to-day living, while their embassies use the platform more for public relations objectives in planning their official communication that emphasizes nation-branding, the promotion of their various countries, and for other diplomatic chores.

INTRODUCTION

Historically, the word “diaspora” had long been used to describe dispersion experienced by dislocated religious groups. According to historian Martin Baumann (2001), the term originally dates to the third century B.C. as a technical term used to describe the dispersed condition of the Jews when the Greeks controlled Jerusalem and introduced the ideas of Polis, or city-state. At the time, the large Jewish groups that lived throughout the Hellenistic Kingdoms were living in exile, hence in dispersion, because they

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were not born in the lands where they were inhabiting. The use of “diaspora” to describe non-Judaic groups and trans-nationalists had to wait until the twentieth century. By then, those who were dispersed from their homeland in search of work or a better life in a foreign land were also distinguished as participants in a social diaspora (Safran, 1991; Scheffer, 1986).

Contemporary diasporas are more likely to be both less disconnected from home and less dispersed or isolated from their native ethnic group. Computer-mediated communication has created inexpensive, instant venues of horizontal communication between immigrants, their peers in the diaspora, or their loved ones back home. Online communication technology has also turned vertical communication between governments and their citizens into a standard practice at most levels of governance. State leaders, public officials, embassies, and consulates have turned to social media to manage communication with their target audience and engage with them. This has led to the emergence of new forms of diplomacy, such as public diplomacy and digital diplomacy, wherein the Internet and communication technologies support diplomatic objectives. According to the comprehensive list of Twitter accounts on Twiplomacy, more than 4,100 embassies and ambassadors are now active on Twitter and the list is growing daily (Twiplomacy, 2018). The same source identified 951 Twitter accounts – 372 personal and 579 institutional accounts – belonging to heads of state as well as government and foreign ministers within 187 countries. “Facebook is the second-most popular network among government leaders, and it is where they have the biggest audiences,” as recently as 2018 (Twiplomacy, 2018).

The Facebook Groups feature allows for the creation of smaller communities within digital arenas and allows users to share customized content to niche audiences. As it exists, the Facebook Group feature enables users to launch custom, niche communities, where individuals share visual content, connect with similar members, and participate in a collective agenda that is often defined and protected by Group administrators. The growth of Facebook groups over the past decade is not only indicative of their popularity, but also of their flexibility to meet variable needs and strategies of groups worldwide. In October 2009, “Google indexed over 52 million Facebook groups” (O’Neill, 2010). Three months later, the number “surged to over 620 million groups” (O’Neill, 2010). By 2016, membership in Facebook groups exceeded 1.4 billion users (Holmes, 2018). By utilizing this popular feature on Facebook, like-minded diasporic individuals who may possess weak social ties and face distance barriers can create their own communities and boost their social capital with one tool (Burke, Kraut, & Marlow, 2011). This resource enables diaspora groups who are isolated, geographically dispersed, and interested to connect with their respective ethnic groups.

This chapter therefore examined how immigrants from the largest African diasporas in the U.S., namely Nigeria, Egypt and Ethiopia, use their Facebook groups to establish social ties, revive their culture, and maintain connection with their homeland. The chapter also explored how the embassies of the three African countries in the United States utilize Facebook to perform their own digital diplomacy. Studying the Facebook content shared in African diasporas and their respective embassies compares the popular constituent agenda to the official diplomatic agenda.

THEORY AND LITERATURE

Social networking sites facilitate interactivity between members who might have never met face-to-face. When users decide to have their own “ethnic” or cultural space online, they forge their own communities that are based on commonalities, and perhaps nationalism. In his theory of “Imagined Communities,”

Anderson (1983, p. 49) defined a nation as an imagined political community because the “members of even the smallest nation will never know most of their fellow members, or even hear from them, but in the minds of each one lives the image of communion....(all communities that are) larger than primordial villages of face-to-face contact ... are imagined” (p. 49). In 2006, Anderson redefined the imagined “nation” as a “deep horizontal comradeship” (p. 9) that is based on fraternity and communication, rather than citizenry or nationalism. Anderson also emphasized the effect of commonness on creating imagined communities by introducing the idea of print capitalism. For him, capitalist businesses organized the printing of newspapers to serve their interests, which generated “their cohesions outside language” (Anderson, 2006, p. 76) by creating their own vernacular language in their newspapers. Furthermore, the shared content of newspapers demonstrated a sense of belonging as “each person who reads the morning paper over tea or coffee could imagine his countrymen doing the same” (Calhoun, 2016, pp. 13-14). This sense of commonness, fraternity, and shared language is what creates those imagined communities, regardless of physical proximity.

Diaspora groups create their own imagined online communities through sharing personal narratives, even if the individuals themselves are loosely connected or geographically dispersed. This allows members to redefine their identities and feel distinguished from either other diasporic groups or natives in their new place of residence (Cohen, 1997). Turkle (1995) suggested that identity on the Internet is more fragmented as people can assume several identities, but this position was not supported by Mitra (2001) who suggested that immigrants on the Internet produce their own personal identities against the stereotypical identities produced by the dominant host culture. These imagined digital communities are especially important for marginalized immigrants who feel isolated from home and are labeled as a minority in their host-land. The communities will be a source of empowerment for their “residents” who need to be assured in their diaspora that they are not alone. They produce and exchange content that informs them of their home culture and represents their beliefs, needs, and interests. This supports some research findings that “widely shared Facebook posts [are] mostly entertainment-oriented” (Tremayne, 2017, p. 30). According to Brinkerhoff (2009, p.2), such digital diasporas can also “support security and socio-economic development in the homelands.” Conversely, the ability of digital diasporas to boost the economies of their homelands makes them a priority for the public and digital diplomacy of their governments and embassies.

Facebook-Imagined Communities

Human beings have a number of places where they can choose to socialize. Prominent among them are the home, workplace, places of worship, and an array of public areas such as bars and coffee shops. However, online forums have also become virtual places where people can mingle and exchange views. Still, online talk is transcribed and saved for later asynchronous communication, which makes online forums a middle ground between the public and private spheres of communication (Kvansy & Hales, 2008). This form of communication technology has impacted the diasporic experience by allowing immigrants to create their own imagined online communities and have a sense of “contemporaneity and synchronicity” even though individuals are dispersed and fragmented (Tsagarousianou, 2004, p. 62). The “Group” feature on Facebook has made it possible for like-minded individuals to form their own private, secure communities and examine the profiles of users before issuing them an entry “visa” into such imagined communities. This feature also allows the creators of the Facebook groups to set the rules of “residence” and virtually deport any violating users who challenge the group norms or standards.

But what do the “residents” of these digital communities on Facebook do? Al-Rawi and Fahmy (2018) analyzed the textual and visual content of “The Syrian Community in Italy,” a page founded by diasporic Syrians in Italy. The authors observed an “archiving” function of this page as Syrians in Italy used the Facebook page as “a public archive, serving a digital diaspora by visually and textually documenting its activities.” (Al-Rawi & Fahmy, 2018, p. 90). The main visual and textual themes of the posts were about either the political situation in Syria or the anti-Assad demonstrations organized by the Syrian diaspora in Italy. Accordingly, the “homeland” was the main topic on the agenda of this digital diaspora, and political activism was the main function of its Facebook page, which supports Mitra’s (2001, p.32) preposition that marginalized groups on the Internet “call on the dominant and put the dominant in the difficult position of acknowledging the marginalized.”

Oiarzabal (2012) reported similar homeland-centered uses of Facebook groups among the Basque diaspora in 20 countries. Most of the respondents said that they joined Basque diaspora associations on Facebook to keep in contact with the Basque culture, to be informed about the current reality of their homeland, and to “reaffirm and maintain Basque identity and culture” (p. 1478). Other subsequent studies about diasporic groups that come from suppressed ethnic groups at home (the Kurds who belong to Turkey, Syria, Iraq, and Iran; the Chinese Muslim minority of the Uyghur) confirmed the identity construction and maintenance functions of these imagined communities (Jacob, K., 2013; NurMuhammad, R., Horst, H. A, Papoutsaki, E. & Dodson, G., 2016). The diasporic Kurds shared the same language, myth, history, and religion and used their diasporic Facebook groups as “a tool to learn about their roots and existence” (Jacob, 2013, p. 57). By the same token, the Facebook group for Uyghur diaspora members also emphasized ethnic identity. The members identify themselves by saying, “we the Uyghur people,” and use the Uyghur language, often addressing each other as brother and sister. The Uyghur diaspora’s use of Facebook Groups included emphasis of their political identity and solidifying “support for Uyghur political causes, sharing information and updates about conditions for Uyghur friends, families and associates within China” (NurMuhammad et. al, 2016, p. 493).

In addition to the role of Facebook in the maintenance and construction of identity for diasporic groups, this networking site allows digital groups to stay connected with their *good ol’ days* by facilitating “reminisces about the nostalgic past.” This feeling translates into an obligation to provide “transnational social and psychological care to family and kin,” as in the case of Trinidadian immigrants (Plaza & Plaza, 2019, p. 17). By sharing memories and photos of historical events from the homeland, diasporic groups create an online archive of their cultural heritage and engage second-generation immigrants who are, by default, in more distant proximity to their own ethnic identity. Diaspora groups on Facebook also contradict the prevailing stereotypes about them in their host-land by sharing personal achievements, which Lorenza (2016) had observed through analyzing the Facebook posts of Filipino transnationals in India.

This literature suggests that diaspora groups have multiple uses and seek various gratifications by using social networking sites (SNS); it also suggests that these platforms empower members of diasporas to negotiate, maintain, and reconstruct their identities. When diasporic groups use SNS, they reinforce their existence as an imagined community, which strengthens their group identity and redefines their values and beliefs (Al-Rawi & Fahmy, 2018). However, diasporas that come from conflict-ridden countries also tend to use cyberspace to address this conflict as part of their online interactions. The Uyghur diaspora tends to differentiate themselves from China’s dominant ethnicity, the Han. When they communicate about their own diaspora on Facebook, the Uyghurs prefer to use the term *Weten Yurt*, which means “motherland.” They do not “use the word China, and seldom use ‘Xinjiang’ or ‘Xinjiang Uyghur Autonomous Region’ which are the official names chosen by Chinese authority” (Nuermaiti, 2014,

p. 100). Similarly, the online communities of several African diasporas reflect the ethnic and political conflicts in their homeland. For instance, Skjerdal (2011) remarked that the online forums of the Zimbabwean, Eritrean, and Somali diasporas represent conflict-torn societies. The members of the Eritrean diaspora established a war memorial online to post information about those who were killed in the war between Eritrea and Ethiopia. Typically, establishing such a memorial is the responsibility of the state, but this diasporic initiative challenged the power of the Eritrean government in a way (Bernal, 2013). A tone of political discontent was also prevalent in Ethiopian diasporic websites tied to an oppositional political group in Ethiopia (Skjerdal, 2011, p. 736). Tones of both conflict and opposition are frequent in the diasporic virtual communities, especially the African communities, but have not been historically examined on the social media pages of their respective embassies.

Facebook Diplomacy

The U.S. pioneered the use of the Internet for diplomatic purposes when the State Department launched an eDiplomacy unit in 2002 (Adesina, 2017). Ever since, the use of cyberspace and social media by governments and state actors has grown swiftly and steadily, eventually drawing the attention of media scholars who sought to analyze and understand the new diplomat-generated content online. Spry (2018) identified several research approaches to studying digital diplomacy: (1) The first research approach aligns digital diplomacy with the broader field of public relations, which either depicts digital diplomacy as a transition to a “new” two-way public diplomacy model or explores the experiences, professional norms, and institutionalized priorities of diplomats; (2) An alternate approach that designates public diplomacy as a product of the state and aligns it with theories of soft power; (3) A more decentered approach that integrates media with public diplomacy, or what was termed as mediatization, which includes channels of communication, language, and environment in response to political-economic conditions.

Spry (2018) adopted the third approach when analyzing the Facebook pages (the channels) published by the diplomatic missions (embassies and consulates) of eight countries: The U.S., the United Kingdom, Japan, India, Australia, Canada, Israel, and New Zealand. The study identified four types of communication posted on the platform: one-way communication that targets external audiences; one-way communication that targets internal audiences (colleagues); engaging, two-way communication that invites comments; and user-generated communication posted by Facebook users. The most typical Facebook diplomacy was one-way external communication, such as publicity for events, information about visa requirements, and information about cultural assets (Spry, 2018).

That outward digital diplomacy is commonly used for promoting a nation’s image and interacting with both the influencers and the public. Fergus Hanson (2012) outlined eight policy goals for digital diplomacy, which included public diplomacy (it targets audiences with key messages) and the role of consular communication to create direct channels with citizens travelling overseas. Seeking to activate those goals, diplomats utilize social media platforms to brand their nations, communicate with foreign audiences, and cater to the needs of their fellow citizens in the diaspora. Bali, Karim, and Rachid (2018) explored how diplomatic missions utilize Facebook to communicate and engage with their audiences. They compared the Facebook page of the U.S. embassy in Erbil (capital of Kurdistan) and the Facebook page of the Kurdistan Regional Government (KRG) in Washington, D.C. The study showed that both embassies focused on using Facebook to inform local people about policies and regulations, but the two embassies did not target their own people in the host country with any content. The U.S.-based

posts highlighted the values of equality, human rights, and humanitarian aid, while the Kurdish posts highlighted the efforts of the KRG in fighting terrorist groups.

The “engagement” function of social media has also been analyzed to determine the dialogue that diplomatic actors invite and manage digitally. Hayden, Waisanen, and Osipova (2012) analyzed the communication generated by the U.S. embassies in Bangladesh, Egypt, and Pakistan on Facebook after the election of former U.S. President Obama in 2012, as well as the comments made by visitors to those pages. The authors detected a spreadable epideictic communication from those embassies that fostered a discourse of either praise or blame in the comments posted. Such comments were in response to the embassies’ posts to announce Obama’s victory. This announcement fueled a tide of expressive emotion rather than a dialogue or deliberation. The embassies’ posts targeted their own diaspora members abroad to guide them through the voting process. America’s image was boosted by targeting local people with news about the election and showing how the election process was both competitive and transparent. Several local visitors wished to either participate in this process or have a similar one exist in their own nations. The authors argued that the Facebook pages of the three embassies generated supportive comments of U.S. legitimacy because such participatory forums “cultivate communities of identity performance” and the usage of these forums is based on a “selection bias” (Hayden et al, 2012, p. 1635).

Despite these diverse approaches in exploring the imagined communities on Facebook and their role in digital diplomacy, there is no research that compares the agenda of diasporic groups on Facebook to the agenda of their home embassies in their host-nation. These traditionally marginalized groups seek to establish a sense of community that supports their status as a “dispersed” minority, but it is not clear whether they consider their constituent embassies as another way to seek that sense of support. Moreover, one of the functions of digital diplomacy is to cater to “diasporic citizens” and solidify their “imagined communities,” but this area of digital diplomacy has not been explored deeply. Accordingly, the present study seeks to identify how diasporic groups use Facebook in comparison to their constituent embassies. The focus will be on three long-established African diasporic groups in the U.S.: Nigerian, Ethiopian, and Egyptian diasporas. The study seeks to answer the following research questions:

RQ1: How does the agenda on Facebook of some diaspora groups from Nigeria, Ethiopia, and Egypt in the U.S. compare in terms of focusing on political/sectarian strife back at home?

RQ2: How does the agenda of these diaspora Facebook groups compare to the agenda of the Facebook pages of their constituent embassies?

RQ3: What is the main approach adopted by the embassies of three African countries in approaching their diasporas?

METHOD

The authors of this chapter purposively identified three African diaspora groups in the U.S. to gather data and answer the research questions. Africans from Nigeria, Ethiopia, and Egypt who live in the U.S. represent the population targeted in the present study. The obvious reason for identifying these nations is that they are the top “birthplaces for African immigrants in the U.S.” (Anderson, 2017), with Nigeria topping the list, followed by Ethiopia and Egypt. Those three countries accounted for 35 percent of the foreign-born African population in the U.S in 2015 (Anderson, 2017). They are also the most populous

countries in the African continent (World Population Review, 2019). Table one shows the population of those countries and the size of their U.S. diasporas.

Table 1. Population of Nigeria, Ethiopia, and Egypt in 2019 and size of their U.S. diasporas in 2015

Country	Population (Source: World Population Review)	Size of U.S Diaspora (Source: Anderson, Pew Research Center)
Nigeria	200,962,417	327,000
Ethiopia	110,135,635	222,000
Egypt	101,168,745	192,000

The number of immigrants from the three countries remained minimal in the U.S. during the last two decades of the twentieth century but began to increase at the turn of the 21st century. For instance, the numbers of both Nigerian and Ethiopian immigrants in the U.S. during the 1980s were approximately 25,000 and 10,000 respectively. However, less than three decades later, those numbers increased by more than tenfold (Migration Policy Institute, 2015).

A preliminary search about the use of social media by these diaspora groups and their embassies showed that the Nigerian embassy in the U.S. has a few tweets on its Twitter account. In addition, the Ethiopian embassy in the U.S. uses its Twitter account to post links to its Facebook posts. Accordingly, the authors decided to study the use of Facebook by those diasporas and their embassies in the U.S. The authors conducted a search on Facebook in February 2019 for public groups that call on nationals from either country to join. The search words were *Nigerians in U.S.*, *Nigerians in America*, *Ethiopians in U.S.*, *Ethiopians in America*, *Egyptians in U.S.*, and *Egyptians in America*. The largest public Nigerian group was *Nigerians in U.S.A*, which had 2,514 members. Three Ethiopian Facebook groups were also found: *Ethiopians in America* (212 members); *Ethiopian Diaspora in USA* (673 members); and *New York & New Jersey Ethiopians* (916 members). We also located a public Facebook group named *Egyptians in USA*, which had 4,299 members. Those five Facebook groups from the three African diasporas represent the population of Facebook content the authors analyzed in order to answer the research questions. We decided to extract the posts manually because several posts were written in native languages, which could be captured by the existing applications that extract Facebook data.

The authors opted to draw 100 posts from the Facebook group(s) that represented each diaspora group. A systematic random sample size of 100 posts from each group was gathered by selecting every fifth post on the group. The first post on each group was drawn randomly by generating a random number from 1 to 5 (since the interval is 5) by using List Randomizer (RANDOM.ORG). The number generated by the List Randomizer was used to start the selection of our systematic sample of the posts. For instance, if the Randomizer generated number 3, we started with the third post and then skipped to every fifth post until we completed 100 posts. The same methodology was used to draw a sample of 100 posts from the Facebook account of the embassy of each country in the U.S. The total sample of the posts analyzed in this study was 600 Facebook posts. Table 2 displays more information about this sample.

All posts were coded and content-analyzed quantitatively. In addition to the standard categories used for the analysis, such as language used in the post and where it was posted, we used four main categories to describe the content of each post:

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Table 2. Facebook posts retrieved from Facebook Diaspora groups and Facebook accounts of the embassies of Nigeria, Ethiopia, and Egypt in the US

Facebook Groups/Embassy	Sample Size	Period covered by Posts	Language of posts			
			English	Amharic	Arabic	Dual
Nigerians in USA	100	Nov. 11, 2016 thru. April. 26, 2019	100%			
Ethiopian Diaspora in USA	19	April 4, 2017 thru. Oct. 27, 2017	12 (63%)	5 (26%)		2 (11%)
Ethiopians in America	32	May 23, 2009 thru. Dec. 21, 2018	22 (69%)	4 (13%)		6 (18%)
New York & New Jersey Ethiopian community	49	Sept. 25, 2017 thru. Dec. 21, 2018	42 (86%)	6 (12%)		1 (2%)
Egyptians in USA	100	June 27, 2017 thru. Mar. 3, 2019	45%		33%	22%
Nigerian embassy	100	Aug. 30, 2018 thru. April 23, 2019	100%			
Ethiopian embassy	100		94%	6%		
Egyptian embassy	100	Oct. 4, 2017 thru. April 24, 2019	97%		1%	2%

1. **Pronoun:** Pronoun used or implied in the post, which could be first-person (I or we), second person (you), or third-person (he, she, or they).
2. **What:** Subject nature of the post content, which included 10 subcategories: 1) Sharing Home History; 2) Promoting Diaspora Events; 3) Discussing Home News; 4) Promoting Arts / Culture; 5) Seeking Services (Social, Financial, Academic, Instructional, etc.); 6) Advertising Services (Social, Financial, Academic, Instructional, etc.); 7) Declaring Activism; 8) Sharing Resources; 9) Personal Engagement; and 10) Opinion Sharing.
3. **Who:** Who was mentioned in the post, such as political leaders from the homeland (president, prime minister, minister); entertainment/sports figures from the homeland; intellectuals from the homeland or the diaspora; embassy figures in the host-land; U.S./global politicians; and diaspora figures.
4. **Where:** Where the story or event featured in the post occurs, which could be the homeland, the host-land, or other areas in the world.

The authors selected 10 percent of the total sample of the posts (60 posts) and coded them independently to test the reliability of the coding by calculating Cronbach's Alpha for the inter-coding reliability of each category. Table 3 shows that the coding adopted by the authors is reliable with high coefficient figures.

Table 3. Cronbach's alpha reliability of inter-coding of four content categories

Category	Cronbach's Alpha
What	.85
Pronoun	.86
Who	.87
Where	.88

RESULTS

RQ1: Diasporas and Political Strife Back Home

The data suggest that the diaspora Facebook groups are not used as a forum to fuel or even discuss political or ethnic strife back home. They seemed to share both less controversial and less confrontational agenda of topics on their Facebook public groups. Such neutral, tranquil Facebook posts do not represent the violent, unstable political environments of Nigeria, Ethiopia, or Egypt. Since its 1967-1970 civil war, Nigeria has been “synonymous with deep divisions which cause major political issues to be vigorously and violently contested along the lines of intricate ethnic, religious, and regional divisions” (Çanci & Odukoya, 2016). These authors highlighted the ongoing ethnic and religious conflicts in the Middle-Belt and North Eastern Nigeria and the borderline states that have a Muslim majority. In Ethiopia, the war between rival ethnic groups in the Western parts in 2018 has been captured by news outlets worldwide. Moreover, the protests across the Oromia and Amhara regions have been ongoing since 2016. Similarly, political instability is also familiar to Egypt. The country has been through chaos because of the Arab Spring and the stepping down of former Egyptian President Mubarak in 2011. Soon after, the Islamists formed their first government in 2012, but they were soon overthrown by a military coup in 2013. Ever since, the new military regime has waged an open war against terrorism, and news stories about bombings and mass killings remain recurrent.

However, such ethnic and political conflicts were not represented in the Facebook groups formed by the diasporas from those countries, living in the U.S. The tone was more relaxed and less partisan, except for minor references to ethnic preferences on the Facebook groups of the Ethiopian diaspora. Several users addressed their fellow *Habesha* or announced that they needed *Habesha* roommates. *Habesha* is a pan-ethnic, distinct group that does not represent all Ethiopians, especially under-represented minorities such as the Anuak group. Notably, this ethnically-selective posting was minimal on the Facebook groups of the Ethiopians in the diaspora (four posts out of 100 posts), so it cannot be considered a significant trend or element of the group agenda.

RQ2: Agenda of Diasporic and Diplomatic Facebook Posts

The African diaspora groups included in the present study use their Facebook pages to boost their sense of community, which is not the main agenda item on the Facebook pages of their constituent embassies. According to Table 4, most posts on the diasporic Facebook groups revolve around promoting diaspora events, especially among the Egyptians and Ethiopians in the U.S. They shared invitations to music festivals, discussed TV shows, highlighted African awards nominations, celebrated graduation parties, posted job openings, and uplifted Ramadan festivities. In contrast, the agenda of those diasporic embassies was more geared toward nation branding rather than catering to the activities and events organized by their fellow citizens in the U.S. The main theme for the Facebook page of the Egyptian embassy in D.C. was promoting embassy-related events in the diaspora. Such events included state visits made by Egyptian high-rank politicians to the U.S., awards received by top Egyptian athletes and artists in the U.S., and TV interviews with Egyptian officials in the U.S. media. Those news stories from the U.S. diaspora were elitist and more celebratory than related to the daily lives of the Egyptian diaspora in the U.S. Global Egyptian celebrities, such as Liverpool soccer player Mo Salah, and movie star Rami Malek, were celebrated and/or congratulated by the Egyptian embassy several times, perhaps with the

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hope to create an association between Egypt and the prestige of its notable nationals. The Ethiopian and Egyptian embassies were more focused on introducing news from home on their Facebook pages. This includes news stories that did not relate to the U.S., such as stories about the Renaissance Dam in Ethiopia, the solar park in Egypt, the anniversary of liberating Taba (in Sinai), and the inauguration of renovated ancient Greek tombs in Alexandria.

Table 4. Agenda of topics on diaspora Facebook groups on the Facebook pages of their embassies

Topics	FB diasporic Groups				FB pages of embassies			
	Nigeria	Ethiopia	Egypt	Total	Nigeria	Ethiopia	Egypt	Total
Opinion Sharing	4%	3%		2%	4%	1%	1%	2%
Personal Engagement	24%	15%	24%	21%	15.2%	3%	3%	7%
Sharing Resources	7%	9%	9%	8.3%	16.2%	3%	3%	7.4%
Declaring Activism	9%	11%		6.7%	21.2%	5%	5.1%	10.4%
Advertising Services	18%	9%	17%	14.7%	1%	0%		0.3%
Seeking Services	1%	8%	6%	5%	10.1%	5%	5.1%	6.7%
Promoting Arts / Culture	13%	9%	31%	17.7%	27.3%	65%	65.7%	52.7%
Discussing Home News	17%	16%	1%	11.3%	4%	18%	16.2%	12.8%
Promoting Diaspora Events	6%	15%	12%	11%	1%	0%	1%	0.7%
Sharing Home History	1%	5%		2%	4%	1%	1%	2%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Table 4 also shows that the three embassies relied more on promoting arts and culture in their nation-branding posts. This category included news about ancient Egyptian monuments, poetry contests, links to theatrical events, and promotions of Ethiopian Picnic Day. Both Nigerian diaspora and Nigerian embassy were more aware of sharing interactive, service-oriented content on Facebook. While some Nigerians volunteered to educate their fellow citizens on resume writing, others sought the help of Nigerian “friends” on the group. Political activism was also present on the agenda of the diaspora and embassies of both Nigeria and Ethiopia while being noticeably absent from the Egyptian Facebook group.

The use of Facebook for engaging users and creating a sense of community in diasporic Facebook groups was revealed when we analyzed the “pronouns” presented in the posts. The use of second and third-person voice was more prevalent in these groups (61 percent of the total posts) compared to how the embassies implicitly or explicitly used the same pronoun in their posts (19 percent). Conversely, 81 percent of the embassy Facebooks posts used the third-person, indicating a less personal tone when posting, which may be congruent with formal diplomatic discourse.

The difference between the diasporic and diplomatic agendas on Facebook was further examined by analyzing two categories: the geographic area where the story in the post took place, and the persons mentioned in each post. The area of a story was coded into three categories: 1) home-country, 2) host-country, and 3) other. Table 5 shows that three diasporic groups (especially the Egyptian and Ethiopian groups) shared stories and events that took place in their host-land more often than their constituent embassies did. All three embassies were significantly more home-oriented in their posts, suggesting their prioritization of the U.S. foreign relations and homeland affairs.

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Table 5. Location of the stories posted on both the diaspora Facebook groups and Facebook of their constituent embassies

Where	Facebook Groups			Facebook of Embassies		
	Nigeria	Ethiopia	Egypt	Nigeria	Ethiopia	Egypt
Host-country	38.5%	67.1%	83.7%	23.6%	22.8%	32.3%
Home-country	50.0%	27.6%	12.2%	75.0%	62.0%	64.6%
Other	11.5%	5.3%	4.1%	1.4%	15.2%	3.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

$$X^2 = 98.1, DF = 10, p < 0.001$$

When examining the total geographic agenda of both the diasporic and diplomatic Facebook agendas, the data showed that 63 percent of the diasporic posts pertained to their host country, and 67 percent of the diplomatic posts pertained to the home country. This variance in geographic priorities as posted on Facebook between the diaspora groups and their embassies was statistically significant ($X^2 = 61.2$, $DF = 1$, $p < 0.001$).

The analysis of the category of “persons mentioned in posts” shows another aspect of the difference between the diasporic and diplomatic Facebook agendas. According to Table 6, the Nigerian diaspora group was more interested in their local politics and political leadership than their embassy had been. The Nigerian embassy was more focused on news stories about the U.S. embassy in Nigeria, American philanthropy, and scholarship providers, such as USAID and the Fulbright program. The Egyptian and Ethiopian diasporas, however, were less focused on political leadership back home, while their embassies tended to use their Facebook pages mainly as a platform to share news about their political leaders, especially the Ethiopian Prime Minister Abiy Ahmed and Egyptian President Al-Sisi.

Table 6. Persons mentioned in both diasporic and diplomatic Facebook posts

Persons mentioned	Facebook Groups			Facebook of Embassies		
	Nigeria	Ethiopia	Egypt	Nigeria	Ethiopia	Egypt
Leader/executive home	33.3%	21.4%	8.3%	6.8%	75.4%	44.8%
Entertainment/ Sports home	25.9%	14.3%	58.3%	1.4%	1.8%	17.9%
Intellectual home	14.8%	3.6%	8.3%	24.7%	0%	4.5%
Entertainment/ sports global	14.8%	7.1%	25.0%	5.5%	0%	0%
World/US political leader	3.7%	14.3%	0%	5.5%	17.5%	20.9%
Embassy figure	3.7%	7.1%	0%	2.7%	3.5%	7.5%
World/US African leader	3.7%	14.3%	0%	1.4%	0%	0%
US diplomat/aide	0%	0%	0%	46.6%	0%	3.0%
Intellectual global	0%	7.1%	0%	2.7%	0%	0%
Diaspora figure	0%	10.7%	0%	2.7%	1.8%	1.5%

The diasporic Facebook agenda was unique in discussing their local culture as well as global celebrities, such as their favorite entertainment and sports stars, especially within the Egyptian diaspora. The Ethiopian and Nigerian diasporas were more interested in posting about global and U.S. politicians, such as former UN Secretary Kofi Anan, former U.S. President Obama, and Somali-born U.S. Congresswoman Ilhan Omar.

The diplomatic Facebook agenda was significantly more political than the diasporic agenda, as 73 percent of the persons mentioned on the diplomatic agendas were political figures, while politicians mentioned on the diasporic agendas accounted for 43 percent of all persons mentioned ($X^2 = 26.6$, $DF = 1$, $p < 0.001$).

RQ3: Facebook Diplomacy Toward Diaspora

The three embassies employed different approaches on their Facebook pages to address their fellow citizens who live in the U.S. diaspora. The authors detected three main approaches:

1. **Interactive/Beneficiary:** An embassy would offer opportunities to engage their fellow citizens and provide them with knowledge and skills to help them have a legal status in the U.S. or seek a job.
2. **Interactive/Socializing:** Some embassies will create events and activities to engage their diaspora without adding to their knowledge or skills, such as inviting them to a meeting with an ambassador or to a movie.
3. **One-Sided Address:** In other cases, the embassy will release news that impacts the lives of those in the diaspora, such as launching a new route of a national airline or announcing the visit of a prominent intellectual to a U.S. city.

Table 7 shows how each embassy utilized those strategies.

Table 7. Strategies adopted by embassies in approaching their diasporas

	Nigeria		Ethiopia		Egypt	
	N	%	N	%	N	%
Interactive/beneficiary	14	64%	2	33.3%	0	0%
Interactive/socializing	2	9%	2	33.3%	5	38%
One-sided address	6	27%	2	33.4%	8	62%
Total	22	100%	6	100%	13	100%

Overall, the three embassies did not target their diasporas by a substantial amount of their Facebook messages. The total number of posts directed to those African diasporas was 41 posts (14 percent of the total sample of posts analyzed).

DISCUSSION

The present study contributes to understanding how Facebook communities are structured and used by both African diplomatic and diasporic content creators. The diplomatic users tend to structure their Facebook pages as tools of nation-branding and maintaining relations with other diplomatic organizations. They also adopt an outward-facing, one-way communication model (Spry, 2018) in their use of Facebook and promote both the cultural assets of their homeland, such as their historical artefacts and celebrities, and the news of their political leaders in the homeland.

This model of digital diplomacy relies on disseminating homeland-related content, especially when it relates to the host-land. This explains why the news of American diplomats in the homeland was salient on the online agenda of African embassies based in the host-land. This model of digital diplomacy pays little attention to the embassies' own people in the host country, which replicates the model identified by Bali, Karim, and Rachid (2018) who analyzed the Facebook pages of both the U.S. embassy in Erbil and the Kurdistan Regional Government (KRG) in Washington, D.C. However, those embassies do adopt several models of digital diplomacy to address and engage the diaspora groups in the host-land. The Nigerian embassy is more focused on a two-way informational model to educate current and potential diaspora members about legal and educational matters in the U.S, whereas the Egyptian embassy was more focused on a one-way pull model by inviting diaspora members to attend lectures and events in the embassy. This propaganda-oriented, unengaging digital diplomacy strategy limits the existence of embassies in the imagined communities of the diaspora Facebook groups.

The African diasporas, on the other hand, create a Facebook community to seek entertainment-based gratifications. The symbols of pop culture and sports in the homeland are the main tools to seek entertainment on these Facebook groups. Political news and confrontational political content were secondary on the Facebook agenda of the three African diaspora groups. Facebook members, in general, tend to share entertainment content for "social coherence purposes" (Tremayne, 2017, p. 33). Research also shows that the use of Facebook for open discussions and news sharing is less trending as users have started to express these views elsewhere, migrating "to the privacy of WhatsApp and messaging apps" (Kantar Media, 2018, p. 13). Future research can examine whether users in closed/private Facebook groups engage in political conversations and news-sharing more significantly than users in open/public Facebook groups.

The results also show that the Ethiopian and Nigerian diasporas are more affiliated with African or African American leaders than the Egyptian diaspora. A substantial percentage of the posts on the Ethiopian and Nigerian groups celebrated the victory of Somali-born U.S. Congresswoman Ilhan Omar and discussed news about the Ghanaian former UN Secretary Kofi Anan, and former U.S. President Barack Obama. This raises questions about how Egyptians rank their continental belonging when they think of their national identity. The Egyptian diaspora groups had a sense of pride of the newly developed soft power of their homeland, which was epitomized by the soccer star Mo Salah and the "Best Actor" Oscar winner, Rami Malek. Several users shared the news about Malek's nomination and identified with him by using a one-word comment: "Congratulations!" The Ethiopian and Nigerian diasporas did not share such news about either Mo Salah or Rami Malek. However, some of them shared news about Moitshepi Elias, Miss Botswana who was among the top 30 contestants in the Miss World Contest in 2018. These findings suggest that Ethiopian and Nigerian diasporas feel more traditionally African than their Egyptian counterparts.

CONCLUSION

The present study sought to explore how the U.S. diasporas of the most three populous African nations use Facebook groups to create their own digital supportive community and stay in touch with their culture and homeland while living abroad. The study also compared the agenda of those diasporas on their Facebook groups to the agenda of their constituent embassies on the same social media platform. The results show that the three African diasporas have more pragmatic uses of their Facebook communities. They exchange services, advice, and information as they would do in an offline neighborhood, which makes them more focused on avoiding politically divisive content. Their embassies, however, demonstrate more public relations objectives in planning their communication on Facebook. They emphasize the function of nation-branding, and adopt several tactics to achieve that strategy. Applying Spry's classification of the uses of Facebook diplomacy (Spry, 2018), the three embassies adopt a public diplomacy approach that mainly targets external audiences and minimally engages two-way communication to offer interactive venues for educating or socializing with members of the diaspora. We encourage future research to examine the impact of this homeland-focused approach of digital diplomacy on the construction and maintenance of the identity of diasporic groups.

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Section 5

Organizational and Social Implications

Chapter 51

Understanding Social Media Addiction Through Personal, Social, and Situational Factors

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ABSTRACT

The main objective of this chapter is to gain an in-depth understanding of the social media addiction construct. For this purpose, prior studies on social media addiction are reviewed. Based on this review the influence of several personal, social, and situational factors on social media addiction are examined. Firstly, personal factors such as demographic characteristics, personality traits, self-esteem, well-being, loneliness, anxiety, and depression are studied for their impact on social media addiction. Next, the social correlates and consequents of social media addiction are identified, namely need for affiliation, subjective norms, personal, professional, and academic life. Lastly, situational factors like amount of social media use and motives of use are inspected. Following the review of literature an empirical study is made to analyze factors that discriminate addicted social media users from non-addicted social media users on the basis of these different factors.

INTRODUCTION

Internet has dramatically changed the communication patterns of individuals. It has become a pervasive part of consumers' lives such that, researchers heightened their attention to understand the positive and negative effects of internet on human life. Certainly, several positive outcomes of internet can be counted as; providing easy access to information and leveraging early learning (Reid et al, 2016; Bauer, Gai, Kim, Muth, & Wildman, 2002), providing chances for widening social surroundings (Hampton & Well-

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man, 2003; Katz & Aspden, 1997; Rheingold, 1993) and improving psychological mood via creating opportunities for social contact and support (Reid et al, 2016; Chen, Boase, & Wellman, 2002; Kang, 2007). However, some potential negativities also emerged namely; decreasing level of social contact of individuals (Kim & Harikadis, 2009; Sanders, Field, Diego, & Kaplan, 2000; Kraut, Patterson, Landmark, Kielser, Mukophadhyaya, & Scherlis, 1998; Stoll, 1995; Turkle, 1996), causing loneliness and eventually, clinical depression (Young & Rogers, 1998). These negativities especially intensified as individuals' frequency and duration of internet increased specifically in the cases of addiction.

Internet addiction has gained substantial interest by both mental health professionals and academic researchers. "Addiction" term, actually, is based on biological and psychological dependence of a physical item. The Diagnostic and Statistical Manual of Mental Disorders (DSM) is the most well-known and appreciated source for addiction related terms, but behavioral addictions are not listed in mental disorders according to psychiatric literature. Recognizing this gap in the field, Goldberg (1996) established "internet addiction disorder" term for excessive human-machine interaction. Goldberg (1996) supported his argument by referring how the four components of addiction also exist in internet addiction, as well. These four components are; tolerance (increasing the engagement level to reach previous improved mood states), withdrawal (feeling discomfort when the behavior is prohibited), negative life outcomes (neglecting social, educational or work related issues), and craving (increasing the level of intensity) (Kim & Harikadis, 2009; Goldberg, 1996). In time, three more components are added to the four existing components namely; salience (being preoccupied with the behavior), mood modification (using this to alleviate psychological state) and relapse (fail to control the behavior) (Kim & Harikadis, 2009; Griffiths, 1998).

A growing wave of researchers supported the notion of using addiction term to characterize high dependence of certain behaviors especially among the youth (Kuss & Griffiths, 2011; Young, 2004; Lemon, 2002; Orford, 2001; Shaffer, 1996; Griffiths, 1998; Peele 1985). Moreover, the recent edition of "Diagnostic and Statistical Manual of Mental Disorders" recognized gambling as an addiction and listed digital game addiction as a potential behavioral addiction (American Psychiatric Association, 2013). Likewise a number of various behavioral addictions have been examined such as; internet addiction, social media addiction, digital game addiction (Keepers, 1990) and smartphone addiction (Savci & Aysan, 2017). This chapter focuses on social media addiction. Although in the literature there exist different terminology to explain this phenomenon, specifically problematic social media/Facebook use (Kircaburun et al., 2019; Shensa et al., 2017), social networking addiction (Griffiths et al., 2018; Monacis et al., 2017; Wang et al., 2015) and compulsive social media usage (Dhir et al., 2018; Aladwani et al., 2017), social media addiction term is used deliberately to reach consistency within the work.

This chapter aims to understand "social media addiction" concept by examining its correlates. Moreover, it contributes to social media addiction literature in two ways. First of all, it provides a comprehensive look to social media addiction by discussing a variety of factors, which are beneficial for academicians' to be used for further research. Secondly, with an empirical study, factors discriminating social media addicts from non-addicts are identified.

SOCIAL MEDIA ADDICTION: AN EMERGING TREND

At the present time, the dramatic role of social media on communicational patterns cannot be underestimated. Even though, social media use provides many benefits such as of eroding distance between people,

easing and speeding up the interaction, even changing the formal communicational patterns in the business life, excessive use of social media can be problematic as it potentially harms social and psychological life of individuals (Karaiskos et al., 2010; Kuss & Griffiths, 2011). It has become almost a social obligation for individuals to check their social media updates, even when they are walking, shopping, listening to a lecture, and driving (Sriwilai & Charoensukmongkol, 2015). People engage in social media for a variety of reasons, specifically to play games, to fill waiting times, to communicate, to share their “self” and to respond to other “selves” (Andreassen et. al, 2017; Allen, Ryan, Gray, McInerney, & Waters, 2014; Ryan, Chester, Reece, & Xenos, 2014). Enjoyment gained through social media can stimulate a strong habit which occasionally transforms into an irresistible urge (Longstreet & Brooks, 2017). This urge to make frequent checks or updates in social media, has a potential to turn into a compulsive disorder, which might be harmful for academic, professional and social life of individuals (Karaiskos et al., 2010). In that perspective, Andreassen and Pallasen (2014, p.4054) defined social media addiction as “being overly concerned about social media, driven by an uncontrollable motivation to log on to or use social media, and devoting so much time and effort to social media that it impairs other important life areas”.

Coining the term “social media addiction” brought about two burdens. The first one is about differentiating addicts from non-addicts, whereas the second one is about constituting the criteria for distinguishing the addicts. In 2012, Andreassen and her colleagues developed a new scale entitled Bergen Facebook Addiction Scale (BFAS), using Facebook’s position of being a pioneer in social media. In this scale, there exist six main characteristics of addictions, prevailed in Facebook addiction. These characteristics are identified as; salience (continuous preoccupation with Facebook), tolerance (incremental engagement with Facebook to reach prior mood escalating effect), mood modification (using Facebook for mood alleviation), relapse (failed attempts of limiting or prohibiting Facebook use), withdrawal (feeling anxious without Facebook) and conflict (excessive Facebook use causing social, academic or work related problems) (Andreassen et al., 2013, 2012; Wilson et al., 2010). Hence this characterization was the first attempt to distinguish extreme or enthusiastic users and addicts, since it is not only increasing the amount of time spent for social media, but the incremental and possibly detrimental effect on individuals’ life. In addition, this characterization provided further insights about the progressive nature of addiction as checking the concept in six dimensions in continuous basis, rather than dichotomous addict or non-addict basis.

FACTORS RELATED TO SOCIAL MEDIA ADDICTION

In the literature, the effects of variety of personal, social and situational factors on social media addiction has been explored. Several studies categorized the related factors as either antecedents or consequences yet majority of the analyses are made based on correlations. Therefore, this chapter intends to present the influential factors altogether to better examine potential antecedent or consequential effects.

Personal Factors

Demographic Characteristics

A substantial amount of research examined the role of demographic characteristics on the prevalence of social media addiction (Marino et al., 2018; Andreassen et al 2016; Van Deursen et al., 2015; Kuss et

al., 2014; Koç & Gulyagci, 2013). Within this stream of research, gender's effect on social media addiction is well examined. There exist three main perspectives which explain gender's role on social media addiction. The first one advocates that women are more vulnerable to addictive usage of social media compared to men due to their heightened interest in social activities (Andreassen, 2015; Van Deursen, Bolle, Hegner, & Kommers, 2015; Kuss et al. 2014; Turel et al., 2014; Griffiths et al., 2014; Andreassen et al., 2013; Moreau et al., 2015). Kuss et al. (2014) suggested the idea that both men and women have the tendency to become technology addicts, however males are more interested in gaming, pornography and gambling, whereas women favor social media, texting and online shopping (Maraz et al., 2015; Van Deursen et al., 2015; Andreassen et al., 2013). The second view, emerged as gender having a minimal role in explaining social media addiction (Beyens, Frison, & Eggermont, 2016; Lee, 2015). The third view, interestingly, suggests that men are more likely to be addicted to social media compared to women (Çam & Isbulan, 2012; Ryan et al., 2014). Thus, gender's role on social media addiction seems to be an unresolved issue, hence needs further empirical data to reach conclusive findings.

Compared to gender, age seems to have a greater impact on overall demographic characteristics. Research indicated that young individuals have higher scores in social media addiction compared to older individuals (Andreassen et al., 2012; Kuss et al., 2014). This phenomenon might be explained by new generations' easy adaptation to technology and simply embracing the state of being "constantly online" (Prensky, 2001), their tendency to develop their self via a virtual identity in social media freely (Andreassen, 2015; Mazzoni & Iannone, 2014) and their readiness to use social platforms as effective entertainment and leisure activities (Allen et al., 2014).

Another significant demographic variable is defined as individuals' relationship status. Research shows that people, not in a relationship, are more prone to social media addiction (Kuss et al., 2014). Also some studies interpret this fact with, how social media can serve as a medium to meet new people as to create or nurture relations with potential partners (Andreassen, Torsheim, & Pallesen, 2014; Ryan et al., 2014).

Self Esteem

A number of studies investigate the association between social media usage frequency and self-esteem. These studies report a negative relationship between duration of time spent on social media and self-esteem (Kalpidou, Costin, & Morris, 2011; Vogel et al., 2014). Studies also corroborated that for adolescents a negative relationship exists between intensity of social media use and individuals' self-esteem (Valkenburg, Peter, & Schouten, 2006; Woods & Scott, 2016; Ingólfssdóttir, 2017). As for tracing the relationship between self-esteem and addictive type of behaviors, notable amount of research indicated that, individuals having low level of self-esteem are more inclined to engage in addictive type of behaviors (BaAnyai et al., 2017; Andreassen et al., 2017; Baturay & Toker, 2016; Malik & Khan, 2015; Eraslan-Capan, 2015; Marlatt et al., 1988). There exist three probable explanations about self-esteem's role on social media addiction. The first one argues that, individuals having low self-esteem have negative feelings towards themselves, and social media addiction serves as an escape strategy to suppress this stress and anxiety (Błażuch et al., 2016; De Cock et al., 2014; Bozoglan, Demirer, & Sahin, 2013; Baumeister, 1993; Swann, 1996). The second one suggests that, people use social media to strengthen their self-esteem (Peele, 1985; Steinfield, Ellison, & Lampe, 2008; Gonzales & Hancock, 2011). Gonzales and Hancock (2011) use the term of "selective self-presentation" as how people carefully select the media by highlighting the most positive and appealing slices of their life. The third one is, related to

individuals having delicate self-esteem as having extreme awareness of what the environment thinks about them and embracing social media as avoiding real human contact (Eraslan Çapan, 2015). Social media serves as a magical digital channel for individuals to remove the uncomfortable feeling of one-to-one communication with others, especially for those having insufficient social skills (Boyce & Parker, 1989).

In contrary with these views, Blachnio et al. (2016) propose that, it is not only individuals with low self-esteem that use social media addictively, but people with high levels of self-esteem use social media in an addictive manner, as well. These people are motivated to sustain their social bonds via social media, and extend their social circle by being active in social media. Marino et al. (2018) interpret the overall relationship between self-esteem and social media use referring to the social compensation theory. According to that people with high self-esteem boost their self-esteem via social media presence and people with low self-esteem, use social media as a way to compensate their deficiency.

Personality Traits

In the literature, personality is widely characterized through the Five-Factor Model (Caprara, Barbaranelli, Borgogni, & Perugini, 1993; Caprara, Barbaranelli, & Livi, 1994; Marino et al., 2018). According to this model, there exist five dimensions in personality, which are extroversion, agreeableness, conscientiousness, neuroticism and openness. Extraversion refers to the quantity of social interaction, the individual prefers. It gives critical hints about sociability and emotional expression level of individuals. It is believed that, introverted individuals (scoring low in extroversion dimension) mostly engage in social media to compensate the stability of their social life (Amichai-Hamburger, Wainapel, & Fox, 2002; Bodroza & Jovanovic, 2016). On the contrary, Andreassen et al. (2012) argued that extroverted people are more inclined to be social media addicts, as a result of their motivation to sustain their sociability. Perhaps, the most comprehensive view came from Kuss and Griffiths (2010), indicating that extrovert people engage in social media for social boost, whereas introvert people engage in social media for improving social well-being. Agreeableness refers to the quality of social interaction, as how kind, emphatic and helpful the individual is towards others. Individuals scoring high in agreeableness, excessively use social media to convey their relational achievements to stay connected to the others (Marshall, Lefringhausen, & Ferenczi, 2015). However, there exist studies claiming insignificant relations between agreeableness trait and social media addiction (Lee, 2015; Błachnio et al., 2017). Further a negative relationship is also found which indicates that a high agreeableness score potentially results with lower social media addiction tendency (Andreassen et al., 2013; Bodroza & Jovanovic, 2016). Conscientiousness trait is related to being organized, competent, goal-driven and having self-discipline. Those, scoring high in this dimension, either favor organizing tools of social media as facilitators or enjoy accelerating number of friends (Amichai-Hamburger & Vinitzky, 2010). However, there also exist intriguing reverse relationship suggestions, which suggest that highly conscientious people avoid social media since social media is seen as a disturbing activity (Wilson et. al., 2010; Andreassen et al., 2012; Andreassen et al., 2013; Lee, 2015; Bodroza & Jovanovic, 2016; Błachnio et al., 2017). Neuroticism reflects individuals' incapacity to deal with anxiety and stress. Hence, it is usually taken as an indicator for emotional (in) stability. According to literature, neuroticism is evident in addictive type of behaviors (Andreassen et al., 2012; Tang, Chen, Yang, Chung, & Lee, 2016; Marino et al. 2018). Neurotic people are articulated as heavy social media users to alleviate their mood due to emotional instability (Marino et. al., 2018), to pursue emotional support via this online channel (Andreassen et. al, 2012). Likewise, Ross et al. (2009) believed neuroticism plays a significant role in information sharing tendency of people in social

media. Last dimension is openness, which symbolize how ready the individuals are to embrace novelty in their life. Individuals, who are high in openness to experience, are frequently labeled as information searchers or sharers in the social media. Thus, this information concern, make these people vulnerable for excessive use and potentially addictive behavior (Hughes, Rowe, Batey, & Lee, 2012).

Loneliness

Loneliness is also among the potential antecedents of social media addiction. According to an empirical study with a sample size of 1193, active social media users expressed they felt less lonely and gained social support after they used social media, compared to passive social media users (Wilson, Gosling, & Graham, 2012). People, who have low social skills (McKenna and Bargh, 2000) or feel socially incompetent (Kubey et al., 2001) might feel more relaxed and comfortable with online activities. Loneliness is also matched with other addictive activities such as consumption of drugs (Grunbaum, Tortolero, Weller, & Gingiss, 2000) and alcohol (Loos, 2002; Medora & Woodward, 1991). In that perspective, heavy dependence on internet and social media to cope with loneliness might cause social media addiction (Caplan, 2002, 2003; Davis, 2001).

Well-being

One factor that is examined as a negative correlate of social media addiction is individuals' well-being. It is suggested that meaningless time on Facebook dampens individuals' morale (Sagioglou & Greitemeyer, 2014). Besides, compared to non-addicts, those who are addicted to social media score lower on subjective happiness and subjective vitality (Uysal, Satici, & Akin, 2013). Moreover, it is indicated that procrastination due to social media use has a damaging effect on general well-being (Meier, Reinecke, & Meltzer, 2016). A study which examined the impact of instantaneous and prolonged Facebook use, reveal that increased usage of Facebook lessens individuals' well-being (Kross et al., 2013). A negative relationship is also demonstrated between Facebook addiction and satisfaction with life (Błachnio, Przepiorka, & Pantic, 2016; Satici & Uysal, 2015). Likewise, a decrease in social media use enhances satisfaction with life (Hinsch, & Sheldon, 2013).

Anxiety and Depression

In the literature, depression and anxiety are related to social media addiction in two aspects. The first aspect is figured as anxiety/depression's role as an antecedent, whereby people feeling more anxious or depressed spend more time in social media and decrease the level of communication with their social circle (Pantic, 2014; Kraut et al. 2002). Block et al. (2014) reported that depressed individuals use media (internet, tv and social media) more frequently than regular people. Likewise, Clayton, Osborne, Miller, and Oberle (2013) referred anxiousness as an important antecedent of emotional connectedness to social media.

The second aspect is visualized as a consequence, as of social media addiction's detrimental effect on producing more depressed and anxious individuals (Shensa et al., 2017; Moreno et al., 2011). Addictive use of internet increases depression symptoms (Gámez-Guadix, 2014). Specific to social media domain, it is also found that excessive use of social media correlates with increased likelihood of depression (Moreau et al., 2015; Lin et al., 2016). Another study also reported increased levels of anxiety and depression as

a result of increased social media usage for adolescents (Woods & Scott, 2016). Similarly, it is revealed that social media addiction contributes to emotional burn out through the use of emotional strategies of coping with stress (Sriwilai & Charoensukmongkol, 2016). Social media addiction may also lead to physical health issues (Andreassen, 2015). For instance, both overall state of health and sleep quality deteriorate with social media addiction (Atroszko, 2018). Additionally, it is indicated that excessive use of social media results in delayed bedtimes and rising times (Andreassen, et al., 2012).

In sum, social media addiction is perceived as a significant contributor to depression, especially in youth, according to a substantial number of research (Younnes et al., 2016; Levenson et al., 2016; Liu et al., 2016; Block et al., 2014; Feinstein et al., 2012; Moreno et al., 2011; Desjarlais & Willoughby, 2010; Mihajlović et al., 2008). On the other hand, studies also tried to validate the potential positive effects of social media on human spirit. Interestingly, McDougall et al. (2016) initiated that social media might produce benefits as fueling social support to remove depression, yet he argued that social media did not nurture depressive symptoms, but let people share their inner world and start almost like a primitive therapy for these people. In that vein, excessive social media users or social media addicts do not necessarily in all cases, suffer from depression and anxiety. Eventually, the relationship between social media, depression and anxiety seem ambiguous, in terms of whether addictive social media causing these negative feelings or negative feelings lead individuals to addictive social media use.

Social Factors

Need for Affiliation / Social Enhancement

Need for affiliation is described as the individuals' inclination to develop and maintain social relationships (Veroff, Reuamn & Feld, 1984; Murray, 1938). Seeking social approval or belongingness is a natural drive, since people show considerable energy for social interaction to satisfy the need for appreciation and affection. Yet, human interaction is not limited to face-to-face contact, writing letters once was the main practice for engaging in distant relationships (Lansing & Heyns, 1959). Thanks to advances in communication technologies, internet and social media acts as an efficient tool for individuals' contact with their friends. Ample amount of studies underlined people's enthusiasm for social connectedness as the major reason of social media use (Valentine, 2013; Kuss & Griffiths, 2011; Sheldon, 2009; Joinson, 2008; Raacke & Bonds-Raacke, 2008). In the studies, validating the correlation between individuals' need for affiliation and internet communication, respondents expressed that web based communication is deeper and more pleasant than face-to-face interaction (Peter & Valkenburg, 2006; Caplan, 2003). Similarly, it was argued that, need for affiliation is a strong motivator for new generation to take place in social media due to frequency and quality of communication they develop with others (Chuang & Nam, 2007). The type of interaction is different in social media, such as receiving and sending comments, writing on the wall of others, number of shares, likes and so on. This reciprocity produces a virtual community for those people, whereby they can satisfy the need for affiliation. In that vein, online social networking can be beneficial for social functioning (Burke, Marlow, & Lento, 2010; Ellison, Steinfield, & Lampe, 2007; Steinfield, Ellison, & Lampe, 2008). Furthermore, the individual can create and develop the desired "self", which serves the need for affiliation, as well (Gibbs, Ellison, & Heino, 2006). Even so, having such a convenient, cheap and easy communication tool seems promising, it comes with a cost. It is interesting to reveal that, individuals excessively using social media might turn into socially isolated individuals in real life (Allen et al., 2014). When taken with facilitating demographic character-

istics (being young and having no relationship), need for affiliation via social media can evolve to social media addiction, whereby the individual experiences an alienation in real social settings and escapes to virtual world for social gratification (Shen & Williams, 2010; Valkenburg & Peter, 2009; Mesch, 2001).

Subjective Norms

Subjective norms are defined as individuals' perception of the type of conduct that is expected from them within a group (Davis, 1989; Cialdini, Kallgren & Reno, 1991). It is a more lenient form of group pressure, which creates an obligation to act suitably (Marino et al., 2016). Studies support the notion that, especially in youth, subjective norms can have both positive and negative impacts (Venkatesh et al., 2003; Borsari & Carey, 2003; Pozzoli & Gini, 2013). Rabaai et al. (2018) suggested that subjective norms might function in two ways. The first one is due to rapid adoption of technology especially in younger generation, individuals feel like they have to be present in social media, even though they do not have a certain desire (Lewis et al., 2012). Even more, Olowu and Seri (2012) state that existence in social media might be for just suppressing the social pressure of "have to be there, have to be online". In that sense, adolescents seem more vulnerable to seize social media just for approval due to peer influence. The second impact emerges, when the individuals observe how their social circle experience and enjoy social media, they feel the strong need to feel alike (Huang et al., 2014). Compared to previous trigger, hereby not solely being online in social media motivates the person, but seeks to actively participate in conversations and events for the purpose of enriching social life and not missing out on joyful events. If individuals become heavily anxious about their social life performance, they fear of social exclusion (Blackwell et al., 2017). In that perspective, fear of missing out might promote individuals increased social media use. Fear of missing out is defined as a type of fear when individual thinks other people are enjoying their time without him/her (Przybylski, Murayama, DeHaan, & Gladwell, 2013).

Personal, Professional and Academic Life

The influence of social media use on real life relationships are also examined within this stream of research. When individuals use social media excessively their relationships with friends and family are damaged since they dedicate less time to their social environment (Zheng & Lee, 2016). Studies also demonstrate detrimental effects of social media addiction on romantic relationships such that a positive association between addiction and romantic detachment along with betrayal exists (Abbasi, 2018, 2019).

Social media addiction may also lead to problems in individuals' professional life. Firstly, individuals declare a slightly negative impact of social media use on their job performance (Andreassen, Torsheim, & Pallesen, 2014). On the other hand, it is indicated that excessive use of social media use impedes individuals' work conduct (Zheng & Lee, 2016). It is further revealed that social media addiction hinders job performance as a result of social media induced distraction and negative affect (Moqbel, & Kock, 2018). Parallel to that a decline in job performance is shown due to addiction based work-family life imbalance and emotional exhaustion (Zivnuska et al., 2019). Finally, addiction to social media is shown to influence job satisfaction negatively as well (Choi, 2018).

The impact of use of social media on academic performance also received some scholarly interest. First of all, it is shown that those who use Facebook spend less time studying compared to those who do not use Facebook (Kirschner & Karpinski, 2010). Furthermore, it is indicated that as the frequency of Facebook use increase, the overall GPA of students decrease (Junco, 2012). Parallel to that, multitasking

social media while studying is shown to be negatively related to overall GPA (Junco & Cooten, 2012; Lau, 2017). It is also demonstrated that individuals, who show symptoms of social media addiction, performed poorly in their academic studies (Al-Menayes, 2015).

Situational Factors

Amount of Use

Social media addiction, just like the other addictions, can be assessed in an incremental basis on a continuum. As it can be expected, the higher amount of time the individual uses social media, the likelihood to get addicted increases (Widyanto & McMurren, 2004; Leung, 2004). Yet, prior research supported that problematic social media users tend to spend more time rather than regular users, signaling significant positive relationship between two concepts (Hormes et al., 2014). However, studies distinguishing excessive social media usage and social media addiction, state that amount of use might not indicate problematic/addictive social media use, in all cases (Pontes et al., 2015; Griffiths, 2010). By making this distinction, emphasis is put on the availability of negative consequences. If the individual does not suffer from negative outcomes (e.g. delay in daily chores, feelings of insecurity or discomfort when deprived from social media etc.) then the individual is not considered addicted (Griffiths, 2010). In sum, addicts use social media frequently; however, excessive users (referring to the quantitative data) do not necessarily always show addictive symptoms. In that manner, apart from the quantitative approach, the qualitative nature of the time spent on social media needs to be explored.

Motives

Motives leading to excessive or addictive usage of social media might be numerous. Studies proposed various motives for social media usage; fulfilling relational needs (interaction, affection, approval, self-expression) or fulfilling media related entertainment needs (learning new things, leisure activity, using applications and tools) (Charney & Greenberg, 2002; Ebersole, 2000; Ferguson & Perse, 2000; Kaye & Johnson, 2004; Papacharissi & Rubin, 2000). It was suggested that, if the individual is aware of the motives that lead them to excessive or addictive usage of social media, that would reduce the potential manifestation of the negative outcomes (Song, LaRose, Eastin, & Lin, 2004). A growing body of research indicated that people that are using social media for social goals (socialization, companionship and social interaction) and lightening mood (escapism, feel good effect, passing time) are more likely to be addicts (Bodroza & Jovanovic, 2016; Koc & Gulyagci, 2013; Tang et al., 2016; Sharifah et al., 2011; Dhaha, 2013; Masur et al., 2014). Similarly, Ryan et al. (2016) stressed social media's effect on emotional life of individual as repairing mood or overcoming boredom besides social motives. The motivational model for social media, is characterized as having two dimensions; positive / negative valence (enhancing positive mood, or repairing negative mood) and internal / external resource (satisfying one's own internal needs or others') (Marino et. al., 2016; Bischof-Kastner et al., 2014). Consequently, four motives emerge, namely enhancement, coping, conformity and social. Enhancement refers to positive valence and internal source, meaning that individuals with this motive aim to improve positive feelings for them. Coping refers to negative valence and internal source, meaning people wish to escape from negative feelings via social media. Conformity refers to negative valence and external source, which is related to using social media to overcome social pressure. Social motive is related to use social media

with the aim of improving social interaction with existing or potential friends (Marino et. al., 2016; Bischof-Kastner et al., 2014).

THE STUDY

The objective of the empirical study is to gain a better understanding of social media addiction. For this purpose a comparison of addicted social media users and non-addicted social media users are made based on a number of factors. First, the study examines the relationship between social media addiction and motives underlying social media use. Second, the impact of person characteristics such as loneliness and life satisfaction on social media addiction is investigated in the study. The influence of individuals' judgments regarding their satisfaction with their lives and participants' subjective feelings of social seclusion on the degree of their social media addiction is also examined. Moreover, the extent of association between social media usage duration and social media addiction is inspected. Finally, the relationship between social media addiction and social media use while conversing with others, driving, listening to lectures is also analyzed.

METHOD

Data

The empirical study for this chapter is conducted in Turkey. It is stated that Turkey is one of the top twenty countries based on time spent each day on social platforms (GlobalWebIndex, 2019). Accordingly, the tendency to use social media in a problematic manner is quite high in Turkey. The data is collected from a sample of college students. Social media use is most widespread among the young; hence the age base of the sample is deemed appropriate.

Undergraduate students of Business Department of three major universities in Istanbul, Turkey are invited to the study. Students are incentivized to participate to the study with bonus credit offerings. A total of 269 students completed a web-based survey. The survey took on average 10 minutes to complete. 11 students did not own a social media account. Therefore, they were removed from the sample. Moreover, 23 students failed to answer correctly to an attention test and hence were removed. Consequently, 235 participants were retained in the final sample.

Measures

Social Networking Addiction

To assess participants' level of social media addiction Bergen Social Networking Addiction Scale (Andreassen et al., 2012) was employed. The scale includes six items corresponding to six main dimension of addiction namely salience (prominence of social media use in individuals' thinking), mood modification (social media use improving mood), tolerance (increasing amount of social media use to experience the same effects), withdrawal (presence of negative feelings when social media is not used), conflict (negative impact of social media use on studies/work), and relapse (returning to earlier use of social

media after exercising self-restraint). Participants' were asked to indicate how often they experienced the mentioned thoughts, feelings and behaviors during the past year. They responded using a five-point scale ranging from (1) very rarely to (5) very often. A summated score of 6 to 30 marks the extent of social networking addiction. The Cronbach's alpha of the scale was 0.75 for the current sample.

Motives for Using Social Media

As a measure of participants' motives underlying social media, the 16-item Motives for Using Social Media Scale (Marino et al. 2016) was included in the study. The scale assesses four key motives namely; enhancement (to improve positive feelings by using social media), coping (to reduce negative feelings by using social media), conformity (to conform to peer group norms by using social media), and social (to improve relationships with friends). Participants' were asked to indicate how often they used social media for each motive on a five-point scale ranging from (1) never or almost never to (5) always or almost always. Higher scores on this scale indicate stronger motives. The Cronbach's alpha of the scale was 0.91.

Loneliness

The trait loneliness was assessed using eight-item Loneliness Scale developed by Hays and DiMatteo (1987). The scale assesses individuals' feelings of social isolation. Participants were asked to indicate to what extent they agree with the statements on a four-point scale ranging from (1) never to (4) always. Those who obtain a high score on this scale were considered to feel lonely. The Cronbach's alpha of the scale was 0.73.

Satisfaction with Life

In order to measure participants' satisfaction with their lives the Life Satisfaction Scale developed by Diener et. al. (1985) was employed. The scale comprises five items that assess a cognitive appraisal of individuals' satisfaction with their lives. Participants were asked to indicate to what extent they agree with the statements on a four-point scale ranging from (1) strongly disagree to (4) strongly agree. The Cronbach's alpha of the scale was 0.78.

Social Media Use Duration

The measure for Social Media Use Duration was adapted from Facebook use duration scale of Brailovskaia et al. (2019). The scale is adapted by substituting the Facebook term with social media. One item assessed frequency of social media use on a 6-point scale ranging from (1) less than once a day to (6) ten times a day or more. Another item assessed length of social media usage period on a 7-point scale ranging from (1) less than five minutes to (7) more than 180 minutes. The average frequency and length of social media use for this sample was 5.01(SD=1.21) and 4.83 (SD=1.52), respectively.

A combined measure for social media use duration was also calculated by taking the average of two Z-transformed scores of both measures.

Improper Use of Social Media

In order to assess improper use of social media a three-item scale is developed for this study. Items related to the tendency to use social media while conversing with others, driving and attending a lecture are included. Participants were asked to indicate to how frequently they engaged in the behaviors reported in the statements on a four-point scale ranging from (1) never to (4) always. The Cronbach's alpha of the scale was 0.6.

Demographics

Participants' age, gender and relationship status were included in the questionnaire. The mean age of the sample was 20.77 (SD=3.35). 40 percent of the participants were female and 34 percent of the whole sample was in a relationship.

Analysis and Results

Initially mean values, standard deviations and bivariate correlations of the study constructs are computed (Table 1). The average summated social media addiction score for the sample is 16.16 (SD = 5.04) out of a possible 30 points.

Table 1. Descriptives and Correlation coefficients between constructs

	A	B	C	D	E	F	G	H	I
A. Social Media Addiction	1								
B. Life Satisfaction	-0.02	1							
C. Loneliness	0.18**	-0.17**	1						
D. Social Motive	0.40**	0.10	0.15*	1					
E. Enhancement Motive	0.54**	0.10	0.13	0.56**	1				
F. Conformity Motive	0.46**	-0.04	0.32**	0.40**	0.42**	1			
G. Coping Motive	0.62**	-0.1	0.20**	0.43**	0.51**	0.39**	1		
H. Composite duration	0.51**	0.12	0.01	0.39**	0.51**	0.21**	0.32**	1	
I. Improper use	0.52**	0.09	0.11	0.38**	0.45**	0.35**	0.40**	0.39**	1
Mean	16.16	4.62	1.92	3.33	3.05	1.77	2.88	0.00	2.28
Standard deviation	5.04	1.05	0.43	1.12	1.01	0.98	1.22	0.88	0.83

* p< 0.05

** p< 0.01

A multiple regression analysis is made to examine the predictors of social media addiction. The variables of the study explained 54% of the variance of social media addiction (Table 2). Multicollinearity among the variables is inspected based on bivariate correlations and variance inflation factors. It is seen that there is no multicollinearity since all correlation coefficients are below 0.7 and variance inflation factors for all variables are below 3 (Hair et al., 2006). According to the results of the multiple

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regression analysis significant variables are social media use duration ($\beta=0.25$), enhancement motive ($\beta=0.13$), conformity motive ($\beta=0.18$), coping motive ($\beta=0.34$), and improper use ($\beta=0.19$). The other variables are not significant.

Table 2. Regression analysis for social media addiction

	B	Std. Error	β	t	Sig.
(Constant)	8.38	2.28		3.67	0
Composite duration	1.42	0.31	0.25	4.65	0.00
Life satisfaction	-0.14	0.23	-0.03	-0.63	0.53
Loneliness	0.35	0.55	0.03	0.63	0.53
Social motive	-0.35	0.26	-0.08	-1.35	0.18
Enhancement motive	0.64	0.32	0.13	2.02	0.04
Conformity motive	0.93	0.27	0.18	3.43	0.00
Coping motive	1.40	0.23	0.34	6.09	0.00
Improper use	1.16	0.32	0.19	3.66	0.00
Age	-0.08	0.07	-0.05	-1.13	0.26
Gender	0.79	0.47	0.08	1.69	0.09
Relationship Status	-0.21	0.48	-0.02	-0.43	0.67

R²: 0.57

Adjusted R²: 0.54

Std. Error of the Estimate: 3.37

F_(df1,df2): F(11,223)=27.35

*p<0.05; **p<0.01

Next, a logistic regression analysis is made with the same variables to predict the likelihood of being addicted to social media. In order to distinguish addicted individuals, having a minimum score of three or more for at least four of the six items is required, following Andreassen et al. (2012)'s approach. A dummy variable, which takes the value 1 for addicted individuals, is created for the analysis. Based on that a total of 113 participants fit this criteria and hence were categorized as addicted individuals.

The logistic model is statistically significant (χ^2 (11, N = 235) = 106.56, $p < 0.05$) which suggests that differences between addicted and non-addicted individuals can be identified. Hosmer - Lemeshow test is employed to assess goodness of fit for the logistic regression. The p-value, which is greater than 0.05, indicates no significant difference between the expected and the observed data. 77% of the cases are correctly classified by the model. Four variables are significant namely; social media use duration, conformity motive, coping motive, and improper use. According to that, individuals, who used social media for longer durations are 2.01 times more likely to be addicted ($p = 0.01$). Moreover, using social media with conformity motive and coping motive increase the chances of being addicted with odds ratios of 2.09 ($p < 0.01$) and 1.94 ($p < 0.01$) respectively. Lastly, improper use of social media increase the odds of being addicted with a ratio of 1.87 ($p = 0.01$).

Table 3. Logistic regression analysis predicting likelihood of being addicted to social media

Variables	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for Exp(B)	
							Lower	Upper
Composite duration	0.70	0.26	7.36	1	0.01	2.01	1.21	3.33
Life satisfaction	0.01	0.18	0.01	1	0.94	1.01	0.71	1.45
Loneliness	0.47	0.44	1.10	1	0.29	1.59	0.67	3.81
Social motive	-0.12	0.19	0.38	1	0.54	0.89	0.61	1.29
Enhancement motive	0.03	0.23	0.02	1	0.89	1.03	0.66	1.62
Conformity motive	0.74	0.23	10.33	1	0.00	2.09	1.33	3.28
Coping motive	0.66	0.18	14.19	1	0.00	1.94	1.37	2.74
Improper use	0.63	0.25	6.35	1	0.01	1.87	1.15	3.05
Age	-0.09	0.06	2.38	1	0.12	0.91	0.81	1.02
Gender	0.02	0.36	0.00	1	0.96	1.02	0.50	2.05
Relationship Status	-0.39	0.38	1.03	1	0.31	0.68	0.32	1.43
Constant	-3.38	1.88	3.23	1	0.07	0.03		

Hosmer-Lemeshow

χ^2 : 5.66

Sig.: 0.69

N: 235

DISCUSSION

Firstly, the empirical study supported that the degree of social media addiction increases with increased duration of use. The composite index of frequency and length of social media use significantly predict social media addiction. This finding corroborates findings of prior studies which show a significant link between time spent on the internet and internet addiction (Leung, 2004) as well as a significant link between amount of daily online presence and Facebook addiction (Przepiorka, & Blachnio, 2016; Brailovskaia, Margraf, & Köllner, 2019).

Secondly, the study point out that neither life satisfaction nor loneliness determines social media addiction. Even though prior research demonstrated that individuals who are socially secluded seek interactions through online mediums (McKenna & Bargh, 2000), and that a positive relationship exists between state of loneliness and internet addiction (Kubey et al., 2001; Kim & Haridakis, 2009), findings demonstrate no significant relationship between loneliness and social media addiction. Moreover, earlier studies indicate positive relationship between social media addiction and life satisfaction (Błachnio, Przepiorka & Pantic, 2016; Longstreet & Brooks, 2017). Current study does not support these findings. One probable account for this discrepancy is that life satisfaction is a general concept which encapsulates global evaluations of every dimension of life. Therefore, judgments about life in general might not be a driver of social media addiction.

Regarding the motivation of social media use, results indicated that conformity and coping motives distinguish between addicted and non-addicted users. Those, who used social media to reduce their negative feelings or to conform to peer norms, are more likely to get addicted. Moreover, enhancement motive is found to be a significant predictor of social media addiction. Even though enhancement does

not discern addicts from non-addicts, the motive to improve positive feelings increase degree of social media addiction. Lastly social motive does not determine social media addiction since majority of the users' main drive in social media use is to improve relationships with friends. Accordingly, social motive becomes a generic purpose for all users.

Another finding demonstrated that those who use social media improperly are more likely to get addicted to social media. Those, who compulsively check their social media feeds during lectures, while driving or having a conversation with others, are more likely to be addicted. This finding demonstrates the detrimental effects of social media addiction and hence is valuable. Further studies might investigate the impact of improper use on social interactions as well as performance of daily tasks.

Finally, the findings reveal that gender does not discern likelihood of being addicted to social media. It is shown that only marginally significant differences exist on extent of social media addiction between men and women. Specifically, the extent of social media addiction is slightly higher for women than for men. Prior studies report conflicting findings regarding the role of gender in predicting social media addiction (Çam & Isbulan, 2012; Griffiths et al., 2014; Wang et al., 2015). Our study also does not clarify the influence of gender on social media addiction. Furthermore, neither age nor relationship status predict social media addiction. The age range of the current sample is rather narrow due to student based sampling. Thus, it is unsurprising that age does not predict social media addiction with this sample. Regarding the relationship status, it is shown that being addicted to social media does not depend on being in a relationship or being single. This finding contradicts earlier work which demonstrated that individuals who are not in a relationship have higher levels of social media addiction (Andreassen et al., 2017). Still, the authors of that study also report that the impact of being in a relationship on social media addiction is rather small, almost negligible.

CONCLUSION

In this chapter, social media addiction construct is discussed extensively, starting with the facilitating conditions that cause social media addiction to become an emerging trend especially with the young generation. Diverse perspectives from psychology, psychiatry, and social psychology are reviewed to indicate conceptual differences and grasp the theoretical underpinning. Then, the influences of most significant personal, social and situational variables are presented. Prior work, which investigate the impact of these factors on social media addiction along with the impact of social media addiction on some of these factors, are assessed. Regarding the personal variables; demographics, self-esteem, personality traits, loneliness, well-being, anxiety and depression are studied as they received the most scholarly interest. For the social factors; need for affiliation/social enhancement, subjective norms, and personal/professional/academic life are scrutinized. Lastly, situational factors are investigated such as individuals' amount of social media use and motives leading people to social media use.

In order to better understand the impact of these defined factors, an empirical study is designed. Using a sample of university students, the predictors of social media addiction are examined. The study highlighted four major findings. The first one is, as anticipated, there exist a significant relationship between amount of social media usage and social media addiction. In that perspective, for future studies, the qualitative nature of that time might be studied by examining the amount spent for leisure (game etc.), interpersonal relation (texting, replying and so on) or gathering information (about others, events, news). The second finding demonstrates how loneliness and life satisfaction might be irrelevant factors

to determine addictive type of behaviors. The literature proposes conflicting results; hence further examination is needed on the effect of these predictors. The third outcome validates, how the nature of the motives to use social media might produce social media addiction. Conformity and coping motives are stated as crucial contributors to social media addiction. Meaning that, individuals using social media to alleviate their negative mood or conform to social circle's norms have the tendency to get addicted. The forth finding supports the view that, a close relationship exists between improper use of social media while doing other staff (in the lecture, reading, driving etc.) and social media addiction. Finally, contrary to some of the prior research, the findings did not support the demographic characteristics effect on social media addiction. Even so, demographic factors need further examination perhaps on a wider and heterogeneous sample. The findings of the current study contributes to the social media addiction literature, in a both corroborating and contradicting manner with prior work. As a result, it is evident that this stream of research is at its infancy and more research is imperative.

As popularity of social media grows, recognizing adverse effects of social media addiction becomes essential. Compulsive use of social media has several negative correlates however majority of the studies in this domain are cross-sectional. Even though a number of relationships are depicted with these studies, causal inferences can not be made. There is a pressing need for longitudinal research, which will provide insight into the negative consequences of social media addiction. Understanding the direction of the relationship between social media addiction and variables such as depression, anxiety, and self-esteem is necessary.

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Chapter 52

Aesthetics Perceptions of Social Media Generations

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ABSTRACT

This chapter aimed to investigate the online value and behavior transfer of generations who use social media with the phenomenon of aestheticization. By examining the social media generations' preferences, usage habits, the levels of acceptance of differences and the effects of social media use on the work life in the light of researches, generations' togetherness and differences on the online network are revealed. In social networks, generations can provide power by affecting each other's moods, and can easily impose violence, aggression, and power factors on others by making fun. When compared to older generations, the fact that young generations prefer social media environments that are with more photo and video sharing makes for them to produce/consume many emotions that have been made usual with aestheticization, especially the information that contains violence. At the end of this chapter, some suggestions are made including family communication and trust model named "5S+1M."

INTRODUCTION

We live in an era surrounded by social media. Social media, which has transformed many ways of doing work in all areas of life, has influenced people of all ages. Today, the effects of social media are discussed along with many economic, technological and social events since social media has taken over the world with its global communication network.

Social media can easily be used by individuals of all ages. Now that everyone can access the internet in an easy and inexpensive way, the spread of Web 2.0 technologies has brought interpersonal communication from the real environment to the virtual environment. Thus, people who cannot communicate comfortably in face-to-face communication can be quite social and charismatic online. The effect of communication that the person provides globally through social networks can be quite different and powerful than the real life.

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The effects of digitalization and the transformations it creates are spoken worldwide. Besides the social effects, our communication, value transfer, the ways of doing work and even our behavior have been transformed under the influence of social media when the individual is taken into consideration. Therefore, it is seen that many sociological issues addressed in real life are reconsidered by including the effects of social media in current studies. Digitalization has profoundly influenced research in all fields. One of these areas is communication. The forms of interpersonal communication and value transfer are signs of being a society. Social coexistence is important, and today, societies have taken their place in online networks as virtual societies by changing platforms.

Intergenerational value transfer has also been influenced by online platforms and especially social media networks that have emerged with Web 2.0 technologies. Tarhan (2018) divides the values into two as universal and cultural. Accordingly, culture-specific values consist of universal values mixed with various doses. For example, while one culture emphasizes love, another one emphasizes honesty and another diligence. However, in all of these cultures, the social unity of the society is created with bricks built from values. There is a dose difference between the anonymous values of each society and the cultural identity of the society is shaped accordingly.

There are people from many cultures in the virtual world just as in the real world. The participatory culture is generally the dominant culture in societies. In such a culture, members believe that their contributions are important and feel that they have established a certain social bond with each other. In this culture, it is very important for people to be accepted in the society and what someone else thinks. The most common example of participatory culture nowadays is social media networks. It is important for people on social media networks to be accepted by others on their networks. Therefore, people try to be accepted with edited contents in photographs, text and video formats. The thoughts, the quantity of “likes” and the comments represent being accepted by the others on the network in social media culture.

On the other hand, social media includes people of all ages and this made it necessary to reconsider the concept of generation. Generation studies used to address intergenerational communication and value transfer in the real life. Nowadays, the fact that people behave differently on the online platforms caused the need to update the generation studies by taking into consideration the interactions in the virtual environment. Generations are examined around the world by grouping with certain names. Thus, generations are generally called as the Silent Generation (1927-1945), Baby Boomer (1946-1964), Generation X (1965-1979), Generation Y (1980-1999) and Generation Z (2000 and later).

When the literature is examined, there are many studies conducted according to the generation perspective. In these research, by focusing on the value transfer between generations, the work life, school life and communication habits of different age groups were investigated (Akdemir et al., 2013; Alwin & Mcammon, 2007; Biggs, 2007; Ekşili & Antalyalı, 2017; Latif & Serbest, 2014; Özdemir, 2017; Yıldırım & Becerikli, 2013). In fact, in a research, multi-dimensional scales were developed with the aim of understanding generations' work life, acceptance of differences and social media usage levels (3 scales can be used together or separately) (Deniz & Tutgun-Ünal, 2019a). In order to understand the generations, the use of social media must be investigated and its great impact should not be overlooked.

When conducting a research tried to understand the generations who use social media, it is important to consider the conditions of the period as generations differ in adapting to the work life, technology and even life itself. In addition, the fact that the Generation Y being quite different from each other by attending two different types of schools, even if they are members of the same generation, revealed that the subject of the generation should be studied more individually (Ekşili & Antalyalı, 2017).

Due to the consideration of online values and behaviors in social media networks, Tutgun-Ünal and Deniz (2020a) named the generations as “social media generations” and examined them by grouping according to the worldwide accepted names, as Baby Boomer, X, Y and Z. Since social media is a means of communication which is independent of time and space on a global scale, people from different religions, ethnic groups and different cultures are able to interact with one another. Billions of people from all cultures spread information by sharing content from massive online networks. This information affects other billions of people in the network. It is possible to spread various emotions through social networks by hiding a message under a photo or video. This raises emotional transmission on social networks.

Christakis and Fowler (2012) argue that there are three degrees of influence in social networks. To them, emotions spread to three degrees in social networks. Mathematical analysis of the social networks shows that the probability of a person to be happy increases by 15% when a person at one degree away is happy. The impact of happiness is 10% for people from two degrees away who can be friend of a friend, and about 6% for people from three degrees away who can be friend of a friend of a friend. At four degrees away, the effect disappears. Thus, it is seen that as the person expands the network on social media, their power of influence will increase. So much so that a person’s influence on social media will be many times greater than it is in everyday life.

This situation indicates the potential of information spread over social media to bear the elements of aestheticized fear, violence and power. Social media are interactive forms of mass media and members can easily spread their feelings to others by sending messages in the social media society. As known; mass media played a preliminary and an important role in reaching the masses by aestheticizing violence. Nowadays, many moods are easily transferred via social media.

People on social media have the power to influence each other by sharing. We see in many instances that people from different places, regardless of the distance, use social media networks effectively to create unity in a subject at a speed that would not be possible in daily life. In today’s new media age, social media networks need to be analyzed by dividing online users into generations. Since it is very important to know how value, behavior and aesthetic contents transfer between generations are transformed by digitalization. In this section, it is aimed to discuss the effects of generations’ associations and social media interactions on the values and behaviors of the generations with the research data and aesthetic perspective.

BACKGROUND

While the relationship of people with mass media such as newspapers, radio and television has been examined (Pecchioni, Wright & Nussbaum, 2005; Williams, 2001; Williams & Harwood, 2008), the relationship of different generations with computers, the internet, mobile phones and especially social media has been examined with the rapid spread of Web 2.0 technologies, (Asmafiliz & Şalvarcı Türeli, 2018; Dyke, Haynes & Ferguson, 2007; Kuyucu, 2017; Özdemir, 2017; Sağır & Eraslan, 2019; Süer, Sezgin & Oral, 2017).

We are going through a period when the violence that exists in our lives spreads to the media. Violence, shaped and changed according to societies and culture, has both physical and symbolic dimension. A while ago, it was discussed as a common element of advertisements but now, it has become a common element of social media by being shaped and aestheticized. With this way, it gains a new aesthetic dimension, and normalized with the images of violence that are now seen as natural and harmless.

The increasing problem of violence in the postmodern world needs to be understood how and in what content the symbolic violence is included in the media (Çevikalp, 2020). In this regard, it is important to know which generations share content on social media, and on which social media platforms. Generations have different characteristics and each generation has a tolerance threshold for different information. Understanding social media generations will be successful in finding solutions to problems since aestheticized symbolic violence also has a certain tolerance threshold in social networks.

In a postmodern structure, the postmodern violence concept reflects violence as a source of entertainment. Adorno and Horkheimer draws attention to the phenomenon of violence in films in the culture industry and talks about the transformation of the pleasure taken from violence into violence against the audience (Adorno & Horkheimer, 2014: p. 185). In this context, it can be said that the violence -underlying many entertaining content on social media- penetrates especially the child users.

Cinema and digital platforms resort to violence to attract attention. Not only children but users of all ages randomly click to contents that attract their attention even if it is not intended to. This increases the spread of violence to a wide audience. With aesthetics, the images of violence that are perceived as natural and more harmless are almost neutralized and normalized (Bauman, 2001). In this context, it shows that people are exposed to fear, violence, anger and power without realizing.

According to Çevikalp (2020), violence activates impulses and desires within people and individuals, and sets a negative example for society by disrupting the level of consciousness; meaning that it keeps the society away from peace. Violence exponentially legitimizes its existence through the media. Furthermore, the diffusion of negative content compared to positive is much faster in social media. Since social media sharing has the potential to create unrestlessness and critical emotional impact on people, it is seen that the research is done in the direction of what types of content the generations produce and consume.

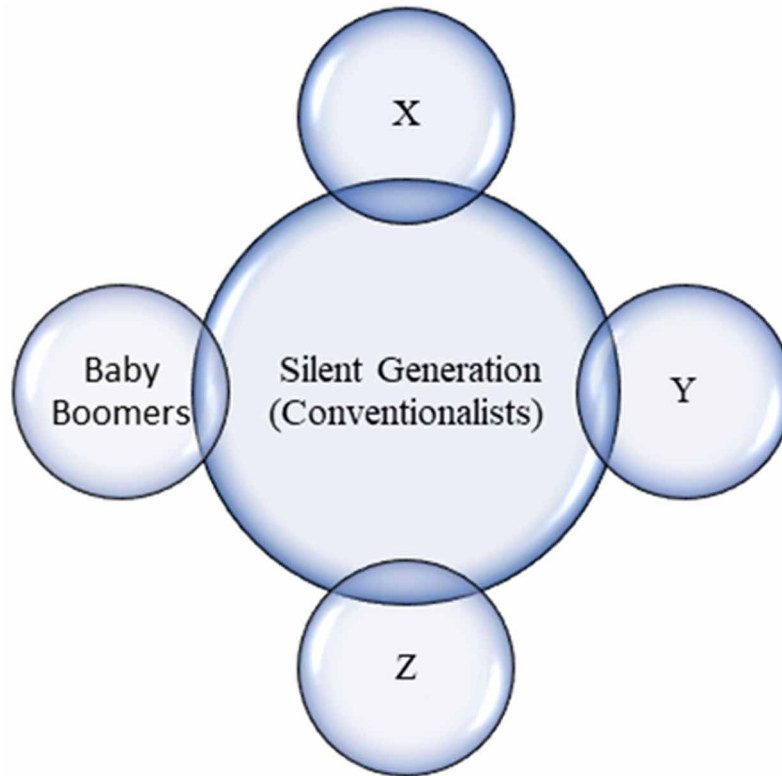
Tutgun-Ünal and Deniz (2020a) obtained interesting results in a study that measured the “social media generations’ tolerance to differences” in order to understand whether the generations’ sharing affected each other.

Accordingly, getting high scores at the work life scale is interpreted as being distant to conventionalism, whereas getting low scores is interpreted as being close to conventionalism in their generation research. As a result of the research, the acceptance of different religious/ethnic structures of the youngest generation who are raised with technology was found low and it was found that technology supports a conventionalist structure rather than modernizing it. When each generation is taken into consideration, the definition is centered at the differences from the generation called Silent Generation or “Conventionalists” (Figure 1).

Surprisingly, the fact that the Generation Z, which is located close to the conventional generation, does not tolerate differences in global communication will also determine their online behavior. Here, innovations adapted to life with globalization and opening up to the outside world are described as “modernity”. In this way, it can be said that the online values and behaviors of the generations differ from being conventional to being modern by leading to real life transformations.

When the generations that come together in social media platforms in proportion to their preferences are examined, it is seen that older generations use Facebook and spread information in line with their interests. Instagram usage rate of the younger generation is found to be high in social media research conducted in Turkey (Tutgun-Ünal & Deniz, 2020a, 2020b).

Figure 1. Intergenerational transition



According to the research, visual content, especially photos (selfies or multiple photos), Generations Y and Z who like sharing videos are found to come together in Instagram environment. YouTube and Instagram usage rate of Zs were found to be close to each other, and the YouTube usage rate is increasing day by day. Considering the Ys, the YouTube usage rate is not as high as the Zs. At this point, it can be said that Ys and Zs are more together in the Instagram environment, but Zs are concentrated in the YouTube environment. Thus, it is possible to talk about the existence of online networks where generations are both concentrated in the same environment and clustered separately.

When Generation X and Baby Boomer Generation are considered, it is stated that Baby Boomer Generation uses Facebook in first place. Although Facebook is the most used platform in Generation X, Instagram usage rates are close to Facebook (Tutgun-Ünal & Deniz, 2020a). Accordingly, Instagram can be considered as the intersection point of Generation X with Generation Y. In this intersection zone, Zs and Baby Boomers continue to exist even though the usage rate is low.

From this point of view, it can be said that there are certain intersection areas in social media environments and all generations came together in these areas to a certain extent with the flow of information in that direction. It is observed that with the spread of information, Facebook is associated with the Baby Boomer Generation, who is dominant in determining its own natural flow, whereas Ys are more dominant in Instagram and yet creating a mosaic formation is seen with the information spread by Xs and Zs.

Thus, it can be concluded that generations that show themselves predominantly in social media platforms at certain rates have a say in being exposed to information that suits for them. When considered as

a virtual version of real life, it is clear that online social networks contain separate societies and cultures within themselves. Therefore, the online version of the participatory culture mentioned in real life can be called as social network culture.

The fact that young generations prefer social media platforms where more visual content is at the forefront shows that they demand more photos and videos with symbolic violence. And the fact that older generations are on Facebook has shown that different age groups demand content on different topics on different platforms. The presence of users in different profiles on many platforms has increased the spread of symbolic violence to content of many interests. Therefore, understanding the social media generations is also necessary to understand the aesthetics of online content.

SOCIAL MEDIA GENERATIONS

In previous years, it was stated in the studies of social media users that the internet was mostly used by the young population. Wright (2011) even made a reference to the new growing population, today's Generation Z, by calling "Net Generation" at the beginning of 2000s. Nowadays, as the intensive use of users of all ages expose to social media networks, research are conducted with separated samples that are not only for young people but for all age groups based on the generation theory (Deniz & Tutgun-Ünal, 2019a; Tutgun-Ünal & Deniz, 2020a).

Due to the consideration of online values and behaviors in social media networks, Tutgun-Ünal and Deniz (2020a) named the generations as "social media generations" which are Baby Boomer, X, Y and Z. With 516 participants, social media preferences and purposes of generations are examined in their research. As a result, it has been revealed that 70,6% of the Generation X, which covers the dates of 1965-1979, follows and likes the current news on social media. The older social media users who are the Baby Boomer Generation born between 1946 and 1964, %56,7 have stated that they liked the content related to the current news on social media. This showed that the generations who are not familiar with technology when they were born are now compatible with the social media era.

Especially due to the need to follow current news, the presence of people who are connected to social media on a daily basis reveals that the need to be aware of life globally is now met from social media. Considering younger generations, it was stated in the same research that Generation Y followed a significant amount of news from social media (64.5%), that is, those born between 1980 and 1999 liked the current news. Thus, in today's world, where social media networks play a heavy role in meeting the needs of getting news from all around the world, especially the posts of citizens who share first-hand contents are seemed to be very valuable.

The rate of liking the current news content of the Generation Z, that is, those who born in 2000 and later, were found to be 21,6% and that they like different contents more. In the research, it was revealed that the generation that liked sports content the most was Generation Z which almost half of them follow sports news. Further, news tracking was seen in this generation only with a content difference.

In the examinations made for the Generations Y and Z, it was revealed that in the first place, young people use the Instagram application where visual sharing is at the forefront and they like the selfie content more than the older ones. Particularly, multiple photographs are liked by the Generation Y the most, while video/music contents are mostly liked and shared by the Generation Z (84.4%). Thus, there is a connection between the most used social media application and the most liked content types.

Table 1. Likes of generations on social media content (Tutgun-Ünal & Deniz, 2020a)

Social Media Contents	Baby Boomer		X		Y		Z	
	n	%	n	%	n	%	n	%
Multiple Photos	8	26,7	12	35,3	93	50,8	95	35,3
Education	14	46,7	21	61,8	116	63,4	80	29,7
Handcraft	4	13,3	11	32,4	53	29	71	26,4
Current News	17	56,7	24	70,6	118	64,5	58	21,6
Motto	7	23,3	9	26,5	43	23,5	89	33,1
Selfie	3	10	6	17,6	66	36,1	103	38,3
Video/Music	13	43,3	19	55,9	133	72,7	227	84,4
Politics	12	40	15	44,1	44	24	10	3,7
Animals	8	26,7	6	17,6	53	29	78	29
Sports	6	20	8	23,5	69	37,7	133	49,4
Recipes	7	23,3	12	35,3	58	31,7	47	17,5
Advertisements	-	-	5	14,7	33	18	10	3,7

On the other hand, it is stated that the Generation X and Baby Boomers use Facebook in the first place and like current news and educational content the most. Further, the Facebook usage rate of younger generations is at 10%. The gap between these generations shows that the platforms on which the posts are shared have a specific-mass in themselves and that people of all ages are not on the same platforms in the same proportions. Thus it is clear that there are often links between which age group or which communities they are associated with and the types of shared content.

With the increased interest in social media networks and the addition of people from different ages, regions and cultures to the networks day by day, these differences become widespread by leading to a change in social media preferences. For example, Facebook has a specific user group in itself where they share similar content on the network, and this causes another group to prefer Instagram, which is another social media application, by liking the content there. Therefore, it is seen that researchers concentrate on the users in the context of their social media preferences and online habits.

On the other hand, with the emergence of new social media applications day by day, it is seen in many examples that the demand for the previous one may decrease over time. As in the example of Instagram, while young people prefer Facebook in the first place earlier, they focus on Instagram now. In fact, it is reported that the Generation Z's usage of YouTube is becoming closer to Instagram. Besides, according to Tutgun-Ünal and Deniz (2020a), Generation Z is the generation with the most video sharing and liking.

According to Çevikalp (2020), violence always appears in the arts of painting, photography and digital platforms; and today, the most important socialization tools are digital platforms. The social media buyers of the violence, which can be servable especially through aestheticized films, will likely to be the younger generations who follow the video contents more.

Social media networks have users from many different cultural, religious and ethnical backgrounds that spread information around the world. In addition to social media usage habits, it is important to know the degree of acceptance of these different cultures by the generations. However, intergenerational

communication will also be in question. Without tolerance to differences, it will be inevitable for violence and showing force to spread in social media networks.

The Diffusion of Differences on Social Media

With new communication networks, cultural flows take place rapidly through moving/still images and symbols. The most prominent example of this is social media networks, which are known for their popularity today, enabling different cultures to be encountered and viewed side by side.

However, the consumption frenzy, considered one of the biggest concerns of today, has changed platforms with online environments such as social media by turning into a different form. It is stated that societies that attach great importance to consumption are made up of people uniting around their own interests. This triggers selfishness which is in human's nature (Tarhan, 2018: p.23).

Today, it is seen that the rapid social change caused by the effects of many factors such as technology, economy and social events also creates an intense interaction between cultures and affects all generations by spreading globally through online networks.

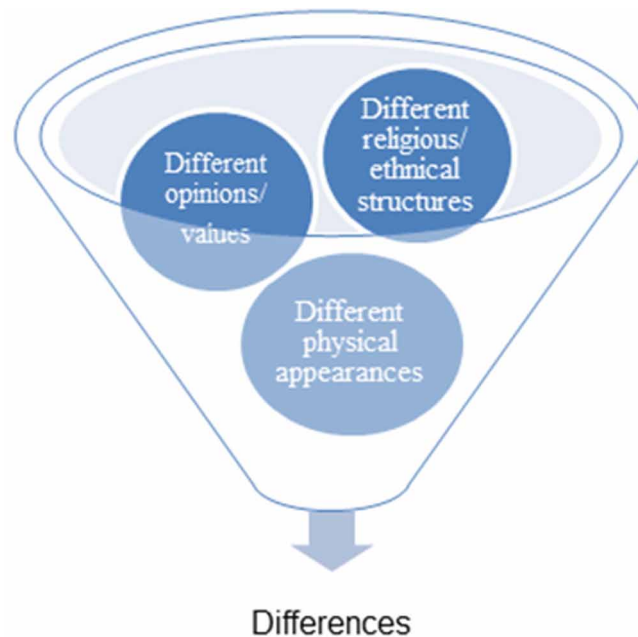
The fact that social networks enable communication on a global scale has provided the ground for the formation of mosaic structures around the world by providing an environment to interact with people of different cultures, beliefs, physical appearances and values. Thus, it has been wondered how the mosaic structures created online will reflect on the society in the real daily life and how it will affect the communication and behavior styles in various fields.

In this context, Deniz and Tutgun-Ünal (2019b) examined the acceptance levels of differences of social media generations in their study. For this purpose, the "Acceptance of Diversity Scale (ADS)" was developed and it consists of 9 items and 3 dimensions. These dimensions are; a) Accepting different religious/ethnic structures, b) Accepting different physical appearances and c) Accepting different thoughts/values (Figure 2). By applying the scale to the generations using social media, the tolerance level of the generations can be determined, and the effect of social media can be explained.

In the generation research conducted with 516 people, it was investigated whether the social media usage of generations affected tolerance to differences (Deniz & Tutgun-Ünal, 2019b). The acceptance levels of differences of Baby Boomer, X, Y and Z generations were found to be medium. In the inter-generational comparison, Generation Z is found to have the lowest tolerance to differences. Generation Z is the youngest generation and they are called "those born with technology". Although they are intertwined with social media, which may suggest that they are closer to modernity, and yet it turns out that they appear to be conventionalists. Accordingly, they stated that they do not want different religious/ethnic structures around themselves and they do not want to make friends or to cooperate with them in homework/projects.

When the other results are examined in the generation research, Generation Y was found to have the highest acceptance level for different physical appearances. Acceptance level of different physical appearances of Baby Boomers and Generation Z was significantly lower than Generation Y. Furthermore, Generation Z has a low tolerance to physical appearances and this makes them to be similar to the oldest generation, Baby Boomers that are called "conventionalists". Thus, it was revealed that the youngest generation evolved into the oldest generation, by becoming conventionalists.

Figure 2. Description of differences



Generation Y is called the generation where differences are felt most prominently (Ekşili & Antalyalı, 2017; Kelgökmen İlic & Yalçın, 2017). When the characteristics of Generation Y are examined, it is stated that their self-value is high and have a tendency to form unity with a sense of belonging to people from different sections, thoughts or physical appearances. According to researches, if Generation Y receives support from their families, they show more self-defensive behavior with an increased self-confidence. Accordingly, the acceptance of people with different physical appearance (people who may wear piercings and have tattoos on their body) is at a high level and this result complies with other research in the literature.

There was no significant difference between generations in terms of accepting different thoughts and values. Thus, it has been determined that all generations accept different views and values moderately. However, it was revealed in the examination made for gender that women showed more tolerance to differences in all dimensions compared to men. So it can be said that women accept different views and thoughts, physical appearances, religious and ethnical structures more than men. This result provides a clue about the communication between men and women and tolerance levels in both the real and online world.

In the generation study, in which the effects of social media are also questioned, it was revealed that those who use more social media are more tolerant to differences. Accordingly, it was found that those who use social media for 4 hours or more per day have higher levels of acceptance for different physical appearances than those who use social media less. The use of social media affects the generations' perception towards the differences around them. Those who use social media less than 1 hour a day do not tolerate differences, while those who use for 4 hours or more show a more normalizing attitude.

In the analysis made on a yearly basis, the acceptance level of those who use social media for a long time was found to be high. Those with high social media usage time of normalize different religious/

ethnic structures, different appearances and different thoughts/values. This situation can lead to positive results in showing consideration and tolerance between generations. The fact that the generations with low social media usage time do not want to see the differences around them creates the potential to cause violence with lack of tolerance.

As a result, considering that the generations who use social media provide global communication online, it can be said that they have a positive attitude towards cultural diversities worldwide and develop tolerance. Generation Z, which is said to be born with technology, should not be exempted from this result since they do not display an attitude that accepts differences yet. Generation Z both take part in social media and do not tolerate differences. This situation may cause to show an incompatible structure in their social media communications. However, this situation needs to be addressed separately.

The Threshold of Tolerance of Generation Z

Understanding a society requires understanding values since it is the guiding element that forms the basis of the generations and social norms which build the society. Values and behaviors are changing with factors such as beliefs, personal characteristics, family life and socialization experiences.

There are people with different attitudes and values in the social environment in which the person resides, in the school he/she studies or in the workplace where he/she works. Each individual has unique values and reacts against an event in line with these values (Tarhan 2018). First of all, the environment in which an individual is born and raised is different. When social events, economic and technological changes occur in a certain time period of individuals' life, the individual becomes distinguished from other individuals. When we generalize this situation from the environment of the individual to the society and even to the world, it is inevitable that the value transfer is enormous and complex with the existence of online platforms such as social media which will ensure that people of different cultures live together all over the world.

Today, the use of social media and the quantity of information spreading from these networks have reached to huge dimensions by influencing the entire world. In fact, research on social media addiction is highly demanded by experts from almost every field. (Andreassen, 2012; Hazar, 2011; Kuss & Griffiths, 2011; Tutgun-Ünal, 2015, 2020a, 2020b; Wilson, Fornasier & White, 2010).

In social media addiction research, especially young people are reported to be at risk (Andreassen, 2012; Hazar, 2011; Kuss & Griffiths, 2011; Tutgun-Ünal, 2015; Uzun et al., 2016). It is seen that the research are carried out especially with the university students belonging to the Generation Y and with the younger age group, Generation Z. Social media addiction is important because it causes a mental and emotional engagement with social media and hinder the educational life of children in school.

The tolerance threshold of the people is important since we can communicate if we tolerate differences. In the study conducted by Deniz and Tutgun-Ünal (2019b) with 516 participants, the tolerance level of a sufficient number of social media users from all generations was determined. The lowest tolerance threshold was found at Generation Z in the study where differences were considered in three dimensions as "accepting different religious/ethnic structures", "accepting physical appearances" and "accepting different thoughts/values". Generation Z has a conservative attitude that is seen in conventionalist structures towards different cultures and it is important to reveal the underlying reasons of this situation especially today, where modernity comes with globalization.

The "Acceptance of Differences Scale" developed by Deniz and Tutgun-Ünal (2019a) includes the acceptance of individuals with different religious/ethnic structures, different physical appearances,

thoughts and life values, and their prejudices about these groups. If the person does not accept people with these differences both in real life and digital environment, it will be difficult to tolerate. In this case, the possibility of resorting to lynching, violence or power shows will increase. The fact that the communication provided in the social media environment is in a global dimension and containing diversity also increases the size of the danger.

Generation Z which is a generation that is raised with technology, show a lot of variety in social media networks despite its conventional attitude. It will be inevitable for Zs to either remain vulnerable or overreacted to unlimited spreading information from online networks with such a huge variety.

On the other hand, those who with low tolerance will be negatively affected by the messages underlying the content spread by countless users from different cultures and religions around the world. Those who tend to develop tolerance will be expected to transform their value system by stretching the conventional structure.

When the Generation Z is mentioned, it is difficult to put forward the clear value system since they are still with their families and by being under their responsibility. In the years to come, it can be thought that their own value judgments will be formed with parameters such as studying, marrying or going out of the house outside the province. Therefore, researches conducted with Zs should be followed up in the following years.

Despite Zs, Generation Y is defined as the “generation where differences are felt most clearly” also shows itself in online behavior. It is observed that Ys, who can easily express their thoughts thanks to social media networks which provide a comfortable platform for self-confidence, are more active in showing themselves and feel more free in spreading information compared to other generations.

Generations in Work Life

We are exposed to the effects of different peoples in almost every area of our lives. In areas such as family, work, and private life, we communicate with ourselves and others, and it is very important to keep communication healthy to maintain social balance.

It is also observed that the studies focus on intergenerational communication in workplace environments consisting of various age groups (Berkup, 2014; Çetin Aydın & Başol, 2014; Erdal, 2018; Latif & Serbest, 2014; Macky, Gardner & Forsthy, 2008; Martin & Tulgan, 2002; Toruntay, 2011; Yiğit, 2010). In a study, it is stated that a significant part of the problems in workplaces are caused by intergenerational perception, method, application and communication differences (Latif & Serbest, 2014). Martin and Tulgan (2002) emphasize that the Generations X and Y working in the same organization may have communicative problems and that the management of the organization should help employees to overcome these problems. From this point of view, it is stated that in order for these two generations to communicate, they should engage in informal activities outside working hours.

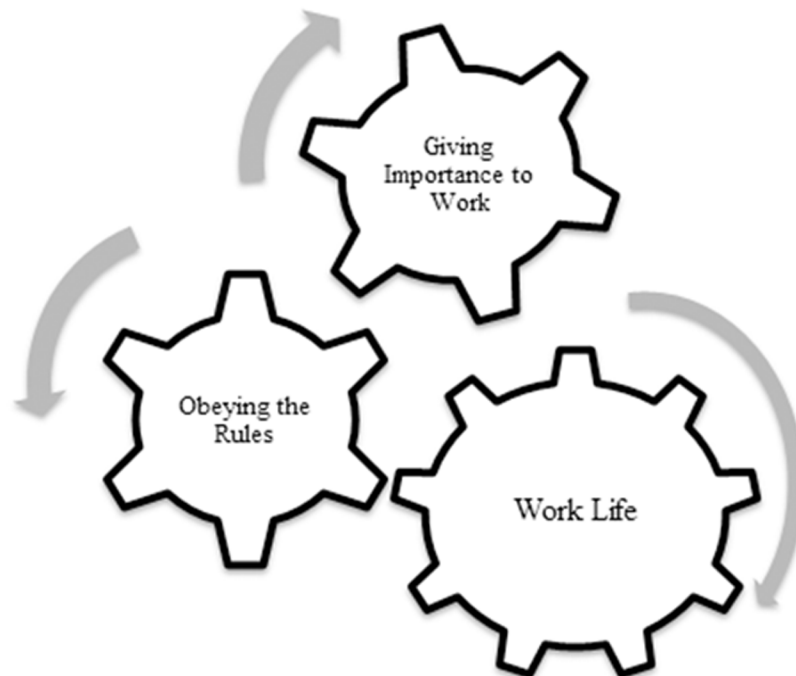
Thus, coexistence is important and necessary for the value transfer from generation to generation in order for a society to survive. Nowadays, in addition to face-to-face social communication, social media effects have been added to research in many fields since the coexistence in online networks is quite popular. It is seen that social media is integrated into research in the topic of work life, where comparisons are made between working generations.

In the social media use research conducted by Tutgun-Ünal and Deniz (2020b), it was found that all generations use social media at a medium level. Therefore, it is seen that all generations use social media at an intermediate level both in work life and in other areas of life. In work life, doing business

with people of all ages and different age groups, cultures and values is a process that should be managed very well. Today, social media is also involved in this process and it can be said that it affects this process very strongly as a system providing global information exchange.

Starting from this situation, Deniz and Tutgun-Ünal (2019a) developed a 5-point Likert-type “Work Life Scale” consisting of 8 items to understand the point of view of the generations towards work life. In the research, which consisted of 516 people, they applied the scale to all generations and examined the effects of social media on the work life. The Work Life Scale measures two dimensions called “Giving Importance to Work” and “Obeying the Rules”. While giving importance to work sub-scale includes the importance that the person gives into his/her the work life and job, the effort to be permanent in the workplace where he/she works and his/her dedication to the workplace where he/she works; obeying the rules sub-scale includes the orientation or preference of the working environment to be disciplined and regular.

Figure 3. The determinants of work life



All items (1st to 5th) in the WLS’s “Giving Importance to Work” sub-scale in the Giving Importance to Work sub-scale should be scored in reverse. The high score obtained from the sub-scale shows that they are impatient to rise in work, that the work is not an important part of their life. 7th and 8th items in the Obeying the Rules sub-scale should be scored in reverse. The high score obtained from the sub-scale shows that a disciplined work with clear rules is not preferred. (Tutgun-Ünal & Deniz, 2020b).

The fact that the scores obtained from the WLS are high means that the work life is moving away from the conventional values, while the low score indicates that being close to the conventionalist at-

titude in the work life. The closeness to conventional values is explained by the adoption of working hours and rules in work life. Those who adopt this situation are expected to work for many years at the same workplace and have a high job loyalty. It is thought that those who do not have these attitudes can easily change jobs when they find a job in better conditions, and they do not like clear working hours, rules and authority. This is explained by being far from conventional values.

Accordingly, the results of research conducted by applying WLS to all generations in Turkey, all generations appear to be “close to conventional values of in the work life. When the WLS and sub-scale scores of the generations are examined, it is noteworthy that the average score of Generation Z is the lowest, especially in terms of obeying the rules. In this context, it has been revealed that the Generation Z, who is not yet in the work life, has a conventional attitude towards obeying the rules, that is, adopting a workplace with certain working hours and rules. This was reflected in the total of the WLS, and Generation Z is the nearest to the conventional values.

Since Generation Z does not work yet, it was a matter of curiosity what will their attitude towards the work life be like. It was stated that this generation, which was born with technology, will display features like being impatient, distracted and high tendency to develop technology addiction in the work life whereas the results of this research showed the opposite when they were asked. The result of this research should be evaluated as a guess for Generation Z, who has not yet join the work life, and it should be taken into consideration that they can change when they are in the work life. More precise results will emerge in the future, when determinative studies are carried out by observing their behaviors about giving importance to work and especially obeying the rules.

In the gender-based comparison, it was found that the work life values of women were near to the conventional values and made a significant difference compared to men in the total of WLS. It was revealed in the sub-scale of obeying the rules that women are more conventional than men and adopt the rules. There was no difference in gender in terms of giving importance to work. In giving importance to work, the scores of women and men are near to each other and it is concluded that they are neither near nor far from the conventional values, that is, they have a medium level of job loyalty.

On the other hand, there are also studies that offer different perspectives about women. In a study, it is suggested that female workers place more emphasis on family life and home-related duties and roles than male workers, causing organizational careers and values to remain secondary (Varlı, 2014: p.24). In another study of managers, male managers were found to have significantly more organizational commitment than female managers (Aka, 2017). In this case, it can be thought that the responsibilities and compliance with the rules of being a manager may make a difference. However, some studies in the literature emphasize that female workers show more organizational commitment than men (Angle & Perry, 1981; Hrebiniak & Alutto, 1972).

In the study of Tutgun-Ünal and Deniz (2020b), in order to question whether work values are affected by the use of social media, the daily social media usage of the generations and WLS scores were compared. Accordingly, it has been revealed that those who use social media less than 1 hour a day are near to conventional values in the work life and adopt the rules. In the research, social media use for 4 hours a day was determined as a breaking point for finding whether social media use affects the work life values or not. Thus, it was revealed that the individual, whose usage of social media is for 4 hours or more per day, moves away from conventional values in the work life.

As a result of the research, it has been revealed that the work life values differ among generations and accordingly they have different behaviors and attitudes in the context of giving importance to work and obeying the rules. It was concluded that the increase in the use of social media due to the effect

of digitalization also affected the work life values. It is noteworthy that the generations with low daily social media usage adopt conventional values. The difference that the Generation X makes in giving importance to the work among working generations has shown that they will make their choice in this direction when they find a job under better conditions. This situation has revealed that they are distant from conventional values, and give importance to work conditions instead of job loyalty.

According to the results of this research, it has been found that those who use social media are far from conventional values in the work life. Thus, the rate of demanding digital content of the generations who are in the work life and who have high daily social media usage will likely to be high. In this case, it can be concluded that aestheticized digital contents are functional in diverging from conventional values.

YouTubers, Children and Family

The youngest generations mostly prefer the YouTube platform worldwide. For example, YouTube in Sweden is the most popular website by the Generation Z between the ages of 9-18 (Swedish Media Council, 2017), and 81% of children who are 8-11 years old are reported to use this video sharing website in the UK (Ofcom, 2017). Tutgun-Ünal & Deniz (2020a) ranks the generations in their research in Turkey and the results showed that those participants who indicate using YouTube is found to be the Generation Z in the first place. According to this, while the use of Instagram is the first in the Generation Y, the ratio of those who use Instagram (45%) and YouTube (37%) applications in the first place in the Generation Z are close.

In addition, according to the research conducted by Özdemir (2017) with 400 participants in Istanbul, the new media usage habits of X, Y and Z generations differ and Generation Z use the new media the most. As a video sharing platform, YouTube, which is one of the many interacting applications of the new media, has become the home of Generation Z and phenomena because it appeals to the people those who born with technology.

In a study that states that children prefer watching YouTubers when they go online, Martinez and Olsson (2018) investigated how children make sense of Youtubers and their role in the daily routine. In the research conducted by group interviews and observations with Swedish children between the ages of 9-12, how the children constructed a notion about a YouTuber that they follow and their comments were examined. As a result of the research, it was found that the YouTubers played a role in identity building and the phenomenon followed was important in determining who the person was.

While the use of YouTube and the effects of Youtubers on children are so nush, there is lack in number of studies in the literature. Accordingly, some research conducted with YouTubers focused on how they structure their relationships with themselves and their audience (Berryman & Kavka, 2017; Lovelock, 2017; Ramos-Serrano & Herrero-Diz, 2016). Children's peer cultures are important areas for placing, negotiating, and making sense of mediated symbolic materials such as YouTubers, and this is also an important part of the identity building of children in their peer group (Corsaro, 2015; Thompson, 1995).

YouTuber is defined as a person who has reached a certain number of followers and a moderately-known person in the computer (virtual) environment (Driessens, 2016). This concept has become very important with the intense demand of the YouTube platform's younger generation and especially the children. Because, as stated in the researches, the videos prepared by YouTubers affect the identity building of children.

There are many emotions in the infrastructure of videos edited by those users who share on YouTube. Exposing children to emotions such as violence, fear and narcissism that are spread with aestheticized

and tailored images can pose a danger both in terms of psychological and personality development. The most obvious example of this is children who watch videos of games or game reviews and then who commit suicide. Underneath the attraction of the game, there are emotions such as violence, fear, aggression and anger and these emotions are spreading from one child to another through social media which leads to an increase in the size of the danger.

On the other hand, it is known that emotions have the power to spread in online networks, and especially negative emotions spread more rapidly and widely (Christakis and Fowler, 2012). This situation points to the big problems caused by the videos that leave the children under the influence of the YouTube videos which contain negative emotions that are frequently used by the Generation Z.

Tarhan (2020a) defines the family as the cornerstone of society and emphasizes the need for families to receive awareness training by experts since only a family with awareness will be able to emotionally nurture their children and provide them with a peaceful habitat. Moreover, according to Prof. Dr. Nevzat Tarhan, conventional families used to have the function of protecting new marriages and older family members such as aunts and grandparents were considered to be in the family as well. This was causing fewer mistakes to be made. He further states that in the nuclear family model, which has become widespread nowadays, social support is decreasing and couples find it difficult to resolve their disagreements when they quarrel and leave each other because they cannot establish a good relationship even if there is love.

Considering that YouTubers have large audiences, it is obvious that the videos they will share from their channels will reach online communities consisting of many users. Thus, it can be said that the phenomena have the potential power to manage the community. Since children are vulnerable users, the importance of family control in the usage of YouTube comes into play here.

By stating that the family is an institution that needs to be empowered, Prof. Nevzat Tarhan says that this is essential for empowering the society, as well. Accordingly, one of the most important causes of domestic violence is the weakening of family ties and healthy children cannot be raised in the environment where the family is dispersed.

Tarhan indicates that there is an increase in the divorce rate in Turkey, according to the Turkey Statistical Institute data. In the first 5 years of marriage, the divorce rate is at 39% in 2017. This rate varies between 50% and 60% in the world. Those who marry get divorced in the first 5 years of their marriage. After 5-10 years, this is thought to be out of control. This is a security problem and definitely needs to be emphasized as a state policy. On the other hand, the disease of modernism is stated as narcissism. Narcissism harms the marriage institution and pushes individuals into loneliness. In the conducted studies, higher loneliness has been seen among young people compared to older people. While the rate was 27% in the elderly; it was 40% in the youth and it is stated that the young people do not want to get married anymore (Tarhan, 2020a).

Social media, especially YouTube videos, are watched by children to enjoy themselves. The child clicks on the video according to the visual mobility and immersiveness without knowing what the video content is and enjoys it as long as he/she watches it. YouTubers come into play right here. In this context, YouTubers are trying to gather followers and video clicks/views and prepare their videos for this purpose. It is important for them to gain viewings towards children and due to this; they deliberately edit the videos in an immersive way that will allow children to break away from the real world.

Tarhan (2020c) states that pleasure, happiness and peace are separate concepts. Accordingly, pursuit of pleasure is thought to be happiness, and in order to be at peace, each work must be meaningful. At this point, YouTube videos that do not have any meaning and break the records of clicking come into play. These kinds of videos help contributing children not to search for meaning and do not have peace.

Psychiatrist Prof. Dr. Nevzat Tarhan states that lack of peace causes behavioral disorders in the child and in order to ensure peace, trust, and communication, not lying, positive goals and consistency are required in the family environment where children are raised.

SOLUTIONS AND RECOMMENDATIONS

Families have a role in providing security to children who are heavily interested in YouTube videos and phenomena and build their identity with the influence of YouTubers. For this, healthy family structures are needed. Moving from this point, as Tarhan stated, in developed countries, when there is a the problematic family, before reaching to the divorce point family members are taken to the camps at the weekends and in these programs, in which children also participate, activities are carried out on subjects such as communication, stress management and problem solving skills. Similar activities should be carried out in all countries.

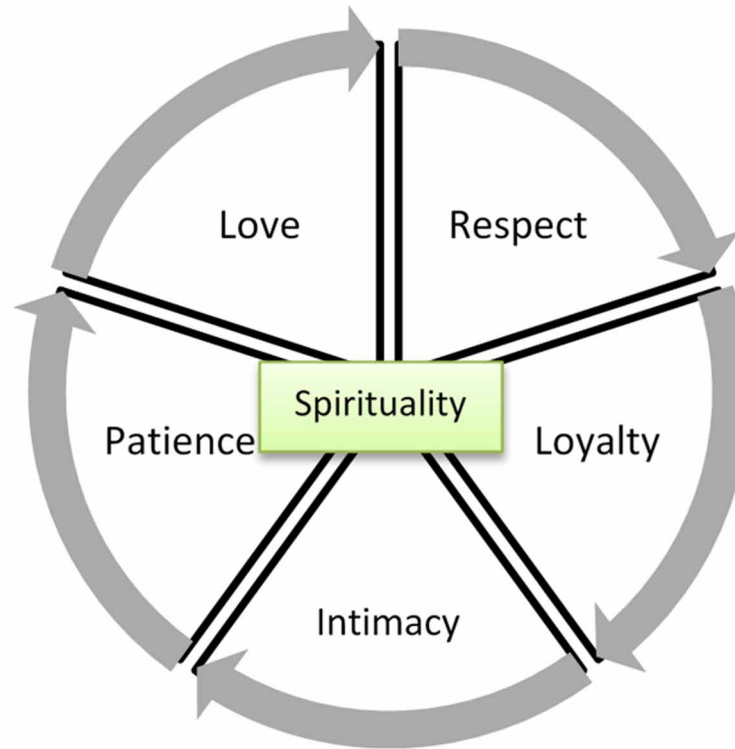
Also, considering that children are at school age, it may be preventive to empowering school systems to work on social media addiction and conscious use, and to include families by contributing municipalities in these studies. If the child, education system and families cooperate, it will be effective in the solution of the problem. According to Tarhan (2020b), for the development of a child, his/her emotional and social brain must develop as well as his mathematical brain. When children who spend a lot of time on YouTube are not involved in the real-life routines, their emotional and social development will be incomplete, which will cause problems. In order to be a healthy individual, the child has to go through psychosocial development stages and has the skills to be acquired at each stage.

Erik Erikson, a psychologist working in developmental psychology and psychoanalysis, argues that human beings go through 8 different phases from birth to death. It is important for the child's parents and educators to know these phases, which are important for children to make sense of their environment and their behavior. These stages, called psychosocial development stages, have goals to be completed in each period in order for people to be developed with a healthy mood. These phases are; 1) Insecurity towards basic trust (0-1.5 years), 2) Shame and suspicion (1-3 years) against independence, 3) Guilt against entrepreneurship (3-5 years old), 4) Feelings of inferiority against productivity (5-11 years), 5) Identity confusion in the face of identity acquisition (12-19 years), 6) Isolation against intimacy (20-30 years), 7) Stagnation against generativity (30-60 years), 8) Despair against self-integrity (over 60 years old).

In each of these phases, it is important to successfully overcome the conflicts experienced by the individual (Erikson, 1998). In this context, it is important for both parents and teachers to know these phases and develop appropriate behaviors. In particular, parents need to know by knowing the goals that their children should achieve in the relevant period so that their forward-looking psychosocial development can be healthy.

In order for the psychosocial development stages of children to take place in a healthy way, the feeling of trust should be supported by families at all ages. This can be achieved by making families aware of these stages. Controlling social media actions in children can also be achieved through emotional and social satisfaction. Because, instead of the pleasure that the child will get from social media, the child will have to choose the trust that his/her family will provide. In this context, the development of a sense of trust in children can be preventive against harmful content circulating in the virtual world. According to Tarhan (2020c), 5S+1M is needed to develop a sense of trust: Love (Sevgi), Respect (Saygı), Patience (Sabır), Loyalty (Sadakat), Intimacy (Samimiyet), Spirituality (Maneviyat).

Figure 4. Tarhan's Model of Trust (5S+1M)



On the other hand, there is a pyramid of needs in humans. In the lower steps of this pyramid, there are eating, sheltering and breeding. The most important need that comes after these basic needs is the sense of security, and this also raises the need for attachment. In this respect, it also means that people always appear in an identity; identify themselves through these mechanisms roots from the need for commitment. (Tarhan, 2019: p.102).

When the need for attachment in children has not been met by their families, the child will be in a search for identity. At this point, the child will take on the role of the hero he watches and build his identity accordingly, if there are temptations such as the phenomenon, cartoon character, and YouTuber. Research investigating the effect of YouTubers on children also emphasizes identity building (Corsaro, 2015; Martinez and Olsson, 2018; Thompson, 1995). Here, it is seen that the family's trust (love, respect, patience, loyalty) and attachment to the child are of vital importance.

According to Tarhan (2018), technology is an addiction brought by civilization and modernism tries to keep them together, especially by connecting people to something. Technology addiction types such as social media addiction, technology addiction, and smartphone addiction that emerge today make individuals who spend intense time in these areas lonely and become isolated from the environment.

As a result; Model of trust starts in the family and if it spreads to the environment, a stronger stance can be imposed to cope with the problems of the era. However, with a strong family foundation, the emotional and social needs of children towards YouTubers can decrease and protective measures can be taken against the negative effects of identity building.

FUTURE RESEARCH DIRECTIONS

Since the past, the subject of intergenerational conflict has been dealt with in the fields of sociology, psychology and pedagogy, by revealing intergenerational communication differences in the studies (Ayçiçek, 1994; Mannheim, 1952: p.163; Sarıtaş & Barutçu, 2016). With the generation theory that explains that the people born between 1980 and 1999, which are now called the Generation Y, are showing different characteristics than the other generations. This required specific studies to be carried out for this generation, and then with these studies, it will be possible to strengthen communication among generations by developing understanding and raising awareness.

On the other hand, there is a study stating that the differences in the characteristics specified for Generation Y arise from socio-economic and cultural conditions in different countries and these differences can even be observed from school to school. Accordingly, Turkey may not even contain only one type of Generation Y. Characteristics such as cultural, economic, and level of education can make variations in the profile of Generation Y (Ekşili & Antalyalı, 2017). Supporting this view, Bayramoğlu and Şahin (2017) stated that the Turkish Generation Y, born in 1981 and later, has different expectations compared to Generation Ys in other countries. In line with this study, it is seen that the Generation Y' birth year intervals may differ in some studies. Therefore, the need to address individual differences has emerged instead of intergenerational differences. In future researches, especially generation Y and Z needs to be examined within the scope of more specific groups.

CONCLUSION

Nowadays, the position of an individual in society is coming to the agenda with his/her position in social networks.

Social networks' recognition of global communication feature has provided the ground for the formation of mosaic structures around the world by providing an environment for the interaction with people of different cultures, beliefs, physical appearances and values at one end of the world. Thus, it has been wondered how the mosaic structures created online will reflect on the society in the daily real life and how it will affect the communication and behavior styles in various fields.

In the study carried out by Deniz and Tutgun-Ünal (2019b) with the acceptance scale, acceptance level of differences of the generations coexisting on social media was examined. It has been investigated how users in global online networks are exposed to worldwide massive information and how transfer of value and behavior is affected. Accordingly, those with longer social media usage normalize different religious/ethnic structures, different physical appearances and different opinions/values. This can lead to positive results in showing tolerance and understanding between generations. The fact that the generations with low social media usage time do not want to see the differences around them creates the potential to cause violence by making it difficult for them to tolerate.

Social media networks have users from many different cultures and religious/ethnic backgrounds that spread information around the world. In addition to social media usage habits, it is important to know the level of acceptance of these different cultures by generations. However, intergenerational communication will also be in question. Without tolerance to differences, it will be inevitable for violence and showing force to spread from social media.

On the other hand, the fact that the usage of YouTube as a platform for sharing video content is spreading around the world and especially children demanding this content raises the problem of trust. The fact that YouTube videos that aim to break a record of clicks and are being made attractive and served for children increases the size of the danger. In addition, the fact that consciously prepared videos containing emotions such as violence, anger and fear are circulated in online networks, requires the families, educators and even management policies of administrators to come into effect.

As a result, it is clear that the “Tarhan’s Model of Trust (5S+1M)” that will be created with love, respect, patience, loyalty, intimacy and spirituality in the society will play a healing role in the negative effects of social networks arising from digitalization. Firstly families, who are one of the cornerstones of the society, and then the leaders of the communities, have a great job in creating this trusting environment. Raising a healthy child and bringing it into society will only be possible in the family environment where strong communication and bonding are created. When dealing with the attractive contents which include negative emotions at the social media networks, awareness will be functional with the help of families, schools, and society at the macro level and with individuals and at the micro level.

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KEY TERMS AND DEFINITIONS

Baby Boomer: A term used to describe people born between the years of 1946-1964. It means a huge increase in annual birth rate especially in the USA, starting at the end of the World War II and continuing until the beginnings of 1960.

Generation: A community of people who share common habits, culture, and time zone.

Social Media Generation: Social media users grouped according to the globally accepted Generation Theory based on specific birth dates.

Social Network: Web-based environments that support the interpersonal interaction and increase the sharing of individuals with common interests by giving everyone the chance to create their own personal profile and the list of friends that they want to communicate with.

Social Networking: Communicating by using social networking sites.

Tarhan's Model of Trust: A guiding model for providing interpersonal (especially within the family) trust, which is developed by Psychiatry Professor, Nevzat Tarhan in Turkey, also known as “5S+1M” Model.

Violence: Human behaviors that manifest themselves in the forms of breaking the law, harming others, insulting, dishonoring, hindering peace, violating someone's rights, hurting, mistreating, using force to injure, showing extreme destructive behaviors and excessive anger.

YouTuber: A person who has reached a certain number of followers and a moderately-known person in the computer (virtual) environment.

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Chapter 53

Follow my Snaps!

Adolescents' Social Media Use and Abuse

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ABSTRACT

Using third-person perception as a theoretical framework, a survey of 1,167 American adolescents explores their social media use and its relationship to verbal, emotional, physical, and sexual abuse. Despite the sexual nature of social media platforms like Snapchat, which are popular with adolescents, even adolescents who have experienced sexual violence in the past. Snapchat users were more likely than non-users to report abusive behavior to others. Adolescents exhibited third-person perception, believing others were more affected than they were by negative social media posts. This was related to experience with violence, and social media use. A third-person effect emerged, as adolescents who exhibit third-person perception were more likely to engage in abusive behaviors, both face-to-face and in an electronic medium.

INTRODUCTION

According to the Pew Research Center (2015), 92% of teens go online daily, facilitated by the widespread availability of smartphones. The most popular social media platforms were reported as Facebook (used by 71% of teens), Instagram (52%) and Snapchat (41%). The purpose of the current study is to explore adolescents' changing patterns of social media use and their experience with victimization and perpetration of violence, using third-person perception (TPP) as a theoretical framework.

Adolescents and Social Media

A report issued by the American Academy of Pediatrics (2011) outlined the benefits and risks of social media use by children and adolescents. On the positive side, staying connected with friends and family, exchanging ideas, and sharing pictures. Adolescent social media users find opportunities for community engagement, creative outlets, and expanded social circles. According to the report, the risks fall into these

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categories: peer-to-peer (bullying), inappropriate content, lack of understanding of privacy, and outside influences (social and corporate). The report also refers to “Facebook Depression,” which emerges when adolescents spend too much time on social media and start exhibiting classic signs of depression.

A number of social media apps were designed specifically for finding sexual contacts or the “hook-up culture.” Apps like Grindr and Tinder allow users to find potential sexual partners locally, using the GPS in their smart phones. The popular app Snapchat began as a means to quickly share explicit photos for a set period of time, without the receiver saving a copy of the image. Use of the app has evolved, with some users sharing benign photos and videos and others using it for more explicit purposes. Facebook also began as a hookup app limited to college students. As other users (including parents) were permitted to use the app, the social media giant evolved, becoming many things to over one billion users worldwide.

A recent study (Stevens, Dunaev, Malven, Bleakley & Hull, 2016) outlined how adolescents use social media in their sexual lives. Adolescents seek out sexual content (sexually explicit material, information about sexual health, sexual norms). Social media platforms provide an opportunity for sex-related communication and expression; According to the study, 25%-33% of adolescent social media users post or distribute provocative images, seeking feedback on their appearance or connection with other users. Finally, social media provide adolescents with tools for seeking out romantic or sexual partners, which may result in risky behaviors.

The National Academies of Sciences, Engineering, and Medicine issued a review of a decade of research on bullying (Flannery et al., 2016). According to the report, bullying and cyberbullying prevalence rates reported vary from 17.9 to 30.9% of school-aged children for the bullying behavior at school and from 6.9 to 14.8% for cyberbullying. Much of the variance can be attributed to sexual orientation, disability, and obesity. Physical consequences can be immediate (injury) or long-term (headaches, sleep disturbances). Psychological consequences include low self-esteem, depression, anxiety, self-harming, and suicide. There is some evidence to suggest links between being bullied in adolescence and perpetration of violence in adulthood. A recent publication from the American Psychological Association called “a call to action” reviewed a decade of research on suicide, which acknowledged a dearth of research on the relationship between suicide and social media (Westerfield, 2018). Social media are developing more quickly than our ability to process and understand their impact.

Third-Person Perception and Social Media

Third-person perception (TPP) is the belief that negative media message influence others more than oneself. The phenomenon has been well-documented over a variety of contexts, which recently include news coverage of election polls (Kim, 2016), deceptive advertising (Xie, 2016), and the impact of religious cartoons (Webster, Li, Zhu, Luchsinger, Wan & Tatge, 2016). A third-person effect emerges when the misperception causes a behavior or attitude change. The most common third-person effect reported in the literature is support for censorship (Chung & Moon, 2016; Kim, 2014; Webster et al., 2016). A recent study (Lee & Park, 2016) found TPP regarding H1N1 (pandemic flu), which predicted intentions to vaccinate.

A growing literature is documenting TPP regarding social media (Antonopoulous, Veglis, Gardikiotis, Kotsakis & Kalliris, 2015; Paradise & Sullivan, 2012; Wei & Lo, 2013). Facebook users believe they are less likely than other users to suffer negative consequences to their personal relationships and privacy (Paradise & Sullivan, 2012). Adolescents believe others are more harmed by sexting, and, in turn, support restrictions for others. Buturoiu and colleagues (2017) found similar results among a large sample

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of college students, but added one more piece to the puzzle. The strongest predictor of TPP regarding the influence of news stories shared on Facebook was Facebook itself. Students who used Facebook the most exhibited the highest degrees of TPP. The current study seeks to document TPP regarding a broader range of social media platforms and explore a third-person effect related to violence.

Based on the preceding review of the literature, the following research questions are posited:

RQ1: What are adolescents' patterns of use of social media platforms?

RQ2: What are adolescents' experiences with victimization and perpetration of violence?

RQ3: Do adolescents believe others are more influenced by negative social media posts (TPP)?

RQ4: What is the relationship between TPP, social media use, victimization, and perpetration of violence?

METHOD

Procedures and Participants

Multiple urban and suburban middle school and high school students participated in violence prevention programs provided by a Pennsylvania women's center ($N = 1,167$). Research materials were gathered as part of a pre-test. A post-test was also collected for program assessment, but was not included in the analysis. Students were notified of informed consent and their right to opt out of the study, but none did so. Students were also informed their responses were anonymous, but they could skip any items that made them uncomfortable. The most common items skipped were about sexual violence: 87 participants (7%) skipped one or more of these items. Free counseling services were available for the students. The research was approved by the University's Human Subjects Review Board and the Women's Center Board of Directors. Participants ranged in age from 12 to 18 ($M = 14.1$, $SD = 1.5$) and were 50% male, 50% female. Consistent with the demographics of the region, participants were 80% white, 8% black, 3% Asian, and 2% Hispanic. The remaining students identified as mixed race or other.

Materials

Students were asked to circle which social media platforms they used and to identify which were favorites. Platforms included were identified as the most popular among adolescents by the Pew Research Center (2015): Texting, Facebook, Twitter, Instagram, Pinterest, and Snapchat. A space was provided for students write in other platforms they were using. The only app written in was YikYak, an app designed for college students, which is limited by GPS to a small radius surrounding a campus. YikYak posts range from "This chemistry class sucks," to "anyone want to hook-up?"

Experience with violence was measured in two ways. The first was a simple checklist indicating which forms of violence (verbal, emotional, physical, and sexual) participants had witnessed and which they had experienced as victims. These were treated as binaries and also summed to create a measure of combined experience with violence. Perpetration was measured using a Likert-type scale asking "In the last 30 days, how many times have you done each of the following (1 = Never; 7 = almost daily): Hit or slapped someone; shoved or pushed someone; put someone down to their face; made fun of someone to make others laugh; spread false rumors about someone; left someone out on purpose when it was time to do an activity; used cell phone pictures or text to threaten to hurt someone physically; used cell

phone pictures or text to make fun of someone; posted rude comments about someone you know on-line.” These items were summed to create an overall perpetration scale and subscales for face-to-face and electronic violence ($\alpha = .81$).

Third-person perception was measured using a standard measure. Students rated two items, one about the effect of negative social media posts on themselves; one about the effect on others (1 = Not at all; 7 = Greatly affected). The TPP measure is created by subtracting the perceived influence on others from the perceived influence on self. TPP is indicated by a negative mean.

Participants also self-reported their age, race, and gender. TPP increased with age. There were no significant differences in TPP attributable to gender or race.

RESULTS

SPSS software was used for analysis. Frequencies, T-tests, and correlations were used. RQ1 asked what were adolescents’ patterns of use of social media. Findings are summarized in Table 1.

Table 1. Adolescents’ social media use

Platform	Student Use	Identified as Favorite
SnapChat	78%	57%
Texting	76%	20%
Instagram	73%	13%
Twitter	37%	5%
Facebook	26%	2%
Pinterest	21%	3%
Other (YikYak)	1%	---

Note: Frequencies reported were processed with SPSS software

Facebook has been steadily losing ground as the preferred social media platform for adolescents, with Snapchat and texting rising in popularity. Snapchat is the clear favorite, with 78% of participants saying they use the app, and 57% identifying it as their favorite. Participants use as many as seven apps ($M = 3$). Only 5% say they do not use social media. The number of apps increases with age. There were no high school students who indicated using no social media.

RQ2 asked what are adolescents’ experiences with victimization and perpetration of violence. Findings are summarized in Tables 2 and 3. Consistent with national surveys, it’s likely these figures are under-reported. Participants were most likely to indicate witnessing and experiencing verbal and emotional abuse. Three percent acknowledged experiencing sexual abuse; another 24% know someone who has been sexually abused. When combining witnessing and experiencing the different forms of violence, a more realistic picture forms. For verbal abuse, only 9% rated themselves as a zero (never witnessed or experienced). That figure rises to 18% for verbal abuse, 32% for physical abuse, and 73% for sexual abuse. A different pattern emerges for perpetration of violence (Table 3). Participants were most likely to acknowledge physical violence (shoving, pushing, hitting, slapping), followed by public ridicule, with

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face-to-face more common than electronic. While middle school students freely acknowledge shoving a friend, there seems to be greater stigma ascribed to verbal and emotional taunting. Combining the nine items, 25% say they have never engaged in any form of abuse; the remaining 75% acknowledge perpetration of at least one form. For additional analysis face-to-face were separated from electronic. Face-to-face was more common across age groups, consistent with the national Pew study.

Table 2. Adolescents' experiences with victimization

Type	Witnessed	Personally Experienced
Verbal	75%	65%
Emotional	65%	26%
Physical	60%	13%
Sexual	24%	3%

Note: Frequencies reported were processed with SPSS software

Table 3. Adolescents' perpetration of violence

Item	Frequency	Standard Deviation
Shoved or pushed	M = 2.2	SD = 1.6
Hit or slapped	M = 2.1	SD = 1.6
Ridiculed in public	M = 2.1	SD = 1.6
Ridiculed via technology	M = 1.6	SD = 1.2
Left someone out	M = 1.5	SD = 1.1
Verbal putdown	M = 1.3	SD = .9
Spread false rumors	M = 1.3	SD = .7
Posted rude comments	M = 1.3	SD = .9
Threatened to hurt via technology	M = 1.2	SD = .7

Note: Perpetuation of violence was measured on a 7-point Likert scale (1 = Never; 7 = Almost Daily)

RQ3 asked if participants exhibited TPP, believing others were more affected than they are by negative social media posts. A t-test was used to verify that participants believed they (M = 2.1, SD = 1.5) were less influenced than peers (M = 3.9, SD = 1.6) by negative social media posts, $t(1,159) = -34.1, p < .000$.

RQ4 asked what is the relationship between TPP, social media use, victimization, and perpetration. Findings are summarized in Table 4. TPP is most closely related to experience with violence. This finding is consistent with the TPP literature (Chapin, 2013; Kim, Kim & Cameron, 2012). Participants who have witnessed and experienced multiple forms of violence are less likely to believe they will not be affected by negative social media posts. A third-person effect also emerges, in that adolescents who exhibit TPP are more likely to engage in both face-to-face and electronic perpetration of violence against others. Adolescents who use multiple social media platforms are more likely to exhibit TPP and more likely to engage in cyber-bullying behaviors. A series of independent t-tests were used to delve deeper into the impact of specific social media platforms. The most disturbing findings emerge with Snapchat

and Facebook users. Snapchat users ($M = .19$, $SD = .40$) are more likely than non-users ($M = .30$, $SD = .50$) to experience all forms of sexual abuse, $t(1,027) = -3.1$, $p < .000$. Despite having experienced sexual abuse, adolescents continue to use the app most associated with the hookup culture and the transmission of sexually explicit images. Snapchat users ($M = 14.8$, $SD = 6.9$) are also more likely than non-users ($M = 13.2$, $SD = 5.7$) to perpetrate all forms of abuse on others, $t(1,098) = -3.3$, $p < .000$. For Facebook, users ($M = .92$, $SD = 1.1$) are more likely than non-users ($M = .75$, $SD = 1.0$) to experience all forms of abuse, $t(1,026) = -2.3$, $p < .01$. There is no pattern of perpetration for Facebook users. No similar patterns emerge for users of the remaining platforms (Twitter, Instagram, Pinterest, and text).

Table 4. Zero-order correlations among variables predicting third-person perception

	2	3	4	5	6
1. TPP	-.15**	.16**	.09**	.08**	.06*
2. Experience/Victim	---	.11**	.09**	.03	-.12**
3. Perpetration/Cyber		---	.55**	.08**	.04
4. Perpetration/Face to Face			---	.02	.05
5. Social Media Use				---	.21**
6. Age					---

Note. * $p < .05$, ** $p < .01$

TPP is indicated by a negative mean. For ease on interpretation, the signs have been reversed in row 1.

DISCUSSION

The majority of adolescents (95%) use social media. Despite this use, they believe they are less impacted by negative social media posts than their peers. This misperception predicts a third-person effect, in that adolescents who believe they are not affected are more likely to perpetrate violence against others face-to-face and electronically. Adolescents who use multiple social media platforms are more likely to exhibit TPP and more likely to engage in cyber-bullying behaviors. The study examined the use of the most popular social media platforms, finding disturbing patterns among Snapchat and Facebook users. Despite the nefarious origins of Snapchat, adolescents who have experienced sexual abuse seem to be drawn to the app and are more likely to perpetrate all forms of abuse on others. Similarly, Facebook, users are more likely than non-users to experience all forms of abuse. The Facebook platform was also originally designed as a hook-up app for college students. As it opened to older and younger users, it has developed over the years to include the sharing of personal information, photographs, news, and political opinions. One student shared with the trainer that kids are migrating away from Facebook, because it got too “newsy.” It’s also difficult to use to find potential dates if Mom is following your feed.

Findings have implications for parents, educators, and women’s centers. First, some aspect of media literacy training is important. Adolescents need to understand how social media works, as well as the potential dangers. The high school trainings referenced in this study include legal implications. Students are surprised (and angered) to learn that sending an explicit selfie could result in criminal charges for

creating and distributing child pornography. Local cases are reviewed, as well as long-term consequences, including mandatory registration as a sexual offender on Megan's Law websites.

A number of limitations should be considered before interpreting these results. The sample consisted of Pennsylvania students gathered for training from a Women's Center (Middle school trainings focused on bullying; high school trainings focused on dating violence). Although study data was collected prior to the training, participants were aware of the topic, which could skew their responses. Findings may not be generalizable to all U.S adolescents or adolescents from other parts of the world.

While the findings are consistent with the current literature on TPP and social media (Antonopoulous, Veglis, Gardikiotis, Kotsakis & Kalliris, 2015; Paradise & Sullivan, 2012; Wei & Lo, 2013), each study provides a snapshot of adolescents from a particular location using specific social media platforms. Future research could delve more deeply into why adolescents use social media and how that changes the patterns of abuse that emerged in the current study. For instance, adolescents who use Snapchat and Facebook for hookups likely differ from users who are sharing whimsical pictures of their cats. Clearly other factors come into play, on the social and cultural levels. Funding for a broader national survey would shed more light and provide guidance for prevention campaigns.

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Chapter 54

Social Network Sites (SNS) and Their Irrepressible Popularity: Can They Really Cause an Addiction?

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ABSTRACT

Popularity of social media is increasing day by day and there are thousands of social media platforms on the internet with different features. This chapter discusses the term social media in general and examines its evolution in detail from the beginning of the first e-mail to today. Authors explore the terms pertaining to the domain of Social Network Sites (SNS) which are considered as one of the most used forms of social media. Authors present a discussion about a popular topic “SNS addiction” and examine its characteristics with a brief literature review. Accordingly, despite the fact that excessive use of social network sites cannot be formally accepted as a behavioral addiction; shy and young, extroverted, and neurotic women with no relationship are more likely to develop addictive behaviors towards social media.

INTRODUCTION

The reputation of social media is increasing day by day, and this popularity changes our daily lives and business environments in both negative and positive ways. For example one study claims that proper use of social media helps family members to increase their connection and to strengthen their family bonds (Williams & Merten, 2011); whereas other has investigated that divorce rates have increased with developing technology (Greenwood, Guner, Santos, & Kocharkov, 2016). Moqbel and Kock (2018) has admitted that excessive use of social media has negative impacts on the personal and work environment by means of decreasing positive emotions, increasing health problems and task distraction. However,

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their strong evidence about the harmful effects of social media on personal environment is as strong as the impact on the work environment, Greengard (2012) believes that social media can be a way for achieving our life experiences. Indeed, some previous studies have clearly proved that using social media can enhance academic success (Ainin, Naqshbandi, Moghavvemi, & Jaafar, 2015), increase students' engagement (Junco, Heiberger, & Loken, 2011) as well as having more interactive customer relationship performance (Trainor, Andzulis, Rapp, & Agnihotri, 2014), creating more trusted products and customers (Laroche, Habibi, & Richard, 2013). Social media brings to our life not only performance-based positive outcomes; it may also offer some emotional gifts. For example, results have shown that getting positive feedback on the profiles enhance self-esteem and subjective well-being (Valkenburg, Peter, & Schouten, 2006). Similarly, Wang, Jackson, Gaskin, and Wang (2014) have also found that social use of social networking sites is positively related to well-being. These contradictory examples can be reproduced even further, but the most critical point in here is that there is no generalizable effect of social media. Although literature is agreed that some people are more inclined to use social media and exposed its negative effects such as young individuals (Kalpidou, Costin, & Morris, 2011) and females (Andreasen et al., 2013a), the situation depends on who you are, what are your individual characteristics and other unpredictable factors. Effects may be different even when the same person uses social media for different purposes. Baek, Bae, and Jang (2013) have found that social activities (based on reciprocity between the user and his/her friends such as chatting) decrease the feeling of loneliness; however parasocial activities (based on unilateral activities such as commenting a celebrity's photo) show opposite effect. Because of these reasons, understanding social media is crucial to get benefit from it without being harmed. For this purpose, the present chapter has two main objectives (1) to present the outline of social media (Section 1), (2) to define social network sites (SNS) with examples of their potential effects, and (3) to discuss a relatively new concept "SNS addiction."

UNDERSTANDING SOCIAL MEDIA

In this section, first, we try to define social media with different definitions made by different point of view and touch on the evolution of social media.

What is Social Media?

According to Oberst (2010), the online world started gaining prominence with the social media after the year of 2000, and since then people have started to share their feelings, information, videos, and pictures at an astounding rate. According to their massive global compendium of stats, We Are Social has currently released that among 4.338 billion internet users worldwide 3.484 of them have already active social media users (We Are Social, 2019). This simply proves that 75% of internet users are also a member of social media. The reason why social media has become popular is that; it is always up to date, be able to multiple use (can be used for so many people at the same time), and is an open-source platform (Akıncı Vural & Bat, 2010). Although literature builds consensus about social media has changed our lives in many ways, there is no common sense what actually it is. Kaplan and Haenlein (2010) have stated that the terms social media and Web 2.0 are generally used interchangeably, but this situation is contradictory. According to them Web 2.0 can be considered as an ideological and technological foundation for the evolution of social media. More precisely, social media is an intimate and natural platform created

by its users who come together based on their shared interests and ideas (Evans, 2008). Odabaşı (2010) has stated that social media is a way of connecting with our friends or/and strangers via sharing our experiences, ideas, and opinions on an online platform. Lusk (2010) has also agreed the idea that social media is a platform and it provides communication and sharing opportunities to its users. From another researcher perspective, social media is not just a platform, but it also consists applications, services, and systems that allows to create and share related contents (Junco, 2014). Boyd and Ellison (2007), who are recognized as the important contributors to the social media literature have claimed that the term social media captures all the services including internet-based and mobile ones that allow people to engage and participate in exchanges, joining and contributing to communities. Kietzmann, Hermkens, McCarthy and Silvestre (2011) have also admitted that social media captures mobile and web-based technologies to create interactive platforms through which users and communities share, discuss, co-create, and modify the contents. Despite the slight differences in the definitions of social media, there are some similarities that can be clearly seen. According to Mayfield (2010), there are five common characteristics that each social media platform has to be assured. These are:

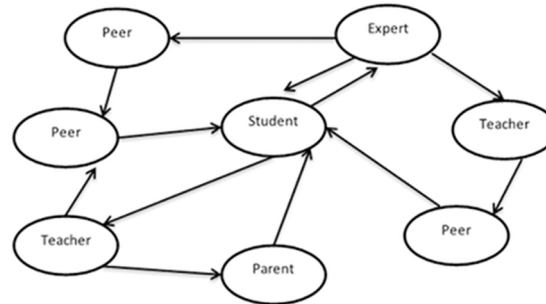
1. **Participation:** Encourages becoming an active user.
2. **Openness:** Be accessible for everyone.
3. **Conversation:** Removes from being a broadcast.
4. **Community:** Creates groups that share common values and interests.
5. **Connectedness:** Increases interactions with other sites and potential users. Besides common features, the term social media also involves seven functional blocks such as sharing, conversations, groups, reputation, relationships, presence, and identity which are called by “the honeycomb of social media” (Kietzmann et al., 2011). Along the same line, Akkaya (2013) has emphasized four main aspects of social media that differ from traditional media:
 1. In traditional media, contents can be produced by only publishers, whereas in social media all users can create contents using tools which are mostly free or at small costs.
 2. In traditional media, contents are shaped by expert and dominated with their experiences; however in social media users are free to create and share regardless of their skills, knowledge or background.
 3. Social media is faster than traditional media for getting feedback.
 4. Once the content is published in traditional media, it is hard to revise. However, it is one click job correcting your mistakes in social media.

As Kuhn (1962) has propounded, Pink (2005) has agreed, and finally, Dawley (2009) has corroborated, new communication technologies such as printing press, internet, and social media play a role in epistemological and ontological development because of their functionality. In her inspirational study, Dawley (2009) has proposed a social network knowledge construction model (Figure 1) and tried to define how communication patterns could be shaped in the technology age for a student.

Based on this model, it can be indicated that networking through social media provides multi-channel communication opportunities that mass media cannot guarantee it. Before social media has penetrated our lives, constructors generally access their students and share their knowledge to them with face to face communication whereas the interaction between them is a continuous process nowadays. Of course, this situation is not to be limited to the educational context but also encompasses people’s daily lives. Rettberg (2009) has admitted that social media lends a hand us to craft the narratives of our own story.

According to her, social media can organize our data and create an aspect of our life so that we can stay away from the clichés of mass media. For example, at certain times of the year Facebook prepares a customized video that includes the photos you shared.

Figure 1. Social network knowledge construction model (Dawley, 2009)



Similarly, Dopplr (offline now) creates a colored timeline travel plan -so that its users can plan everything in detail- and marks correlations with friends –so that they can receive alerts when they would be in the same place-. Businesses can also get the advantage of social media by having a comprehensive platform (<https://www.clarabridge.com>) to engage better their customers -who also probably have at least one social media account- in real-time. Marwick (2013) has indicated that social media encourages people to promote themselves as a brand like businesses do; however majority of them abstain from monetizing through their account. Besides these enthusing features of social media, not all people may want to have this experience. The main issue is that people use social media willingly and choose what they represent in there. There are three modes of self-representation which generally overlap in social media: visual, written, and quantitative (Rettberg, 2017). Visual self-presentation captures all the images that we share on social media whereas the way of expressing yourself via the words called written self-presentation. Quantitative self-presentation comes to mean as depicting our self-portrait with numerical statements such as self-tracking and showing how many steps you have walked today. Rettberg (2017) has also stated:

Self-representations in social media are often mocked as vapid, self-obsessed, frivolous – or simply boring ... on the other hand, self-presentation shows a certain aspect of ourselves ... and it never can share everything.

The definitions, features, and issues that have been discussed so far about social media, it seems as if social media can only use for communication to other people or/and expressing ourselves in different manners. However, in their research report Cann, Dimitriou, and Hooley (2011) have classified social media tools into three groups namely; communication, collaboration, and multi-media. Table 1 shows their classification and the different applications each group has.

Social Network Sites (SNS) and Their Irrepressible Popularity

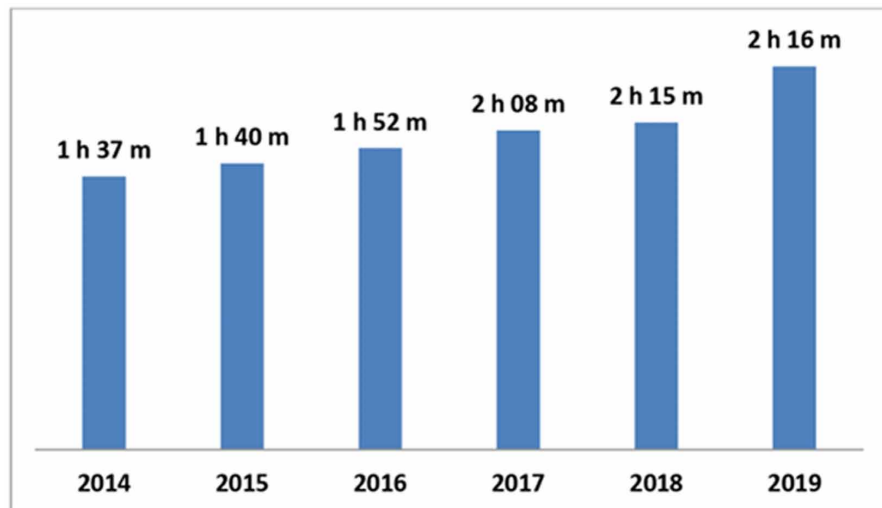
Table 1. Classification of social media tools (Cann, Dimitriou, & Hooley, 2011)

GROUP 1 COMMUNICATION TOOLS	Blogging	Blogger, LiveJournal, TypePad, WordPress Twitter, Yammer, Google Buzz
	Microblogging	Foursquare, Gowalla, Facebook Places Facebook, LinkedIn, MySpace
	Location	Google Reader, Netvibes, Pageflakes, iGoogle
	Social networking	Blogger, LiveJournal, TypePad, WordPress Twitter, Yammer, Google Buzz
	Aggregators	Foursquare, Gowalla, Facebook Places Facebook, LinkedIn, MySpace
GROUP 2 COLLABORATION TOOLS	Conferencing	Adobe Connect, GoToMeeting, Skype PBworks, Wetpaint, Wikia Delicious, Diigo, BibSonomy CiteULike, Mendeley Digg, Reddit, Newsvine
	Wikis	Google Docs, Dropbox, Zoho Bamboo, Basecamp, Huddle
	Social bookmarking	Adobe Connect, GoToMeeting, Skype PBworks, Wetpaint, Wikia Delicious, Diigo, BibSonomy CiteULike, Mendeley Digg, Reddit, Newsvine
	Social bibliography	Google Docs, Dropbox, Zoho Bamboo, Basecamp, Huddle
	Social news	Adobe Connect, GoToMeeting, Skype PBworks, Wetpaint, Wikia Delicious, Diigo, BibSonomy CiteULike, Mendeley Digg, Reddit, Newsvine
	Social documents	Google Docs, Dropbox, Zoho Bamboo, Basecamp, Huddle
	Project management	Adobe Connect, GoToMeeting, Skype PBworks, Wetpaint, Wikia Delicious, Diigo, BibSonomy CiteULike, Mendeley Digg, Reddit, Newsvine
GROUP 3 MULTI MEDIA TOOLS	Photographs	Flickr, Picasa, SmugMug Viddler, Vimeo, YouTube
	Video	Justin.tv, Livestream, Ustream Scribd, SlideShare, Sliderocket
	Live streaming	OpenSim, Second Life, World of Warcraft
	Presentation sharing	Flickr, Picasa, SmugMug Viddler, Vimeo, YouTube
	Virtual worlds	Justin.tv, Livestream, Ustream Scribd, SlideShare, Sliderocket

If we have a glance at Table 1, it comes to our mind that communication tools are the ones which are most popular and ready to use applications. Literature also has agreed that social networking is the most attractive tool for communication in our modern age (Aghazamani, 2010). In Figure 2, a recent report's statistics have proved the increasing trend of social media usage all around the world. Likewise, a study's result has shown that college students spend approximately 18 hours a week on social networking which almost corresponds to 3 hours per day (Huang & Capps, 2013). Raice (2012) has also admitted customers pass the time of their day more on Facebook (6 hours average for the day) compare to Google and Youtube. Similarly, Wu, Cheung, Ku and Hung (2013) have also stated that nearly one-fourth of them their participants among Chinese smartphone users spend their time on social networking for more than three hours a day.

Because of exponential growth and rapid penetration of social media, it is crucial to understand the nature of these platforms, the reasons pushing people to use, and the consequences of using them should carefully investigate. Based on this inspiration, we will discuss the evolution of social media, most popular platforms, and their features –mainly focus on social network sites-, and the concept of social network sites addiction.

Figure 2. Time per day spent on social media (We Are Social, 2019)



The Evolution of Social Media

In web 1.0, people get the information they need and nothing more. A few writers create the pages, and a vast number of people make use of them. Web 1.0 is described as “read-only web,” whereas there is another way of reaching the web called “read-write” or more commonly known as Web 2.0. Although Web 2.0 is recognized as the most significant development for social media evolution, three milestones that should not be passed without mentioning since they can be recognized as the foundations of social media. The first one is the first **e-mail** sent between two computers by Raymond Samuel Tomlinson. The second one is the first **data transmission via telephone lines** between two users. The third one is a discussion system called **User Network (Usenet)** created by Tom Truscott and Jim Ellis which allows internet users to send instant messages. These three pioneering developments cover the period of 1970 to 1988 which we call “Foundation Age.”

After the idea of transformable-information has been introduced by Tim Burners-Lee in 1989 at first, people have realized that they could do more than search and read (Getting, 2007). The idea of participating in the information has dramatically changed the ecosystem of the web. In 1996, **ICQ** (I Seek You) has been established by an Israeli company called Mirabilis. It is similar to Usenet, but ICQ also provides several privacy features for its users (Heim & Hansen, 1999) and it is the first stand-alone instant messenger. Two years later, the client of ICQ was bought by American Online (AOL) and then Mail.Ru Group in 2010 (Hollars & Lew, 2010). As of 2019, iOS and Android applications of are also available for ICQ. In 1997, AOL has launched its messenger called AOL Instant Messenger (**AIM**) which allows data transfer as well as instant messaging. Despite its growing popularity until the late 2000s, it has not failed to close in 2017. The same year with the AIM, **SixDegrees** formerly known as MacroView has also been established which is accepted as the first social network site. The idea behind this web site is “everybody is linked with everybody else via six degrees of separation” (Boyd & Ellison, 2008). Although ICQ and AIM offered lists of friends, they are not visible to others. SixDegress is the first web site that combined the popular features of social media as we discussed in the previous section

such as profiles, friends list, and school affiliation. Another early social networking site which is called **Open Diary** has been introduced by Susan and Bruce Abelson in 1998. It is also accepted as the first blog. Although the web site has been hacked twice time in 2004 and 2008, it has managed to reach more than 561.000 blogs with 77 different countries by years 2008. In 2014 it has gone offline; however it has been activated in 2018 again. When it comes to millennium, **Wikipedia** has been introduced by Jimmy Donal Wales. It is the first collaborative online encyclopedia and has been adopted “anyone can edit” as a slogan (Bruns, 2006). From individual social connections to professional social connections, **Ryze** is the first platform to help people to leverage their professional networks. It has established in 2001 and recognized as the precursor to LinkedIn, but never gained mass popularity. As a social complement to Ryze, **Friendster** has started its life in 2002. Jonathan Abrams who is one of the owners of Friendster stated that this dating site focus on friends-of-friends meets instead of gathering strangers with similar interests. A motto “How can be lovers if we cannot be Friendsters?” has been started to spread (Boyd, 2006). According to Abrams, people create stronger ties and have better romantic relationship with the people that they have been known for a while (Boyd & Ellison, 2008). Thus, Friendster allowed its users to access at most four degrees away (“friends-of-friends-of-friends-of-friends”). At first, he was right, and Friendster got 300,000 users through word of mouth before it was founded as newsworthy (O’Shea, 2003); however, in the end, the site flamed out because of some technical and social difficulties (Boyd, 2006). In 2011, the site has transitioned into a virtual gaming community. Chafkin (2007) has evaluated the Friendster’s rise and fall as the biggest disappointments in Internet history. The years between 1989 and 2002 has been introduced as “Exploration Age” which has started with the foundation of ICQ and ending with Friendster’s succumbs.

As people realize the possibilities of socializing in the digital environment, new social networking sites have begun to evolve. As can be seen in Figure 3*, the expansion age of social media has begun in 2003, and it is still going on. In 2003, two important platforms have established called LinkedIn and MySpace. Unlike Ryze, **LinkedIn** has become an essential site for professionals. It has never stopped to evolve and always updated itself with new features like hiring solutions for businesses. In 2011, LinkedIn has been gone to public and now it is accepted the biggest initial public offering for a web company after Google (CBSNews, 2019). **MySpace** is a kind of dating site and has adopted an aggressive market strategy. They have focused on users who were the estranged users of Friendster. After the Friendster were fee-based system, MySpace has succeeded its mission and overgrown with its unique features (Boyd & Ellison, 2008). MySpace is the one which allows its users to personalize their profiles and pay regard their suggestions to update the site. Although MySpace has kept its leading position and remained as the most visited social networking site until 2008, Facebook has surpassed it after then. At the beginning of its history, **Facebook** has started out as a private sharing platform only for Harvard University students. As of September 2006, it has extended beyond universities to public (Phillips, 2007). Recently, Facebook is considered as one of the most prestigious companies in the world with its more than 2.3 billion monthly active users (Gebel, 2019). In addition to self-representation opportunities such as sharing photos, videos, ideas; Facebook also offers the Like button which enables users to confirm themselves and to get the appreciation of the other. According to Hayes, Carr, and Wohn (2016), the Like button is a kind of “paralinguistic digital affordance” which gives a communication chance without any word. Because of the array of potential meanings and ease of use, this button is one of the characteristic features of Facebook and contributes as trigger to Facebook’s appeal to more people both teenagers and adults (Figure 4). How Facebook has left behind its rivals and why is still the most popular social network site? Actually, the answer is simple: Facebook provides a relatively easy way to

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access social connections (Ellison, Steinfield, & Lampe, 2011), contains time-saving cues (Walther & Ramirez, 2009), and targeting a global audience so that users can reach and comments on anybody with minimum efforts and without limitation.

Figure 3. Timeline of social media (*only the most groundbreaking developments are listed for the consideration of the authors)

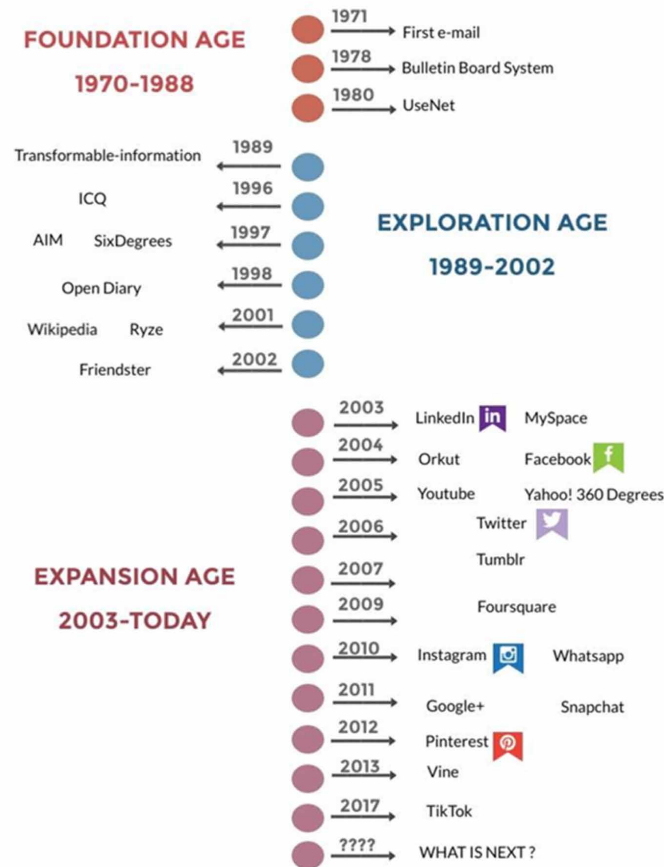
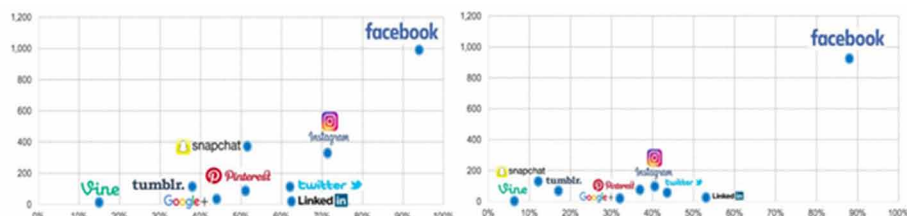


Figure 4. Age 18-34 and age 35+ digital audience penetration vs. engagement of leading social networks (Comscore, 2018)



Although the original Yahoo! Company has been established in 1995, it has succeeded to adopt to technology age in 2005 with the foundation of **Yahoo! 360 Degrees**. This special module has launched with its unique services such as Flickr, Yahoo! Music, and Messenger. However Yahoo has slowly declined in the late 2000s and its core businesses have been bought by Verizon in 2017 (McGoogan, 2016). In 2005, a video sharing platform -**Youtube**- has hit the headlines and be one of the leading web sites around the world. In 2006, Google has bought Youtube, and now it operates as one of Google's subsidiaries. In 2006, something has changed with a little whisper. Jack Dorsey wrote a sentence "Just setting up my Twtr." via his platform and announced that **Twitter** (formerly known as Twtr) -a microblogging web site- has officially founded. Besides Facebook popularity, Twitter has begun experiencing a massive growth because the web-site has been a user-driven (hashtags are the idea of Twitter's users) and more suitable for an ongoing public dialogue (Junco et al., 2011). Currently, there are more than 321 million active users on Twitter (Molina, 2017). In 2007, another microblogging web site **Tumblr** has been created. The site has not been achieved its mission and made an agreement with Yahoo just before Verizon bought it in 2017. Currently, Tumblr is one of the subsidiaries of Verizon. In 2009, **Foursquare** has been founded which is a location-based service that allows its users to share their location-specific information with their real-time updates. In 2010, a photo and video-sharing website -**Instagram**- has owned by Facebook. According to the literature, these two platforms have similar features however the motives for using them are different. People tend to use Facebook to fulfill their need for belonging and need for self-presentation whereas Instagram focuses on self-expression and social interaction (Kircaburun, Demetrovics, & Tosuntaş, 2018). It is also stated although the widespread acceptance of Facebook all around the world with 2.5 billion active users, it has admitted that young people have started to move into another social media platforms such as Instagram (Sweeney & De Liz, 2018; Utz, Muscanell, & Khalid, 2015). The same year with Instagram, another popular platform -**Whatsapp**-has been founded by Brian Acton and Jan Koum who were the former employees of Yahoo. Four years later it has owned by Facebook because the owner of Facebook has thought Whatsapp would be their major rivals in the near future. Whatsapp is a free, cross-platform messaging for individual uses, and since 2018 it has launched for small business use, too (Ong, 2018). According to the statistics of January 2019, Whatsapp has the most active user accounts among the messenger/VOIP applications (We are Social, 2019). Given the dominance of Facebook, Google has also made some attempts to catch social networking trends. **Google+** has launched in 2011 which is a fairly standard social networking site. According to Ovadia (2011), there is no reason to expect Google+ win the first place; however so many people are curious about what Google can do about social networking. In the end, Google+ can't manage to get rid of calling as a "ghost place" and more than 99% users of it cannot satisfy with it (Denning, 2015). As Pariser has stated that Google is undeniably good at managing relationships among data; whereas Facebook is good at managing relationships among people (Pariser, 2011). In 2011, **Snapchat** has been released as a photo-sharing app. What makes it different from Facebook and Instagram is that Snapchat offers its users more private communication opportunities with a feature of immediately disappearing posts. A report results' has indicated that college students think Snapchat is the safest web-site for photo-sharing (Bennett, 2014). The rapid acceleration of Snapchat annoyed Facebook and the acquisition attempt has occurred in 2013. Unlike Instagram and Whatsapp, Snapchat has rejected \$3 billion offer from Facebook (Rusli & MacMillan, 2014). Although, Facebook remains its popularity among young adults; however adolescences and teens have already started to Instagram and Snapchat (Alhabash & Ma, 2017). Currently, the market value of Snap is estimated by nearly \$15 billion (Feiner, 2019). In 2012, a new kind of social media called visual bookmarking has been created by the name of **Pinterest**. Users can dis-

cover, achieve, and share any web image or personal digital image in their scrapbook. Since most posted pictures are of products and brands, Pinterest offers many opportunities to brand advertisers as well as individuals (Phillips, Miller, & McQuarrie, 2014). As of the second quarter of 2019, Pinterest had 300 million monthly active users (Statista, 2019a). In 2013, **Vine** -a Twitter-owned service- has started its journey. Similar with few seconds appearing photos in Snapchat, Vine offers to create and share six-second videos. After Vine has shut down, another similar video sharing application has been offered which is called **TikTok**. Currently, TikTok has more than 500 million monthly active users which is more than Twitter (Langford, 2019).

Consequently, it can be stated that social media is an umbrella term which consists tools that provide several communication opportunities via connecting and retrieving features that include blogs (OpenDiary), wikis (Wikipedia), social bookmarking (Pinterest), media sharing (YouTube) virtual communities (all social network sites such as Facebook, Instagram), and collaborative tools (Google+) (Taylor, King, & Nelson, 2012).

SOCIAL NETWORK SITES (SNS)

After defining social media and its evolution in Section 1, we are going to focus on the most popular forms of social media which are called social network sites (SNSs). First, we try to clarify the concept of SNS. Then, we are going to have a look at the effects of using SNS both an individual and business level.

The Concept of SNS

Although there are many attempts to describe what social media sites refer to, Boyd and Ellison (2008)'s approach is the most cited one. According to them three major components that each SNS should have but the nature of them could be different from one website to another. They have stated that SNSs allows people to (1) create a personal page within a bounded system, (2) have a list of people with whom they are agreed to share a connection, and (3) view and change their friend's list. Boyd and Ellison (2008) have also stated that SNSs are unique communication platforms which offer users to articulate their networks as well as meeting with strangers.

According to Whiting and Williams (2013), people use SNS for ten reasons: passing time, information seeking, social interaction, communicatory utility, relaxation, entertainment, expression of opinion, information sharing, convenience utility, surveillance of knowledge about others (Alhabash & Ma, 2017). Curran and Lennon (2011) have proposed a research model to explain social networking behaviors. They have indicated that ease of use, usefulness, enjoyment, social influence and drama are the five main antecedents of SNS usage behavior. To put into more general, we can plausibly state that people want to use SNS for two main reasons: First one is about enhancing an individual's network size by means of meeting strangers. The second one is maintaining current relationships and having more strong-ties (Boyd & Ellison, 2008). One recent study's result has shown that young people generally prefer to use social media for creating new friendships, whereas older users tend to use these platforms to sustain their relationships (Munzel, Meyer-Waarden, & Galan, 2018). Besides motives for using SNS habits differ according to age, literature suggests that there are also some gender-specific patterns. For example, Sharp, Coatsworth, Darling, Cumsille and Ranieri (2007) have admitted that being social on SNS is more important for females compared to males. Similarly, Hargittai and Hsieh (2010) have also

proved that males are more likely to join SNS for gaining new friends whereas females tend to develop more strong-tie activities such as chatting with close friends or press the like button for someone's picture whom they have been already introduced. With this line, Stanley (2015) has also found that females are mostly online in Facebook and Snapchat in order to monitor their siblings and parents status; whereas males go online in Facebook to meet new people.

Regardless of who uses them for what purposes, SNSs become more and more people day by day. According to the current statistics, 2.65 billion people have used social media in 2018 and will reach almost 3.1 billion in 2022 (Statista, 2019b). These numbers are reasonably enough to claim that SNS usage moves towards addiction. This claim will be discussed in more detail in Section 3.

Positive and Negative Effect of SNSs

It is stated that people - especially young adults (18-35 years) - do not realize how much time they spend on these platforms (Meena, Soni, Jain & Paliwal, 2015). A master thesis' results from Johnson & Wales University have indicated that 45% of their participants spent 6-8 hours a day in SNSs, while 23% of them have admitted that they have spent more than 8 hours a day (Wang, Chen, & Liang, 2011). A more recent report has indicated that the average time a user spends on Facebook is 58 minutes, in Youtube 60 minutes, in LinkedIn 10 minutes, and in Snapchat 25 minutes which is dominated by young adults (Stout, 2019). As a result of excessive use of these platforms, people face with some hassles in their daily lives. For example, Moqbel and Kock (2018) have expressed that high-frequency usage of social media causes health problems and low task performance as well as having more negative emotions. The negative effects of SNSs are more common among young individuals because they are more engaged with social media (Baker & Moore, 2008; Kalpidou et al., 2011). A study conducting with young adults has admitted that there is a positive relationship between the usage of SNS and sleep disturbance (Levenson, Shensa, Sidani, Colditz, & Primack, 2016). Gerson, Plagnol, and Corr (2016) have admitted that excessive use of SNS causes low well-being, especially for high goal-driven users since they are more inclined to develop negative social comparison. Besides daily life problems, time spent on Facebook and checking the notifications frequently are negatively related to students' academic success (Junco, 2012). Benson, Hand, and Hartshorne (2019) have stated that compulsive use of SNS is positively and significantly related to low academic performance.

Despite SNSs can have negative consequences they can offer some advantages such as enhanced social capital (Ellison, Steinfield, & Lampe, 2007) and sense of belonging (Davis, 2012), public individuation and user innovativeness (Choi & Kim, 2016), and increased well-being (Magsamen-Conrad, Billiotte-Verhoff, & Greene, 2014). Magsamen-Conrad et al. (2014) have aware that not all people have to feel comfortable in face-to-face communication. According to them several communication opportunities on SNS may reverse the negative effects of self-concealment on well-being, especially for the isolated and shy young individuals. A more recent study's results has showed that higher number of Facebook friends is positively related with subjective happiness and negatively related with loneliness (Phu & Gow, 2019). Beyond daily life, social media provides many unpredictable opportunities in the educational context, too. Using SNSs as an educational tool and integrating them with course content may increase the efficiency of lessons and motivation of learners. In their study, Lim & Richardson (2016) found out that, students used online social networking platforms for various reasons and their perceptions were usually positive when the SNSs were used as an educational tool. Junco et al. (2011) conducted a study to reveal if Twitter has an impact on students' engagement in the USA, where the instructors can also

participate. Results showed that Twitter has a significant impact by the way of offering to students being more active and the ability to engage. Another study looked into the impact of Facebook usage on students' academic performance and found that there was a positive correlation among them (Ainin et al., 2015). Besides academic related jobs, usage of Facebook also beneficial to predict time spent in co-curricular activities (Junco, 2012).

There is no denying that social media platforms are inevitable for the majority of people to share their knowledge and interests. However, that is not all. These platforms can be unique in the way of improving the businesses performance. Businesses are fostered to use SNSs for increasing their relationships in order to have more trusted products and more loyal customers (Laroche, Habibi, & Richard, 2013). The term 'social media marketing' has increased its popularity by means of placing brand posts on the brand fan pages on SNSs. One study results showed that positioning the brand post on the right SNS affect the popularity of the brand in a positive way (de Vries et al., 2012). Although SNSs are generally considered an easy way to participate in Computer-Mediated-Communication (CMC), Treem and Leonardi (2013) have pointed out that social media differs from computer-mediated communication in some ways namely visibility, persistence, editability, and association. Thanks to these affordances businesses may alter their socialization, knowledge sharing, and power processes.

IRREPRESSIBLE POPULARITY OF SNSs

In this section, we try to define what SNS addiction it is and what features it consists of. We have also briefly examined the reasons for SNS usage and the consequences of it. After, we have briefly examined the previous studies about the related subject.

Term Of SNS Addiction

Addiction is a complex concept, and it is tough to define it accurately. Generally speaking, there are two kinds of addiction exists; substance addiction and non-substance addiction. Former one expresses the fondness for certain substances such as alcohol or drug. The later one comes into our lives with the advancement of technology and more related to individuals' behavior. That is why it is also called behavioral addiction (Alavi et al., 2012). Marlatt, Baer, Donovan, and Kivlahan (1988, p. 224), who have defined addictive behavior as: "...a repetitive habit pattern that increases the risk of disease and/or associated personal and social problems. Addictive behaviors are often experienced subjectively as 'loss of control' – the behavior contrives to occur despite volitional attempts to abstain or moderate use. These habit patterns are typically characterized by immediate gratification (short term reward), often coupled with delayed deleterious effects (long term costs). Attempts to change addictive behavior (via treatment or self-initiation) are typically marked with high relapse rates." More specifically, Walker (1989, p.185) has defined a behavioral addiction as "a persistent behavioral pattern characterized by: a desire or need to continue the activity which places it outside voluntary control; a tendency to increase the frequency or amount of the activity over time; psychological dependence on the pleasurable effects of the activity; and, a detrimental effect on the individual and society." In 1990, Goodman has identified the diagnostic criteria for behavioral addictions as can be seen in Figure 5. Griffiths (2005) has concluded topic with his 'components' model of addiction. He has identified six features that each addiction consists of. These are:

Social Network Sites (SNS) and Their Irrepressible Popularity

1. **Salience:** A particular activity becomes the most important thing in person's life.
2. **Mood Modification:** Consequences of participating in a regular activity.
3. **Tolerance:** Requests more and more from a particular activity.
4. **Withdrawal Symptoms:** Unpleasant feelings in the absence of a particular activity.
5. **Conflict:** Chaos between the addict himself and also those around him.
6. **Relapse:** Be unable to stop doing an undesirable behavior.

Figure 5. Diagnostic criteria for behavioral addictions (Goodman, 1990)

- A. Recurrent failure to resist impulses to engage in a specified behaviour.
- B. Increasing sense of tension immediately prior the initiation of behaviour.
- C. Pleasure or relief at the time of engaging in the behaviour.
- D. A feeling of a lack of control while engaging in the behaviour.
- E. At least five of the following:
 1. Frequent preoccupation with the behaviour or preparatory activities
 2. Frequent engaging in the behaviour to a greater extent or over a longer period than intended
 3. Repeated efforts to reduce, control or stop the behaviour
 4. A great deal of time spent in activities necessary for the behaviour, engaging in the behaviour or recovering from its effects
 5. Frequent engaging in the behaviour when expected to fulfil occupational, academic, domestic or social obligations
 6. Important social, occupational or recreational activities given up or reduced because of the behaviour
 7. Continuation of the behaviour despite knowledge of having a persistent or recurrent social, financial, psychological or physical problem that is caused or exacerbated by the behaviour
 8. Tolerance: need to increase the intensity or frequency of the behaviour in order to achieve the desired effect or diminished effect with continued behaviour of the same intensity
 9. Restlessness or irritability if unable to engage in the behaviour
- F. Some symptoms of the disturbance have persisted for at least 1 month or have occurred repeatedly over a longer period of time.

Young (1999) have classified internet addiction into five groups namely computer addiction, information overload, net compulsions, cyber-sexual addiction and cyber-relationship; however, only one behavioral addiction called pathological gambling –falls into the net compulsion group- has been formally accepted as a diagnostic disorder (American Psychiatric Association, 1987). Although the idea of behavioral addictions is based in scientific knowledge, the concept is still controversial (Grant, Odlaug, & Chamberlain, 2016), researchers aware the other possible behavioral addiction with the evolution of

social media and there is an increasing interest in this topic (Andreassen et al., 2013b). In this context, Kuss and Griffiths (2011) have claimed that a rising addiction called SNS addiction has emerged. Andreassen (2015) has also stated that excessive and compulsive behaviors on SNSs can be regarded as an addiction. It should be noted here that excessive usage of an activity alone is not enough to accept any behavior as an addiction (Griffiths, 2010). There are many people who use Internet for more than 10 hours a day but have few negative consequences. Griffiths, who is a popular psychologist on behavioral addictions, also believes that being addicted to social media and being addicted to social media are two different things. Just as alcoholics are addicted to alcohol, not the bottle, social media users may be addicted to the activities, not the SNS, itself. Phu and Gow (2019) have also stated that actual time spent on a specific SNS is not a clear indication of being addicted to it since there could be different reasons to use these platforms. Because of these reasons, someone should be carefully evaluated as she or he is addicted to the SNS or not.

Andreassen and Pallesen (2014, p.2) have defined SNS addiction as “being overly concerned about SNSs, driven by a strong motivation to log on to or use SNSs, and to devote so much time and effort to SNSs that it impairs other social activities, studies/job, interpersonal relationships, and/or psychological health and well-being.” SNS addiction takes part in the cyber-relationship category since the primary purpose of using these platforms is communication (Kuss & Griffiths, 2011).

Research Topics in SNS Addiction

For a while, researchers have tried to find an answer to one question: What types of person are most likely to use SNS? In literature, there is some evidence that excessive use of SNS is more common in certain groups. For example, Ehrenberg, Juckes, White, and Walsh (2008) have conducted a survey-based study and indicated that more neurotic and low self-esteem individuals have spent more time on social networking activities. They have also stated that people who prefer online communication instead of face to face conversation can be regarded as more anxious and socially insecure. Low self-esteem has been also found to be positively related to SNS addiction in other studies (Bányai et al., 2017; Lou, Yan, Nickerson, & McMorris, 2012). Addictive tendencies appear more common in extroverted and less common in conscientious individuals (Wilson, Fornasier, & White, 2010). Another study has revealed that openness to new experiences, extraversion, and neuroticism are all positively related to SNS addiction (Correa, Hinsley, & De Zuniga, 2010). Impulsivity has been found as another indicator of high usage of SNS (Rothen et al., 2018). Similarly, a more recent study with a convenient cross-sectional sample of 23,532 Norwegians has found that people who are more narcissist with low self-esteem are more likely to use SNS (Andreassen, Pallesen, & Griffiths, 2017). The same study has also indicated that women may tend to develop more addictive habits towards SNS. Although there are some other studies which have admitted that social media addiction is more commonly appears among men (Çam & İşbulan, 2012), research has more consistently suggested that women are more prone to developing addictive SNS use (Andreassen et al., 2013; Kuss, Griffiths, Karila, & Billieux, 2014; Mariko Kasahara, 2017; Tartory, 2019). Kuss et al. (2014) have also investigated that people with no relationship are more willing to use SNS. In the same line but more exciting finding is that married men generally prefer to stay away from social media, whereas women actively engage in social network activities whether they are married or not (Lennon, Rentfro, & Curran, 2012). In addition to gender differences, there is undeniably the dominance of young population in social media. As previous studies have proved that Internet addiction is negatively related to age (Carbonell, Chamarro, Oberst, Rodrigo, & Prades, 2018; Neverkovich et al.,

2018), SNS addiction has also been found a negative relationship with the age. In their inspiring scale construction study, Andreassen, Torbjørn, Brunborg and Pallesen (2012) have admitted that neurotic and extraverted young people are more inclined to develop addictive habits towards Facebook. Turel and Serenko (2012) have investigated the benefits and dangers of enjoyment with SNS and found that age is a significant control variable with negative effect on habit.

CONCLUSION AND FUTURE DIRECTIONS

In our modern world, having a profile and surfing on social media are accepted as normal behaviors (Andreassen, 2015). While there are some gender and age-specific patterns that affect the SNS usage habits, it is stated that internet access or parental education have no longer been concerned as predictors of social media because people always get a way to be online (Ahn, 2011). Considering that older users have the highest proportion of newly registered users rather than younger ones in recent years (Benson et al., 2019), it can be plausibly asserted that the spread of social media does not lose its speed. This chapter focuses on this popular topic and presents the outline of social media since its early years to state-of-art issues.

As a result of our study, we have agreed on Allen et al. (2014) who have stated that how social media can use its capacity to provide a real benefit?" is still a controversial issue. It is clearly seen that excessive and problematic use of social media -especially SNSs- has several effects on our lives, it is critical to get benefit from these platforms without being addicted to them. Although gambling is the only behavioral addiction that formally accepted (American Psychiatric Association, 1987), there are strong pieces of evidence that problematic use of SNSs can also be an addiction (Körmendi, Brutóczki, Végh, & Székely, 2016). Thus, people get aware about the current situation and take some precautions before they get addicted to them. Regarding positive and negative concerns, successful integration of social media is challenging. Having content with what you already desire entails you moving away from current technological development and becomes you just an audience when your rivals do something more creative.

Our study is not without its limitations. First, the timeline of social media (Figure 3) is a great effort by putting together with the main developments; however we aware that there are also other platforms and events which should be discussed about. Thus, we encourage researchers to design more detailed and comparative visualizations so that evolution of social media can be deeply understood. Second, we have briefly presented the concept of SNS addiction and related literature. We suggest other researchers make empirical researches about this topic since there is emerging literature about this relatively new area.

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Chapter 55

Online Social Networking and Romantic Relationships

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ABSTRACT

With the increased popularity of social media, social networking sites (SNSs) have received the attention of many scholars. In particular, researchers have focused on the impact of SNSs on interpersonal relationships. Accordingly, this chapter provides an overview of the extant literature concerning associations between the use of SNSs and romantic relationships. It provides empirical evidence on how social networking behaviors are influenced by adult attachment styles, and how social networking influences relationship constructs such as satisfaction, commitment, jealousy, and relationship dissolution. Furthermore, it presents previous research that emphasizes gender as a moderator in these relations. This chapter overall contributes to researchers and professionals in providing information on online social networking and emphasizing key romantic relationship constructs related to the use of SNSs. It also provides suggestions for future research.

INTRODUCTION

With the advances in wireless communication technologies, social media use has become prevalent among individuals. To illustrate, the number of active users of social media around the world was 2.46 billion in 2017 and this number is expected to reach to 3.02 billion by 2021 (Statista Facts on Social Networks, 2018). Given its prevalence and importance in interpersonal communication, scholars have shown an interest in online social networking and conducted numerous research to understand its influence on interpersonal relationships. In particular, they have focused on Social Network Sites (SNSs) such as Facebook or Twitter, and addressed several characteristics of individuals, such as attachment style (Emery, Muise, Dix, & Le, 2014a; Fox & Warber, 2014) and SNSs-induced jealousy (Muise, Christofides & Desmarais, 2009; 2014; Utz & Beukeboom, 2011) as well as relationship characteristics

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such as relationship happiness (Mod, 2010; Utz & Beukeboom, 2011), satisfaction (Elphinston & Noller, 2011; Saslow, Muise, Impett, & Dubin, 2013), commitment (Dibble & Drouin, 2014; Drouin, Miller, & Dibble, 2014) and dissolution (Clayton, Nagurney, & Smith, 2013; Clayton, 2014) as outcomes or predictors of SNSs-related behaviors of partners in a romantic relationship.

This chapter aims to provide an overview of the extant literature concerning associations among the use of SNSs and romantic relationship constructs. Given that SNSs enable public communication between partners (Billedo, Kerkhof, & Finkenauer, 2015) and may either damage or benefit an emotional relationship between partners, the investigation of the associations between the use of SNSs and romantic relationship constructs is warranted. Accordingly, this chapter provides information on how the use of SNSs influences and is influenced by individual and relationship characteristics. Furthermore, plausible moderators and mediators in these relations are explained. Thus, this chapter would contribute to researchers and communication professionals in providing information on online social networking and emphasizing key romantic relationship constructs related to the use of SNSs. It also provides suggestions for future research directions.

Several issues are addressed in this chapter. First, online social networking is introduced and the emergent interest in SNSs is discussed. Second, the research addressing online social networking and romantic relationships are reviewed. To do so, EBSCOhost, Psych ARTICLES and Scopus electronic databases were used to search several keywords such as *social media*, *social networking sites*, *online social networking*, *intimacy*, *romantic relationship*, *jealousy*, *satisfaction*, *commitment*, etc. The articles were primarily chosen from those published in the past 10 years. Lastly, the findings of the current literature are summarized, and limitations and suggestions for future research are mentioned.

BACKGROUND

SNSs are online platforms where individuals can generate profiles, interact with friends, meet with other people based on common interests and trace the networks of connected users (boyd & Ellison, 2007; Kuss & Griffiths, 2011). Under the broader term of 'social media', SNSs are described as web-based services that allow for maintenance of social relationships within one's social network (boyd & Ellison, 2007; Rus & Tiemensma, 2017, p.685). Many people spend a great amount of time in SNSs. According to a survey, 71% of people who use the internet were social network users in 2017, and this rate is expected to grow (Statista Facts on Social Networks, 2018).

Facebook was first launched as an online student community at Harvard University in 2004 and became the most popular social networking site worldwide with 2.2 billion active users in 2018 (Statista Facts on Social Networks, 2018). Accordingly, most research on the use of SNSs has focused on Facebook, followed by Youtube, Whatsapp, Facebook Messenger, WeChat and Instagram. Given the popularity and high rate of prevalence of the use of SNSs, social networking and its possible influence on romantic relationships call for investigation. Thus, the following section of the chapter reviews the empirical research focusing on how the use of SNSs influences romantic relationships and is influenced by individual and relationship characteristics.

In general, people might initiate and maintain romantic relationships through public declaration of love and commitment, and through monitoring partner's status updates, photos, wall postings, and friends on SNSs (Marshall, Bejanyan, Di Castro, & Lee, 2013). In particular, it is proposed that social networking influences romantic relationships through three different ways: 1) Through increasing the

information that individuals receive about their partner, 2) through offering an acceptable way of monitoring the partner, and 3) through publicly sharing information related to a romantic relationship (Utz & Beukeboom, 2011, p. 512).

Scholars have also addressed gender differences in investigating the associations among the use of SNSs and romantic relationships. For instance, it has been argued that SNSs serve different social functions for men and women (Rus & Tiemensma, 2017). In particular, the genders differ in their motivations for the use of SNSs due to different gender-role expectations (Muscanell & Guadagno, 2012). That is, men are more likely to use SNSs such as MySpace and Facebook for relationship formation (i.e., to find potential dates) whereas women are more likely to use these sites for relationship maintenance (Muscanell & Guadagno, 2012; Raacke & Bonds-Raacke, 2008).

In the extant literature, considerable research has been conducted on the positive and negative effects of SNSs on romantic relationships (see Rus & Tiemensma, 2017 for a review). While some scholars suggest that social networking may be beneficial in enabling people to keep in touch with others (Joinson, 2008), other scholars propose that excessive use of SNSs may be damaging to romantic relationships (Clayton, 2014; Clayton et al., 2013). Accordingly, in the following section, the relationship between social networking and relationship constructs including attachment style, relationship satisfaction, commitment, jealousy, and dissolution are presented, along with the identification of existing gender differences in the current literature. In specific, it reviews empirical research on how attachment style influences social networking behavior, and how online social networking influences romantic relationship constructs.

MAIN FOCUS OF THE CHAPTER

Social Networking and Attachment Style

Attachment theory (Bartholomew & Horowitz, 1991; Collins & Read, 1990) provides a framework to understand romantic relationships. Hazan and Shaver (1987) conceptualized romantic love as an attachment process, and proposed that adult attachment style is determined by infant's relationship with a primary caregiver. In early stages of life, infants develop internal working models (positive/negative images for the self and the others) based on experiences with parents, and these models later influence relationships in adulthood (Bowlby, 1969). Drawing upon Bowlby's (1969) original formulation, Hazan and Shaver (1987) proposed three attachment styles of adulthood (secure, avoidant, anxious/ambivalent) that corresponds to those in early years. Later, Bartholomew and Horowitz (1991) proposed four attachment styles (secure, preoccupied, dismissing, and fearful) that were derived from a combination of two dimensions.

Securely attached individuals (low anxiety, low avoidance) desire intimacy, preoccupied/anxious individuals (high anxiety, low avoidance) desire closeness but fear rejection, dismissive/avoidant individuals (low anxiety, high avoidance) avoid intimacy due to desire for independence, and fearful individuals (high anxiety, high avoidance) avoid intimacy due to desire for not being hurt (Bartholomew & Horowitz, 1991). Accordingly, research on adult attachment have shown that secure individuals have higher self-confidence, higher level of involvement in romantic relationships, and express greater interpersonal warmth (Bartholomew & Horowitz, 1991). Furthermore, they are better able to seek and provide support (Collins & Feeney, 2000) and have more satisfaction with their relationships (Collins & Read, 1990).

Scholars examined adult attachment style as an underlying mechanism predicting SNSs-related behaviors and emotional reactions to SNSs content (Rus & Tiemensma, 2017). A number of studies investigating attachment styles and the use of SNSs show that anxiety and avoidance dimensions predict how people use and react emotionally in SNSs (Emery et al., 2014a; Fleuriet, Cole, & Guerrero, 2014; Fox & Warber, 2014; Marshall et al., 2013). Anxious individuals reported more desire for relationship visibility (i.e., via the display of couple photos and relationship statuses on Facebook) while avoidant individuals reported less desire for visibility especially when they believed that others perceive their relationship as low quality (Emery et al., 2014a). Moreover, when individuals felt more insecure about their partners' feelings, they preferred more visibility. In other terms, they prefer their relationships to appear as an important aspect of their self-images on SNSs.

In another study, Morey, Gentzler, Creasy, Obenhauser, and Westerman (2013) investigated whether the way that social networking relates to intimacy/support depends on one's attachment style. In a sample of undergraduate students who were in a committed romantic relationship, it was revealed that greater use of SNSs is associated with more intimacy/support among individuals with attachment anxiety. It was argued that some aspects of SNSs such as posting relationship status or dyadic photos in the profile may buffer the negative effects of insecure attachment through creating a secure environment and support to the individual (Morey et al., 2013).

Researchers have also examined attachment style in relation to partner surveillance and feelings of relationship uncertainty. For instance, an online survey of university students revealed that due to high levels of relationship anxiety, fearful and preoccupied individuals experience higher levels of relationship uncertainty and show the highest level of partner surveillance (Fox & Warber, 2014). In another study, attachment anxiety was positively while attachment avoidance was negatively associated with jealousy and partner surveillance (Marshall et al., 2013). In addition, lower partner trust and daily jealousy partially mediated the anxiety association. Similarly, attachment anxiety was positively associated with negative emotion in response to an ambiguous message on a partner's wall that might invoke jealousy (Fleuriet et al., 2014). Taken together, the previous research indicate that the emotional bond among partners influences the link between social networking and romantic relationship.

Social Networking and Relationship Satisfaction

In addition to individual characteristics such as attachment style, online social networking has been studied with respect to several relationship characteristics. Among those characteristics, satisfaction has been extensively investigated by scholars. In specific, relationship satisfaction is defined as the overall evaluation of feelings, thoughts, and behaviors that are associated with a romantic relationship (Hendrick, 1988). A wide array of research focusing on relationship satisfactions often used several terms interchangeably such as marital or relationship satisfaction, relationship adjustment, and happiness (Graham, Diebels, & Barnow, 2011). Relationship satisfaction is widely studied in married couples but is also valid in dating and/or cohabitating couples, and it is an important determinant in predicting the quality and the duration of the relationship.

Recent literature has shown that the use of SNSs and relationship satisfaction are partly associated. Hand, Thomas, Buboltz, Deemer, and Buyanjargal (2013) explored the effect of the time spent on the use of SNSs on both relationship satisfaction and intimacy. The findings based on a sample of undergraduates who identified themselves as exclusively dating, did not report a significant relationship between an individual's use of SNSs and relationship satisfaction. However, it was reported that the relationship

between romantic partner's online social network usage and relationship satisfaction was mediated by intimacy. That is, higher intimacy between couples might serve as a protective function and thus, diminish the negative effects of perceived partner usage (Hand et al., 2013).

Likewise, in their Facebook intrusion questionnaire development study, Elphinston and Noller (2011) also investigated the associations among Facebook intrusion (excessive attachment on Facebook that interferes with daily activities), relationship satisfaction, jealousy, and partner surveillance. Data were gathered from Australian partners with a high majority being dating couples. Their findings suggest that time spent on Facebook is not significantly related to relationship satisfaction. However, jealousy and surveillance are found to be mediators among Facebook intrusion and satisfaction, such that the negative effect of excessive use of online network site on relationship satisfaction was indirect through the experience of cognitive jealousy and surveillance behaviors. In other words, Facebook intrusion promotes jealousy-related feelings and monitoring behaviors among partners, which in turn leads to relationship dissatisfaction. These findings point toward a need for further research that explores the relationship between SNS-addictions and romantic relationship constructs (Elphinston & Noller, 2011).

Drawing upon Relationship Maintenance Theory (Canary & Stafford, 1992; Stafford & Canary, 1991), some scholars (i.e., Billeto et al., 2015; Dainton, 2013; Steward, Dainton, & Goodboy, 2014) have focused on relationship maintenance strategies in relation to the use of SNSs. These strategies are routine, unconscious behaviors engaged by a partner to maintain a relationship such as "positivity" ("being cheerful around the partner"), "openness" ("disclosing one's desires from the relationship"), "assurances" ("reassuring the partner about commitment"), "social networks" ("relying on common friends and family") and "sharing tasks" ("performing tasks that help the relationship to function") (Dainton, 2013, p. 114). Among these strategies, positivity, assurances and sharing tasks were found to be strongly related to relationship characteristics such as control mutuality, liking, satisfaction and commitment (Canary & Stafford, 1992; Stafford & Canary, 1991). Using a measure of Relationship Maintenance Strategies (Stafford, Dainton, & Haas, 2000), Dainton (2013) examined whether general maintenance behaviors and Facebook maintenance behaviors were related to relationship satisfaction among college students. The researcher found that Facebook positivity (i.e. sending positive messages to partner) and assurances (i.e. expressing love on partner's wall) were positively correlated with relationship satisfaction. However, only Facebook positivity predicted relationship satisfaction after controlling for general maintenance behaviors (Dainton, 2013).

In another study by Billeto et al. (2015), researchers conducted an online survey to investigate the role of SNSs in the maintenance of a long-distance romantic relationship among young adults who use Facebook. They found that compared to those in geographically close romantic relationships, individuals in long-distance romantic relationships use SNSs more to express strategic and routine relationship maintenance behaviors and to monitor their partner's activities for seeking out information concerning their involvement in the relationship. In addition to *partner surveillance* or *stalking*, the persistent monitoring of one's romantic partner's or ex-partner's online activity (Tokunaga, 2011), these individuals reported experiencing higher levels of SNS-related jealousy as well. These findings point out that among partners who are in long-distance romantic relationships, surveillance and SNSs-induced jealousy may serve maintenance function for the relationship. In particular, researchers argue that partner surveillance signals continued interest and concern for the partner who is far away, and jealousy arouses feelings of protectiveness over the relationship, thus affirming love for the other (Billeto et al., 2015).

On the other hand, a group of scholars have proposed that Facebook maintenance behaviors might be related to relationship uncertainty (Steward et al., 2014). Berger and Calabrese's (1975) original

formulation of Uncertainty Reduction Theory (Berger & Calabrese, 1975) emphasizes the role that communicative behaviors among partners play in reducing the perceptions of ambiguity within the relationship (Fox & Warber, 2014). Accordingly, Steward et al. (2014) examined whether different types of uncertainty are related to relationship maintenance behaviors. Using Knobloch and Solomon's (1999) classification of relational uncertainty, Steward and her colleagues (2014) revealed that perceptions of mutuality uncertainty (concerning similarity and reciprocity of the shared feelings between partners) and definitional uncertainty (concerning explanation of the the status of the relationship to others) in a relationship predicted more monitoring behaviors to maintain the relationship among undergraduates who use Facebook. Furthermore, perceptions of future certainty (concerning relationship outcomes over time) and definitional certainty predicted more relationship maintenance strategies of assurances and openness via Facebook. Finally, relationship satisfaction was not related to partner monitoring; but related to positivity and assurances via Facebook (Steward et al., 2014).

In another study, Papp, Danielewicz, and Cayemberg (2012) investigated the nature of the use of SNSs on relationship satisfaction. Based on the data gathered from dating partners, the findings provide evidence that Facebook has a considerable role in dating partners' intimate relationships. More specifically, it is found that portraying the relationship in Facebook determines relationship functioning. Such that, the display of a partner's status for men and the inclusion of their partner in profile picture for women are found to be associated with greater levels of relationship satisfaction. This finding calls for future research exploring the gender differences to underpin the varying attributions regarding portrayals of relationship and its outcomes (Papp et al., 2012). Accordingly, Saslow et al. (2013) investigated whether relationship satisfaction predicts dyadic profile displays and if so whether gender moderates this relationship in both married and dating couples. In two studies, one, cross-sectional, and the other, longitudinal, higher satisfaction among married couples predicted greater likelihood of posting dyadic profile photos both in cross-sectional and over a one year time periods. No significant gender differences were reported (Saslow et al., 2013).

A very similar pattern is also revealed with dating couples such that the tendency to post relationship-relevant information on Facebook was higher on the days when couples felt more satisfied with their relationship (Saslow et al., 2013). In other words, individuals tended to post images of themselves and their partner on Facebook when they were more satisfied with their relationship. As it is proposed, this may stem from the increased feelings of interconnectedness or self-other overlap among partners (Saslow et al., 2013). Besides, when people find public expressions of love and commitment on the profile, it increases feelings of relationship happiness (Mod, 2010; Utz & Beukeboom, 2011). Indeed, individuals tend to experience more happiness than jealousy as a result of their partner's online behavior, thus supporting the notion that SNSs play a role in increasing relationship satisfaction (Utz & Beukeboom, 2011).

Similarly, Orosz and his colleagues (Orosz, Szekeres, Kiss, Farkas, & Roland-Levy, 2015) examined the emotional correlates of publicly announcing relationship status in Facebook, a phenomenon namely *becoming Facebook official* or *FBO* among Hungarian adults. They revealed that among individuals who share relationship-related information in their profiles, there is more increased romantic love and jealousy toward partner than those who do not share that information. It was argued that these jealousy feelings may explain an intention to protect the relationship. However, as the authors indicate, the correlational nature of the study does not allow causal inferences about the relations among variables. In other terms, it is unclear whether love and jealousy feelings predict the declaration of the relationship status or vice versa. Nevertheless, authors argue that *FBO* can be considered as an indicator of maturity

in a romantic relationship and thus, it can be labeled as a ‘digital wedding ring’ in an online platform (Orosz et al., 2015).

On the other hand, Emery, Muise, Alpert, and Le (2014b) addressed the question of how sharing relationship-related information influences other people’s impressions of the individual and of their relationship quality. They revealed that among undergraduates who use Facebook, sharing dyadic profile pictures and relationship status was positively associated with perceived relationship quality, measured by the level of satisfaction and commitment, and perceived likeability. Besides, sharing intimate information about the relationship was positively associated with perceived relationship quality, but negatively associated with perceived likeability. These findings indicate that making relationship-related information visible (relationship visibility) conveys a positive image while sharing too much private information (relationship disclosure) conveys a negative image about the individual and the relationship (Emery et al., 2014b).

In a recent study, McDaniel, Drouin, and Cravens (2017) investigated the relationship between the use of SNSs and satisfaction among married couples. With this vein, they mainly focused on one specific type of social network behavior- online social media infidelity related behaviors and explored its prevalence. Moreover, they investigated the relationship between engaging in online infidelity-related behaviors, marital satisfaction and relationship ambivalence on married/cohabiting couples. Only a small percentage of married/cohabiting couples engaged in social media infidelity-related behaviors. Nevertheless, among those, it was reported that the higher the levels of infidelity related behaviors on social media, the lower marital satisfaction (McDaniel et al., 2017). Overall, aforementioned research indicate that even though excessive use of SNSs may be related with relationship dissatisfaction (i.e., Elphinston & Noller, 2011), sharing dyadic profile pictures and relationship status in SNSs may increase relationship satisfaction, and thus, perceived relationship quality.

Social Networking and Relationship Commitment

Another important characteristic of relationship dynamics that has been studied by scholars in relation to social networking is relationship commitment, which is defined as the evaluation of the feelings of psychological attachment to one’s partner (Rusbult et al., 1998). The theoretical argumentation regarding the literature between social networking and commitment is built upon the Rusbult’s Investment model. According to this model, relationship commitment results from the balance among the perceived costs and benefits of remaining with a partner and perceived quality of alternative partners. In other words, commitment is expected to be greater when the benefits of remaining with a partner outweigh the perceived quality of the alternatives (Rusbult, 1980).

Only a few studies investigated the predictive utility of relationship commitment in explaining SNS behaviors. For instance, Dibble and Drouin (2014) investigated the role of relationship commitment and online communication pattern with alternative potential partners based on data gathered from college students. The authors used the term of ‘back burners’ in referring to alternative potential partners with whom an individual maintains some degree of communication for keeping the possibility of future romantic and/or sexual involvement (Dibble & Drouin, 2014). Their main goal was to explore whether the individuals involved back burner communication via online channels and whether communicating with back burners through online channels was associated with relationship commitment, investment, and quality of alternatives. The findings revealed that individuals do use computer-based technologies and online channels to communicate with their back burners. Moreover, the use of computer-based

technologies ease their task in communicating with alternative partners. Males reported to have more back burners compared to females; however, the number of back burners did not differ between single individuals and the individuals who were currently in relationships. Furthermore, the total number of back burners was not found to be related to relationship commitment or investment in the current partner whereas the number of back burners was found to be positively related to the perceived quality of alternative partners (Dibble & Drouin, 2014).

In another study, Drouin and his colleagues (2014) examined the role of commitment in predicting Facebook solicitation behaviors (i.e. accepting /sending friend requests with romantic interests) and having romantic interests with the existing lists on Facebook. With their sample of undergraduates, they found that lower relationship commitment is positively related to Facebook solicitation behaviors, meaning that those who had a lower commitment to their partners in their current relationship tended to make and accept friend requests with romantic interests on Facebook. However, for single individuals, this relationship was not supported. Nevertheless, the commitment was not related to the number of romantic desirables on a Facebook friends list (Drouin et al., 2014).

Fox, Warber and Makstaller (2013) investigated the role of SNSs, in particular, Facebook, in escalation stages of the romantic relationships. According to Knapp's (1978) dual staircase model, initiation is the first stage that involves "interaction between couples and impression formation", experimenting is the second stage that involves "gathering in-depth information about the partner", intensifying is the third stage that involves "self-disclosure and more commitment between couples", integrating is the fourth stage that involves "formation of shared, public relational identity that results in 'we' feeling", and bonding is the last stage that involves "publicly announcing the relationship through marriage or civil union" (Knapp & Vangelisti, 2009; Fox et al., 2013, p. 773). Drawing upon this model, researchers showed that if the target person was listed as "in a relationship", people were less likely to initiate a relationship with that person than if the person was listed as "single" or no relationship status was posted. Furthermore, in the intensifying and integrating phases, people felt the necessity of publicly declaring their relationship through pictures, relationship status or wall posts. Furthermore, stating the status as 'in a relationship with' another person and providing a link to this person in Facebook was considered as an indicator of an exclusive, long-term, and public commitment (Fox et al., 2013).

Accordingly, Fox and Warber (2013) examined whether public proclamation of an individual's relationship status differed across men and women through an online survey among university students who are Facebook users. Researchers revealed that women are more likely to feel that this status conveyed commitment, seriousness and long-term stability in a relationship. However, men are more likely to believe that an individual might still pursue other relationships since men do not view this status so seriously. These findings indicate that placing a label on the relationship has different meanings (Fox & Warber, 2013) and importance (Papp et al., 2012) for men and women. Nevertheless, it can be argued that specific SNS-related behaviors such as public proclamation of the relationship status contributes to relationship commitment.

Social Networking and Romantic Jealousy

Addressing the dark side of social networking on relationships, scholars have examined romantic jealousy, anxiety, and relational turbulence in their research (i.e. Fox & Moreland, 2015) and tried to uncover how social networking triggers these negative thoughts, feelings and behaviors. One of the first studies linking social media engagement to relationship problems was conducted by Muise and her colleagues

(2009), the results of which show a “jealousy effect”. In this study, researchers conducted an online survey among undergraduate students having a romantic relationship and demonstrated that when people spend more time on Facebook and faced with potentially jealousy-provoking information, it increases feelings of jealousy. Muise and her colleagues (2009) also argued that this relationship might be two-directional. That is, spending more time on Facebook increases feelings of jealousy, which in turn may increase monitoring of the partner’s profile for more information. The study findings overall indicate the unique contribution of Facebook use on partners’ experience of jealousy and suggest a possible feedback loop which increases monitoring partners’ profile as a result of heightened jealousy (Muise et al., 2009). Other scholars also confirmed the positive relationship between time spent on Facebook, feelings of jealousy and monitoring of a romantic partner’s profile (Muise et al., 2014; Utz & Beukeboom, 2011).

Several scholars investigated the effect of Facebook message content on romantic jealousy. In a series of studies, Hudson and his colleagues (2015) examined how gender and use of emoticons influence Facebook jealousy. Similar to the previous findings (Muise et al., 2009), they showed that females tended to display more Facebook jealousy than males. Interestingly, in open-ended responses, males display more jealousy when there is a message containing a winking emoticon (a sign of flirtation); however, females display more jealousy when there is no emoticon. Similarly, in Fleuriet and his colleagues’ (2014) study, as compared to males, females reported more negative emotions following exposure to an ambiguous message with nonverbal cues on their partner’s wall. These studies indicate that males and females’ responses were differentially affected by specific nonverbal cues that help to clarify the message (i.e. winking emoticon, smiling emoticon). The results also seem to support the evolutionary perspective suggesting that men display more jealousy in response to sexual infidelity whereas women display more jealousy in response to emotional infidelity (Buss, Larsen, Westen & Semmelroth, 1992).

In another experimental study, Muscanell and her colleagues asked undergraduate students who were Facebook users to imagine an ambiguous scenario involving their romantic partners’ Facebook page and manipulated user privacy settings and dyadic photos publicly available (Muscanell, Guadagno, Rice & Murphy, 2013). They revealed that when women imagine their partners as posting a photo with another woman, they display more intense feelings of jealousy, anger, and hurt than men. Furthermore, the gender difference in jealousy was higher when the photos were visible to all Facebook friends and users as compared to be visible only to the user. In addition, highest ratings of jealousy were present when there were no dyadic photos of the couple as compared to a few or many photos. As the authors argue, this may indicate that the individual does not acknowledge or wants to hide his/her current relationship. The findings suggest that emotions of women and men are influenced differently from a hypothetical scenario indicating potential infidelity (Muscanell et al., 2013).

In line with previous findings on gender differences in SNSs-induced jealousy (McAndrew & Shah, 2013), Muise et al. (2014) showed that women are more jealous when they view their partner’s photo with an attractive member of the opposite sex. Women are also more likely to monitor their partners’ activities on Facebook in response to jealousy as compared to men. Interestingly, attachment style influences in the link between Facebook jealousy and partner monitoring. That is, feelings of jealousy are linked to attachment anxiety, and higher levels of attachment anxiety is linked to increased partner monitoring on Facebook among women but not among men. In other terms, preoccupied/anxiously attached women spend more time monitoring their partner’s activities on Facebook in response to jealousy. It is also consistent with previous findings (Marshall et al., 2013) showing that attachment anxiety is positively associated with jealousy and partner surveillance. Based on previous work it can be argued that gender plays an important role affecting the way that the use of SNSs influences emotional responses.

According to Halpern, Katz and Carril (2017), social media use leads to selfie-related conflicts, which in turn, reduce perceived relationship quality. These conflicts are created through two processes. The first one is jealousy, stemming from the excessive sharing of photos and comments on these photos. In other words, when an individual shares his/her personal images and receives comments on these photos, this increases a partner's feelings of jealousy. The second one is the creation of an online idealized persona in the picture-takers mind, stemming from one's sharing of flattering images. Drawing upon self-affirmation theory (Steele, 1988), one can argue that individuals need to present themselves in a positive and desirable way in SNSs. Accordingly, the ideal persona constructed online via selfies may cause a conflict between how a picture-taker views himself/herself and how partner views the picture-taker. Supporting these arguments, researchers revealed in their longitudinal study conducted among Chilean adults that the negative effect of selfie-taking on relationship quality was mediated through jealousy conflicts and the creation of an online idealized persona (Halpern et al., 2017).

In another study conducted among Dutch undergraduate students involved in a romantic relationship, Utz and Beukeboom (2011) examined the moderating effects of self-esteem and need for popularity in predicting emotional consequences of the use of SNSs for romantic relationships. They found that individuals with low self-esteem experienced more jealousy in reaction to the partner's activities on SNSs than those with high self-esteem, and individuals with a high need for popularity experienced more SNSs-induced jealousy than those with low need for popularity. Furthermore, self-esteem moderated the impact of the use of SNSs and need for popularity on jealousy. The results showed that the need for popularity has stronger effect on SNSs-induced jealousy among individuals with low self-esteem. However, the use of SNSs for maintaining social contact ('grooming') have stronger effect on jealousy among individuals with high self-esteem (Utz & Beukeboom, 2011). Taken together, the results of the aforementioned research indicate that the use of SNSs increases jealousy within romantic relationships.

Social Networking and Relationship Dissolution

A few studies have addressed the relationship between the use of SNSs and its potential consequences on romantic relationship dissolution. Clayton and his colleagues studied Facebook users and investigated whether a conflict over partner's excessive Facebook use acted as a mediator in the relationship between Facebook use and adverse relationship outcomes including infidelity (emotional cheating and physical cheating), breakup and divorce among partners in a newer relationship for three years or less (Clayton, Nagurney & Smith, 2013). It was argued that high levels of Facebook use might be a threat to short-term relationships either through indirectly neglecting the partner, or through adding an ex-partner or -spouse to the friend list and communicating with this person, which in turn produces Facebook-related jealousy and conflict among partners. Similar results were also found for Twitter, a different platform. The results of an online survey conducted among Twitter users revealed that Twitter-related conflict mediated the relationship between active Twitter use and negative relationship outcomes including infidelity, breakup and divorce (Clayton, 2014). However, the length of the romantic relationship did not moderate the indirect effect of Twitter use on negative relationship outcomes through Twitter-related conflict. This finding suggests that this mediational relationship does not change for those who are in shorter (18 months or less) or longer duration relationship. Overall, the findings of these studies point out that conflicts arising from the use of SNSs might trigger problems in the relationship.

LeFebvre and his colleagues examined the effects of social networking on relationship dissolution adjustment (LeFebvre, Blackburn & Brody, 2014). In their study, university students who had a breakup

within the past two years completed an online survey that assessed Facebook activities they engaged *during* and *after* the romantic relationship breakup. The most frequently engaged activities *during* relationship dissolution were relational cleansing such as hiding or removing the relationship status (22.7%) and minimal or no Facebook activities (22.6%), followed by partner surveillance (10.2%), self-regulation from partner (9.3%), normative Facebook activities (7.5%) and self-regulation from Facebook (5.3%). Similarly, the most frequently engaged activities *after* relationship dissolution were relational cleansing (20.4%) and minimal or no Facebook activities (19.9%), followed by partner surveillance (10.2%), withdrawing access (9.3%), self-regulation from partner (7.5%), and impression management (7.1%). Interestingly, the results showed that people who did not engage in Facebook activities reported to have better post-breakup adjustment than those who engaged in Facebook activities during and after the breakup (LeFebvre et al., 2014).

Researchers have also examined how SNSs facilitate connections with ex-partner in the relationship dissolution phase. Fox and Tokunaga (2015) investigated the relational and psychological factors that are related to online surveillance. The results showed that higher levels of commitment led to increased emotional distress after the breakup, which in turn led to more online surveillance. In particular, individuals who were more negatively affected by the breakup tended to monitor their ex-partners online activity (Fox & Tokunaga, 2015). In a related vein, Marshall (2012) conducted an online survey among undergraduates to examine how ex-partner surveillance influenced postbreakup adjustment and growth. It was revealed that monitoring of the ex-partner's profile is associated with more distress over the breakup, more negative feelings, more sexual desire for the ex-partner and lower personal growth. Facebook surveillance of an ex-partner may inhibit emotional recovery and growth following a breakup. However, remaining Facebook friends with an ex-partner may not damage the breakup recovery process (Marshall, 2012). As there are limited studies of the link between the use of SNSs and relationship dissolution, scholars should conduct further studies to better understand these relations.

Limitations and Avenues for Future Research

This chapter reviews the extant literature concerning associations between the use of SNSs and romantic relationship constructs. Thereby, it serves as a guide for synthesizing the current state of knowledge. However, it is worth to mention several limitations of the previous research. First, this chapter presents findings of research, the majority of which was conducted among university students who were in a romantic relationship. These individuals, however, are younger, emerging adults whose romantic relationships are of short duration, less established and more prone to feelings of jealousy (Arnett, 2000; Rus & Tiemensma, 2017). Hence, the homogeneity of the sample would limit the generalizability of the findings across broader populations. Therefore, in future studies, scholars will want to examine these relations among older adults who are outside of the university context and who have a romantic relationship for at least 10 years.

Second, the research was mostly conducted on Facebook; however, each platform has a different pattern of use, user characteristics and social functions (Wilson, Gosling, & Graham, 2012). Accordingly, there may be specific SNSs-related behaviors associated with a romantic relationship (Rus & Tiemensma, 2017). For instance, there are differences in individuals' motivation to use Snapchat and Facebook (Utz, Muscanell, & Khalid, 2015). That is, people are more likely to use Snapchat for flirting and finding new partners while they are more likely to use Facebook for interacting with friends. Furthermore, there are differences in visibility and persistence of information between two platforms such that Snapchat offers

a higher level of privacy for users as the messages that have been sent in this platform are erased after a few seconds. In line with this, Snapchat and Facebook induce different psychological effects especially in the domain of romantic jealousy with Snapchat evoking higher levels of jealousy in response to partner behaviors (Utz et al., 2015). Therefore, in future research, scholars may focus on other SNSs to examine the generalizability of the previous findings.

Third, the vast majority of previous studies are cross-sectional in nature, thus restricting causal inferences. However, longitudinal studies are needed to identify whether SNSs-related behaviors influence or are influenced by a particular romantic relationship. For instance, in a longitudinal study Saslow et al. (2013) showed that higher satisfaction among married couples predicted greater likelihood of posting dyadic profile photos over a one year time period, indicating the causal inferences among variables.

Fourth, there are limited studies (i.e., Utz & Beukeboom, 2011) investigating mediators and moderators that play role in associations among social networking and characteristics of romantic relationships. Future research might explore personality traits, level of intimacy or SNSs-addictions. Besides, more research need to be done to understand how social networking influences geographically long-distance romantic relationships as well as to identify the factors that play an important role (i.e. relationship quality) in terms of reducing the relationship problems arising from the use of SNSs.

Lastly, as previous research has primarily been conducted in North American or European cultural contexts, they may be biased in terms of explaining relationships and communication behaviours in other cultural contexts (Zhang & Leung, 2014). Therefore, further studies might be conducted to uncover the role cultural factors play in these relations. For instance, scholars might examine the use of SNSs and its outcomes on romantic relationship in the Asian culture which particularly emphasizes long-term relationships, loyalty, and harmony (Zhang & Leung, 2014).

CONCLUSION

This chapter reviews the recent literature with respect to the relationship between online social networking and romantic relationship constructs. In particular, it discusses how social networking behavior is influenced by individual characteristics such as anxious and avoidant attachment styles, and how online social networking influences romantic relationship with respect to relationship satisfaction, commitment, romantic jealousy, infidelity, break up and divorce. Overall, there are mixed findings regarding the beneficial and damaging effects of online social networking on romantic relationships in the current literature. Considerable research have pointed out the positive consequences of social networking on the romantic relationship such as promoting happiness (Utz & Beukeboom, 2011), romantic love (Orosz et al., 2015), and satisfaction (Papp et al., 2012). That is, the public display of affection on partner's profile increases relationship happiness (Utz & Beukeboom, 2011) and the display of a partner's status or inclusion of their partner in profile picture increases reports of feelings of romantic love (Orosz et al., 2015) and relationship satisfaction (Papp et al., 2012). Research has also demonstrated how attachment styles (Emery et al., 2014a; Fleuriet et al., 2014; Fox & Warber, 2014; Marshall et al., 2013), relationship satisfaction (Saslow et al., 2013), and commitment (Droun et al., 2014) influence social networking behaviour. Further, scholars have examined the effects of gender (Muscanell et al., 2013) and other moderators such as self-esteem or need for popularity (Utz & Beukeboom, 2011) in associations among the use of SNSs and romantic relationships.

On the other hand, several studies have revealed the negative consequences of the use of SNSs for romantic relationships such as increasing jealousy and conflict among couples (Fox & Moreland, 2015; Marshall et al., 2013; Muise et al., 2009). For instance, when people spend more time on SNSs, they may be faced with potentially jealousy-provoking information, experience more jealousy and monitor their partner's profile for more information (Muise et al., 2009). The jealousy effect as a result of social networking was also confirmed by other scholars (Elphinson & Noller, 2011; Hudson et al., 2015; Muise et al., 2014; Utz & Beukeboom, 2011). A few scholars have demonstrated the effect of SNS-related conflict in the relationship between the use of SNSs and romantic relationship termination (Clayton et al., 2013; Clayton, 2014). Furthermore, previous research revealed the emotional and behavioral consequences of breakup in relation to the use of SNSs (Fox & Tokunaga, 2015; LeFebvre et al., 2014; Marshall, 2012).

The findings of the aforementioned research may provide important information for professionals to support the promotion of a positive atmosphere in romantic relationships. As social networking may have a negative impact on a relationship either through creating conflict or jealousy feelings, online activities that promote positive feelings among partners such as public declaration of relationship status or sharing dyadic photos in the profile may be emphasized in promoting better relationships for some.

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KEY TERMS AND DEFINITIONS

Attachment: Emotional bond between the infant and the primary caregiver.

Facebook: An online platform used to keep in touch with others and monitor others' activities.

Partner Surveillance: Monitoring of the partner's profile such as viewing photos, wall posts, comments and status.

Relationship Commitment: An individual's feelings of psychological attachment experienced in a relationship.

Relationship Maintenance Strategies: Routine behaviors engaged in by partners' to maintain the relationship.

Relationship Satisfaction: An individual's evaluation about his/her romantic relationship.

Romantic Jealousy: Negative thoughts, feelings, and behaviors as a response to a perceived threat to a romantic relationship.

Social Networking Site: An online platform which allows users to build social networks.

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Chapter 56

Examining the Psychosocial Dimensions of Young People's Emergent Social Media Behavior

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ABSTRACT

Social media usage among young people has grown astronomically, generating interest among a number of interest groups. This chapter fills a gap on social media psychosocial antecedents propelling high-usage behavior and the subsequent psychosocial outcomes showing in attachment to the social media. The chapter explored the emergent psychosocial needs driving young people's level of usage in social media and the consequences, among a population in Ghana. The findings revealed that young consumers' social media behavior could be greatly influenced by their social psychological needs, but individual psychological variables did not significantly predict usage behavior in social media. The findings also suggest that young people are more emotionally attached to social media, slightly attached cognitively and not attached behaviorally. This implies young people have developed some level of emotional involvement for the use of social media which could affect their well-being positively or negatively.

INTRODUCTION

Social media comprises of various forms of internet based or web 2.0 platforms that allow users or the public to generate and share ideas, pictures, videos, information, interests, and other expressions. It is one of the most dynamic, interdisciplinary socially facilitated media of contemporary society (Hjorth & Hendry, 2015; Kaplan & Haenlein, 2010). Made up of five distinct types, including social networking sites, social news, media sharing, blogs and micro blogging, social media is transforming young consumers' behaviour as it has created a shift in how consumers use technology, connect with others, engage with brands and other social activities such as entertainment (Chuma, 2014; Pinto, 2015). Such level of advancement and accessibility is increasingly creating opportunities for high usage and the likelihood

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of psychological consequences (Bolton et al., 2013; Chiang, 2013; Wu, Cheung & Hung, 2013). Given its growing importance, the power of social media to influence consumer behaviour cannot be overlooked. Studies shows that, at a global level, it has become a major medium through which businesses engage their customers and for multiple levels of communication in all social interactions (Kim, 2016).

Although social media usage can be found among different groups of people, the younger consumer generation has been found to be connected to social media to a higher degree and this has become the focus of attention by researchers (Chiang, 2013; Dunne, Lawlor & Rowley, 2014; Khan, 2017; Westlund & Bjur, 2014). The younger generation basically consists of those from the later generation of generation Y, born from 1980s to 2000 and described as millennials, and the generation Z who are described as totally distinct from previous generations of consumers or market segment. They are considered as a dominant consumer segment, brand conscious, technologically advanced and digital citizens (Abeeele, 2016; Bertel & Ling, 2016; Bolton et al., 2013; Kotler & Keller, 2013; MacCasland, 2005; Mascheroni & Vincent, 2016; Walsh, 2009). They spend a lot of their time on technology devices mainly smartphones, internet and social media for social connections, information and entertainment. They are considered technology lovers and multi device owners (Bertel & Ling 2016; Lien & Cao, 2014; Khan, 2017; Lin & Lu, 2011; MacCasland, 2005; Naumouska, 2017; Whiting & Williams, 2013). Consequently, young people have been considered vulnerable to excessive usage and behavioral outcomes of social media. Due to their prolific usage of social media, they are considered as the population of interest for new digital media technologies such as smartphones and social media (Babadi-Akashe, 2014). As social media assumes a high level of influence it is imperative to understand young consumers from different parts of the world.

Social media has created strong interactions in people and Bolton et al. (2013) suggested social media antecedent factors and outcomes in young people should be the focus of research. In response to this call, psychosocial antecedents and outcomes including social capital, psychosocial motives, and psychological wellbeing such as dependence and addiction associated with social media, has been examined. Findings suggest some social and psychological factors including entertainment, information, and relationships are key drivers of social media behaviour (Al-Kandari et al., 2016; Bulduklu, 2017; Cheng et al., 2015; Kuru et al., 2017; Khan, 2017; Wei & Lo, 2015). Other findings suggest individual psychological factors such as personality, self-esteem, and self-seeking status influence social media behaviour in young people (Seidman, 2012; Steinfield, Ellison & Lampe, 2008; Wilson et al., 2010; Wood & Scott 2016). The Western world and Asia have been the central geographic context for the majority of these studies. However, social media usage behaviour in a diverse sociocultural context (Carter & Yeo, 2016; Khan, 2017; Rubin, 2002; Sundar & Limperos, 2014; Whiting & William, 2013; Wu et al., 2013) may present different patterns of behavior relevant to understanding social media behavior. As there are only a few studies from a developing country setting (Karikari et al., 2017), this calls for more studies to bridge this gap (Al-Kandari, Melkote & Sharif, 2016). Findings from the US, UK and Asia have been the focus of developing countries studies on social media. In Ghana, Karikari et al. (2017) found that social media supports the generation of social capital and user well-being but usage can be influenced by external social pressure. Nevertheless, there have not been many studies on the extent to which psychosocial factors associated with social media usage in Ghana may differ from other parts of the world. Consequently, as psychosocial factors have become significant drivers of young people's social media behaviour, it is imperative to examine these factors and how they interplay with usage behaviour and psychosocial outcomes from a different context.

Thus, the main purpose of this chapter is to examine the psychosocial antecedents influencing social media usage behaviour of young people, the extent to which these factors drive continuous usage in social media and the subsequent behavioural consequences in social media behaviour of young consumers from a developing country setting.

THEORETICAL FRAMEWORK

Uses and Gratification Theory

Originating from media psychology, the Uses and Gratification Theory (Blumler & Katz, 1974) constitutes a dominant theoretical body for examining and explaining the reasons for adopting new digital media technologies such as social media. The theory assumes that media use is a goal directed activity in which the audience or users are active participants. This means that individuals actively seek out media to fulfill specific needs that leads to gratification (Rubin, 2009; Whiting & Williams, 2013) and that media cannot be used without its audience. The framework considers motives and individual factors that are the reason for the use of social media, use behaviour and behavioral effects of social media (Khan, 2017).

Proponents of the Uses and Gratification Theory suggest many underlying motives, both utilitarian and non-utilitarian, for media use such as seeking to relax, entertain themselves, interact with people, escape some things etc. (Leung & Wei, 2000). In recent times, social media gratification has evolved into mainly social interactions, entertainment, information, affection, social coordination etc. (Bulduklu, 2017; Khan, 2017; Sundar & Limperos, 2014; Wei & Lo, 2015; Whiting & William, 2013). The Uses and Gratification Theory has been applied in a wide range of new media technologies.

According to Rubin (2009), there are various dimensions of focus of the theory. The theory focuses on the connecting motives and consequences to media behaviour and attitudes; comparing motives across different media; exploring a variety of media's psychological and social situations; connecting media motives sought from motives obtained; exploring different attributes, backgrounds and affection for motives; and assessing the reliability and validity of motivation measures. New media technologies have rekindled the interest in the application of the theory. Some studies have focused on reasons and motives for media use, media use effects and how motives influence media use behaviour. The theory has become useful in assessing social media use behaviour hence its usage for this study. However, there has been more emphasis on the media and communication aspect focusing on the media and the message rather the consumer or user of the media. Hence, this chapter concentrates on what drives users to continuously engage social media and the behavioral outcomes of such sustained usage.

Social Media Usage

Media use is the purpose or function for which a technology medium is consumed as well as the frequency of use (Weiser, 2001). Social media usage in young people includes information gathering and sharing of content as well as interactions with friends and relatives. Social networking sites have become the most popular aspect of social media and it is used for social connection, for sharing of media content, for academic work and searching for and buying of goods and services generated by these contents (Watulak & Whitefield, 2016). Another dimension of social media is the media sharing sites that permits users to upload your photos, videos and audio to or from other sites anywhere in the world. One of the main

common forms of a media sharing site is video sites where YouTube.com, Facebook and Instagram are the dominant and most widespread, according Bolton et al. (2013).

Studies show that young people's social media behaviour is on the high side. Social media frequency of use has increased over the years as more young people get connected (Whiting & William, 2013; Wu et al., 2013). Carter and Yeo (2016) reported that most students have integrated social media into their daily lifestyle. They reported that, on a daily basis, young university students in Malaysia use social media 20 times, accessing chat apps such as WeChat, Twitter, Facebook, WhatsApp and Instagram. Wu et al. (2013) discovered that young people spend more time on smartphones and social networking sites than other digital media. Hussain (2012) observed that students used social media for enjoyment and some academic activities, while Tess (2013) is of the view that young students rarely use social media for learning; nonetheless they use it for career networking and connecting with friends. Karikari et al. (2017) added that, in Ghana, young people have social pressure to connect with friends through social networking sites hence the high usage behaviour. Overall, the findings reveal that most students have integrated chatting on social media into their day to day lifestyle. Such usage behaviour may be attributed to psychosocial drivers including motives and other psychological factors, which is the focus of the next sections.

Gratification and Motives Driving Social Media Use

Gratification, on the other hand, has been conceptualized as the needs, motivation and satisfactions driving media consumption (Walsh, 2009). Different authors have used different terminologies and classifications for the gratification consumers usually seek. For instance, some researchers posit that gratification is the motive that drives media use in general (Khan, 2017; Leung & Wei, 2000; Whiting & William, 2013), and more specifically, drives the use of media usage (Wei, 2006). Lin (2002) posits that gratification is a need, and media use is a conscious effort towards the fulfillment of both emotional and mental needs (Leung & Wei, 2000; Ling, 2000; Wei, 2008). Gratifications are psychological and social needs, which are fulfilled through the use of technology (Cheung, Liang, & Leung, 2015).

Studies have identified several psychosocial motives based on the Uses and Gratification Theory (Blumler & Katz, 1974; Khan, 2017; Rubin, 2009; Sundar & Limperos, 2014; Whiting & William, 2013) driving social media use, and several findings support gratifications connected with social media and social networking sites (Kuss & Griffiths, 2017; Ryan, Chester, Reece, & Xenos, 2014). The psychological and social gratifications, such as information, entertainment, and social relationship, are considered to be the main antecedents for use behaviour of most young people in social media (Ling, 2000; Walsh, White & Young, 2007; Whiting & Williams, 2013).

Social media increases human interactions even at a distance. Hence, social motivations are highly involved in human to human technology interactions (Khan, 2017; Ko et al., 2005). This is confirmed by Khan (2017) who indicates that those who have strong social interaction needs were more likely to comment on videos by showing their likes or dislikes and are more likely to upload videos. Also, among the 10 themes Whiting and William (2013) considered to be gratifications for using social media, they highlight social interactions and expression of opinion. Lawlor and Rowley (2010), in a qualitative study, reported that usage of social networking sites by young people is driven by personal gratifications such as personal identity and managing social relationships: these were found to be the basis for sticking to social networking sites and online social media chats. Ko et al. (2005) as well as Sundar and Limperos (2014) likewise reported that motives for social media use include relational needs such as social interaction.

Similarly, Karikari et al. (2017) reported that young people in Ghana have external social pressure. This is a strong antecedent for social media engagement and social media being able to be used for building social capital and subjective wellbeing.

Moreover, entertainment, information seeking and information sharing were also predominant gratifications for using social media. Kang and Atkin (1999) found that entertainment is a major reason for multimedia adoption (see also Khan, 2017). This is supported by Chan and Fang (2007) who reported that entertainment gratification is one of the major psychosocial factors driving social media for fun and music as well as other activities. The user participation was reported as a stronger predictor for liking a video and reading information while those who seek entertainment gratifications are more likely to view videos and read comments on social media. Al-Kandari et al. (2016), Ko et al. (2005) and Whiting and William (2013) also reported that motives and needs driving social media include self-expression, entertainment, opinion exchange and information seeking.

Although additional gratifications have been identified (e.g., escapism, Sundar & Limperos, 2014; relaxation, Whiting & William, 2013), it appears that the most predominant psychosocial gratifications driving social media content engagement are social gratification, entertainment gratification and information gratification, hence this study embraces these emergent gratifications. Most of the aforementioned studies have not explored the extent to which gratifications influence social media usage rate in young people, especially in developing countries. Therefore, this chapter was carried out to examine the current gratifications influencing young people's social media and the extent of influence thereof, in the context of a developing country. Based on this gap the research questions were formulated as:

Research 1a: To what extent does social relationship gratification drive social media usage positively?

Research 1b: To what extent does information gratification influence social media usage positively?

Research 1c: To what extent does entertainment gratification influence social media usage positively?

Individual Factors in Uses and Gratification

There are individual psychological factors, such as personality factors, influencing usage behaviour in social media. Researchers have adopted the big five personality approach (using agreeableness, conscientiousness, extraversion, neuroticism and openness) and found the most prominent influencers of social media use were extraversion and conscientiousness (Wilson et al., 2010). Seidman (2012) likewise confirms that higher extraversion is associated with frequency of Facebook use while agreeableness and neuroticism influence the motive of belonging.

Other studies have explored different individual factors such as self-esteem, impulsivity, shyness, loneliness, locus of control, and factors which may predispose people to use digital media to a high level (Bian & Leung, 2015; Philips & Bianchi, 2005; Walsh et al., 2009). These individual factors have been found to influence usage, motives and addiction. For instance, Wilson et al. (2010) found that personality factors such as extraversion, conscientiousness and self-esteem could influence the tendency to be addicted to social networking sites. Earlier findings on self-esteem suggest that it is part of general psychological wellbeing in technology usage behaviour. For instance, Steinfeld, Ellison, and Lampe (2008), in a longitudinal study of young people in the US, found that self-esteem is associated with young people's use of Facebook where those with lower self-esteem gained more in bridging social capital than those with higher self-esteem. However, recent studies have used self-esteem and self-seeking status as major

individual factors in social media studies due to the fact that only extraversion has been found to show consistency in media use (Khan, 2017).

Self-esteem is the sense of value and worth a person puts on him/herself. It stems from the need to feel good about one self. Esteem needs, as proposed in Maslow's theory of need, identified lower esteem needs such as status, fame, glory; and higher esteem needs such as self-respect, confidence, competence, and achievement. Self-seeking status gratification is a satisfaction for the need to feel important, to impress others and feel cool (Khan, 2017). Connecting these two variables can bring insight into new individual factors for social media use.

Other findings similarly connect the use of social media to age and gender with findings suggesting that young people are more likely to use mobile technology as an expression and fashion (Ling, 2003; Ling, 2004); whereas, adults moreover tend to emphasize mobile phone use to feel safe and secure (Ling, 2004). Regarding gender, the evidence points to mixed results (Bolton et al., 2013; Campbell, 2006; Ling & Haddon, 2003; Wu et al., 2013); and such mixed findings require continuous research in social media. Based on these findings, the following research questions were formulated:

Research Question 2

Research Q2a: How does self-esteem drive social media usage in young people?

Research Q2b: How does self-seeking status influence social media usage in young people?

Research Q2c: To what extent does age and gender affect social media usage?

Psychosocial Outcomes of Social Media Use

Current psychological research fronts have shifted from emergent use behaviour to the psychological consequences associated with social media use such as problematic, addictive or dependent use as a consequence of high usage (Bolton et al., 2013; Kuss & Griffiths, 2017; Walsh, 2009; Wu et al., 2013). Brown (1993) introduced technology addiction using indicators such as withdrawal, salience, loss of control and others. Based on the biomedical model of substance addiction, the behavioural addiction concept assumes that an individual dependent on a substance will exhibit withdrawal symptoms when they are denied that substance; and that can disrupt normal daily functioning. In the same way, when this is applied to behavioural addiction, a person can use a technological media to such an extent that lack of usage may lead to withdrawal symptoms and heavy usage can impact general wellbeing. It has been argued that the term addiction should be extended to include behavioural addictions such as excessive use of technology. According to Brown (1997), behavioural addictions entail usage without being able to control technology use. It is similarly difficult to abstain, and continuous use can be harmful to the user. Excessive, uncontrolled and impulsive usage can be described as an addiction problem (Billieux, 2012).

As social media use becomes prominent among young people, more findings are pointing to excessive and/or addictive use. Wu et al. (2013) reported that young people who spend more time on smartphones and social networking sites may be addicted to smartphones and social networking sites. This is supported by Kuss and Griffiths (2017) whose empirical review confirms that, due to the need for social connection, the main basis for social networking addiction is to sites such as Facebook, Instagram and Twitter. Furthermore, Fernandez-Lopez et al. (2017) in a multi-cultural study reported that social networking and social media may drive consumers into dependence and addiction.

Yet there are other studies suggesting that social media addiction may be culturally specific, may not be applicable to all use situations, and some young people can control the use of mobiles (Asante, 2018). According to Billieux et al. (2014), the biomedical model of addiction and dependence may not be applicable in all situations of excessive use and there is a need to offer alternative explanations. Ahmed, Qazi, and Perji (2011) found that young people in Pakistan use media technology within reasonable limits even if it is an integral aspect of daily life. Others see addiction as only a simplification of individual psychological functioning (Asante, 2018; Billieux, et al., 2015). However, Orford (2001) argued that excessive media usage behaviour might have negative outcomes but may not be described as an addiction. He however, suggests that high media use could be described as psychological attachment or involvement with the object. Hence, extensive usage of media technologies can only show high involvement or psychological attachment and not addiction. Walsh et al. (2009) used involvement in young people's mobile phone behaviour and reported that, although involvement was high, there was no connection between frequency of use and psychological involvement. Nonetheless little has been found on psychological attachment or involvement in social media. Hence, there is a need to put young people's heavy usage of social media into a different behavioral perspective for better understanding of emergent social media consumer behaviour. So for the purpose of this study, Orford's approach to explaining young people's psychological attachment or involvement is adopted in assessing behavioural effects. The study likewise adopted Walsh et al.'s (2009) psychological involvement and adapted it into three levels of psychological attachment, namely; emotional, cognitive and behavioral attachment. To this end, Research Question 3 was formulated.

Research Question 3

Research Q3a: How does emotional attachment to social media drive usage in young people?

Research Q3b: How does cognitive attachment to social media influence social media usage in young people?

Research Q3c: How does behavioral attachment to social media influence social media usage in young people?

Research Q3d: To what extent does age and gender affect psychological attachment to social media usage?

METHODS

The purpose of this section was to unfold the research methodology for answering the following research questions.

Research Q1: To what extent does social gratifications of relationship, entertainment and information influence social media usage in young people in a developing country?

Research Q2: How do individual factors of self-esteem and self-seeking status influence social media usage in young people in a developing country including moderation of age and gender?

Research Q3: How does emotional, cognitive, and behavioral attachment to social media influence social media usage in young people in a developing country including the moderating effects of age and gender?

To answer these questions the study adopted a quantitative approach in order to obtain better answers to the research questions and meet the objectives. A survey method, which is a widely used data collection method for measuring multiple variables, was used. The survey method allowed for a deductive approach based on a theoretical framework with empirical measurement through data analysis (Neuman, 2007).

The Study Context

The study was carried out in Ghana, an emerging economy in the West African sub-region with a considerable level of market potential for technology and digital media. With a population of 29.99 million people, Ghana has experienced high growth in technology as a result of market liberalization, privatization, technological advancement innovation and other benefits derived from using digital media (Atsu et al., 2013; Tobbin, 2012). According to ITU (2019), mobile subscription shows about 36,751 active users of smartphones in Ghana leading to high social media usage, social and economic growth in investment and GDP, improvement in micro trading and economic activities, and strengthening social ties.

Population and Sampling

The target population was young consumers from age 18-35 with a mean age of 28.4 currently pursuing tertiary education at various universities in Ghana. A survey was conducted in three main universities spread across Ghana. These universities were chosen because of their geographic location, large number of students, easy accessibility and young active users of social media on these campuses (Bian & Leung, 2015; Dlodlo, 2015). Also, the universities were used because the university campuses house predominantly young people and a number of studies in new media technologies have used such samples. The young students are considered to be the most active users of new media technologies because they are the generation who has been exposed widely to technology since they were born. They started playing with mobile phone toys and digital gadget so they may have more to share on mobile phones (Karikari et al., 2017; Walsh, 2007; Yan, 2017).

Cluster sampling, where geographic clusters are created and a random sample of individuals are selected, was used to sample universities and students from the various campuses (Wilson, 2012). This ensured that the majority of geographic areas were covered. The characteristics of respondents are described below in Table 1.

Three faculties were selected at random from each university and students were randomly selected for the survey from these faculties at lecture halls. Each member of the population had an equal chance of being selected for the survey. Students responded to the questionnaire by themselves under supervision after briefing them and obtaining their consent.

Measures and Scales Used for the Study

The survey questionnaire was made of three main sections - A, B and C. Questions assessing the social demographic data such as age, gender and type of social media frequently used were found in section A. Section B addressed mobile phone psychosocial gratifications, usage rate and individual factors. The questions here captured the social relationship, information and entertainment gratification and individual factors, self-esteem and self-seeking status. Section C was used to assess psychological attachment.

Table 1. Characteristics of respondents

Variables	Total Population	Sample Frequency	Percent of Sample
Institution:			
U.G.	29,754	201	33.3
U.C.C.	31,229	222	36.8
KNUST	31,189	182	30.0
Age:			
20 years & below		210	34.8
21-25 years		252	41.7
26-30 years		115	19.0
31-35 years		25	4.2
36 years and above			0.3
Sex:			
Male		292	48.3
Female		312	51.7
Frequently used social media:			
Facebook		211	34.9
WhatsApp		158	26.2
Twitter		116	19.2
Instagram		72	11.9

Usage rate was measure based on the number of times or frequency of use in social media on a daily basis. From a range of 1-10 times, usage was described as low usage; 11-20 times was moderate usage; and above 20 times was considered to be extensive usage. This was further categorized into high users and low users.

Variables for psychosocial factors, individual factors and attachment were measured using a five-point Likert scale anchored from 1 to 5 and categorized into various responses ranging from (5) strongly agree to strongly disagree (1). Scores were then converted into high and low for the purpose of the analysis. Scales were adapted from related literature (Billieux, 2012; Khan, 2017; Kuss et al., 2017; Walsh et al., 2009). However some were modified to suit the current research. Questions for the scales are described below in Table 2. The only validated scale available was the Rosenberg's (1965) self-esteem inventory, which was included in the current study. Table 3 presents the means, standard deviations and Cronhach's Alpha for all variables. All variables were with the acceptable range for Cronbach's Alpha .75 -.899 suggesting a good reliability level.

DATA ANALYSIS

The logistic regression, also referred to as Logit regression, was used in analyzing the data in both SPSS 21 and Stata/SE 14. In this type of regression the aim was to predict the relationship between two variables; where the dependent variable(s) is/are binary. This allowed for the assessment of the extent of the relationship between high users and low users of social media and its connection to various gratifications, individual factors and levels of psychological attachment. It also made it possible to measure the extent to which age and gender relates to gratifications, psychological attachment influences and the frequency of use in social media.

Table 2. Scales of measurement used

Information Seeking Gratification	Entertainment Gratification
Information gratification was assess based statements such as: To get information about things that interest you, To learn how to do things, To find out what is new out there, and To keep up with current issues and events	Information gratification was assess based statement such as: To be entertained, To play, To enjoy, To relax; and To pass time
Social and Relationship Gratification	Self-Esteem
To connect with friends and family To stay connected to those I care about To meet new people To belong to a community	On the whole I am satisfied with myself, At times I think I am no good at all, I feel I have a number of good qualities, I am able to do things as well as most other people, I feel that am a person of worth equal to other, In all I am inclined to feel that am a failure, I take a positive attitude towards myself
Self-Seeking Status	Emotional Attachment
To impress other users To feel important To make myself look cool To gain respect To establish personal identity	I am in love with my phone so much, I give my phone my first priority above anything else, Am always absorbed with my phone, I cannot live without my mobile phone
Cognitive Attachment	Behavioural Attachment
I cannot put my phone out of my mind The thought of losing my phone scares me Am always mentally conscious of my phone	I always have a drive to use my phone. My phone is the first thing I look at when I wake up Am always anxious to check my phone I cannot control my phone use behavior

Table 3. Construct reliability, means and standard deviations of scales

Constructs Used	Cronbach's Alpha	No. of Items	Mean	Standard Deviation
Information Gratification	.857	4 items	3.39	1.4
Self-Seeking Status	.868	5 items	3.13	1.37
Social Rel. Gratification	.871	4 items	3.16	1.03
Self-Esteem Gratification	.899	9 items	3.20	1.31
Entertainment Gratification	.784	5 items	3.14	1.31
Emotional Attachment	.700	5 items	1.33	0.72
Cognitive Attachment	.687	3 items	3.30	0.92
Behavioural Attachment	.780	4 items	1.08	0.72

RESULTS AND DISCUSSION

Social Media Gratifications in Young People

This chapter examined the psychosocial factors influencing social media behaviour including psychosocial gratifications and other personal factors driving social media usage behavior. It also assessed the extent to which these factors, social relationship, entertainment and information gratification, individual

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factors including self-esteem and self-seeking status and other factors such as age and gender drive usage behaviour. The findings are described in Table 4.

Table 4. Gratifications driving social media usage results

Predictor of Social Media Usage Rate	Odds Ratio	Standard Error	Z	P>Z	Confidence Interval (95%)
Social Relationship	3.72	0.06	-6.13	0.000	0.19; 0.42
Entertainment	3.56	0.83	6.00	0.000	2.44; 5.81
Information	2.49	1.91	4.94	0.000	2.80; 10.87
Self-seeking Status	1.01	0.28	0.02	0.983	0.58; 1.74
Self-esteem	3.77	0.83	6.00	0.000	2.44; 5.81
Gender	0.32	0.06	-6.52	0.000	0.23; 0.45
Age	0.64	0.10	-2.85	0.004	0.47; 0.87

Log likelihood = -441.66774

The results show that there is a significant positive relationship between social relationship gratification for using social media (with odds ratio of OR=3.72, $p<0.000$), entertainment (OR=3.56, $p<0.000$) and information gratification (OR=2.49, $p<0.001$). This shows that high users of social media are three times more likely to be driven by the need to bond through social interactions and the need to relate with other people including family, friends and other loved ones. Those driven by entertainment gratification are three times likely to use social media more and users who have a need for information are twice as likely to use social media at a higher rate.

It was observed that, for personal psychological variables, users with high self-esteem are more than three times more likely (OR=3.76, $p<0.001$) to use social media. The satisfactions that users pursue for social usage surprisingly include social relationship, information and entertainment gratifications, but interestingly self-seeking status, age and gender were not significant in relation to social media use.

These findings suggest that young people's drive for information and entertainment is high and that can make them vulnerable to high technology involvement and addictive tendencies. It also shows that young people are driven by the need to satisfy social relationships and interactions with friends and family members while seeking pleasure as well. Findings from several studies (Carter & Yeo, 2016; Khan, 2017; Rubin, 2002; Sundar & Limperos, 2014; Whiting & William, 2013; Wu et al., 2013) support the argument that emergent gratifications are tilting toward these psychosocial gratifications. This confirms a report by Lawlor and Rowley (2010) that gratifications for using social networking sites include personal identity and social relationships and another report by Leung (2013) which suggests that socio-psychological needs such as entertainment and cognitive needs are crucial predictors of social media behaviour. The motivations or satisfactions driving Facebook include relationship maintenance, companionship, passing time and entertainment. These satisfactions drive people into excessive usage leading to addiction. It appears that gratifications drive user behaviour into psychological attachments addictions; which is consistent with Kuss and Griffiths (2017) who confirm the need for social connection, identifying this as the main basis for social networking and why people can be addicted to such sites including Facebook, Instagram and Twitter. This is also supported by Khan (2017) and Whiting

and Williams (2013) who reported predominant gratifications for using social media as entertainment, social interactions, information seeking and information sharing, relaxation, communication utility, convenience utility and others. Wilson et al. (2010) also confirms social media usage with high self-esteem. Several other findings have likewise been consistent with the current finding (Carter & Yeo, 2016; Khan, 2017; Rubin, 2002; Seidman, 2012; Steinfield et al., 2008; Sundar & Limperos, 2014; Wood & Scott 2016Wu et al., 2013).

It could therefore be concluded that, to a large extent, social psychological gratification and individual factors drive the continuous usage of social media by young people, similarly in developing and developed countries.

Social Media Psychological Attachment

The current study sought to examine the extent to which young people are psychologically attached to social media and how that attachment relates to social media. Adapting from Walsh et al. (2009), three main levels of attachment were assessed - cognitive, emotional and behavioral. The findings are detailed in Table 5.

Table 5. Social media psychological attachments

Predictor of Social Media Usage Rate	Odds Ratio	Standard Error	Z	P>Z	Confidence Interval (95%)
Emotional Attachment	2.62	0.51	4.90	0.000	1.78; 3.85
Cognitive Attachment	2.00	0.64	2.17	0.030	1.07; 3.73
Behavioral Attachment	0.30	0.06	-6.22	0.000	0.21; 0.44
Gender	0.52	0.09	-3.88	0.000	0.37; 0.72
Age	0.87	0.12	-0.99	0.323	0.66; 1.15

Log likelihood = -463.53888

The findings show that users of social media are influenced significantly by emotional attachment (OR=2.61; $p < .000$) and are likely to be preoccupied mentally, although not very strongly (OR=1.998, $p < 0.03$). In other words, those who use social media more are almost three times more likely to become emotionally attached or have strong emotional feelings towards social media. They are furthermore almost two times more likely to be attached at the cognitive or mental level to social media usage. This shows that young people are emotionally attached to social media as a behavioural consequence. This could be due to the human to human interactions on social media as emotional bonds develop with social interactions. Moreover, when people interact with others the words stay as impressions on the mind before bonds could develop. As could be observed through the gratifications that drive usage, it suggests that social relationships, entertainment and information are strong connections driving young users into high usage and hence towards emotional attachment. This confirms Wu et al. (2013) who report that young people who spend more time on smartphones and social network sites were more likely to be addicted to smartphones and social networking sites. Several other findings support either dependence or addiction of some sort (Fernandez-Lopez et al., 2017; Kuss & Griffiths, 2017). Although addiction

could be too strong, the findings from this study suggest that young people are actually in love with the use of social media or it actually resonates well with them and makes them feel good, hence they cannot get it off their minds.

However, they do not show significant behavioural compulsion to use social media: this means they are conscious to use social media within acceptable limits and might not show withdrawal symptoms as proposed by behavioral addiction proponents. Moreover, age and gender did not influence social media usage behaviour significantly.

CONCLUSION AND IMPLICATIONS

The study was carried out to explore the extent to which social media gratifications and individual factors influence usage behaviour and whether the extent of psychological attachment contributes in driving continuous usage of social media. The findings suggest that social media frequency of use is driven by psychosocial gratifications such as information, entertainment, social relationships, and individual factor of self-esteem; nonetheless self-seeking status, age and gender were not significant in influencing social media behaviour. Social media psychosocial consequences were observed to show emotional attachment with slight cognitive attachment however behavioural attachment was not a strong predictor of psychosocial attachment in social media as well as age and gender. It could be concluded that social and psychological needs have replaced basic needs as far as new digital technologies such as social media is concerned. Due to the level of drive from these satisfactions there is a higher need to satisfy such needs by businesses in a way that will lead to positive psychosocial attachment for brands.

Although physiological gratifications may be important to consumers, it appears that new digital media has moved beyond meeting physiological needs to more psychosocial needs of information, entertainment, belongingness, and individual differences, which have become crucial in ensuring continuous usage and could, create resonance for brands online.

Findings from this study authenticate that technology gratifications have evolved, and for the current generation of millennials in a developing country, it is social relationship, information, and entertainment gratifications that drive their usage behavior. The findings strengthen the existence of emergent psychosocial gratifications and individual factors as the drivers of usage behaviour in social media. The findings strengthen the importance of media uses and behavioural effects, which in turn, drives continuous usage.

The finding extends the Uses and Gratification Theory that social media is strongly connected to psychosocial satisfactions and personal factors driving the extent to which young people use the media. It is the gratification obtained that predicts the continuous usage. Again, there are behavioural effects (such as psychological attachments) due to the gratifications obtained but these may not be strong enough to be referred to as an addiction.

These findings imply that businesses can influence young consumers' behaviour by engaging them through social media usage behavior. It implies that young consumers can be engaged through information, relationship, entertainment and activities that enhance their self-esteem. Considering the upsurge of information, entertainment and relationship gratifications driving young people's usage behaviour in social media, this could be used to facilitate policy information to communities, schools and other places by government and other policy formulators.

LIMITATIONS AND FUTURE RESEARCH

The study is limited to only students in a developing country; accordingly other researches can focus on young people in general. Further, the selection of three universities and a particular age cohort could affect the generalization of the results. Different age groups could present different usage behaviour that could have improved the understanding of consumer behaviour in social media. Also, the study is limited by the use of self-reports and scales used to gather information from respondents on their social usage behaviour and psychological attachment. For instance the number of times it is used in a day may not be wholly reliable. Future studies could add open-ended and qualitative sections to enrich the data. Finally, future research should compare more media uses and gratifications as well as dependence and psychological attachment.

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KEY TERMS AND DEFINITIONS

Behavior: The actions and activities of a person or how a person's conduct.

Gratification: Satisfaction or pleasure obtained for engaging in behavior to fulfil a specific desire. Common gratification for using social media include: relationships, to relieve boredom and loneliness, for entertainment, etc.

Millennials/Second Digital Generation Users (2DG): Young consumers born in the 1990s, considered to be natives to digital media and distinct from the older segments of the population.

Outcome: A consequence or the way something turns out.

Psychological Attachment: A deep and enduring emotional bond which connects one person to another or an object.

Psychosocial: The interrelation of social factors, individual thought patterns, behavior, and how these influence interrelationships with others in a social setting.

Social Media: This is a Web 2.0-based social interactive platform that allows users to generate and share ideas, pictures, videos, information, interests, and other expressions.

Uses and Gratification Theory (U&G): A theoretical perspective that examines why and how users engage with media to fulfil specific needs or achieve specific goals, based upon their psychological characteristics, social factors, and motives.

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Chapter 57

My Little Joy in Life: Posting Food on Instagram

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ABSTRACT

To post food on social media has become a frequent source of fun and joy in life for many mobile users. In investigating such a common scene on Instagram among its young users, the authors of this chapter investigated the relationship between social activity, personal traits like narcissism and shyness, and uses and gratifications from posting food photos on Instagram. Uses of Instagram for posting selfies were also examined for comparison. Results showed that while posting food photos were associated with social activity, posting selfies were associated with shyness. Narcissists were more likely to involve in posting both food photos and selfies. Implications of the results in explaining the generation of visual contents on social media are discussed.

INTRODUCTION

Food, as an important part of daily life, is likely to be universally welcomed by everyone. The joy from food not only comes with its taste, but with its visual appeal as well. With the development of technology in recent years, the joy from the appearance of food can be visually recorded and shared anytime, anywhere. One of the important apps for photo sharing is Instagram, which was launched in October 2010, and has become popular since then for its visual components and the hands-on creative features. Instagram is particularly popular among young adults. As of October 2018, 31% of the global Instagram users were aged 18-24, compared with 27% of the global Facebook users in the same age group (Statista, 2018). The gender distribution of young adult Instagram users aged 18-24 was more balanced than Facebook: 15% of the global Instagram users were female and 16% were male, versus 11% of the

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global Facebook users were female and 16% were male. It shows that Instagram were popular among both female and male young adults.

Among various categories of photos on Instagram, food was identified as one of the top eight popular photo categories (Hu, Manikonda, & Kambhampati, 2014). Over 30% of the users in Hu et al.'s (2014) study posted more than two photos about food in their accounts. As of November 2018, there have been more than 300 million posts using the hashtag #food on Instagram, and more than 180 million posts using the hashtag #foodporn, indicating the popularity of sharing food photos on Instagram.

Instagram's focus on visual arts and the App-embedded filters makes it a suitable and convenient platform for photo sharing. Comparing to other social media platforms such as Twitter and Facebook, Instagram has lowered the requirements in artistic and photography skills, so almost anyone can enjoy producing attractive photos via Instagram. Verbal descriptions on how visual and gustatory attractive the food is might be difficult, but showing a photo of the food is a more convenient way to convey the same messages.

Although posting food photos has been popular for years (Hu et al., 2014), little is known about how people could gratify from posting food and why they would especially like to post food on social media. In view of the popularity of Instagram among young adults, the purpose of this exploratory study is to investigate young adults' gratifications from posting food photos (photos with food as the main theme) on Instagram, and how these gratifications are related to the use of Instagram for posting food photos. Also, how young adults' social activity and personal traits including narcissism and shyness are associated with posting food photos on Instagram is examined.

This study provides significant findings in indicating how the ubiquitous use of visual images of food for communication can satisfy young adult users. In other words, food consumption, is no longer only about nutritional needs, but the visual aspects of food can serve as a communication tool with Instagram as a platform. A number of studies have been conducted about Instagram selfie uploaders, (e.g., Al-Kandari, Melkote & Sharif, 2016; Williams & Marquez, 2015; Dhir et al., 2016; Kim et al., 2016), but not much have been done studying the motives of a large amount of Instagram users who have posted food photos. This study fills the research gap by investigating how young Instagram users satisfy their needs through posting food, an important aspect of everyday life.

Past research suggested that common Instagram users who focus more on posting food photos still like to post other categories of photos as well, which is quite different from the "selfies-lovers" who prefer posting self-portraits on Instagram exclusively (Hu, Manikonda, & Kambhampati, 2014). While both food photos and selfies can be easily posted anytime, anywhere, the two types of visual contents differ greatly by their levels of self-disclosure. In view of this, we also investigate young adults' use of Instagram for posting selfies (a self-portrait photo taken by oneself, which can include an individual alone or an individual with any other persons) on Instagram to see how the differences in visual appeals lead to different Instagram use. By comparing the use of Instagram in posting food photos and selfies among narcissistic and shy individuals, this study provides important implications on the relationship between the visual contents and individual characteristics.

LITERATURE REVIEW

Gratifications of Posting Food on Instagram

The uses and gratifications approach has been employed by researchers to study audiences' active consumption of mass media contents for more than half a century. It assumes the audiences actively select the media to meet their social and psychological needs and expectations (Katz et al., 1973). The term "gratifications set" refers to multiple possibilities for audiences to form and re-form the basis of their media-related interests, needs or preferences (McQuail, 2005). As Lindlof and Schatzer (1998) suggests, the difference between computer-mediated communication and other media use is that the former is more transient and multimodal, with fewer codes of conduct governing use, and allows for a higher degree of "end-user manipulation of content." Nowadays, the uses and gratifications approach has been applied to study the users of social media to generate contents. Leung's (2009) study indicates the motives of online user-generated contents include recognition needs, cognitive needs, social needs and entertainment needs, and their civic engagement.

Today, a smart phone is both a personal medium and a multipurpose device converging with the internet (Humphreys, Von Pape, & Karnowski, 2013). Wei's (2008) study found that the use of the mobile phone for news-seeking and web-surfing was driven by instrumental use motives, while playing video games via the mobile phone was driven by the motive of passing time. Gerlich et al. (2015) conducted an exploratory analysis of the uses and gratifications sought of mobile apps. Findings suggested that reasons for using mobile apps included engagement/disengagement, passing time, gaining knowledge and education, and social uses. In this study, we focus on Instagram, a popular mobile social media app which relies largely on photos as a visual component for information sharing. Lee, Lee, Moon, and Sung (2015) suggest that Instagram users have five social and psychological motives to share and review photos on Instagram: social interaction, archiving, self-expression escapism, and peeking. The activity of food blogging involves the creation and production of photos, and the processes of selecting and editing images, which make food blogging time consuming but very enjoyable (Cox & Blake, 2011).

In view of the literature using the uses and gratifications approach, the following hypothesis is proposed:

H1: The more gratifying the Instagram users find from posting food photos, the higher their personal involvement in posting food photos.

Social Activity

Rubin and Rubin (1982) associated television use and the concept of "contextual age", measured by various factors including social activity, as an important indicator for assessing life-position and communication behavior. While motives for posting photos on Instagram can be very different from television usage, social activity can be an important factor associated with Instagram use. Social activity indicates to what extent a person is socially active. A socially active person displays little affinity with the media and feels more comfortable with interpersonal interaction than a less mobile person. Instagram allows users to share photos and network with other users via visually-attractive photos, and the online visual expression can be a self-disclosure of social activity in their real lives (Rubin & Rubin, 1982; Sheldon & Bryant, 2016). A research question is proposed to examine how social activity is associated with the food photo posting behaviors:

RQ1.1: How is social activity associated with the personal involvement in posting food photos?

Previous visual studies have shown that human faces are powerful ways to communicate non-verbally (Takeuchi & Nagao, 1993). In online social media contexts, visuals with human faces also have more power in engaging and interacting with other users, for example, photos with faces are more likely to receive likes and comments (Bakhshi, Shamma & Gilbert, 2014). A study has shown that self-portraits were the most popular photo category on Instagram (Hu, Manikonda, & Kambhampati, 2014). Al-Kandari et al.'s (2016) survey found that the need for visual self-expression was the strongest predictor of the self-disclosure use of Instagram. As posting food photos and selfies involve different kinds of self-disclosure in social activity, a research question is proposed to compare the different behaviors:

RQ1.2: How is social activity associated with the personal involvement in posting selfies?

Narcissism

In recent years, a number of researchers have studied the role of narcissism in predicting social media use. According to Campbell and Foster (2007), "Individuals with narcissistic personality possess highly inflated, unrealistically positive views of the self. Often-times, this includes strong self-focus, feelings of entitlement, and lack of regard for others. Narcissists focus on what benefits them personally, with less regard for how their actions may benefit (or harm) others" (p.115). Social media are different from the traditional media, in a sense that they allow users to generate the contents on their own accounts – meaning that narcissists now have their platform to build up their images of the narcissistic self, which can be "positive, inflated, agentic, special, selfish, and oriented toward success" (Campbell and Foster, 2007, p.118).

Poon and Leung (2011) have found that narcissistic individuals reported more frequent online content production. Davenport et al.'s (2014) study indicated that narcissism was a stronger predictor of Facebook friends than Twitter followers. Ong et al.'s (2011) study found that narcissistic people are more likely to engage in features presenting self-generated content such as profile picture rating, status update frequency. Sheldon and Bryant (2016) surveyed college students and found a positive relationship between narcissism and using Instagram for the purposes of surveillance and being cool. The authors argued that Instagram appeared to be cool, accommodating narcissists' wish to be perceived in a positive light. Therefore, the following hypothesis is proposed:

H2.1: The higher the level of narcissism of the Instagram users, the higher their personal involvement in posting food photos.

Paramboulakis, Skues and Wise's (2016) online survey suggested that uploading photos of one's physical appearance was associated with grandiose narcissism (traits such as exhibitionism and aggression). The following hypothesis is proposed:

H2.2: The higher the level of narcissism of the Instagram users, the higher their personal involvement in posting selfies.

Shyness

Shyness is defined as “one’s reaction to being with strangers or casual acquaintance’s: tension, concern, feelings or awkwardness and discomfort, and both gaze aversion and inhibition of normally expected social behavior.” (Cheek & Buss, 1981, p.330; Buss, 1980). To shy individuals, the development of asynchronous computer-mediated communication such as social media has been important - Asynchronous computer-mediated communication not only reduces the need to interpret peripheral communicative behaviors such as body languages and tones of voice, but also gives shy individuals more control of the interaction and reduces the effects of situation-specific cues such as unexpected interruptions (Chan, 2011).

Past research has shown that social media remove the divide between shy and non-shy individuals. Baker and Oswald’s (2010) survey found that among relatively shy individuals, greater Facebook use predicted satisfaction, importance, and closeness with Facebook friends, and increased social support received from friends. Stritzk, Nyugen and Durkin’s (2004) experiment indicated that shy individuals differed from non-shy individuals in terms of rejection sensitivity, initiating relationships, and self-disclosure in an offline context, but they were not significantly different on these three domains in the online context. Sheldon’s (2013) study suggested that while shyness was negatively correlated with self-disclosure to a face-to-face friend, it was not correlated with time spent on Facebook and self-disclosure to a Facebook friend. The following hypotheses are proposed:

H3.1: The higher the level of shyness of the Instagram users, the higher their personal involvement in posting food photos in posting food photos.

H3.2: The higher the level of shyness of the Instagram users, the higher their personal involvement in posting selfies.

Finally, in order to explore the uses of Instagram in posting food photos, the following research question is proposed:

RQ2: How do demographics, narcissism, shyness, social activity, general Instagram use, and gratifications sought predict a) personal involvement in posting food photos on Instagram; b) frequency of posting food photos on Instagram?

METHOD

Data Collection

To investigate Instagram use by young adults, a survey was administered to undergraduate students who had posted food photos on Instagram in the past. Following approvals by the Institutional Review Board in the U.S. and the Human Ethics Committee in New Zealand, a focus group of undergraduate students and a pilot test of the questionnaire, data were gathered through an online survey on Qualtrics and the distribution of paper questionnaires in 2016 in two public universities in the United States and in New Zealand respectively. The online survey link was snowballed from the undergraduate students, and the paper questionnaires were distributed to undergraduate students in class. A total of 373 respondents took

part in the survey. After eliminating responses who indicated no experience in posting food photos on Instagram and incomplete responses, 223 responses (59.8%) were eligible for further analysis.

Among the analyzed responses, 136 (61.0%) were from the United States, and 87 (39.0%) were from New Zealand. 151 (67.7%) respondents were female, 53 (23.8%) were male, and 19 (8.5%) had their gender not revealed or undefined. The majority of the respondents were White/Caucasian ($n = 181$, 81.2%). The mean age of the respondents was 21.6, with 189 (84.8%) respondents aged 25 or below.

MEASUREMENTS OF MAJOR VARIABLES

Gratifications for Posting Food Photos on Instagram

To assess the gratifications sought from posting food photos on Instagram, respondents were asked to indicate their opinion for 34 items, on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The items were adapted from previous studies on Instagram uses and social media use in general (Sheldon & Bryant, 2016; Lee et al., 2016; Whiting & Williams, 2013; Malik, Dhir & Nieminen, 2016). A pilot test with 15 Instagram users was conducted to eliminate the ambiguous and irrelevant items. The final survey instrument consists of 34 statements about gratifications sought from posting food photos.

An exploratory factor analysis of 34 items, with principal components and Varimax rotation, was conducted. Six factors were yielded using following criteria: eigenvalue greater than 1.0, and all factor loadings greater than 0.4. Six factors emerged, which explained 79.76% of the total variance. Eleven items were deleted due to low factor loadings.

Factor 1 was labeled “self-promotion,” containing six items (Cronbach’s $\alpha = .94$). Factor 2, “escapism”, contained four items (Cronbach’s $\alpha = .94$). Factor 3 was named “information sharing” (Cronbach’s $\alpha = .93$). Factor 4, “archiving,” has a Cronbach’s α at .80. Factor 5 was named as “creativity” (Cronbach’s $\alpha = .90$). Factor 6 was “self-disclosure” (Cronbach’s $\alpha = .86$). The items of all factors can be found in Table 1. The scores of the items under each factor were summated and averaged to become a single variable.

Personal Involvement in Posting Food Photos and Selfies on Instagram

Respondents’ level of personal involvement in posting food photos on Instagram was assessed by their perceived importance of posting food photos on Instagram. Respondents indicated their opinion toward three items taken and adapted from the five items in Mittal’s (1995) Product Category Involvement Scale (PCIS), which captures people’s involvement in products. In this study the measurement used is a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree), with three items: 1) Posting food photo on Instagram is important to me; 2) Posting food photo on Instagram means a lot to me; 3) Posting food photo on Instagram is valuable to me. The three items gave a high reliability (Cronbach’s $\alpha = .957$), and the scores of the three items were summated and divided by three to give the final score of the variable ($M = 3.19$, $SD = 1.65$).

Table 1. Factor analysis of gratifications sought from posting food photos on Instagram

I post food photos on Instagram...	Component						Mean	S.D.
	1	2	3	4	5	6		
Factor 1: Self-promotion								
1. To gain attention	.863						3.66	1.79
2. To be more popular	.857						4.10	1.76
3. To get more likes	.845						4.14	1.85
4. To get more comments	.844						3.69	1.79
5. To be noticed by others	.724						3.76	1.77
6. Because sharing food photos on Instagram is trendy	.612						4.07	1.74
Factor 2: Escapism								
7. To forget about troubles		.903					2.61	1.67
8. To avoid loneliness		.878					2.52	1.67
9. To escape from reality		.847					2.65	1.68
10. To relax		.780					3.19	1.90
Factor 3: Information sharing								
11. To share something useful about food			.861				3.46	1.72
12. To share something informative about food			.860				3.59	1.77
13. To share something important about food			.823				3.49	1.77
Factor 4: Archiving								
14. To record my traces (e.g., trip) via photomap				.796			3.92	1.94
15. To remember special events				.743			5.25	1.51
16. To take fancy food photos and save them online				.675			4.09	1.82
17. To depict my life through photos				.587			4.58	1.74
Factor 5: Creativity								
18. To create visual art					.798		4.41	1.86
19. To show off my photography skills					.793		4.12	1.78
20. To produce attractive visual content					.770		4.70	1.76
Factor 6: Self-disclosure								
21. To express my actual self (who I really am)						.778	4.15	1.78
22. To disclose happenings around me						.695	4.41	1.70
23. To share my personal information with others						.695	3.64	1.78
Eigenvalues	10.47	2.52	2.10	1.23	1.03	1.00		
Variances explained	45.53	10.94	9.13	5.34	4.46	4.36		
Cronbach's Alpha	.94	.94	.93	.80	.90	.86		
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.								
a. Rotation converged in 6 iterations.								

N = 223.

Three similar items were used to measure the personal involvement in posting selfies on Instagram. The three items also gave a high reliability (Cronbach's $\alpha = .941$), and the scores of the three items were summated and divided by three to give the final score of the variable ($M = 2.77$, $SD = 1.65$). The difference between the personal involvement in posting selfies and food photos were then computed.

Frequency in Posting Food Photos on Instagram

Respondents were asked to indicate their frequency of posting food photos by a 7-point Likert scale, ranging from 1 (Almost never), 2 (Rarely), 3 (Sometimes), 4 (Quite often), to 5 (Very often) ($M = 2.60$, $SD = .776$). Respondents also answered the question "On average, how long do you spend on taking and editing a food photo before posting it for others to see on Instagram?" by indicating a number in minutes ($M = 6.36$, $SD = 7.62$).

General Instagram Use

Respondents' general Instagram use were measured by the number of followers they had on Instagram ($M = 5.19$, $SD = 461$), and the number of Instagram accounts they were following ($M = 4.51$, $SD = 328$).

Social Activity

The items of social activity, modified from Rubin and Rubin (1982), were measured by three items on a 7-point scale: 1) I often travel, vacation, or take trips with others; 2) I often visit friends, relatives, or neighbors in their homes; 3) I often participate in games, sports, or activities with others. The three items give an acceptable reliability (Cronbach's $\alpha = .763$), and they were summated and divided into the final score ($M = 5.11$ $SD = 1.25$).

Narcissism

Narcissism was measured by four items on a 7-point Likert scale, adapted from the Hypersensitive Narcissism Scale (HSNS) (Hendin & Cheek, 1997): 1) I can become entirely absorbed in thinking about my personal affairs, my health, my cares or my relations to others; 2) I dislike sharing the credit of an achievement with others; 3) I feel that I have enough on my hands without worrying about other people's troubles; 4) I feel that I am temperamentally different from most people. The Cronbach's α of the four items was .741, showing they were fairly reliable. The scores of the four items were summated and divided by four to become the final score of narcissism ($M = 3.86$, $SD = 1.21$).

Shyness

Four items, adapted from the shyness scale by Cheek and Buss (1981), were set up to measure shyness: 1) I am socially somewhat awkward; 2) I don't find it hard to talk to strangers; 3) I feel tense when I'm with people I don't know; 4) I am often uncomfortable at parties and other social functions. Respondents were asked for their opinion toward the four items, on the 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). The four items gave a very high reliability (Cronbach's $\alpha = .911$). The scores were summated and divided by four as the final score of the variable ($M = 3.49$, $SD = 1.61$).

Demographics

Respondents were asked to indicate their age, gender, and ethnicity. Age was indicated by a number in years. Options for gender were Male; Female; and Others (please specify). Options for ethnicity were Hispanic or Latino; American Indian or Alaska Native; Asian; Black or African or African American; Native Hawaiian or Other Pacific Islander; White or Caucasian or European; Maori; Arab or Middle Eastern; Others (please specify).

RESULTS

H1 proposed that the more gratifying the Instagram users find from posting food photos, the higher personal involvement in posting food photos on Instagram. To test the hypothesis, a hierarchical regression was run. The first block of predictors were users' demographic variables, including age, race and nation of residence. Race and nation of residence were entered as dummy variables, with 0 = White or Caucasian or European, 1 = Others, and 0 = the U.S., 1 = New Zealand respectively. The six gratifications were entered as the second block of the predictors ($F = 21.71, p < .001$, adjusted $R^2 = .509$). The multicollinearity was acceptable ($VIF < 2.30$). Escapism ($\beta = .154, p < .05$), information sharing ($\beta = .310, p < .001$), archiving ($\beta = .164, p < .05$) were found to be significant predictors of personal involvement in posting food photos on Instagram. H1 was supported.

RQ1.1 asked how social activity is associated with the personal involvement in posting food photos. To answer a research question, a hierarchical regression with demographics controlled as the first block and the social activity as the second-block predictor was run ($F = 3.22, p < .01$, adjusted $R^2 = .052$). Social activity was found to be a significant predictor ($\beta = .154, p < .05$) of the personal involvement in posting food photos on Instagram. The result of the regression was shown in the first column of Table 2.

Table 2. Hierarchical regressions of personal involvement in posting food photos on Instagram

DV	Personal Involvement in Posting Food Photos	
Predictors	β	β
Block 1: Demographics		
Age	.085	.095
Race	.025	.068
Gender	-.062	-.074
Nation	-.151*	-.175*
Adjusted R^2	.036	.036
Block 2: Narcissism and shyness		
Social activity	.154*	
Narcissism		.224***
Incremental R^2	.016	.046
Total adjusted R^2	.052	.082

Note: * $p < .05$, ** $p < .01$, *** $p < .001$; $N = 223$.

RQ1.2 asked how social activity is associated with the personal involvement in posting selfies. A similar hierarchical regression was run, with demographics controlled. The regression equation was insignificant.

H2.1 proposed that the higher the level of narcissism of the Instagram users, the higher their personal involvement in posting food photos on Instagram. A hierarchical regression with demographics controlled ($F = 4.62, p < .001$, adjusted $R^2 = .082$) indicated that narcissism was a significant predictor of the personal involvement in posting food photos ($\beta = .224, p < .001$). H2.1 was supported. The result of the regression was shown in the second column of Table 2.

H2.2 proposed that the higher the level of narcissism of the Instagram users, the higher their personal involvement in posting selfies on Instagram. A hierarchical regression with demographics controlled ($F = 3.81, p < .001$, adjusted $R^2 = .077$) indicated that narcissism significantly predicted personal involvement in posting selfies ($\beta = .266, p < .001$). H2.2 was supported. The result of the regression was shown in the first column of Table 3.

Table 3. Hierarchical regressions of personal involvement in posting selfies on Instagram

DV	Personal Involvement in Posting Selfies	
Predictors	β	β
Block 1: Demographics		
Age	-.025	-.036
Race	.035	.035
Gender	-.194*	-.180*
Nation	.011	-.017
Adjusted R^2	.011	.011
Block 2: Narcissism and shyness		
Narcissism	.266***	
Shyness		.160*
Incremental R^2	.066	.20
Total adjusted R^2	.077	.031

Note: * $p < .05$, ** $p < .01$, *** $p < .001$; $N = 223$.

H3.1 proposed that the higher the level of shyness of the Instagram users, the higher their personal involvement in posting food photos on Instagram. A hierarchical regression with demographics controlled ($F = 3.03, p < .05$, Adjusted $R^2 = .048$) indicated that shyness was insignificant in predicting of the personal involvement in posting food photos. H3.1 was not supported.

H3.2 proposed that the higher the level of shyness of the Instagram users, the higher their personal involvement in posting selfies on Instagram. A hierarchical regression with demographics controlled ($F = 2.06, p < .05$, Adjusted $R^2 = .031$) indicated that shyness was a significant predictor of personal involvement in posting selfies ($\beta = .160, p < .05$). H3.2 was supported. The result of the regression was shown in the second column of Table 3.

RQ2a asked for demographics, narcissism, shyness, social activity, general Instagram use, and gratifications sought predicted personal involvement in posting food photos on Instagram. To answer this research question, a hierarchical regression was performed. The first block of predictors were users' demographic variables. The second block of predictors were narcissism and shyness, followed by the number of followers on Instagram and the number of following Instagram accounts as the third block of predictors. The six factors of gratifications sought from posting food photos on Instagram were entered as the fourth block of predictors. Personal involvement in posting food photos on Instagram was entered as the dependent variable. The regression equation was significant ($F = 13.670, p < .001$), with an adjusted R square at .495. Results showed that significant predictors included nation of residence ($\beta = -.164, p < .01$), escapism ($\beta = .16, p < .05$), information sharing ($\beta = .277, p < .001$), and archiving ($\beta = .174, p < .01$). Detailed results are shown in Table 4.

Table 4. Hierarchical regressions of personal involvement in posting, frequency of posting, and time spent editing food photos on Instagram

DV - Predictors	Personal involvement (β)	Frequency (β)
Block 1: Demographics		
Age	.022	.000
Race	.004	-.097
Gender	-.035	-.161*
Nation	-.164**	-.167*
Adjusted R^2	.034	.027
Block 2: Narcissism and shyness		
Narcissism	.005	.099
Shyness	.025	-.168
Incremental R^2	.086	.057
Block 3: Social activity		
Social activity	.005	.033
Incremental R^2	.012	.003
Block 4: General Instagram use		
Followers	.042	-.123
Following a/c	-.024	-.052
Incremental R^2	.014	-.07
Block 5: Gratifications sought		
Social interaction	.119	-.043
Escapism	.160*	.226**
Information sharing	.277***	.296***
Archiving	.174**	.121
Creativity	.102	.089
Self-disclosure	.079	.034
Incremental R^2	.383	.0253
Total adjusted R^2	.495	.333

Note: * $p < .05$, ** $p < .01$, *** $p < .001$; $N = 223$.

RQ2b was proposed to examine how demographics, narcissism, shyness, social activity, general Instagram use, and gratifications sought predicted the frequency of posting food photos on Instagram. Predictors were entered into the hierarchical regression equation with the same order as before, with the frequency of posting food photos as the dependent variable ($F = 7.445$, $p < .001$, adjusted $R^2 = .333$). Results showed that significant predictors included gender ($\beta = -.161$, $p < .05$), nation of residence ($\beta = -.167$, $p < .05$), escapism ($\beta = .226$, $p < .01$), and information sharing ($\beta = .296$, $p < .001$). Detailed results are also shown in Table 4.

DISCUSSION

Findings in this study offer meaningful implications for the theoretical approaches in uses and gratifications. In this exploratory study, six gratifications sought from posting food photos on Instagram by young adults were found. They were self-promotion, escapism, information sharing, archiving, creativity and self-disclosure. Among the six gratifications, escapism, information sharing, and archiving were found to be significant predictors of personal involvement in posting food photos on Instagram. Motives including self-promotion and self-disclosure were not significant predictors of personal involvement and frequency of posting food photos on Instagram. Al-Kandari et al.'s (2016) survey showed the need for visual self-expression was the strongest predictor of the self-disclosure use of Instagram. Sharing food photos without human faces reduces the extent of self-disclosure, which may not satisfy the need for self-expression on social media as other types of photos, such as selfies.

However, posting food photos does satisfy Instagram users' psychological needs by escapism. Unlike selfies that may lead to criticisms on the uploader's appearance, taking photos of food allows the individual to reduce the stress caused by criticisms, by showing the gustatory attractive food without any engagement of a personal appeal. Distress may also be eased physiologically with the consumption of food after taking the food photo. Sharing food photos on Instagram brings ordinary joy that can be shared by everyone, regardless of physical appearances and physical conditions.

Food photos are also informative, as shown by the gratifications of information sharing and archiving. Food photos contain important information about eating, which is always an important aspect of human life. The information on a food photo can include a person's lifestyle, a recipe, a restaurant, and so on, and is worth sharing. Archiving did not predict the frequency of posting food photos, but significantly predicted the personal involvement of posting food. While food is something that appears in everyone's life frequently, it seems everyday food does not need to be archived. Archiving with food photos may only be needed under special circumstances such as remembering an event, celebrating important dates, visiting a famous restaurant, traveling to another place, etc.

Many of the past studies treated content generation on social media as a single, holistic behavior, but our analysis suggests the underlying psychological mechanism behind posting different types of contents can be different. Our findings explore young adults' uses of social media in different ways, by comparing different psychological factors' associations with personal involvement of posting food photos and posting selfies. The comparison enriches our understanding of the content generation behavior on social media.

Social activity significantly predicted the personal involvement in posting food photos, but not selfies. In other words, more socially active people involve more in posting food photos. It can be because posting food photos is a "non-invasive" type of self-disclosure. Food involved in social activity, such as food during gatherings and travels, are usually more visually appealing and can initiate the motives

of sharing them online. The mobile nature of Instagram allows food photos to be shared in these social activities easily, but keeping the privacy of the users at the same time because their own appearances are not shown in these photos. On the contrary, posting selfie is a kind of self-disclosure closely related to self-expression (Al-Kandari et al., 2016). The act of taking and posting selfies may not involve any types of social interactions, and thus it does not necessarily associate with social activity.

This study also disclosed the relationships between narcissism and the involvements of Instagram users in posting food photos and selfies among young adults. The more narcissistic the Instagram user, the more involved they were in posting both food photos and selfies on Instagram. Such a finding is in line with previous research (e.g., Poon & Leung, 2011; Kim et al., 2016). Posting either food or selfies on Instagram can be a way to satisfy the narcissists' needs to promote themselves, attract attentions from others, and share personal information with others. After all, regardless of food or selfies, posting photos on Instagram is a form of self-disclosure. In addition to sharing something with others, Instagram is a perfect platform to equip normal social media users with hands-on mobile photography skills to produce and share visually-attractive creative works with others. To narcissistic individuals, food can be visual extension of themselves, that serves a similar communication function with their selfies.

Shy individuals were found to be more involved in posting selfies. For shy individuals, face-to-face interactions with strangers or casual acquaintances can be a source of awkwardness and discomfort (Cheek & Buss, 1981), so expressing themselves by posting selfies on the social media may reduce the stress caused by self-expressions in real life. On the contrary, posting food photos is less associated with self-expressions and is not associated with tensions built up in face-to-face interactions among shy individuals. This piece of finding shows clearly that the nature of the visual content posted on social media is an important factor influencing users' communication patterns. Food, without any visual self-disclosure, is a more universal way of communication across people with different levels of shyness.

Our sample covers college students from both U.S. and New Zealand, and findings indicated that Instagram users in the U.S. were more involved in posting food photos. One reason may be the differences in eating habits between the two countries. For example, the per capita food expenditure away from home in 2014 in the U.S. was USD 2,293, while the per capita expenditure eating out in New Zealand was much lower at NZD 1,688 (approximately USD 1,182); The share of consumer expenditures on food that were consumed at home in 2015 was much higher in New Zealand (14.9%) than in the U.S. (6.4%) (United States Department of Agriculture, 2016). Food that are non-homemade (offered by restaurants, cafes, etc.) are usually visually more appealing, initiating greater desires to share on Instagram, which may explain the national difference.

In addition, results showed that women involved more than men in posting selfies on Instagram, but there was no gender difference in posting food photos. This is consistent with previous research findings, for example, Dhir et al. (2016) found that women were more likely to take personal and group selfies and post compared to men. Food photos, without showing any physical appearances, on the other hand, engaged men and women equally. Women significantly posted food photos more frequently than men, but both genders involved in posting food photos similarly.

While race was not a significant predictor in the personal involvement in posting selfies, Williams and Marquez's (2015) semi-structured interviews suggested White social media users had an aversion to selfies, whereas Black and Latino users generally approved of selfies. Contrary to selfies, food photos do not disclose the uploaders' race. As we argued before, the joy of posting food photos on Instagram can be shared by everyone, regardless of their gender and race. While selfies involve the visual appeal

of the photographer and are more popular among people with good appearances, food photos can be uploaded by all demographics, because literally, everyone consumes food every day.

LIMITATIONS AND FUTURE STUDY

Although this exploratory study provides several promising insights for understanding young adult Instagram users' behaviors of posting food and selfies, it does have several limitations. First, all participants were recruited from college campuses through snowball sampling. Future study should use a more diverse and representative sample outside the university. Then, differences were discovered from comparing the sample from different countries of residence, the United States and New Zealand, but both countries are dominated by western cultures. Future study can explore young adults' use of Instagram in countries with other cultures, and investigate whether and how culture influences their mobile photography preferences and behaviors. Finally, this study only examined food-and-selfie-posting behaviors on Instagram, so future study would investigate similar topic on other social media platforms such as Facebook, Twitter, Snapchat etc. to understand more about users' self-disclosure of visual contents under the specific characteristics

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Chapter 58

The Impact of Similarity and Self-Esteem on Facebook Behaviors, Perceptions, and Attitudes

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ABSTRACT

From their inception, electronic social networks (ESNs) have held the potential to either (1) expose individuals to a greater diversity of beliefs and interests by removing geographical barriers to communication; or (2) act as “feedback loops” by facilitating relationships and communication among like-minded individuals. In this survey study, the author will examine changes in communication behaviors and perceptions on Facebook from 2013 to 2017. The findings conclude that individuals with lower self-esteem have become less willing to share their views on Facebook, perceive a higher number of negative experiences, and spend less time communicating and more time passively consuming content. The same behavioral changes are found when individuals believe that fewer of their online “friends” have similar beliefs, and when individuals are more prone to “unfriending” others. General comfort in sharing views online is associated with a higher willingness to share views and communicate on Facebook, but also more negative experiences.

INTRODUCTION

In the 2016 U.S. presidential election Donald Trump narrowly lost the popular vote to Hillary Clinton, who captured about 51.1% of individual votes. However, Trump won the Electoral College by a wide margin, in part because both Republican and Democratic votes tend to be concentrated in specific geographic areas. Trump won approximately 2,600 counties to Clinton’s 500, and about 2,200 of those were “landslide counties” in which Trump won by a margin of 20% or greater (Unruh, 2016). In 2016, 60% of Republican voters lived in landslide counties; by contrast, in 2008 this percentage was 48%, and

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in 1992 it was 38% (Aisch et al., 2016). One conclusion that has been drawn from such statistics is that people tend to live near others who are similar to themselves. Within an economic range, people are likely to choose neighborhoods that provide easier access to their preferred activities, religious institutions, and schools. Stated more broadly, people tend to choose neighborhoods in which the inhabitants are culturally similar, and this phenomenon is often correlated with political and religious affiliation. Over time, a “feedback loop” results as individuals are continually exposed to the same political and religious viewpoints (Bishop, 2008).

Many of the geographic factors that limit exposure to a diversity of viewpoints are less relevant in an online setting. Electronic social networks (ESN's) such as Facebook, Instagram, and LinkedIn have made it easier to stay connected with many others (Claybaugh & Haried, 2014). People are connected in ESN's to many of the same people to whom they are connected in the physical world, but they are also likely to be connected to others who they seldom, if ever, encounter in real life. For example, on Facebook people may be “friends” with high school classmates whom they have not seen or spoken to verbally in decades, or with distant family friends and relatives who are typically seen every few years at events such as weddings and family reunions. To the extent that these distant connections live in different geographies, they are more likely to exhibit different economic and cultural characteristics. By interacting with distant connections through ESN's, people are more likely to be exposed to these different characteristics (Balint & Gustafson, 2015). However, ESN's can also facilitate the opposite effect in the form of online communities of interest. The same technology that enables people to connect with others in geographically dispersed locations can also be used to find like-minded individuals online. Thus, although ESN's such as Facebook have existed in consumers' lives since the early 2000's, evidence about ESN's ability to effectively create and spread new political, religious, or social ideas across groups is mixed (Furner, 2013). Some experts believe that ESN's are more successful than traditional, offline forms of communication in spreading new viewpoints, but others feel that ESN's are useless, or even detrimental, in the dissemination of diverse beliefs. For example, ESN's have been blamed for causing more apathy towards political and social causes by allowing people to simply broadcast their opinions without encouraging them to consider others' beliefs as well (Gladwell, 2010; Neil, 2013). Particularly in the U.S. religion is highly correlated with political affiliation, and online discourse of political, religious and social issues has become more divisive since the 2012 presidential election. In addition to current events, individuals may also turn to social media to learn new information about long-standing religious or political doctrine (Almobarraz, 2016). An increasing percentage of content that is posted and discussed online is from sources that are perceived as partial to one end of the political spectrum or the other, discouraging the presentation of diverse viewpoints (McHugh, 2016). Even more insidiously, there is evidence that terrorist groups such as Al-Qaeda and other radical activist groups use ESN's to recruit members and organize activities (Knibbs, 2017).

Adding to this tension is the fact that ESN's change over time. Like most technology companies, ESN providers periodically make changes to the user interface, security settings, or back-end algorithms that affect what content users see (Balint & Rau-Foster, 2014). Most ESN's use collaborative filtering and user feedback to determine the types of content users are most likely to click through. For example, if a Facebook user consistently clicks on articles from conservative sources and spends time reading them, Facebook is more likely to display conservative articles in the future. This gives users what they like, and also generates more revenue for Facebook (McHugh, 2016). However, it also means that the user is less likely to see articles presenting contradictory viewpoints. Individuals have become more likely to “second-screen” social media on mobile devices or tablets, making political messages more salient

(Barnidge, Gil de Zúñiga, & Diehl, 2017). Finally, individual attitudes towards particular ESN's evolve over time. Facebook users have started to spend less time micro-blogging and more time posting pictures and articles (McHugh, 2017). More individuals have started to turn to Twitter as a primary news source (Luckerson, 2017). Social norms and face-to-face friend networks may also influence how individuals choose to use ESN's.

In this paper, we examine changes in Facebook behaviors and perceptions over the past four years. We relate these changes to individual characteristics such as self-esteem, perceived similarity with online "friends", and general comfort in sharing views online. We investigate these issues through two surveys of Facebook users – one conducted in 2013, the other in 2017. The results may help to illuminate individuals' motivations for participating in ESN's, which should also be informative for ESN providers. Our paper also contributes to theory on the relationships between self-esteem, homophily, and communication in ESN's.

Other recent studies have examined individuals' motivations and propensity for engaging in political discourse online, and found that online political discourse is no more likely than face-to-face political discourse (Kruse, Norris, & Flinchum, 2018). In contrast, other studies have pointed out that the speed and dissemination of diverse information may actually make online political discussion and conflict resolution easier (Zeitsoff, 2017). In addition, recent evidence suggests that engaging in political discourse online may motivate individuals to join political organizations in real life (Zhang & Lin, 2018). Finally, other studies (e.g. Yang, Barnidge, & Rojas, 2017) have examined the relationship between political disagreement and "unfriending" or "unfollowing", as we do. However, our study differs in that we also examine discussion of religious and personal interests, and that we examine changes in those activities over time.

THEORETICAL BACKGROUND AND HYPOTHESES

Changes in ESN Behavior

Much academic research and anecdotal evidence suggests that in the physical world, people tend to associate with others who are similar to themselves. In many cases, this association is a result of geographical convenience. If a man belongs to a particular health club or attends a particular church, he is likely to live relatively near that club or church; otherwise he would choose one that is more convenient. Other people that go to the same club or church are also likely to live near their locations. In addition, people that live in the same geographic area are likely to have similar incomes, and income is often correlated with demographic characteristics such as education level, race, and political affiliation (Bishop, 2008).

In other cases, association in the physical world is a function of personal interests as well as geography. For example, out of necessity, a woman may be willing to travel a greater geographic distance to get to work than she would to go to a health club. But at work, she is likely to form relationships with others that have similar or related skills, suggesting similar levels of education and ability. Children are another facilitator of association. Many adults become acquainted because their children are friends and either go to the same school or participate in mutual activities such as athletic teams. These associations are based on both geography and personal interests. In addition, people with children who are of similar ages are naturally more likely to be similarly aged themselves.

Many people who form associations or friendships in the physical world maintain those same associations or friendships within ESN's. ESN's often facilitate communication and organization even for individuals who also connect with one another in the physical world; they have become ubiquitous in personal interaction (Special & Barber, 2012). Because ESN's are not constrained by geography, neither are the associations within them. However, evidence suggests that over the past several years, both the communication patterns on ESN's and the social networks themselves have come to resemble their face-to-face counterparts more closely. For example, in 2013 Facebook implemented an "Unfollow" function. This function allows a user to not see a friend's content without severing the tie to that friend or sending a notification (Ha, 2013). With the unfollow function, Facebook has made it easier for a user to filter undesired content without affecting the relationship directly. A good offline analogy might be ignoring someone's phone calls or invitations to activities without explicitly telling that person you no longer want to be friends. At the same time, evidence suggests that individuals have also become more likely to unfriend people on ESN's with whose viewpoints they disagree (McHugh, 2016). Since the beginning of 2016, people have become more likely to brag on ESN's about how many individuals they have blocked or unfriended. Because it is easier and less socially awkward to unfriend somebody online than in real life, it is reasonable to assume that a greater proportion of these "unfriended" individuals are online only and not encountered often face-to-face.

In summary, the associations that people maintain in the physical world – or the associations that people maintain within ESN's that are also maintained in the physical world – are more likely to arise between people that share similar characteristics. In comparison, associations that are maintained mostly or entirely within ESN's are more likely to arise between people that do not share similar characteristics. However, this distinction has eroded over the past several years due to changes in ESN's themselves and changes in user behavior. For this study, we examine three specific types of characteristics: political viewpoints, religious beliefs, and personal interests. People are often implicitly or explicitly discouraged from discussing political, religious, and personal matters in environments such as the workplace. However, individuals are more likely to share this type of information online, despite potential privacy or risk concerns (Wang, 2012).

ESN's and Self-Esteem

Previous studies have related personality traits such as self-esteem to ESN usage. An individual's level of comfort in presenting his or her own views in ESN's has been positively related to subjective well-being, perceived social support, and self-esteem (Park et al., 2011; Khare, 2012). Conversely, individuals with low self-esteem and social anxiety are generally less likely to disclose personal information (Ledbetter, Mazer, DeGroot, Meyer, Mao, & Swafford, 2011; Sousa, MacDonald, & Fougere, 2012). A possible exception may arise when individuals disclose information in an effort to bolster their own self-esteem; however, in this case, the information is not likely to be potentially stigmatizing (Nadkarni & Hoffman, 2012). Individuals who are willing to share potentially stigmatizing information such as political views, religious beliefs, or personal interests have been shown to have higher self-esteem and confidence in their views (Kim & Lee, 2011; Ledbetter et al., 2011). However, other individuals may divulge this information intentionally in order to project a higher level of confidence and self-esteem (Young, Dutta, & Dommetty, 2009). An individual's level of comfort in sharing sensitive information publicly demonstrates confidence in his or her beliefs in the physical world as well.

Prior research has suggested that individuals lower in self-esteem may actively try to accumulate more friends on ESN's to compensate for a lack of confidence in themselves (Lee, Moore, Park, & Park, 2012). Additionally, there is evidence that a negative U-shaped relationship exists between the number of an individual's ESN acquaintances and perceived social support (Kim & Lee, 2011); while the initial effect of adding acquaintances is increased well-being and social support, this effect disappears as more acquaintances are added. Due to the time and effort involved in maintaining face-to-face relationships, individuals with more ESN relationships are more likely to have relationships based on interactions that occur primarily within the ESN. In other words, if a person has 120 "friends" on Facebook, it is reasonable that he would interact with 60 of them (50%) in the physical world over the course of a month. Alternatively, if a person has 2400 Facebook "friends", interacting with 1200 of them over the course of a month is not as feasible.

We relate self-esteem to three behaviors related to changes in ESN usage. The first measure is a switch from content creation and communication to content consumption. Previous studies have shown that individuals who are more comfortable creating their own content on ESN's are also more likely to spend time reading others' content (Vasalou et al., 2010; Attrill and Jalil, 2011). The second measure is a change in willingness to share one's own views on ESN's. Individuals with higher self-esteem are less likely to change their behavior regarding sharing their own views. Finally, we examine self-esteem in relation to changes in negative experiences online. Individuals who are more confident in expressing their views are expected to be less discouraged when receiving negative feedback (Kim & Lee, 2011; Ledbetter et al., 2011). Thus:

H1: Individuals with higher self-esteem *have not* become less likely to share their own views on ESN's.

H2: Individuals with higher self-esteem *have not* become less likely to communicate and more likely to consume content on ESN's.

H3: Individuals with higher self-esteem *have not* perceived an increase in negative experiences on ESN's.

A related indicator of self-esteem is an individual's comfort in sharing personal views specifically online. While an individual with high self-esteem might be more confident in expressing personal views, he or she may not be as willing to do so online. This could be for reasons such as unfamiliarity with technology, security concerns, or a desire not to have a permanent electronic record of comments. At the same time individuals that express they are more comfortable sharing views online may actually do so, regardless of self-esteem. This will lead to additional opportunities where individuals risk being exposed to negative feedback from others. Thus:

H4: Individuals that are generally more comfortable sharing their views online *have not* become less likely to share their own views on ESN's.

H5: Individuals that are generally more comfortable sharing their views online *have not* become less likely to communicate and more likely to consume content on ESN's.

H6: Individuals that are generally more comfortable sharing their views online *have* perceived an increase in negative experiences on ESN's.

Blocking behavior includes "unfriending" or "unfollowing" someone online, or blocking specific content or types of content that are deemed offensive. Individuals with higher levels of self-esteem are more likely to enjoy interacting with people on ESN's whose characteristics and views differ from their

own (Kwon et al., 2010). This suggests that individuals who are higher in self-esteem are less likely to block others on ESN's. Thus:

- H7:** Individuals that are more likely to block others on ESN's *have* become less likely to share their own views on ESN's.
- H8:** Individuals that are more likely to block others on ESN's *have* become less likely to communicate and more likely to consume content on ESN's.
- H9:** Individuals that are that are more likely to block others on ESN's *have* perceived an increase in negative experiences on ESN's.

ESN's and Homophily

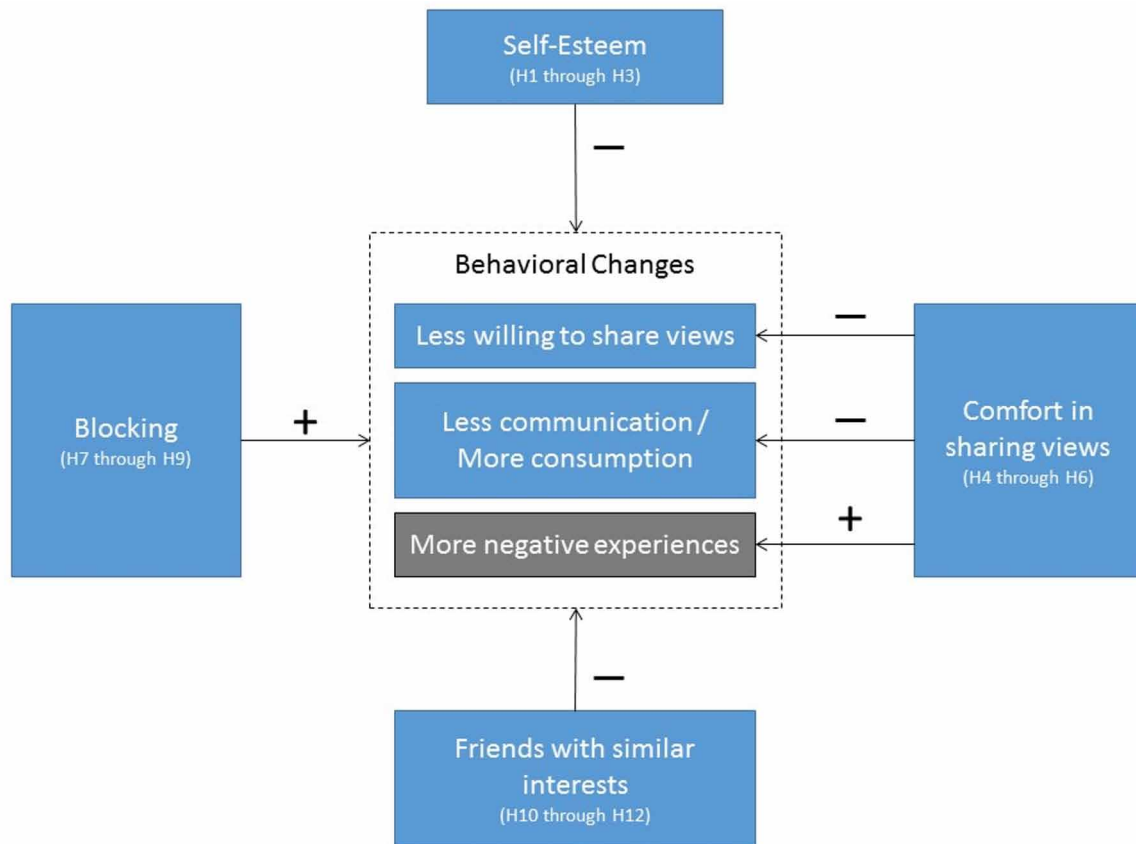
Homophily is the sociological principle that individuals are drawn to connect to others who are similar to themselves. This similarity may arise from sociodemographic, behavioral, or intrapersonal characteristics (McPherson et al., 2001). Over time homophily can become a contributor to the structure and dynamics of social networks through the dynamic sorting and filtering mechanisms described earlier. While research on homophily and social networks predates the existence of ESN's, its implications have proven surprisingly relevant and important. Not only do individuals intentionally include others in their ESN's who are similar to themselves, but the content filtering mechanisms present in ESN's actually promote and strengthen homophily, sometimes to the extent of excluding dissimilar others (McHugh, 2016).

Regardless of self-esteem or other personal characteristics, it would be natural for homophily to affect changes to one's ESN behavior over time. All else being equal, individuals who are less willing to share their own views or to communicate in general will probably be more willing to do so if more of their friends are similar to themselves. Likewise, an individual whose social network exhibits more homophily will probably be less likely to have negative experiences on ESN's. Further, the specific type of homophily may be important – for example, the fact that many of one's friends are Democrats may not affect one's propensity for sharing controversial views on sports. However, we expect homophily to affect changes in ESN behavior as follows:

- H10:** Individuals whose social networks contain more friends with similar interests *have not* become less likely to share their own views on ESN's.
- H11:** Individuals whose social networks contain more friends with similar interests *have not* become less likely to communicate and more likely to consume content on ESN's.
- H12:** Individuals whose social networks contain more friends with similar interests *have not* perceived an increase in negative experiences on ESN's.

Our research model is depicted in Figure 1. For simplicity, the perceptions of behavioral changes we examine – willingness to share views, communication vs. consumption, and negative experiences – are grouped together. The other personal and social characteristics we examine are expected to affect those behavioral changes in the same direction, with the exception of comfort in sharing views (H4 through H6).

Figure 1. Research Model



RESEARCH METHODS

The research questions were investigated using an online survey of Facebook users. Facebook is currently the leading ESN in terms of active monthly users, with over 2 billion users as of June 2017 (Flemming, 2017). The survey responses were collected in June 2017. Respondents ($n=564$) were recruited using Amazon's Mechanical Turk service, with two qualifications: first, that the respondent must be a Facebook user, and second, that the respondent must have a Mechanical Turk Worker satisfaction rating of 99% or higher. Respondents were compensated for completing the survey. After removing observations containing missing or incomplete values, 513 responses remained. A majority of the respondents were between the ages of 20 and 39 ($n=350$) and also college graduates ($n=309$). These characteristics are representative of the total population of Facebook users (Duggan & Brenner, 2013). The respondents also included a slightly larger than average number of females ($n=301$).

Respondents completed a 35-item survey (see Appendix A) that asked about their Facebook activity and their perceptions of the viewpoints of their Facebook "friends". Respondents were first asked how many Facebook "friends" they had, and then how many of those people the respondent talked with at least once per month outside of Facebook, i.e. face-to-face (FTF). They were then asked to estimate how many of those FTF friends shared the same political views as themselves, and then how many of

their non-FTF Facebook “friends” shared the same political views as themselves. These questions were repeated for religious beliefs and personal interests. Next, the respondents were asked about the frequency with which they read or block content that is contrary to their own views. Next, respondents were asked to assess changes in their Facebook behavior over the past couple of years. These questions serve as the dependent variables in testing most of our hypotheses. Finally, respondents were asked about where (online or offline) they were most comfortable sharing political, religious and personal content. To measure self-esteem, respondents also completed the Rosenberg Self-Esteem Scale (Rosenberg, 1965). This scale is widely used and has been validated by numerous studies (e.g. Heatherton & Polivy, 1991).

The distinction between different groups of “friends” is an important one. Facebook “friends” with whom the respondent speaks at least once per month outside of Facebook (i.e., FTF) are assumed to be the closest and most important. Our survey is structured so that each respondent answers the same group of questions about political, religious and personal views for each of these different sets of “friends”. Other questions such as those from the self-esteem scale are specific to the individual. All hypotheses were tested using ordered logit regressions. An ordered logit is appropriate for survey data such as this where the dependent variable has discrete outcomes that are ordered in a specific sequence (Kennedy, 2003).

RESULTS

Results for Hypotheses 1 through 3 are reported in Table 1. In this set of results self-esteem is the independent variable, used in regressions with the three dependent variables of interest. The results indicate that higher levels of self-esteem are associated with a lower likelihood of being less willing to share views on Facebook. Higher levels of self-esteem are also associated with a lower likelihood of communicating less and consuming more, and a lower likelihood of having more negative experiences. All of these results are statistically significant. Thus, Hypotheses 1 through 3 are all fully supported. Self-esteem is a significant predictor of changes in Facebook behavior over the past several years.

Table 1. Coefficients and Standard Errors for Ordered Logit Regressions on Self Esteem

	Less Willing to share views (H1)	Less communication (H2)	More negative experiences (H3)
self_esteem	0.056	0.045	0.032
	(0.015)***	(0.015)**	(0.008)***
X ²	14.78***	9.27**	14.42***

***p < 0.001, **p < 0.01, *p < 0.05

Regression results for Hypotheses 4 through 6 are in Table 2. In this set of results comfort in sharing views online is the independent variable, and it is separately evaluated for political, religious, and personal content. The results indicate that higher levels of comfort in sharing content online are associated with a lower likelihood of being less willing to share views on Facebook, as well as a lower likelihood of communicating less and consuming more. This is the case for political, religious and personal content. All of these results are statistically significant; thus, Hypotheses 4 and 5 are supported. The opposite

is true with negative experiences. Individuals who are more comfortable sharing political, religious or personal content are significantly more likely to have had more negative experiences on Facebook. Therefore, Hypothesis 6 is also supported. In summary, individuals who are more comfortable sharing their views online have not changed their behavior over the past few years but are having more negative experiences. We will examine this further in a post-hoc analysis.

Table 2. Coefficients and Standard Errors for Ordered Logit Regressions on Comfort in Sharing Views Online

	Less Willing to share views (H4)	Less communication (H5)	More negative experiences (H6)
comfort_political	0.646	0.395	-0.444
	(0.113)***	(0.112)***	(0.112)***
X ²	33.72***	12.60***	16.10***
comfort_religious	0.415	0.395	-0.258
	(0.110)***	(0.111)***	(0.112)***
X ²	14.47***	12.69***	5.32*
comfort_personal	0.321	0.197	-0.421
	(0.110)**	(0.111) ⁺	(0.113)***
X ²	8.52**	3.13 ⁺	14.04***

***p < 0.001, **p < 0.01, *p < 0.05, +p < 0.10

Regression results for Hypotheses 7 through 9 are in Table 3. In this set of results the frequency of blocking is the independent variable, and it is separately evaluated for political, religious, and personal content. The results indicate that individuals who have become less willing to share their views are associated with a higher frequency of blocking political and religious content, but not personal content. A change from communication to consumption is also associated with the likelihood of blocking political content, but not religious or personal content. Thus, Hypotheses 7 and 8 are partially supported. Individuals who are more likely to block political, religious and personal content also report that they have begun to encounter significantly more negative experiences on Facebook. Therefore, Hypothesis 9 is fully supported.

Regression results for Hypotheses 10 through 12 are in Table 4. In this set of results the percentage of friends with similar interests is the independent variable, and it is separately evaluated for political, religious, and personal content. The results indicate that higher percentages of online friends sharing similar interests are not associated with changes in willingness to share views, or in communication vs. consumption patterns. The exception is with personal interests; individuals with a higher percentage of friends with similar personal interests have not become less communicative on Facebook, to a significant extent. Thus, Hypotheses 10 is not supported while Hypothesis 11 is supported for personal content only. Individuals with more friends sharing similar political, religious or personal interests are significantly less likely to have had more negative experiences on Facebook. Therefore, Hypothesis 12 is fully supported.

Table 3. Coefficients and Standard Errors for Ordered Logit Regressions on Frequency of Blocking

	Less Willing to share views (H7)	Less communication (H8)	More negative experiences (H9)
blocking_political	-0.010	-0.017	-0.026
	(0.006) ⁺	(0.007) [*]	(0.006) ^{***}
X ²	3.16 ⁺	6.29 [*]	18.62 ^{***}
blocking_religious	-0.013	-0.009	-0.033
	(0.008) ⁺	(0.009)	(0.009) ^{***}
X ²	2.95 ⁺	1.11	16.74 ^{***}
blocking_personal	-0.010	-0.006	-0.038
	(0.009)	(0.010)	(0.010) ^{***}
X ²	1.25	0.310	15.80 ^{***}

***p < 0.001, **p < 0.01, *p < 0.05, +p < 0.10

Table 4. Coefficients and standard errors for ordered logit regressions on friends with similar interests

	Less Willing to share views (H10)	Less communication (H11)	More negative experiences (H12)
homophily_political	-0.126	-0.058	0.577
	(0.254)	(0.255)	(0.264) [*]
X ²	0.250	0.050	4.77 [*]
homophily_religious	-0.330	0.178	0.562
	(0.253)	(0.256)	(0.257) [*]
X ²	1.700	0.490	4.79 [*]
homophily_personal	0.266	0.572	0.637
	(0.254)	(0.254) [*]	(0.256) [*]
X ²	1.100	5.10 [*]	6.21 [*]

***p < 0.001, **p < 0.01, *p < 0.05, +p < 0.10

In total, 11 of 12 hypotheses were either fully or partially supported; Table 5 provides a summary of these results. As a robustness check, we also estimated the results for all hypotheses using ordered probit analyses. Ordered probit analysis is similar to ordered logit analysis but uses the normal distribution instead of the logistic distribution. Ordered probit analysis is preferred by some disciplines, most notably Economics (Kennedy, 2003). Using ordered probit analyses, all hypotheses were supported in the same manner as they were with the ordered logit analysis. These results are available upon request.

Post-Hoc Analysis

The results for Hypothesis 6 were somewhat surprising as they ran contrary to the results for the first 5 hypotheses. Our data show that self-esteem is positively correlated with fewer negative experiences and with comfort in sharing views, but that comfort in sharing views is correlated with more negative

Table 5. Results Summary

H1: Self-esteem and less willingness to share	Supported
H2: Self-esteem and less communication	Supported
H3: Self-esteem and negative experiences	Supported
H4: Comfort and less willingness to share	Supported
H5: Comfort and less communication	Supported
H6: Comfort and negative experiences	Supported
H7: Blocking and less willingness to share	Partially Supported
H8: Blocking and less communication	Partially Supported
H9: Blocking and negative experiences	Supported
H10: Homophily and less willingness to share	Not Supported
H11: Homophily and less communication	Partially Supported
H12: Homophily and negative experiences	Supported

experiences. One simple explanation for this is that individuals who are generally comfortable sharing their views online do share their views more often, and consequently have more negative experiences. If this is the case, then we might expect that online friends that have similar interests would moderate, or dampen, this effect.

To examine this proposition, we ran an additional set of analyses similar to the ones in Column 4 of Table 2, but with the inclusion of the variable for percentage of online friends with similar interests. The results are in Table 6, and they support this proposition. Negative experiences are more likely when individuals are comfortable sharing their political, religious and personal views, but this effect is moderated by homophily in ESN's.

DISCUSSION

The primary hypothesis put forth in this study – that individuals with higher self-esteem are less likely to have changed their behavior on ESN's – is strongly supported. While individuals have on average become less likely to share their views, less communicative, and more likely to report negative experiences, high self-esteem individuals are less likely to report these changes. An important implication of this finding is that if this trend continues over time, a greater share of the content and communication present on ESN's will come from high self-esteem individuals. High self-esteem is also positively correlated with comfort in sharing views. Consequently, there is an inherent tension between the results for H3 and H6: Individuals that are more comfortable in sharing views report more negative experiences, while those that have high self-esteem report fewer. Our post-hoc analysis reveals that the relationship depicted in H6 appears to be modified by the number of friends with similar interests. Taken together, these findings may support the conclusion that ESN's are likely to continue to become more divisive in terms of political, religious and social content (McHugh, 2016). Individuals with high self-esteem are more likely to communicate their views, are more comfortable with their views, and are less likely to be bothered by conflict, particularly when like-minded individuals are also present. This is somewhat

Table 6. Post-Hoc Analysis

	More negative experiences (H6)
comfort_political	-0.459
	(0.112)***
homophily_political	0.642
	(0.265)*
X ²	16.10***
comfort_religious	-0.271
	(0.112)*
homophily_religious	0.595
	(0.258)*
X ²	10.067***
comfort_personal	-0.431
	(0.114)***
homophily_personal	0.677
	(0.257)**
X ²	21.000***

***p < 0.001, **p < 0.01, *p < 0.05

incongruous with previous research demonstrating that ESN's present a greater diversity of viewpoints (e.g. Balint & Gustafson, 2015). However, differences in the political climate in the U.S. and abroad may explain these differences. ESN's and social media in general were just beginning to gain popularity leading up to the 2008 election. Barack Obama's campaign used these technologies sparsely, relying more on platforms such as official campaign websites and YouTube videos to communicate with voters and directly refute attacks by other candidates (Miller, 2008). Using the Internet as a communication platform was an important contributor to Obama's election. In 2012, Facebook and other ESN's played a larger role in political discourse. Obama's campaign expanded its use of ESN platforms such as Twitter and Facebook, and posted far more content than Mitt Romney, the Republican nominee for the presidency (Rosenstiel & Mitchell, 2012). By Election Day, Obama had twice as many Facebook likes and twenty times as many Twitter retweets as did the Romney campaign. Additionally, the Pew Internet Project found after the election that approximately thirty percent of social networking users were influenced to vote by their peers through social media, and that a record number of college-aged voters had showed up at the polls (Rutledge, 2013). An important difference between the Internet strategies of the 2008 and 2012 Obama campaigns was that less of the content was under the campaign's direct control. Instead, more of the discourse came between different users of the site rather than between the users and the candidates themselves (Rosenstiel & Mitchell, 2012).

Of course, giving people on ESN's the opportunity to see content relating to contrary viewpoints does not guarantee that they will read it. The results for Hypothesis 7 through 9 suggest that individuals who are more comfortable blocking users and content have become less likely to communicate and share views and more likely to report negative experiences. Taking these results together, these individuals appear to have the opposite profile of the high-esteem individuals described above. These individuals

are more likely to block contrary content, but also less willing to engage with others and more likely to report negative experiences when they do. Communication research suggests that if a recipient's current beliefs are addressed before a contradictory one is introduced, the recipient will be more likely to consume them (Biocca, 1988). Reducing cognitive dissonance between current and contradictory beliefs may therefore be an effective strategy for organizations attempting to reach these users (Harmon-Jones & Mills, 1999). Perversely, these individuals may also be primary targets for terrorists and other radical activist groups which feed on negativity and close-mindedness (Knibbs, 2017).

Our analyses also show that greater homophily on ESN's is associated with a lower degree of behavioral change. Individuals with more friends with similar interests have not become less willing to communicate or share their views, and are less likely to have negative experiences. This is an important finding in terms of social influence. Marketers using social graphs often try to influence networks by identifying influential members, and in the ESN context, this would translate to finding individuals with a large number of "friends" (Gladwell, 2002). However, the current results of our study suggest that individuals with networks consisting of a higher percentage of like-minded friends are more likely to communicate with others. Perhaps political organizations or religious groups would have more success by targeting these individuals. More generally, activist organizations or internet marketers may be able to disseminate their messages to a larger audience by crafting separate messages for each demographic being addressed. Though we did not measure it explicitly, self-esteem has been shown to be positively correlated with extraversion. Therefore, extraversion may also play a role in this finding. Individuals who are more likely to share their own views are also more likely to engage in discussion of others' views, and to communicate more actively through ESN's in general (Gosling et al., 2011). While ESN's such as Facebook may make it easier for people to be exposed to a greater diversity of interests, ESN's may also provide a mechanism for political, religious, and focused interest groups to get organized and to foster communication exclusively about their own views. By joining or becoming a "fan" of an organization within an ESN, one is increasing the likelihood that he or she will become acquainted with other members who will in turn influence his or her viewpoints. This can create a feedback loop through which individuals are consistently given similar, like-minded messages (Bishop, 2008). On the other hand, exposure to a constant stream of diverse viewpoints may create cognitive overload and confusion. Openness to others' views may engender a lack of commitment to any one view, causing the openness to be counter-productive in the search for adoptable beliefs. This also represents an opportunity for further research.

Like any survey research, ours is not without limitations. We have asked individuals to self-report changes in Facebook behavior, but these reports may not strictly match actual changes in behavior. In addition, we have not measured homophily objectively; rather, we rely on subjects' perceptions of the similarity of their friends' interests. The ability to measure changes in behavior and objective measures of similarity and blocking may present an opportunity for further research.

CONCLUSION

This study has examined changes in behavior on Facebook, currently the most popular ESN. We examine willingness to share views, willingness to communicate, and lack of negative experiences. We find that high self-esteem and high homophily are associated with higher levels of changes in these behaviors. We also find that individuals who are more likely to block contrary content are less willing to exhibit these behaviors. Finally, individuals who are more comfortable sharing views general have not become

less willing to share them on Facebook and have not started communicating less on Facebook, but also report more negative experiences on Facebook. Perceptions of negative experiences are moderated by homophily. In total, 11 of our 12 hypotheses were either fully or partially supported.

This study contributes to the existing literature on ESN's, homophily, and communication. To the best of our knowledge, this paper is among the first studies to measure and report on changes in Facebook behavior over the past several years. From a practitioner perspective, the results from this survey have the potential to influence how political, religious, and personal interest groups can reach new members and facilitate communication. This may help address recent calls for the promotion of civic engagement and digital citizenship within educational institutions (Gleason & Von Gillern, 2018). ESN providers may also use our results in helping to craft an environment that may foster different types of communication.

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APPENDIX

Survey Questions

	Mean	S.D.
How many Facebook friends do you have?	418.485	606.487
In the past month, about how many of your Facebook friends have you spoken with through offline methods (i.e., face-to-face or with your phone)?		
	20.027	32.163
About how many of those Facebook friends (with whom you HAVE spoken offline in the past month) share the same beliefs, values, and interests as you?		
Political beliefs or values	60.838	31.910
Religious beliefs / values	52.994	35.503
Personal interests	51.672	34.083
About how many of your other Facebook friends (with whom you HAVE NOT spoken offline in the past month) share the same beliefs, values, and interests as you?		
Political beliefs or values	47.722	31.939
Religious beliefs / values	40.001	31.972
Personal interests	36.988	32.158
When you see or hear beliefs or values that are contrary to your own through offline media such as billboards, television advertisements, and face-to-face conversations, how likely are you to read or listen to this content? (1=Very likely, 2 = Likely, 3 = Unlikely, 4 = Very Unlikely)		
Content contrary to my political beliefs or values	2.386	0.829
Content contrary to my religious beliefs or values	2.571	0.901
Content contrary to my personal interests	2.347	0.902
On Facebook, you will sometimes encounter content such as posts, comments, or links to other websites that are contrary to your own beliefs and values. How many times have you blocked a Facebook friend or hidden his / her posts because he / she has posted this content?		
Political beliefs or values	2.784	10.091
Religious beliefs / values	1.994	9.001
Personal interests	4.895	13.660
How likely are you to read such content? (1=Very likely, 2 = Likely, 3 = Unlikely, 4 = Very Unlikely)		
Content contrary to my political beliefs or values	2.388	0.805
Content contrary to my religious beliefs or values	2.606	0.869
Content contrary to my personal interests	2.442	0.888
How strongly do you agree or disagree with the following statements about yourself? (1 = Strongly agree, 2 = Agree, 3 = Disagree, 4 = Strongly disagree) * indicates questions that are reverse-coded		
On the whole, I am satisfied with myself.*	1.869	0.679
At times, I think I am no good at all.	2.891	0.855
I feel that I have a number of good qualities. *	1.653	0.610
I am able to do things as well as most other people. *	1.678	0.622

continues on following page

The Impact of Similarity and Self-Esteem on Facebook Behaviors, Perceptions, and Attitudes

	Mean	S.D.
I feel I do not have much to be proud of.	3.162	0.773
I certainly feel useless at times.	2.698	0.899
I feel that I am a person of worth, at least on an equal plane with others. *	1.747	0.639
I wish I could have more respect for myself.	2.538	0.907
All in all, I am inclined to feel that I am a failure.	3.150	0.787
I take a positive attitude towards myself. *	1.924	0.724
How strongly do you agree or disagree with the following statements about yourself? (1 = Strongly agree, 2 = Agree, 3 = Disagree, 4 = Strongly disagree)		
In the past couple of years, I have had more negative experiences communicating with others on Facebook.	2.528	0.852
In the past couple of years, I have become less willing to share my viewpoints on Facebook.	2.109	0.946
In the past couple of years, I have started to spend less time communicating with others on Facebook and more time reading content on Facebook.	2.018	0.858
Where do you feel most comfortable sharing the following types of information? (1 = Only offline, 2 = Mostly offline, 3 = Mostly through online social networks, 4 = Only through online social networks)		
Personal information, such as your phone number and birth date.	1.811	0.626
The reasons that you support a particular political party over others.	2.006	0.741
Information about the religious activities in which you engage.	1.813	0.742
Your romantic feelings toward another person.	1.791	0.720
The social causes you support.	2.465	0.747

Chapter 59

Remaining Facebook versus Face-to-Face Friends after a Romantic Breakup: Factors that Distinguish Those Who Do from Those Who Do Not

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ABSTRACT

The study queried whether the relational characteristics that influence individuals to remain face-to-face friends with former romantic partners following a break up also impact the decisions to remain Facebook “friends” with former romantic partners. The sample included over 300 young adults who met two criteria: They maintained an active Facebook account and reported a pre-marital, romantic breakup. The results revealed that the variables that impact post-dissolution friendship decisions of former romantic partners in the face-to-face context (quantity of relational investments, relational satisfaction, and relational disengagement strategies) do not impact former romantic partners’ decisions to maintain or dissolve Facebook friendships. These results provide evidence that romantic partners may experience different relational motivations and dynamics in online versus off-line venues.

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REMAINING FACEBOOK VERSUS FACE-TO-FACE FRIENDS AFTER A ROMANTIC BREAKUP

Researchers continue to examine factors associated with former romantic partners remaining face-to-face friends following their breakup (e.g., Griffith, Gillath, Zhao, & Martinez, 2017; Hadden, Harvey, Settensten, & Agrew, 2018; Mogilski & Welling, 2017); however, very few studies have examined friendships between former romantic partners on social media venues such as Facebook. We could locate no previous study that examined whether the same factors (that distinguish former romantic partners who elect to remain face-to-face friends from those who do not elect to remain friends) were equally effective in distinguishing those who remain Facebook friends versus those who do not.

Given the prevalence of social media in contemporary life, our study endeavored to discover the extent to which the research findings concerning face-to-face friendship between former romantic partners apply to social media friendships. To that end, we examined factors that might distinguish college students' who remain Facebook friends with former romantic partners versus those who elect to "unfriend" former partners. The term "unfriend" comes from Facebook's friend-managing features that allow a user to "delete" a fellow user from his/her list of Facebook friends and thus prevent the former friend from directly viewing the user's profile and status updates.

Existing literature examining face-to-face relationships suggests that the quantity of relational investments (Stanley, Rhoades & Markman, 2006), disengagement behaviors used in the breakup process (Banks, Altendorf, Greene, & Cody, 1987), and relational quality prior to the breakup (Rhoades, Kamp Dush, Atkins, Stanley, & Markman, 2011) influence the decision to (or not to) remain face-to-face friends with former romantic relationship partners. We directly examined whether these three factors differ significantly across two groups: former romantic partners who elect to remain Facebook friends versus those who do not.

Originally intended to connect college students at one U. S. university, Facebook now serves 1.47 billion daily active users worldwide (Facebook, 2018) and is widely considered the most used social media outlet on the planet. Research on Facebook primarily focuses on two topics: privacy/self-disclosure (e.g., Bazarova, 2012; Kanter, Afifi, & Robbins, 2012) and, more relevant to the current study, social networking (e.g., Craig & Wright, 2012; Crosier, Webster, & Dillon, 2012). For a detailed review of this literature, see Caers et al. (2013).

SOCIAL NETWORKING ON FACEBOOK

Crosier et al. (2012) argues that humans have a genetic predisposition to desire connection and that online social networks provide venues for satisfying that desire. Facebook creates an environment where sharing and connecting with others is easier in many ways than traditional forms of face-to-face interaction. Indeed, Facebook "friendships" involve extremely low commitment. Users can elect to (a) post (or not to post) updates on their thoughts and activities for friends to read as well as (b) read (or not read) friends' posts. Activity leads to a sense of "keeping up with" people but Facebook allows users' to maintain "friend" status whether or not they actively engage on the website. Similarly, friendship status does not change if users spend a few minutes a day on the website or a few hours per day. Such a disassociation between investment and relationship status stands in sharp contrast to face-to-face relationships that

seem to fade away if friends do not stay in regular contact as well as regularly share information and/or experiences together.

Researchers argue that, in addition to creating connections, Facebook also plays a vital role in the maintenance of personal relationships (Craig & Wright, 2012; Ledbetter & Mazer, 2014) and the enactment of relational closeness (Ledbetter et al., 2011). Perceptions of similarity and attraction may be heightened in text-based online interactions due to lack of nonverbal feedback, thereby creating an atmosphere conducive to more sharing (Walther, 2011). Furthermore, the prevalence of social media can intensify the quantity of information being shared, resulting in greater access to personal information—meaning the sheer number of Facebook users creates an environment in which users share massive amounts of information. Additionally, some aspects of the quality of shared information can facilitate network growth and perceived closeness. One such piece of information is “relationship status.” Here the user indicates whether he/she is in a romantic relationship, and, if so, names that partner. Every member of both relational partners’ networks receives a notice when a relationship status is announced or altered. Thus, social networking has evolved from making connections based on “likes” and “comments” to an on-going part of romantic relationships where partners declare they are “in a relationship with” each other, integrate their social networks, and connect with each other (Fox, Osborn, & Warber, 2014). Indeed, romantic partners may “struggle to maintain privacy and independence” on Facebook (Fox et al., 2014, p. 527).

FACEBOOK ROMANCE

In 2010 alone, 43,869,800 people changed their Facebook relationship status from “In a Relationship” to “Single” (Wasserman, 2010). In one interview study, many college students characterized Facebook as “a threat to their romantic relationships” (Gershon, 2011) for multiple reasons including inducing feelings of anxiety and jealousy. Indeed, Facebook permits users to stay in touch with former romantic partners as well as the social networks that supported those past relationships—easy fodder for the jealousy impulse.

A fledgling line of research examines the role of Facebook in romantic relationships (Bowe, 2010; Fox & Warber, 2013; Yang, Brown, & Braun, 2014). Because social media allow users to widen their networks via groups based on schools attended, religion, political affiliations, hobbies, fandom, and other common interests, many users encounter former relational partners in the online world. Users may experience social pressure to friend and to stay friends with their former partners. In one documentary, CNN reported that the number of individuals saying they would be likely to “unfriend” a partner post-breakup at a mere 22 percent (Bartz & Ehrlich, 2010).

Although the decision to unfriend relational partners post dissolution has been extensively researched in face-to-face relationships (e.g., Bullock, 2011; Emery & Dillon, 1994; Rhoades et al., 2011), it remains largely unexplored in online venues. We could locate only two published studies (Marshall, 2012; Tran & Joormann, 2015) that examined remaining Facebook friends with former romantic partners; both studies examined the psychological repercussions of such decisions. Marshall (2012) documented an association between Facebook surveillance of a former romantic partner and increased stress/negative feelings about the break-up as well as increased longing/sexual desire for the former partner. Tran and Joormann (2015) reported “particularly negative emotional consequences” for former partners who remain Facebook friends and ruminate about the ex’s profile. In contrast to these studies of the psychological after

effects of remaining Facebook friends, our study explored factors that might contribute to the decision itself to unfriend or remain Facebook friends with a former relational partner.

UNFRIENDING ON FACEBOOK

Deleting a Facebook friend serves as “a form of relationship termination” (Bevan, Pfyl, & Barclay, 2012, p. 1458). This process cannot be undone once the “unfriend” button is pressed without resending a “friend request” to the “unfriended” user. Facebook does not send an automatic notice of unfriending but, if the unfriended user checks the status of the relationship, they can learn of the unfriending. Additionally, Facebook regularly sends users a list of “people you may know” based on mutual friendships to encourage networking. When a user sees the name of a former romantic partner in his/her newsfeed among a list of “people you may know,” this sighting serves as the official notification that of the unfriending.

A growing body of research examines unfriending on Facebook. Some studies examine how users respond to being unfriended. Users often experience being unfriended as expectancy violation (Bevan, Ang, & Fearn, 2014)—as something unexpected that violates perceived relational and/or societal norms—and are more likely to ruminate about the unfriending if the unfriender was a close partner (Bevan et al., 2012). However, most research on unfriending focuses on identifying the prompts to or motivations for unfriending. For example, some scholars argue that unfriending is a means of enacting perceived Facebook norms (LeFebvre, Blackburn, & Brody, 2015); some users describe as normal the Facebook behaviors of “modifying online relationship statuses, ‘unfriending’ previous partners, and limiting profile access to manage relationship termination” (LeFebvre et al., 2015, p. 78).

Other scholars link unfriending to users’ individual characteristics or behaviors rather than the viewing unfriending as simply a response to ever evolving norms governing Facebook (McLaughlin & Vital, 2012). For example, Quercia, Bodaghi, and Crowcroft (2012) documented that Facebook friendships are more likely to dissolve when they are “not embedded in the same social circle, between people whose ages differ, and if one of the two is neurotic or introverted” (p. 251). In contrast, Pena and Brody (2014) linked unfriending to status updates that made the unfriender look bad. For example, a user posting a status update that contains a critical or snarky remark about a Facebook friend, especially if that person is tagged, may become a prime candidate for unfriending (e.g., “Here’s Kim Smith TRYING to look good but, yeah, not so much!” with an unflattering picture of Kim). Our study followed in this tradition of discovering motivations or prompts to unfriending by attempting to identify the relational preconditions that might motivate a user to unfriend a romantic partner following a break up.

The term “break up” is typically used in everyday discourse to reference Gottman’s (1993) notion of relational dissolution. However, as one form of the relationship ends, a new relational form can emerge; relationships can experience metamorphoses and romantic relationships can transform into friendships. If the former relationship was merely an acquaintanceship, the users may not particularly care about the unfriending. However, unfriending from long-term relationships with multiple investments, as is typically of relationships with romantic partners, might be more unsettling.

RELATIONAL INVESTMENTS

Previous research indicates that shared lifestyles and the quantity of “relational investments” influence the decision to remain face-to-face friends after a breakup (Emery & Dillon, 1994; Rhoades et al., 2011). Stanley et al. (2006) defined “relational investments” as shared aspects of relationships; they may include tangible items such as joint physical property and children as well as less tangible but nonetheless meaningful shared aspects of the relationship such as insider jokes, relational history, and daily dependency on relational partners for social support. In the face-to-face world, a breakup often means a complete separation in physical space, allowing individuals to terminate future contact. However, the extent to which former partners can remain separate is inhibited by factors such as shared lifestyles and elements such as common children, friends, and physical possessions (Emery & Dillon, 1994; Rhoades et al., 2011).

In a study of cohabitating couples, Stanley et al. (2006) noted that staying friends with former partners proves particularly difficult in relationships with large quantities of relational investments. Quantity of investments directly correlates with duration of relationship, meaning, the longer the individuals were together, the more relational investments they are likely to share. In addition, the number of pre-breakup relational investments correlates with the difficulty former partners experience renegotiating the relationship to “friends” in the post-breakup period; the more investments, the more complicated the negotiation process, and the more distant the possibility of friendship with a former romantic partner (Stanley et al., 2006). Given the above described findings, we wondered if investments would similarly influence online connections; thus, we posed the first research question:

RQ1: Do former romantic partners who elect to remain Facebook friends post dissolution (versus those who do not elect to remain Facebook friends) report differences in *quantity of investments* prior to the breakup?

DISENGAGEMENT STRATEGIES

The decision to maintain face-to-face friendships post-dissolution can be directly influenced by the disengagement strategies employed during the breakup process (Banks et al., 1987; Cody, 1982). These strategies range from providing a full explanation of the reason(s) for dissolving the romantic relationship to neglecting the partner and avoiding of future contact. Individuals who engaged in tactics viewed as “de-escalating” (i.e., explaining the reason for the disengagement) were more likely to maintain some level of closeness post-breakup than those who did not (Banks et al., 1987). Behaviors seen as “de-escalating” included expressing interest in and emphasizing the benefits of changing the relationship dynamic while maintaining the possibility of a modified future relationship of a different sort as opposed to complete termination of the relationship on every level, including friendship (Banks et al., 1987). In their study of non-marital relationship dissolution, Lambert and Hughes (2010) found that positively toned de-escalating behaviors that express goodwill were more likely to generate friendships between former romantic partners. These findings raise the question of whether, similarly, disengagement strategies may play a role in the decision to remain online friends with a former romantic relationship partner.

RQ2: Do former romantic partners who elect to remain Facebook friends post dissolution (versus those who do not elect to remain Facebook friends) report differences in disengagement strategies used during the breakup?

RELATIONAL SATISFACTION

The term “relationship satisfaction” is here used to describe an individual’s perception of a relationship as enjoyable, rewarding, and high quality. Since the 1983 publication of Norton’s “marital quality” instrument, assessing relational satisfaction has become a common practice in relationship studies, especially studies of romantic relationships. Not surprisingly, previous scholars have examined relational satisfaction before, during, and after break-ups.

As the tactics employed during the breakup process may influence the viability of face-to-face friendship post-breakup, so too does the quality of the relationship prior to the breakup (Bullock, 2011; Rhoades et al., 2011). Rhoades et al. (2011) found that a relational breakup can cause psychological distress and reduced life satisfaction; however, a relational breakup also can bring partners relief and peace, especially when both partners experience mutual dissatisfaction during the relationship. Furthermore, the more satisfied individuals are with their partners during the relationship, the more likely they are to engage in friendship maintenance after the romantic aspect of the relationship has ended (Bullock, 2011; Rhoades et al., 2011); it is notable that this association was documented across two points in time: Perceptions of relational satisfaction during the relationship were assessed prior to the breakup (Rhoades et al., 2011) as well as assessed after the breakup (Bullock, 2011). These findings support the notion that a satisfying romantic relationship is more likely to produce a satisfying face-to-face friendship after the romantic relationship ends. Conversely, if the relationship was unsatisfying, a relational transformation to being “just friends” is less likely to occur. Given these findings, we posed our third and final research question:

RQ3: Do former romantic partners who elect to remain Facebook friends post dissolution (versus those who do not elect to remain Facebook friends) report differences in relational satisfaction prior to the breakup?

Given the prevalence of social media in contemporary life, our study endeavored to identify factors that may motivate Facebook users who remain friends with their romantic partner after the dissolution of the romantic relationship. Existing literature examining face-to-face relationships suggests that quantity of investments (Stanley et al., 2006), disengagement behaviors used in the breakup process (Banks et al., 1987), and relational quality prior to the breakup (Rhoades et al., 2011) may influence the decision to remain (or not to remain) friends with a former romantic partner. Our study directly tested whether these three factors differ significantly across the two groups: former romantic partners who elected to remain Facebook friends versus those who did not.

METHODS

Participants

We recruited over 300 undergraduate students from the basic communication course at a public, flagship university in the southeastern United States who met two criteria: They maintained an active Facebook account and experienced the breakup of a premarital, romantic relationship. Students received extra credit for participation in the study. We asked participants to recruit additional qualified individuals to the study, thus “snowballing” the sample, but they did not receive additional extra credit for doing so.

Participants included 114 males and 219 females ($N=323$) between the ages of 18 and 24 ($M=19.71$; $SD=2.87$). They self-reported as primarily freshmen ($N=148$) but the sample also included 116 sopho-

mores, 39 juniors, 19 seniors, and one graduate student. Participants reported five ethnicities: 273 Caucasian, 17 African American, 17 Hispanic, 9 Native American, and 8 Asian/Pacific Islander. Participants described breakups that occurred “last week” to “5 years ago” ($M = 16.84$ months, $SD = 17.29$ months). Participants reported on both long-distance ($N = 74$; 23%) and proximal former relationships with daily face-to-face interaction ($N = 248$; 77%). These numbers appear consistent with previous reports that between 25 and 40 percent of U. S. college students report being in long-distance relationships (Aylor, 2014). The majority of our participants remained Facebook friends with their former romantic partner (241; 74.61%), but many did not (82; 25.39%).

Instruments

Relational Investments were assessed using Rusbult’s (1980) investment-model scale. Previous communication researchers (e.g., Bullock, 2011; Ferrara & Levine, 2009; Vanderdrift, Lehmiller, & Kelly, 2012; Wieselquist, 2009) successfully employing the instrument (reporting Cronbach alpha scores of .90, .83, .84, and .70 respectively). The instrument contains 10 Likert-scale items to measure sharing possessions and resources (i.e., money, transportation) as well as the quantity of mutual friends, clubs, and organizational memberships. For example, one item stated: “When we were in a romantic relationship, I invested a great deal of time in our relationship.” Participants responded on a 5-point scale from “strongly agree” to “strongly disagree.” We asked participants to evaluate each statement in the time frame of “when we were in a romantic relationship.” For our sample, the Cronbach alpha score was .88 ($Mdn = 29.00$, $M = 28.31$, $SD = 6.19$).

Disengagement Strategies were assessed using Cody’s (1982) Relational Disengagement Strategies. We asked participants to evaluate each of the 15 statements in the time frame of “during the breakup process.” The instrument assesses perceptions of behaviors during the breakup, specifically five disengagement strategies:

- Behavioral de-escalation: contact avoidance without explanation,
- Negative identity management: ending relationship without explanation and typically citing the other as the source of the breakup,
- Justification: explanation of reasons for breakup,
- Positive tone: attending to the feelings of the partner to avoid an unpleasant end.
- De-escalation: discussing the benefits of changing the relationship dynamic with possibility of resuming in the future, and

We employed measures of this final factor, de-escalation, in our analyses. A sample item for this factor was “When we were breaking up, my romantic partner told me that he/she was very, very sorry about breaking off the relationship.” Participants responded on a 5-point scale from “strongly agree” to “strongly disagree.” We asked participants to evaluate each statement in the time frame of “when we were breaking up.” Previous researchers (Cupach & Metts, 1986; Starks, 2007) linked these strategies to relational outcomes. Additionally, multiple previous researchers offered evidence of the instrument’s reliability, reporting the following Cronbach alpha scores for de-escalation: Banks et al. (1987) = .74; Cody (1982) = .86; and Lambert & Hughes (2010) = .84. Analysis with our data yielded a Cronbach alpha score of .79 for de-escalation strategies ($Mdn = 12.0$, $M = 11.02$, $SD = 3.95$).

Relational Satisfaction was assessed using a modified, four-item version of the Dyadic Adjustment Scale (Spanier, 1976) developed by Sabourin, Valois, and Lussier (2005). Previous researchers (Rhoades et al., 2011) correlated scores from the modified scale with desire to maintain relationships post-breakup, suggesting predictive validity. The four Likert-scale items measure attitudes about the relationship overall, the breakup, and the frequency of confiding/intimate conversation. For example, one item stated “In general, while you were involved with your romantic partner, how often did you think that things between you and your partner were going well?” Participants responded on a six point scale from “all the time” to “never.” We asked participants to evaluate the four statements in the time frame of “while you and your romantic partner were in a romantic relationship.” Sabourin et al. (2005) offered evidence of convergent validity between the original and refined instruments assessing relational satisfaction as well as reliability of the modified version (Cronbach’s Alpha = .84). Similarly, Bullock (2011) reported a Cronbach alpha score of .90. Unfortunately, as described in detail below, the four items failed to cohere into a single factor in our factor analysis. The two items that factored together had a low Cronbach alpha score of .67. Therefore, each item was treated as a separate indicator of relationship satisfaction in the subsequent analyses: degree of happiness ($Mdn=3.0$, $M=3.28$, $SD= 1.40$) and frequency of discussion of termination ($Mdn=5.0$, $M=4.59$, $SD= 1.15$).

Demographics and Relational Status were assessed with the final questionnaire in the survey. Using primarily checklists, we asked participants for the personal information we used to describe the sample (i.e., age, year in school, and so forth). Additionally, we asked participants to indicate their “current Facebook relationship status” by selecting for a checklist of options drawn from the Facebook venue. Finally, we asked participants to...

Please think about the last romantic relationship you were involved in that ended. In other words, if you are currently in a relationship – not that relationship – but instead the previous relationship. Please estimate when your previous romantic relationship ended. (Example: 6 months ago)

Are you currently Facebook friends with the person with whom you had the romantic relationship?
_____ Yes _____ No

Procedures

Students were emailed a message explaining the project and inviting them to participate. The message included a link that directed them to one of three versions of the on-line survey. To ameliorate order effects, the three versions offered counter-balanced orders of the major instruments. Approximately equal numbers of participants complete each version of the survey.

The online survey began with the informed-consent form and a cover letter. Next, participants were prompted to recall their most recent romantic breakup and to complete the survey with this relationship in mind. The three major instruments followed; then, a brief demographic survey gathered data to describe the sample.

Prior to the primary data-collection, a group of 55 participants drawn from the research population who met the criterion for inclusion in the study participated in a pretest version of the survey. The pretest version included the above described questionnaires and comment boxes for feedback. Based on feedback from the pretest, we slightly reworded a few questions, slightly modified the structure of the

survey, and added a question concerning geographical distance from partner.¹ We used the resulting, modified version of the survey to collect our data.

RESULTS

Preliminary Analysis ²

Scores for items across all instruments assessing the variables of interest (quantity of relational investments, preference for de-escalatory disengagement strategies, and relational satisfaction) were factor analyzed to identify patterns of response. A principle-axis factor analysis with Varimax rotation across 100 iterations revealed three principle factors. The emergent factors generally aligned with the three variables of interest. However, we dropped the items that double-loaded on multiple principle factors or emerged as individual items comprising unique minor factors. Only one (preference for use of de-escalatory disengagement strategies) of the five disengagement strategies (negative identity management, positive tone, justification, behavioral de-escalation, and de-escalation) loaded appropriately and yielded a Cronbach's alpha greater than .70. Recall that de-escalatory strategies involve discussing the benefits of changing the relationship dynamic with possibility of resuming in the future. Measures of other strategies were abandoned.

Relational Investments

Eight of the ten items from the Investment Model Scale (Rusbult, 1980) loaded on the same factor and thus were used to calculate quantity of relational investments. The Cronbach's alpha across these eight items was .88.

Disengagement Strategies

Items from Cody's (1982) disengagement strategies instrument (based on the Relational Disengagement Strategies model) loaded together into one factor. Originally comprised of 15 items, in this sample, only six items loaded together on the factor of preference for de-escalatory disengagement strategies. Items from each of the five dimensions of disengagement (negative identity management, de-escalation, justification, behavioral de-escalation, and positive tone) loaded cleanly and separately, but only preference for de-escalatory disengagement strategies yielded a Cronbach's alpha greater than .70. Its Cronbach's alpha score was .79.

Relational Satisfaction

Items assessing relational satisfaction were adapted from Spanier's (1976) Dyadic Adjustment Scale and loaded together on one factor. Originally comprised of 4 items, only two items (degree of happiness during the relationship and frequency of discussion of termination) loaded on the factor of relational satisfaction. The remaining items were abandoned (confided in the partner; thoughts of things going well). Given a low Cronbach's alpha across the two items (.67), each item was treated as a separate in-

indicator of relational satisfaction in subsequent analyses: degree of happiness ($M=3.28$, $SD=1.40$) and frequency of discussion of termination ($M=4.59$, $SD=1.15$).

Concern for Normalcy

Next, descriptive statistics and histograms of each variable of interest were examined to determine skewness. Two variables appeared normally distributed (i.e., investments and de-escalatory disengagement strategies), whereas the other two variables appeared non-normal (i.e., degree of happiness and frequency of discussion of termination). The skew and kurtosis scores were respectively $-.36$ and $-.12$ for investments, $-.48$ and $-.61$ for de-escalatory disengagement strategies, $.08$ and $-.86$ for degree of happiness, as well as $-.09$ and $-.73$ for discussion of termination.

Based on these results, we employed non-parametric analyses in the subsequent analyses, specifically Mann-Whitney U tests. Spiegel described the Mann-Whitney U test as “one of the most powerful of the nonparametric tests and it is a useful alternative to the parametric t ” (1956, p. 116). The Mann-Whitney U test is appropriate in situations where the data are ranked, where the data deviate from normalcy, and where there are noticeable differences between the number of cases in the two groups being compared (MacFarland & Yates, 2016); our data set met all three of these criteria.

Sex Differences

The sample contained an unequal ratio of male ($N=114$) to female ($N=219$) participants. Previous studies involving college students reported a similarly unequal distribution, perhaps indicating that such a distribution frequently occurs in research when sampling college students (Clayton, Osborne, Miller, & Oberle, 2013; Junco, 2013; Tazghini, & Siedlecki, 2013).

Scholars have noted sex and gender differences in the use of Facebook (for a review of this research, see Webb & Temple, 2015). Therefore, we conducted a chi-square analysis to discover if males versus females were more likely to report remaining Facebook friends with a former romantic partner. Results revealed that, in this sample, females were significantly more likely to remain Facebook friends than males ($X^2=367.56$, $df=9$, $p=.001$, 77.29% of female participants versus 69.37% of the male participants). Similarly, males were more likely than females to *not* remain Facebook friends with former romantic partners (30.63% of the male participants versus 22.71% of the female participants).

Additionally, we conducted a series of relevant Mann-Whitney U tests and discovered no significant differences between the sexes across the variables of interest. Therefore, all data was combined for subsequent analyses and treated as one sample.

Relational Type

Participants reported involvement in long distance relationships 23% ($N=74$) as well as in proximal relationships 77% ($N=248$). A series of Mann-Whitney U tests revealed no significant differences between the scores of participants from proximal versus long-distance relationships across the variables of interest. Therefore, all data was combined for subsequent analyses and treated as one sample.

Primary Analysis

Like previous researchers (Marshall, 2012; Tran & Joormann, 2015), we divided our respondents' scores into two groups (i.e., users who unfriended former romantic partners and those who did not). A series of Mann-Whitney *U* tests were conducted to test for differences between the groups across the variables of interest (quantity of investments, preference for de-escalatory disengagement strategies, relational satisfaction). The analyses yielded no significant differences (see Table 1). The results answer the research questions in the negative. The variables of interest fail to distinguish former romantic partners who remain Facebook friends from those who do not.

Table 1. Differences by Friendship Maintenance

Relational Characteristics	Facebook Friends With Former Partner	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	2-tailed alpha
Relational	Yes	149.62	34411.50	7846.50	-1.655	.09
Investments	No	168.90	13174.50			
De-escalation	Yes	160.10	37144.00	8444.00	-1.20	.22
Strategies	No	146.05	11684.00			
Degree	Yes	160.38	38330.00	9470.00	-.129	.89
of Happiness	No	158.88	12710.00			
Discussion of	Yes	163.95	39183.00	8856.00	-1.184	.23
Termination	No	150.33	12177.00			

DISCUSSION

Interpretation of Results

The results of the present study provide relational scholars with a new perspective on friendships with former romantic partners. Our results document that, at least in one sample of college students, the factors that distinguish former romantic partners who remain face-to-face friends (quantity of relational investments, relational satisfaction, and relational disengagement strategies) from those who do not may not distinguish former romantic partners who maintain versus those who dissolve Facebook friendships.

Quality of Investments

The results indicate that the quantity of investments made during a romantic relationship do not influence decisions regarding Facebook friendships after the romantic relationship was terminated. In contrast, Stanley et al. (2006) found that larger quantities of relational investments directly influence face-to-face friendship outcomes after dissolution of romantic relationships. Thus, it appears investments may impact face-to face versus Facebook friendships differently.

However, a trend toward significance emerged in the analyses relevant to quantity of relational investments. Retesting with a larger sample could result in significant findings. Participants who reported remaining Facebook friends in the post-dissolution period tended to have fewer investments. One potential explanation for this finding is that individuals who make fewer investments have less to lose from a change in the relationship status than those with larger quantities of investments; therefore, lowering the quantity of relational investments makes the relationship less costly to both partners. Individuals who reported larger quantities of investments may suffer a greater loss when relationship dynamics change and therefore have more difficulty adjusting to the modified relationship making Facebook friendships challenging.

Relationship Disengagement Strategies.

The results indicate no significant difference in the disengagement strategy of de-escalation between former romantic partners who chose to terminate Facebook friendships versus those who chose to remain Facebook friends. Cody's (1982) findings suggest that engaging in de-escalatory disengagement strategies (i.e., fully explaining feelings and attitudes about the relationship to the partner, tending to the emotional needs of the partner, and indicating a desire for modified relationship in the future) results in more positive friendship outcomes than any of the other four relational disengagement strategies (negative identity management, positive tone, behavioral de-escalation, justification). However, Cody examined face-to-face friendships and not online friendships.

We offer the following explanation for our findings: Regardless of the disengagement strategy employed prior to the relationship dissolution, former romantic partners may avoid terminating Facebook friendships to save face in front of their social networks both on and offline (Wang, 2015). Instead, a user can elect to no longer see a former partner's posts simply by unfollowing that Facebook friend; thus, the user remains "friends" with the former romantic partners but simply never learns new information about the person via Facebook.

A second possible explanation for the findings involves measurement. Please recall that the results of our factor analyses limited our analyses to only one disengagement strategy, specifically de-escalation. In contrast, Cody's (1982) instrument assesses four additional disengagement strategies: contact avoidance, negative identity management (ending relationship without explanation), explaining the reasons for the breakup, and taking a positive tone (attending to the partner's feelings). It is entirely possible that one or more of these factors contribute to former romantic partners' decisions to unfriend each other on Facebook after the dissolution of their relationship. Unfortunately, in this study, we were unable to assess the potential influence of these four additional strategies. Regardless of the explanation, our results indicate that using de-escalation strategies during the dissolution phase of the romantic relationship may have no impact on whether former romantic partners elect to remain Facebook friends.

Relational Satisfaction During the Romantic Phase of the Relationship

Our findings revealed no significant differences in two aspects of relational satisfaction (degree of happiness and frequency of discussion of termination) between former romantic partners who decided to terminate Facebook friendships versus those who do not. This result is not consistent with the findings of Rhoads et al. (2011) who reported that relational satisfaction during a relationship has significant impact on the decision to retain or terminate face-to-face friends with former romantic partners. The

inconsistencies between the results of the two studies may be simply a matter of differences in measurement. Although we used the same 4-item version of the Dyadic Adjustment Scale (Sabourin et al., 2005; Spanier, 1976), Rhoades et al. (2011) measured relationship quality prior to the breakup whereas we retrospectively assessed perceptions of relational satisfaction during the romantic phase of the relationships. Perceptions can change over time and our differing results may reflect such changes.

Alternatively, perhaps expressed happiness during the romantic relationship becomes irrelevant to any continuing online relationship post-breakup and thus does not impact the decision to remain or terminate Facebook friendships. Perhaps the decision to remain Facebook friends is fueled by other factors such as the desire to publicly present the breakup as amicable or the desire to publicly present an online identity as someone who gets along with everyone.

Overall Findings

Taken as a whole, this study indicates no significant differences in the quantity of relational investments, de-escalation strategies, or relational satisfaction (degree of happiness and frequency of discussion of termination) between former romantic partners who terminate Facebook friendships versus those who chose to remain Facebook friends. These findings directly contradict previous findings regarding face-to-face friendships post breakup. Thus, our results provide further evidence that online relationships may operate differently than face-to-face relationships.

Facebook friendships may have different meanings and values than those occurring face-to-face. It can be a casual matter to be someone's Facebook friend. Indeed, the activity is associated with the early stages of relationship development (Yang et al., 2014) and young adults accept friendship requests from stranger (Caer et al., 2013). Thus, being Facebook friends can be viewed as a casual, low commitment activity. If a user no longer wishes to see posts from a given friend, the user can hide that friend's posts from his/her news feed as well as not allow that friend to see the user's posts. Facebook privacy settings allow users complete control over information sent to and received from any given "friend," including a former romantic partner. Indeed, Facebook friendship is such a low-involvement enterprise, that a user may seem small or petty to joint friends in their Facebook social network for not allowing the Facebook friendship to continue.

Alternative factors not investigated in the present study may influence the decision to remain or terminate Facebook friendships. Such factors may include the size and scope of the shared Facebook social network (Lampe, Ellison, & Steinfield, 2006), the desire to remain a part of former romantic partner's life, the perceived benefits of changing the relationship dynamic to friendship with the possibility of resuming a romantic components in the future, emotional reactions to the breakup (Cole, 2014), and the desire to "keep tabs" or engage in on-going surveillance of a former romantic partners sometimes called Facebook stalking (LeFebvre et al., 2015; Blackburn, & Brody, 2014; Marshall, 2012; Tong, 2013).

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Multiple limitations of this research are worth noting, perhaps most notably its sample. Given that our sample only included U. S. college students ages 18 to 24, our findings should not be generalized to a wider population of Facebook users. Furthermore, replicating our study with a larger, national, and more diverse sample may yield somewhat different findings. Such future research could explore additional

and multiple factors that may influence former romantic partners' decisions to remain or not remain Facebook friends.

We used counter-balancing in our survey design to ameliorate order effects. Nonetheless, while participants completed the survey, they may have provided answers on the second and third instruments influenced by their thinking about the previous scale. For example, participants who completed the disengagement strategies instrument either first or second may have experienced negative feelings and thoughts about the break-up that lead to lower scores on the relational satisfaction scale as well as the relational investment scales. Future studies may desire to place the disengagement strategies instrument after any other relational assessment.

At least four factors may have limited the reliability of our test instruments: (a) We slightly reworded questionnaire items to address concerns raised by our pretest participants. (b) We tailored the instruments to assess relationships after they ended. (c) The breadth of time since the breakup reflected in the sample (from "last week" to "5 years ago") allowed for diversity in the sample but also may have limited the accuracy of recall regarding disengagement strategies. (d) Our survey assessed only one-side or version of the break-up as only one partner provided answers to the instrument.

Future research could recruit both former relational partners to participate in surveys and thus gauge perceptions of communication behavior during the dissolution process from two perspectives. Given that this study sought to apply face-to-face findings to online relationships, and that the reliability of the survey was limited, future researchers may desire to employ instruments that better address the idiosyncrasies of online behaviors to more accurately assess Facebook behavior.

CONCLUSION

Despite these limitations, the study offers new information to social media and relational scholars: This study represents a necessary first step toward identifying the factors that influence and/or motivate former romantic partners to remain connected via social media. Second, the study offers further documentation that the variables of importance in face-to-face relational decisions and behaviors may not be equally influential in online venues. Third, the study identified two variables that appear to clearly *not* distinguish former romantic partners who remain Facebook friends from those who do not among at least one sample of college students: de-escalation strategies used in the breakup process (i.e., discussing the benefits of changing the relationship dynamic with possibility of resuming in the future) as well as measures of relational satisfaction prior to the breakup (i.e., degree of happiness and frequency of discussion of termination). Fourth, the study identified a variable that may be worthy of further study, given the statistical trend that emerged in the data; perhaps quantity of relational investments provides the basis for a valid distinction between the former romantic partners who remain Facebook friends versus those who do not. Fifth, the study is heuristic in that it provides meaningful directions for future research, most especially encouraging researchers to engage in exploratory research to determine directly from users the key factors that drive their desires and decisions regarding unfriending versus remaining Facebook friends with former romantic partners. Finally, the results here reported provide a warrant for future studies examining whether findings from face-to-face studies examining romantic relationships apply in the world of online relationships.

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Remaining Facebook versus Face-to-Face Friends after a Romantic Breakup

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ENDNOTES

- ¹ A copy of the survey instruments is available upon request from the first author at dylmed@gmail.com.
- ² Detailed results on our preliminary analyses are available upon request from the first author at dylmed@gmail.com.


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Chapter 60

Today Is Your Birthday!

Analysing Digital Celebration and Social Culture of Young People on Facebook

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ABSTRACT

Facebook birthdays have become increasingly trendy among young people globally and in Africa since the arrival of smart technologies. The study investigates the idea of celebrating birthdays on Facebook among selected Nigerian university students and reactions to this new trend. Using the diffusion of innovations theory and mixed research methods, in-depth interviews were conducted on six respondents, and profile activities of 300 Facebook users' content was analysed to investigate the research objectives. Findings demonstrate that most users found it convenient and economical to celebrate birthdays on Facebook. Online celebrations offer more global online visibility than offline parties leading to the formation of digital cultures and connections. The result led to a proposal for the bicultural convergence model that explains user experiences to social media effect. Poor network and high-cost data tariff, among others, posed challenges. The study recommends the provision of cheap or free internet access in Nigeria and Africa to enable increased growth of the digital social culture.

INTRODUCTION

Social media use initiated a new culture in human sociology and communication ecology. Carr & Hayes as cited in Ajhabash & Ma (2017, p.1) defined social media as “Internet-based, disentrained, and persistent channels of mass personal communication facilitating perceptions of interactions among users, deriving value primarily from user-generated content.” The interactivity and participatory features of social media draw the attraction of many people globally, particularly the younger generation called millen-

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nial, who exploit it for various purpose. Social media is also useful in many areas of human endeavour, including health, communication, development, economic, commerce, education, agriculture, political, socio-cultural rationale, among others. A subdomain of social media is known as social networking sites under which Facebook, Twitter, and Instagram, among other categories.

Young people have broadly embraced the use of social media, especially in Africa and Nigeria, probably as an easy means of education, communication and socialisation. Globally, Facebook is the most popular social network (Alhabash & Ma, 2017; Farahbakhsh, Han, Cuevas & Crespi, 2017) with a usage statistics of 74.58% as of September 2020 (<https://gs.statcounter.com/social-media-stats>). Alhabash and Ma (2017, p.2) corroborate Duggan's findings that "about three-quarters of Internet users report having a Facebook account, and 7 in 10 users report accessing the site daily, highlighting the habitual and ritualised nature of Facebook use." Duggan's findings indicate that people mostly visit Facebook sites whenever they access the internet.

Presently, the role of social media has become diversified to such an extent that some human activities are now executed online on web communities. In the past, though celebrating one's birthday was fun provoking, tasking and involved excellent preparation whenever a person's birthday comes up. In Nigeria, birthdays are celebrated as a significant event depending on the financial status of the celebrant. It requires sending invitations to family and friends; organising musicals; and preparing foods and drinks. Young people usually celebrate birthday parties with their peers and friends at home or on campuses. Presently, in Nigeria, there seems to be a paradigm shift in social celebrations as social networking sites(SNS) such as Facebook, has become an attractive hub for birthdays parties in this age of smartphone pervasiveness.

Facebook is the most popular social media platform among youths in Nigeria (Morah, Udeze & Ekwonchi, 2019; Mbanaso, Dandaura, Ezech & Iwuchukwu, 2015) and presently has a usage rate of 55.94% as of September 2019-September 2020 (<https://gs.statcounter.com/social-media-stats/all/nigeria>). The surge in usage is likely to contribute to increased interest in Facebook birthdays, especially among young people. Its potentialities of allowing people to bond with family members, friends and acquaintances; and its capacity to provide users with the opportunity to post and share contents such as photos and status updates (Stec as cited in Alhabash & Ma, 2017, p.2), makes Facebook ideal for birthday celebrations leading to cultural formation among young people.

The relevance of Facebook in social-cultural development and integration of society also help motivate young people to maintain such accounts. The individual's use of social media, however, is often based on perceived expectation and gratification and is often personalised by different motivational factors. Some research further highlighted some of those motivational factors as the ability: to gain social capital by initiating and maintaining friendships (Alhabash & Ma, 2017; Lenhart, 2009; Valenzuela, Park, & Kee, 2009) and; to create and enhance a self-image (Utz, 2010; Zhang, 2010). Deuze (2015, p.1) succinctly surmises "all people use social media a lot, for all kinds of purposes—but mostly to be in touch with family and friends, to be present and seen in the lives of people they care about." Deuze's mindset underscores the position of Facebook in cultural formation and socialisation.

Expectedly, in the Nigerian Facebook sphere, celebrations of online birthday are also booming, especially among young people on campus who spend most of their time online (Pew Internet Research, 2018). Mbanaso, Dandaura, Ezech & Iwuchukwu (2015) found that Facebook ranked highest as the most commonly used social media platform among young people with 91%, followed by WhatsApp (87%) in a study of five tertiary institutions in Central Nigeria. The widespread adoption of the Facebook sphere for birthdays is now synonymous to a cultural carnival arena where people from different backgrounds that are multiethnic, and multicultural gather, advertises and celebrates their birthdays; posting photographs,

cakes, gifts items, wishes, among others. Though novel, it introduced a new norm among the Nigerian Facebook users and their online community/friends. Under this dispensation, users celebrate birthdays of their friends, families, spouses, loved ones, colleagues, classmates, role models, among others. The new Facebook birthday norm likewise affects user's level of communicativeness and mutuality even as there is evidence that the new media has somehow become the message justifying McLuhan's technological determinism theory (Morah, 2012). It has helped brought people tighter as a family and broken geographical barriers, thereby advancing relationship which aligns with Farahbakhsh, Han, Cuevas, & Crespi (2017) mindset. However, there might be some challenges emanating with such celebration that are peculiar to different users to be investigated in the study.

The Facebook birthday trend is also enhanced and mediated by technology and social networks which keep evolving with the society as described as network sociability. Network sociability culminates to an individual-centred network which is specific to the individual and peer-group formation when the network becomes the context of behaviour for its participants (Castells, Fernandez-Ardevol, Linchuan Qiu & Sey, 2004). It drives relational activities on social media, such as birthday celebrations. Hinged on Jenkins et al. (2007) mindsets that there will be a better understanding of technology-supported social relations when an accurate knowledge of specific platform integrates with an ecological perspective, this study is apt and current. Each social-mediated platform possesses particular potentialities that contribute to building exclusive communication environments (Farahbakhsh, Han, Cuevas & Crespi, 2017; Alhabash & Ma, 2017). The buildup of such environment helps to nurture and create cultures which support Baran (2008) views that media literacy and use has a strong correlation with culture. This study, therefore, investigates user's perceptions of the idea of celebrating birthdays on Facebook among selected Nigerian university students and its link with the formation of digital culture.

The Problem and Research Significance

The dearth of literature about the bonds of Facebook birthdays and formation of digital culture in Nigeria is a significant concern because policymakers do not have the facts as the basis of their decisions. Considering the pervasiveness of Facebook and smartphone usage in Nigeria plus their contributions towards developing technology-mediated social relations in the new public sphere; an empirical examination into the extent of youth behaviour on Facebook towards birthday celebrations is apt. It should provide incisive insights into user perceptions of the significance of Facebook birthday celebrations in digital culture formation.

The Facebook celebration often requires a change in the profile and wall pictures. The profile photograph is generally an essential element of online self-presentation that is significant for relational success. Research (Young & Quan-Haase, 2009) found that 98.7% of college students post their photos on Facebook. Mbanaso, Dandaura, Ezech & Iwuchukwu (2015) found that Facebook has widespread popularity(91%) because of its interactive features like wall post, chat, call, video, gaming, like and share capabilities. The authors believe that Facebook's easy registration process, multiple connection avenues and user-friendly web interfaces also facilitate its wide adoption among young people in Nigeria. Deuze (2015, p.2) research on how people use social media also found "that when doing so, people tend to approximate their normal selves." Such an attitude might be the real motive given by some people who spend most of their time on social media, communicating to real (yet imagined, in as much invisible) others (friends). Such actions are often regarded as numerous endeavours to "project and live up to one or more versions of ourselves that we create and get co-created in media" (Deuze, 2015, p.2).

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Despite the prevalence and importance of this viral communication, little known research has analysed users' perceptions of Facebook birthdays and its connections with the formation of digital cultures (which might develop into mutual connections and communities), particularly in Nigerian and among young people in tertiary institutions. The study, therefore, examines the celebration of birthdays on Facebook among selected Nigerian university students and how these users react to the new trend of online self-presentation and digital culture formation. Doing so will expand on the existing knowledge surrounding social media and its limits. The study will also educate and guide owners of Facebook on essential features to include in the app for users' benefit. It also concerns how and why different online populations of young adults use and perceive the benefits of Facebook birthdays.

Research Objective and Questions

The primary aim of this study was to analyse the celebration of birthdays on Facebook among selected Nigerian youths and how these users perceive the digital culture formation. To this end, these research questions guided the study:

RQ1: What is the frequency of Facebook birthday celebrations among selected users within the study period?

RQ2: How do users react to the use of Facebook as a platform for birthday celebrations?

RQ3: To what extent does use of Facebook for birthdays influence formation of digital culture among selected users?

RQ4: What are the inherent challenges of celebrating birthdays on Facebook?

Facebook and Birthday Celebrations

The new culture of celebrating birthdays on Facebook is overwhelmingly fascinating, especially, among young people who also, advertise their celebration date weeks and days before the actual date as done in local real-life communities. Fiebert, Tilmont & Warren (2013) argue that the cultural involvement with social networking sites, with regards to the global online visibility of Facebook, is dramatic as over 845 million Facebook users spent approximately 10 billion minutes a day on the platform in February 2012. The statistic skyrocketed in 2020 to a whopping 2.7 billion active users as of the second quarter (www.statista.com). Domingo (2015) on his part, posits that "social media is an intriguing stage for social interactions." This assertion captures the present position of Facebook in celebrations of birthday, especially among young people as everyone wants to get noticed.

Widespread use of Facebook in Nigeria accelerated by the introduction of GSM phone and presently adopted in many areas of human endeavour (Morah, 2012). Having a Facebook account seems to be more synonymous with providing the basic needs of many Nigerians. The country has a subscription rate of 27120000 Facebook subscribers and 61.2% internet penetration as of December 31, 2019 (internetworldstats.com). The high adoption rate undermines the role of media in socialisation and evident in the widespread use of Facebook for birthdays. It falls in line with Uzochukwu, Morah & Okafor (2015, p.284) view that the media is powerful and play a significant role in forming and influencing people's attitudes and behaviour. Probably, this might be one factor that propels users to celebrate themselves and their friends on Facebook.

Digital Culture and Social Media

Social media use is firmly rooted in the daily practices of people, just like standard cultural practices. Domingo (2015) believes online conversations shape the offline activities; and “their offline personas are selectively (re)presented online.” This assumption implies that people are influenced by their online activities which they might act-out while offline and vice versa. The difference in an online and offline context does not mean much for digital citizens as their online life is “always on, and available in their pockets” (Domingo, 2015, p.1).

The use of Facebook for birthday celebrations is positively associated with higher levels of self-satisfaction and social trust (Valenzuela et al., 2009). The above view means that people who have online identities feel more connected with their peers and are generally happier with increased social contentment. Ellison, Steinfield, and Lampe (2007) collaborate that perceptions of being connected to others result from the convenience and free-of-cost services provided by Facebook, such as daily reminders of friends’ birthdays. For Domingo (2015), the central irony in social environments is that users can control almost what they share of themselves and as well be “more prone to show their backstage to a much wider audience than in face-to-face interactions” (p.2).

Pempek, Yermolayeva & Calvert (2009) argue that creating social connections is equally positively linked with building a social identity. Facebook users successfully do this by indicating membership of specific subgroups (race, gender, sexuality, among others) and subcultures (such as music and movies). Pempek, Yermolayeva & Calvert (2009) findings indicate that Facebook was also mostly used to acquire information about others, as well as in reconnecting with real-life friends. Waldman (2016, p.202) believes that Facebook helps to nurture communities because of its potentialities. He notes that its “design makes us think that we’re talking to specific other people in controlled spaces. We see others’ faces and are taken to others’ personal profile pages to interact with them; this creates a perception of safety” (p.202). Based on these premises, it is, therefore, evident that Facebook has the great potentiality of expanding and strengthening people’s social networking and trust, which makes it a promising avenue for cultural formation.

Diffusion of Innovation Theory (DOI)

Underlying the usage of Facebook in celebrating birthdays is the theoretical work of pioneering social science scholar Everett M. Rogers, who researched the adoption and diffusion of innovations. This leading theory for analysing technology characteristics concerning technological consumption is called diffusion of innovation theory (Pavlik & Bridges, 2013, p.11). Essentially, this theory suggests that when a concept is perceived as new, an individual utilises communication tactics within their social systems to arrive at a decision point of either adoption or rejection of the innovation. Peter and Olson (2010) indicate that innovation’s characteristics serve as a significant influence on an individual’s adoption decision. Diffusion of innovation theory, besides, predicts that the media and other interpersonal contacts provide information and influence audience behaviour towards the adoption of innovations.

Specific personal characteristics also influence innovation adoption; demographic indicators such as sex, age and educational and social backgrounds become vital markers. In the social or cultural organisation; however, Rogers stated there are various levels at which different people react to and adopt change. People chose to adopt technology at multiple stages. A person’s decision to adopt or reject an innovation is often determined by such innovation itself (Rogers, 2003). In this context, Facebook birthday is an

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innovation that is penetrating the global public sphere, and young people are responding to and adopting it at a different phase. The adoption pattern should conform to Roger's principle of five stages of adoption- (innovators, early adopters, early majority, late majority, and laggards).

Methodology, Population and Sampling

The research adopted the mixed research methods of In-depth Interview (IDI) and online content analysis to provide answers to the articulated research question. In-depth interview was chosen to deeply investigate how celebrants perceive the concept of Facebook birthdays and its influence on them; while online content analysis was used to actually map the rate and nature of Facebook celebrations by the selected respondents within the study period. The fear from respondents of falling victims to Nigeria's proposed Social Media bill constrained the researchers to interview only six respondents out of the selected Facebook users. The researchers purposively selected and interviewed six respondents through In-depth Interview (IDI) and content analysed activities of 300 Facebook users for three months from August 20- October 20, 2018. The aim was to investigate information concerning the number of birthday wishes and notice received; the relational patterns; the appropriateness of using a social media platform for birthday celebrations and the inherent challenges. All potential participants were current university students selected at random from the researchers' list of active Facebook friends by utilising a table of random numbers. The researcher sought their consent through direct chat before the study.

Certain conditions were also considered in the purposive selection of participants. If a prospective participant was chosen and found not to be a Nigerian undergraduate student, the researchers proceeded to the next eligible person on their list of Facebook friends, and continue to purposively select individuals from there. The researcher's personal Facebook friends were, however, exclusively deployed for this study for two reasons. (a) Facebook policies and; (b) only active Facebook friends can access the user timelines, profile page, stories, broadcast and updates which we needed to view when coding the total number of birthday requests and celebrations.

In-depth Interview IDI of six Facebook users also formed part of the mixed methods. It provided answers to research questions two and four. The six respondents were selected from six account owners of the chosen purposively 300 Facebook accounts that were content analysed. The selected respondents were students in third and final years of tertiary education who maintained active accounts on Facebook for five years and above.

The data collection method used for this was some open-ended questions administered using *aide-memoire* in an unstructured form to each of the six respondents purposively selected online at different points during the study. Facebook Messenger utilised for the Interview done from August 20 to October 20, 2018. The researcher sent a message to the respondents via chat box to seek consent and book appointments with them before the actual study period. The chats and audio calls are stored during the interviews, and the responses transcribed later.

Unit of Analysis

The unit of analysis comprised all posts on birthday celebrations on Facebook in the form of request, updates, photos, broadcast, reminders, comments, among others. With the use of simple descriptive statistics; the manifest data were examined for frequency, prominence of birthdays and level of celebrations. The outcomes of the Interview were given and analysed using thematic analysis. The researcher tried to

assure confidentiality during the Interview. The respondents were assigned acronyms in the following order: User AF- female user 1; User AM- male user 1; User BF- female user 2; User BM- male user 2; User CF- female user 3; and User CM- male user 3.

FINDINGS AND DISCUSSIONS

The data analysed was obtained from the result of 300 Facebook accounts content analysed for three months, and six respondents studied through in-depth Interview from among the selected sample of young Nigerian undergraduates on Facebook.

Demographic Data

Out of the three hundred Facebook account studied, 154 (51.33%) belong to male respondents, while the remaining 146 accounts (48.66%) belong to females. This result implies that more male accounts were studied more than female. It also indicates that there is a gender disparity in social media use among young people and might be a pointer to gender gaps in access to digital technology. For the Interview, however, there was an equal ratio of three males and three female interviewed using Facebook Messenger. The research findings present below:

RQ1: What is the frequency of Facebook birthday celebrations among selected users within the study period?

Table 1. Extent to which selected users receive birthday wishes

Variable	Frequency	Percentage
always	194	64.7%
often	78	26%
sometimes	22	7.3%
rarely	6	2%
never	-	-
total	300	100%

The result on Table 1 from the 300 Facebook profile visited shows that majority of the users 64.7% always receive birthday wishes regularly whenever their birthday comes up, followed by 78(28%) users who often receive such message in the form of text, pictures, video, audio and comments. A minimal outcome observed among six users who rarely received any such communications. The finding implies that Facebook birthday are regularly celebrated among the selected users, and most people are currently celebrating their birthdays online, especially among Nigeria students. This result corroborates Ekwenchi, Morah & Adum (2015) that Nigeria students are significantly using social media on campus.

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Table 2. How selected users celebrate their birthday on Facebook

Variables	Frequency	Percentage
Actively	163	54.3
Moderately	65	21.7
Low key	48	16
No celebration at all	24	8
Total	300	100

Findings on Table 2 shows that majority (54.3%) of the selected users actively celebrate their birthdays on Facebook while; 21.7% celebrate moderately with reduced participation, and 16% does theirs on a very low- key. Only 24 accounts representing 8% did not celebrate their birthday at all. This result shows a high interest among young people in celebrating their birthday with assistance from Facebook. It also underscores the point that there is a high rate in adoption of social media among young people and falls in line with Mbanaso, Dandaura, Ezeh & Iwuchukwu (2015) and Morah & Omojola (2018) findings. The result also correlates with Table 1 result as the selected users also have an interest in celebrating their birthdays online even as they celebrated other people.

RQ2: How do users React to the use of Facebook as a Platform for Birthday Celebrations?

Table 3. Users reactions to Facebook birthdays

Variables	Frequency	Percentage
Very Important	256	85%
Less Important	33	11%
Not Important	11	4%
Total	300	100%

Data on Table 3 shows that a majority(85%) of the selected users regard the celebration of birthdays on Facebook as very important, while 11% consider it not so important. Only a minimal 4% of the user regarded the celebration as unimportant. The findings indicate the importance of birthday among university students and corroborate Morah & Omojola (2018) stand on the usefulness of social media to young people.

Interview Result for RQ2

Responses from the IDI corroborate the finding of the online content analysis in Table 3. It shows that the majority of users found it more convenient and economical to celebrate their birthday online, and it also offers them more global online visibility than offline parties. With regards to research question 2, USER AF opines that:

I think it is good celebrating my birthday on Facebook. As a student, it will save time and money. I no longer need to suspend my educational activities to hold parties. I will no longer spend money on feasting friends. I can say that the celebration of birthdays on Facebook is a perfect development, especially for students.

In contrast, USER BF argues that:

I think Facebook birthdays are not real. It doesn't make sense to me. You don't get any present, and you don't see your friend. The only gain will be the photos, wishes, beautiful words from friends and so on. Even some of the wishes might be a pretence. It gives me more joy to stay with friends and celebrates.

For USER CF, however, the above is good a reason as celebrating “my birthday on Facebook is good shaa, but for me, it is better to have offline, with family and friends. It adds life to the celebration offline. If you are well-off as a student, it will be livelier and adds more fun.” There is a divergent opinion from USER AM who expresses the view that:

Yes, I prefer celebrating on Facebook as it will reduce cost. As a student in this country, you must huzzal to eat; buy books; keep fit and move on. When you hold the party online, you don't spend much shaa, and you will not be afraid of any harm from the village or friend. For me, it is better done on Facebook and then forgotten.

USER BM also recognised Facebook birthday as necessary on the point that:

It is perfect, especially for we students. It will enable you to reach out to all your friends without wasting money and time. It is better to combine the two if you have some money. You can buy a small cake and wine, call a friend on campus and celebrate your birthday. In some cases, someone might surprise a celebrant with a cake and drinks. You take photos and video, dance around and upload to Facebook. It is cheaper that way and easier for me as a student in this country.

The above findings imply that one can merge the online and offline celebration for more visibility and enjoyment. The above instance is a kind of media convergence that bothers on cultures where the online culture will merge with real-life culture during the celebration. The experiences will be different and unique. Such birthdays usually celebrated at the same time with people doing the party at home and broadcasting it live on a social platform. There will be responses from friends from every culture; who will join the party online and send wishes and comments.

Proposal for a Bicultural Convergence Model

The phenomenon as described and emanating from the finding here could be regarded as *Bicultural Convergence Model*. The concept of *Bicultural Convergence model* assumes that media technology could be used to share and promote culture online and in real life the same time. Under this dispensation, the individual and communal effect are heightened; leading to acceptance and increased use of such technology in future. It implies that users experiencing this effect are more likely to accept and use Facebook for birthdays, as found in the study.

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Similarly, responses show that USER CM regarded such Facebook celebration as useful and economical:

The use of Facebook for celebrating a birthday is useful to enable friends that were absent because of proximity and engagements to enjoy with you. I feel happy doing it online, for instance; I am not with my family now. So how will I have celebrated my day if not for the videos, chats, chats and wishes on Facebook? This online revolution has simplified human and social communication and is quite beautiful and impressive (USER CM).

In summary, findings show that majority 5(83%) respondents found it very important, more convenient and economical to celebrate their birthday online; and it also offers them more global online visibility than offline parties. The tendency to find more youth on social media celebrating birthdays is therefore prevalent among university students as Facebook is widely used by most Nigerians (Morah, Udeze & Ekwenchi, 2019; Mbanaso, Dandaura, Ezech & Iwuchukwu, 2015).

RQ3: To what extent does use of Facebook for birthdays influence formation of digital culture among selected users?

Table 4. The nature of the relationship existing among celebrant

Variables	Frequency	Percentage
Family	46	15.33%
Relationship	68	22.67%
Direct friends	40	13.33%
Students/course mates	70	23.33%
Online friends	34	11.33%
Friends of friends	29	9.67%
Others	13	4.33%
Total	300	100%

Data on Table 4 show results of analyses on the relationship between the chief celebrant and their friends. Findings show that most users 23.33% are celebrated by their fellow students and course mates; followed by people they have a close relationship with 22.7% and online friends with a total 21% of the respondent's family members (15.33%) and direct friends (13.33%) got a moderate point. This finding implies that there is an extension of social culture to the online space with loved ones still celebrating birthdays for their beloved, which falls in line with Domingo (2015) arguments.

Data on Table 5 sought to examine the users that have their birthdays celebrated by friend independently even as those users celebrated on their own. Results on Table 5 shows that majority 46.3% of the selected users are celebrated by friends always; while friends often celebrate 28.7% and sometimes 15%. No friend celebrated about eleven accounts representing 3.7% of users during their birthdays. The result shows that if someone was not online for some time, one's birthdays are still remembered by a loved one as done in real life. This finding is an indication that users have become part of a community that

will always celebrate the users birthday whenever. Such a community usually is bond by a communal culture preexisting among them and controlling their activities.

RQ4: What are The Inherent Challenges of Celebrating Birthdays on Facebook?

Table 5. How often are users celebrated on Facebook?

Variable	Frequency	Percentage
Always	139	46.3
Often	86	28.7
Sometimes	45	15
Rarely	19	6.3
Never	11	3.7
Total	300	100%

This research question 4 sought to investigate the challenges of celebrating birthdays on Facebook. For USER AF, there are some challenges:

Yes, there are so many of them in this country. One challenge is network failure and money for data. The data doesn't last and even on chats, it is always going fast fast. The networks centres should reduce their tariff. I use two networks for data, especially the ones with more bonuses that is Glo Nigeria or Airtel Nigeria.

USER BF believes that finance is also a significant challenge for offline parties which she prefers as her “major challenge will be financing the party. If I am given money for the celebration, facebook celebration will be for my distance friends. So after the celebration, I will upload the video and photos for my absent friends and family.”

On the same vein, USER CF insists that Facebook birthdays are unnatural despite the obstacles:

It is not real at all and has many challenges; one is network failure, low battery and data. If you want to reply a comment, you might encounter problems of low battery. The worst will be that EDDC might not bring light in time. Also, your data might finish, and you might not have money for a top-up. However, this cannot happen if you organise a party (USER CF).

Respondent USER AM on his part pointed out the hindrances: “the problems are mainly network, battery and data. Once these three are there, you can comfortably relate with friends and have a grand birthday online. That is the in-thing now, especially for students. It actually saves a lot of money.”

Similarly, USER BM agrees that his “only problem with using Facebook is the cost of data and battery life. My network provider is always on, and my phone is very sharp. So the celebration continues.” The respondent USER CM expressed a similar view with most respondents that:

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The challenge I have is poor network to chat, upload pictures and videos to loved ones. I prefer online birthdays because the excerpt will remain viral forever, for easier retrieval. If it is an offline celebration, you might lose the images or videos to a photographer. It is cheaper and trendy to do it on Facebook. I can buy a small cake, cut with my friends with drinks and show the world. It's lovely and fun. It will even motivate others to start celebrating theirs.

This result implies that Facebook birthday celebrations can as well set agenda for other users and even serve as gratification for some media users. The finding corroborates with the tenets of the agenda-setting and diffusion of innovations theories. Business outfits that deal on gifts items will thereby get advertised as people post updates of birth parties online. This fall in with Morah, Ekwenchi & Chiaha (2019) views that social media fosters economic development in Nigeria because of its affordability and ease of access.

In summary, Internet access, poor network and high data tariff were identified by a majority of the respondents to be significant challenges to using Facebook for birthday celebrations among young people. The above result implies that though Facebook celebrations of birthdays are novel and cheaper, the underpinned challenges might hinder their full acceptance, especially in rural areas where there might be inadequate electric supply and inadequate network/data coverage.

CONCLUSION AND RECOMMENDATIONS

The finding has demonstrated that young Nigerians are celebrating their birthdays on Facebook, although there are some inherent challenges. The study also indicated the presence of a new culture among young Nigerian online celebrants on Facebook. The Facebook birthday culture has excellent resemblance with offline parties except for physical touch. However, some respondents complained bitterly about this which shows that people are persuaded by certain factors like the evolving technology to celebrate because; others are doing so which validates the diffusion of innovations theory that happens in stages and the *Bicultural Convergence model* that believes that users experiencing this effect are more likely to accept a particular technology. The result further demonstrates that the concept of shared usage norms appears as a dynamic and continuously negotiated process. This media use patterns vary not only among different groups but also diachronically: as what respondents used to perceive as appropriate behaviour in the past (e.g. birthday celebrations offline/ real life) is no longer widely accepted as trendy. Therefore, we can recognise that specific birthday remembrance norms do exist and are deployed by users, but we cannot highlight stable and universally shared usage patterns as perceived online.

The study recommends the provision of free internet access in Nigeria and Africa to enable the development of digital social culture in the continent. Further study should be conducted on the proposed *Bicultural Convergence model* further to strengthen its propositions with regards to digital culture. There should also be further studies on the celebration of birthdays on other social media platforms to find the most widely acceptable and useful platform for online birthdays.

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Chapter 61

#Childathlete: Examining the Ways in Which Children are Being Presented and Perceived on Instagram

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ABSTRACT

The present study aimed to examine the tone and focus of the conversation associated with #childathlete on Instagram. Additionally, the visual content of five child athlete Instagram accounts were analyzed to determine if fitspiration (e.g., exercise, healthy eating, inspiration, showcase strength, and empowerment) or objectification (e.g., emphasis of specific body parts, suggestive posing, or emphasis on appearance) were promoted. Using Netlytic, a text analysis was conducted to analyze the conversation surrounding #childathlete and the top five child athlete accounts (based on likes) that were managed by parents were selected for visual content analysis. The text analysis revealed that the conversation was positive in tone and focused on sport/exercise. Analysis of the visual content indicated that the child athlete accounts focused athleticism, activity, and fitness, with little presence of objectification. Future research should further explore social media as a strategy for promoting and improving physical activity among users.

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INTRODUCTION

Social comparison theory (Festinger, 1954) suggests that one may engage in comparison with others to fulfill the basic human need for self-evaluation (Engeln-Maddox, 2005). Comparison to media ideals is often prominent among children (Harrison, 2001), as media ideals may be perceived as a goal against which one can evaluate their own appearance (Engeln-Maddox, 2005). However, engaging in (social) comparison with ideal images, such as *fitspiration* imagery (Tiggemann & Zaccardo, 2015), often results in individuals criticizing themselves, rather than the unrealistic ideal characteristics (Harrison, 2001). Thus, children who use Instagram may perceive the individuals depicted in *fitspiration* imagery as ideals, prompting children to engage in comparison, potentially leading to a host of negative outcomes (e.g., internalization of ideals, body dissatisfaction, eating pathology, and preoccupations with physical appearance; Engeln-Maddox, 2005; Fredrickson & Roberts, 1997; Mills et al., 2002). Furthermore, as children encounter the challenges and changes of puberty, such as increased fat deposition in women, the value placed on thin and toned bodies becomes more salient, as prior to puberty children are only in the process of internalizing ideals (Harrison & Hefner, 2006). Consequently, as children develop their adult bodies, they may become at an increased risk of problematic eating, depressive symptoms, and body dissatisfaction, among other negative mental health outcomes (Fredrickson & Roberts, 1997).

It has been suggested that girls, as young as five years of age, who compete in sports may be at a greater risk for unhealthy weight loss behaviours and eating disorders (Davison et al., 2002). The prevalence of weight concerns may be especially elevated among girls who participate in aesthetic sports (i.e., sports that promote leanness), such as cheerleading and gymnastics, as these activities often suggest or imply that appearance is important for success (Davison et al., 2002; Kong & Harris, 2015). Thus, aesthetic sports may place greater emphasis on achieving the ideal body (i.e., thin and toned; Davison et al., 2002; Kong & Harris, 2015). Weight concerns may also result from appearance based comments made by parents, coaches, and peers (Davison et al., 2002). The impact appearance based comments may have on health behaviours could be particularly important to consider within the context of child athletes on Instagram, as this social media site enables users to view, like, and comment on visual posts (Instagram, 2019). Thus, children's use of Instagram and exposure to *fitspiration*, in combination with participation in (aesthetic) sports, may place them at a greater risk for negative health consequences.

Although research has examined the presentation of children in traditional media (e.g., magazines, television), a paucity of literature has examined the ways in which children are being presented and perceived on social media, specifically Instagram. Therefore, the purpose of this study was:

1. To determine the tone of the conversation surrounding #childathlete (e.g., positive or negative), and the conversation focus (e.g., on appearance or athletics/healthy behaviour); and
2. To investigate if visual content from five child athlete Instagram accounts, managed by parents, were promoting *fitspiration* (depict exercise, healthy eating, inspiration, showcase strength and empowerment) or objectification (emphasizes specific body parts or features, depicts suggestive posing, or emphasizes appearance and the 'ideal' body).

BACKGROUND

Currently, literature has focused on social media's role in establishing body ideals that suggest women should be thin and toned (Tiggemann & Zaccardo, 2016) and men should be muscular (Carrotte et al., 2017). One trend that has contributed to the establishment of body ideals for women and men is *fitspiration* (Tiggemann & Zaccardo, 2016). On social media, *fitspiration* is often expressed using the hashtags #fitspiration (Tiggemann & Zaccardo, 2016) and/or #fitspo (Carrotte et al., 2017; Santarossa et al., 2016). As of May 29, 2019, #fitspiration had 17.7 million posts and #fitspo had 65.9 million posts, thus, indicating that these trends have widespread popularity (on July 5, 2020 there were 18.6 million posts and 70.5 million posts, respectively). *Fitspiration* (and its shortened counterpart *fitspo*) is an amalgamation of the words fitness and inspiration. As such, it may be defined as visual content (i.e., images and videos) that aims to motivate social media users to pursue healthier lifestyles (Abena, 2013). More specifically, *fitspiration* promotes healthy eating, exercise, self-care, strength, and empowerment (Santarossa et al., 2016; Tiggemann & Zaccardo, 2016). Tiggemann and Zaccardo (2016) and Santarossa et al. (2016) conducted content analyses of images collected from Instagram that were tagged with #fitspiration and #fitspo, respectively. Additionally, Santarossa et al. (2016) conducted network and text analyses to examine popular themes/text surrounding #fitspo. The authors of the two studies suggest that *fitspiration* tends to promote unrealistic and often unattainable body ideals, rather than fitness and healthy lifestyles (Santarossa et al., 2016; Tiggemann & Zaccardo, 2016). Through social comparison, users exposed to unrealistic and unattainable ideals promoted by *fitspiration* imagery may experience body dissatisfaction (Santarossa et al., 2016; Tiggemann & Zaccardo, 2016).

Further, *fitspiration* may indirectly promote objectification (e.g., content that emphasizes appearance, specific body parts, and suggestive posing; Santarossa et al., 2016; Tiggemann et al., 2009), and it may contribute to many negative outcomes, such as distorted body image (Tiggemann & Zaccardo, 2016) and disordered eating (Holland & Tiggemann, 2016). As suggested by objectification theory (Fredrickson & Roberts, 1997), objectification may be harmful as it treats an individual as a collection of body parts contributing to many potentially negative psychological consequences, such as reduced motivation, shame, anxiety, diminished bodily awareness, and depression (Fredrickson & Roberts, 1997), eating disorders (Fredrickson & Roberts, 1997; Mills et al., 2002), and body dissatisfaction (Harper & Tiggemann, 2008; Santarossa et al., 2016). Thus, the widespread use of *fitspiration* on social media (e.g., Instagram; Santarossa et al., 2016) combined with the rising popularity of social media among children may be problematic (boyd et al., 2011) and may result in various negative health consequences (Fredrickson & Roberts, 1997; Harper & Tiggemann, 2008; Mills et al., 2002; Santarossa et al., 2016). Consequently, social media companies have banned children younger than 13 years of age in response to the Children's Online Privacy Protection Act (COPPA), which regulates the information that commercial websites can collect and use about children (Federal Trade Commission [FTC], 1998). However, children continue to gain access to social media (boyd et al., 2011).

Often parents help their children falsify their age to circumvent the age restrictions put in place by social media companies (i.e., younger than 13 years of age), as they equate the age restrictions to a maturity rating, rather than a legal restriction (boyd et al., 2011). As parenthood consists of personal and social identities, parents may also confirm their identities and influence other's perceptions of them by managing their children's appearances, which may serve as a reflection of the parent rather than the child (Collett, 2005). Thus, posting about their children in a positive, aesthetically pleasing manner on social media may provide parents with the ability to use their child as a commodity to elicit positive percep-

tions of their parenting abilities. To help contextualize, among 27,534 participants, 70% reported using social networking sites (i.e., a subgroup of social media platforms); 96% of whom were 15-24 years old (Coyne et al., 2018). Additionally, the PEW Research Center found that 72% of adolescents (13-17 years) used Instagram (Anderson & Jiang, 2018). Granted, these findings are for individuals older than 13 years of age, and thus beyond the age restrictions listed for social media sites, it is still important to note the young age of users and the plausibility that they began having an online presence prior to when permitted. By circumventing age restrictions parents may be exposing their children to multiple risks (e.g., exposure to inappropriate content and cyberbullying; O’Keeffe & Clarke-Pearson, 2011), extending beyond the aforementioned use of their information by commercial websites. Individuals, including children, may process visual content as reality (Li et al., 2015) as they are unaware of how the image was actually constructed. Consequently, social media (e.g., Instagram), which shares visual content (Instagram, 2019) may become problematic when combined with certain types of imagery (e.g., *fitspiration*).

PRESENTATION OF CHILDREN IN THE MEDIA

Issues, Controversies, Problems

While it is important to outline the risks associated with children’s exposure to *fitspiration*, examining how children are being presented in the media is another important perspective. Children being sexualized is of growing concern with media and commercial marketing playing a significant role (Bragg et al., 2011). Girls, in particular, have been subjected to immense sexualization by the media, as girls are frequently depicted in revealing clothing and provocative poses (Egan & Hawkes, 2008). Exposure to sexualized content may result in girls engaging in self-objectification, whereby they evaluate their bodies in an attempt to conform to society’s standards for attractiveness (Zurbriggen et al., 2007). Consequently, self-objectification may teach girls to view their bodies in terms of sexual desirability, rather than health, wellness, or achievements (Zurbriggen et al., 2007).

METHODS

Using Netlytic (Gruzd, 2016), a text analysis was conducted to analyze the conversation surrounding *#childathlete*. To determine which child athlete Instagram accounts were to be included for further analysis, the output file created by Netlytic (Gruzd, 2016) was organized by likes, and the top five child athlete accounts (based on likes) that indicated they were managed by a parent (i.e., stated in the user’s Instagram biography) were selected. A coding scheme was developed and implemented to analyze visual content from the five aforementioned Instagram accounts. Each method will be further discussed below.

Data Collection and Netlytic Analysis

All publicly available media on Instagram tagged with *#childathlete* were downloaded using Netlytic (Gruzd, 2016). Beginning on April 23rd, 2018 the data were collected for one month (31 days). Once data collection was complete, Netlytic (Gruzd, 2016) created an output file that recorded the link to the visual content, publication date, author of the post (who made the post), description of the post (containing

#childathlete), number of likes the post received, if an Instagram filter was used, and the geographical location of the author. Netlytic (Gruzd, 2016) collected, organized (by frequency), and filtered (removed filler words, such as ‘of’ or ‘too’) words/hashtags found within the *#childathlete* dataset to produce a list of meaningful words/hashtags. Furthermore, Netlytic (Gruzd, 2016) was used to analyze categories of words that represented broader concepts within the conversation surrounding *#childathlete*. The authors modified two of the existing Netlytic (Gruzd, 2016) categories: ‘feelings (good)’ and ‘feelings (bad)’. ‘Feelings (good)’ was modified by adding the synonyms “inspire” and “empower” to represent the positive elements associated with the *fitspiration* (e.g., inspiration and empowerment; Santarossa et al., 2016; Tiggemann & Zaccardo, 2016). Additionally, the authors created four categories (i.e., ‘sport/exercise’, ‘qualities’, ‘appearance’, and ‘food/eating behaviour’) each containing 18 synonyms (see Table 1), which reflected key elements of *fitspiration* (e.g., physical activity, healthy eating, and strength; Santarossa et al., 2016; Tiggemann & Zaccardo, 2016) and objectification theory (e.g., emphasis on appearance; Santarossa et al., 2016). Depending on the author created categories, several synonyms were moved from the Netlytic (Gruzd, 2016) categories into the author created categories, according to relevance. For example, “courageous” was moved from ‘feelings (good)’ to ‘qualities’. Based on the pre-determined synonyms, Netlytic (Gruzd, 2016) identified and counted which records (i.e., the number of captions and comments *#childathlete* appeared in) in the dataset belonged to each category.

Table 1. Description of text analysis categories

Category	Synonyms
Sport/Exercise	Gymnast***, crossfit, soccer, track, run***, cheer***, yoga, baseball, train***, workout, physical activity, exercise, practice, fitness, gym, competition***, perform***, active
Qualities	Flexible, strong, strength, smart, health***, unhealthy, aggressi***, daring, athlet***, determin***, energ***, skill***, competitive***, dedicate***, talent***, confid***, courage***, brav***
Appearance	Beaut***, chub***, cute, fat, fit, gorgeous, musc***, pretty, skinny, small, thin, tone, ugly, young***, short***, tall***, attractive, handsome
Food/Eating behaviour	Food, supplement, processed, junk, treat, diet, eating disorder, fruit, veg***, protein, carb***, restrict***, binge eating, electrolyte, macro***, cal***, snack, meal
Feelings (good)	Agreeable, amused, calm, charming, cheerful, comfortable, cooperative, delightful, eager, elated, empower, empowered, enchanted, encouraged, energetic, enthusiastic, excited, exuberant, fair, faithful, fantastic, fine, friendly, funny, gentle, glorious, good, great, happy, helpful, hilarious, inspire, jolly, joyous, kind, lively, lovely, lucky, nice, obedient, perfect, pleasant, proud, relieved, silly, smiling, splendid, successful, thankful, thoughtful, victorious, vivacious, witty, wonderful, zany, zealous
Feelings (bad)	Angry, annoyed, anxious, arrogant, ashamed, awful, bad, bewildered, bored, clumsy, creep, cruel, dangerous, defeated, defiant, depressed, disgusted, disturbed, dizzy, dull, embarrassed, envious, evil, fierce, flipped-out, foolish, frantic, frightened, grieving, grumpy, helpless, hungry, hurt, ill, itchy, jealous, jittery, lazy, lonely, mean, nasty, nervous, obnoxious, panicky, scary, selfish, sore, tense, terrible, testy, thoughtless, tired, troubled, upset, uptight, weary, worried

Note. *** Indicates truncation.

Image Selection and Coding of Visual Content

The output file produced by Netlytic (Gruzd, 2016) was sorted by likes, as likes may serve as quantitative evidence of popularity (Chae, 2017), and the top five child athletes (based on number of likes) who indicated their Instagram accounts were managed by a parent were selected for further analyses. The last

50 posts from each athlete's account ($N = 250$), beginning at the most popular post (based on likes) that was collected by Netlytic, were analyzed using the visual content coding scheme (Geurin-Eagleman & Burch, 2016; Gruzd, 2016); this number was deemed reasonably manageable by the authors.

A coding scheme similar to those used by Tiggemann and Zaccardo (2016) and Santarossa et al. (2016) was implemented for this study (Table 2). Visual content ($N = 250$) was coded according to content categories (i.e., 'action', 'food', 'objectification', or 'other'). The variables within the content categories were developed based on key elements of *fitspiration* (e.g., physical activity, healthy eating, inspiration, strength, and empowerment; Santarossa et al., 2016; Tiggemann & Zaccardo, 2016) and objectification theory (e.g., emphasis on appearance, specific body parts, and suggestive posing; Santarossa et al., 2016); the same visual content could be coded for multiple content categories. Visual content coded for 'action' was further coded for the presence of physical activity or posing (e.g., posed in fitness clothes), while visual content coded for 'objectification' was further coded for body size, suggestive posing, emphasis on specific body parts, or the absence of an individual's face/head. If the visual content depicted 'food', it was further coded as food (e.g., sandwich), supplement (e.g., protein bar), or health (i.e., healthy or unhealthy). Finally, posts were coded for 'other', which accounted for interactivity (e.g., the post prompted Instagram users to like the photo or follow the author), inspiration (e.g., the post encouraged users to improve their lives and make positive choices), focus of the visual content, type of shot, and size of the visual content.

Table 2. Description of coded variables

Content Category	Variable	Description	Intraclass Correlation Coefficient
Action	Overall Photo Type	Posing (fitness related, e.g., in fitness clothes or at the gym), posing (fitness unrelated), athletic action, food	0.98
	Body Function	Visual content focused on the ability to perform	1.00
	Active/Passive	The action the individual is carrying out in the visual content	0.93
Food	Type of Food	Supplement, processed foods, mixed (processed and not processed)	1.00
	Food Health	Food was healthy or unhealthy	1.00
Objectification	Muscularity	Presence or absence of muscle definition	1.00
	Body Size	Individual was rated as underweight, normal weight, overweight, or obese based on the body image assessment for obesity (BIA-O)	1.00
	Objectification	Presence or absence of elements of objectification	1.00
	Touch	Self-touching, touching others, being touched	0.84
	Genitals/buttocks	Focus of content	1.00
	Clothing	Presence or absence of clothes (e.g., unrevealing, bathing suit)	1.00
Other	Focus of Photo	Who/what the visual content emphasized (e.g., athlete, scenery)	1.00
	Type of Shot	The amount of the individual depicted (e.g., selfie, head shot, half body, full body)	0.88
	Size	The distance at which the visual content was taken (e.g., further from view, normal, close up)	1.00
	Interactivity	Visual content and/or caption cuing Instagram users to interact	1.00
	Inspiration	Presence of inspiration in the visual content and/or caption	1.00

Coding Reliability

A code book, with instructions and examples, was created and utilized by two coders to assess all visual content ($N = 250$). All coding was completed independently. Based on intraclass correlation coefficients (ICC), acceptable levels of agreement are generally between 0.40 and 0.75 (Fleiss, 1986). Specifically, for this study, the minimum acceptable value of an ICC was 0.70. Any variable with an ICC of less than 0.70 required the coders to meet with a moderator to discuss, and agree upon a final code. Table 2 indicates levels of agreement after all codes were fully agreed upon.

RESULTS

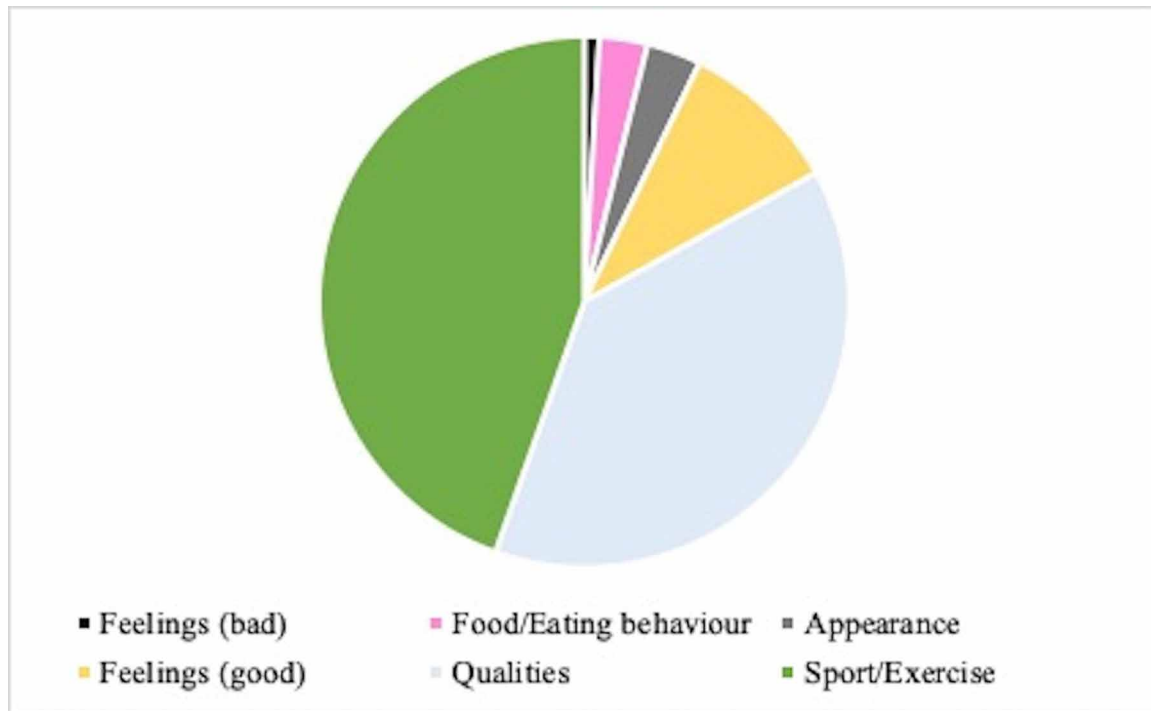
Text Analysis

Among the 254 records downloaded, there were 5,133 unique words. Of the 15 most frequently used words/hashtags, #childathlete was the most popular. However, #childathlete was excluded from analysis as it was the topic of this study. Consequently, #gymnast became the top word/hashtag with 54 messages (the number of messages the word/hashtag appeared in) and 54 instances (the number of times the word/hashtag appeared; see Table 3). Additionally, Netlytic (Gruzd, 2016) distributed words/phrases into the categories: 'sport/exercise', 'qualities', 'appearance', 'food/eating behaviour', 'feelings (good)', and 'feelings (bad)'. 'Sport/exercise' was the largest category accounting for 44.6% ($n = 242$) of words/phrases (Figure 1).

Table 3. Most frequently used words associated with #childathlete ($N = 254$)

Term	Number of Messages	Percentage of Total Records	Number of Instances	Percentage of Total Records
#gymnast	54	21.3%	54	21.3%
#gymnastics	52	20.5%	52	20.5%
#athlete	42	16.5%	42	16.5%
#strong	37	14.6%	37	14.6%
#fitkids	29	11.4%	29	11.4%
#flexible	27	10.6%	28	11.0%
#fun	26	10.2%	27	10.6%
#kidsofinstagram	24	9.4%	24	9.4%
#instagood	24	9.4%	24	9.4%
today	23	9.1%	24	9.4%
#trainhard	23	9.1%	24	9.4%
#littlegymnast	22	8.7%	22	8.7%
#gymnasticgirl	22	8.7%	37	14.6%
#gymnastlife	22	8.7%	22	8.7%
#igkids	21	8.3%	21	8.3%

Figure 1. Categories of words/phrases associated with #childathlete posts (N = 254)



Coding of Visual Content

Of the total visual content ($N = 250$), the majority ($n = 170$; 68.0%) depicted the athlete as the focus of the photo, in a posed position ($n = 136$; 54.4%), containing athletic markers ($n = 73$; 53.7%). Refer to Table 4 for further details regarding the visual content.

CONCLUSION

This study examined the conversation associated with #childathlete to determine the associated tone and focus of the conversation. Additionally, visual content from the top five child athlete Instagram accounts were analyzed to determine if *fitspiration* (e.g., exercise, healthy eating, inspiration, showcase strength and empowerment) or objectification (e.g., emphasis of specific body parts or features, suggestive posing, or appearance) was being promoted. Using the 254 downloaded records and 250 visual content items, the results were broken into text and visual content analyses.

Interpretation of the text analysis indicates a positive conversation surrounded #childathlete, which focused on athletics, suggesting those using the hashtag may have been promoting healthy lifestyles. As appearance comprised a small portion of the conversation and sport/exercise accounted for a much larger portion it is suggested that individuals using #childathlete were not focused on promoting ideal bodies. Thus, the findings of this study suggest that #childathlete may encourage healthy lifestyles (Abena, 2013), as 'sport/exercise' and 'qualities' were the largest categories and the majority of the most

Table 4. Content analysis/coding scheme of visual content ($N = 250$)

Variable ($N = 250$; 100%)	Details	n (%)
Photo type ($N = 250$; 100.0%)	Posed (fitness related)	73 (53.7)
	Posed (not fitness related)	63 (46.3)
	Athletic action	92 (36.8)
	Food	1 (0.4)
	Other (e.g., animals, scenery)	21 (8.4)
	Image depicted the full body	187 (74.8)
	Image depicted half the body	57 (22.8)
Food ($n = 10$; 4.0%)	Head shot/selfie	6 (2.4)
	Food	7 (70.0)
	Supplement	3 (30.0)
	Processed	7 (70.0)
	Not processed	1 (10.0)
	Mixed	2 (20.0)
	Healthy	2 (20.0)
Body function ($n = 103$; 41.2%)	Unhealthy	8 (80.0)
	Aerobic and anaerobic endurance	11 (10.7)
	Muscle strength and endurance	30 (29.1)
	Joint flexibility	16 (15.5)
	Energy efficiency and power	46 (44.7)
Active/Passive ($N = 250$; 100.0%)	Active in sport	87 (34.8)
	Passive in sport	20 (8.0)
	Active non-sport	15 (6.0)
	Passive non-sport	128 (51.2)
Muscularity ($N = 250$; 100.0%)	Little to no definition	179 (71.6)
	Visible definition	71 (28.4)
	High level of definition	0 (0.0)
Objectification ($N = 250$; 100.0%)	Posed in a sexy manner	9 (3.6)
	A specific body part is the main focus	0 (0.0)
	Face/head is not clearly visible	0 (0.0)
Interactivity ($n = 108$; 43.2%)	Cue to like photo	2 (1.9)
	Cue to follow author page/company	6 (5.6)
	Cue to tag friends	1 (0.9)
	Cue to comment	85 (78.7)
	Cue to purchase/use a coupon	6 (5.6)
	Other (e.g., cue to vote)	8 (7.4)
	Inspiration related to fitness	34 (60.7)
Inspiration ($n = 56$; 22.4%)	Inspiration not related to fitness	22 (39.3)

frequently used terms (e.g., *#gymnast*, *#strong*, and *#flexible*) emulated these categories. The promotion of exercise and healthy lifestyles on a global platform, such as Instagram, may be beneficial considering 23% of adults and 81% of children (11-17 years) do not achieve recommendations for physical activity worldwide (WHO, 2019). Social media allows users to engage in social comparison, which may act as a social incentive for users to increase physical activity (Zhang et al., 2016). Future research should examine using *fitspiration* imagery in physical activity/exercise interventions to determine if this type of imagery may result in behaviour change. Despite a more in-depth analysis being needed to determine if changes in physical activity levels occurred, the possibility that social media influences its users' behaviours (Zhang et al., 2016), combined with its potential to reach large audiences (Guo & Saxton, 2014; Pegoraro, 2010), may create an effective medium for promoting physical activity on a global scale due to increased social support (Rote et al., 2015; Zhang et al., 2015). However, research that examines the effectiveness of social media based physical activity interventions is inconclusive and should be further explored to determine if social media interventions result in sustained behaviour changes (Maher et al., 2014; Rote et al., 2015).

The analysis of the most frequently used terms demonstrated that *#childathlete* was primarily associated with other hashtags, which may be used on Instagram to foster online communities (Saxton et al., 2015) by connecting users who share common interests and similar characteristics (Bruns & Burgess, 2011; Veale et al., 2015). Within the text analysis, children and gymnastics emerged as common themes through the use of hashtags, such as *#fitkids*, *#kidsofinstagram*, *#gymnast*, and *#gymnastics*. By utilizing multiple hashtags to engage with different online communities, in this case communities of/for children and gymnasts, users may have been able to interact with accounts that extended beyond those who followed them, subsequently expanding their reach and possibly enticing other users to follow their account (Bruns & Burgess, 2011). A resultant would be increasing their perceived popularity and influence on users who follow hashtags, such as *#childathlete*.

The creation of a community specific to children may be cause for some concern, as Instagram requires users to be at least 13 years of age (Instagram, 2019). Instagram and COPPA have age restrictions in place to protect children's privacy (FTC, 1998) among other potential dangers, such as exposure to inappropriate content and cyberbullying (O'Keeffe & Clarke-Pearson, 2011). Regardless of such age restrictions, parents may be creating and managing accounts dedicated to their children, as was demonstrated by all accounts analyzed in this study. As children are already considered a vulnerable population, sharing information about them may further increase their vulnerability by exposing them to unknown users in a public setting (Minkus et al., 2015). When parents post about their children, they may be indirectly impacting their children's lives (Minkus et al., 2015). Posting about children makes their information publicly available, potentially compromising their privacy, exposing them to predators, and inhibiting their ability to hide their online presence later in life (Minkus et al., 2015). Future research should consider interviewing parents to gain a better understanding of their knowledge regarding social media and why they fabricate the age of their children.

It is unlikely that parents were intentionally exposing their children to the dangers of social media; rather parents were likely attempting to market their children to gain popularity and endorsement deals, mimicking the marketing of children that has been demonstrated within promotions, advertisements, and media (Cook, 2004). Often when children are used in marketing, they are used in a manner that either exploits or empowers them (Cook, 2004). Traditionally news media emphasize exploitation, while marketers emphasize empowerment (Cook, 2004). However, parents use of children varies between exploitation and empowerment (Cook, 2004). As 'sport/exercise' and 'qualities' were the largest categories

and the majority of the most frequently used terms (e.g., *#gymnast*, *#strong*, and *#flexible*) were related to these categories, it may be suggested that parents were portraying their children in a mostly empowering manner. Associating young athletes, especially girls who may not be considered strong or athletic, with qualities such as strength may encourage sport participation by suggesting they can be powerful (Heineken, 2016). Future research should specifically investigate this dichotomy.

Furthermore, by using hashtags, parents are able to engage with and promote their children in various online communities, subsequently expanding the reach of their child's Instagram account and potentially gaining new followers (Bruns & Burgess, 2011). Often Instagram accounts that have numerous followers may be perceived as popular and as having significant influence (De Veirman et al., 2017). Thus, increasing the number of followers could lead to the child becoming a social media influencer (i.e., someone with a sizeable network of users following them; De Veirman et al., 2017). As a result of having widespread reach, social media influencers may receive endorsement deals from a variety of brands (De Veirman et al., 2017). Thus, using multiple hashtags may be a strategic approach on behalf of the parents to gain influencer status for their child(ren) and the potential benefits that accompany such status. Although this study was able to support that parents may be creating and managing Instagram accounts for their children, future research should conduct a more in-depth analysis to better understand the parents' intentions for creating accounts dedicated to their children. According to impression management research, parents may use their children in two ways: as a prop (i.e., the child is used as a display and contributes to a mother's appearance), and as an associate (i.e., the child's behaviour is used as a reflection of the mother's ability and self-presentation; Collett, 2005). By using their children as props or associates, parents are able to establish and verify their roles as good parents (Collett, 2005). Additionally, a more in-depth text analysis could provide a more comprehensive understanding of the context of the conversation within these communities, as this study viewed the words out of context. Thus, determining if the communities aimed to share information about children, acting as an informational source, or if they were communities of children with Instagram accounts.

Another theme that emerged from the most frequently used terms was gymnastics (e.g., *#gymnast* and *#gymnastics*), which is often referred to as an aesthetic sport (i.e., a sport that emphasizes appearance and thinness; Slater & Tiggemann, 2011). As the athletes who participate in aesthetic sports, such as gymnastics, are predominantly girls, the prevalence of gymnastics within the most frequently used terms may indicate that the *#childathlete* community consisted predominantly of girls. However, due to being beyond the scope of this study, the gender of the users participating in the conversation surrounding *#childathlete* was not analyzed. Future research should consider conducting a gendered analysis of the users involved with hashtags, such as *#childathlete*, on Instagram and other social media (e.g., Twitter) to determine if the prevalence of aesthetic sports is specific to *#childathlete* and/or Instagram.

Another potential explanation for the emergence of gymnastics, rather than other sport, is that Instagram and gymnastics both emphasize aesthetics (concern with appearance). Aesthetic sports have been linked with negative health consequences (e.g., self-objectification, body image disturbance, disordered eating) due to the emphasis they place on appearance (Davison et al., 2002; Kong & Harris, 2015; Slater & Tiggemann, 2011). The paucity of appearance-centered conversation may suggest that within the *#childathlete* community, gymnastics was being promoted for its athletic endeavours rather than aesthetics. Shifting away from a focus on aesthetic-based success may be beneficial for many athletes, as focusing on athletics may promote healthy behaviours (e.g., physical activity/exercise), while discouraging unhealthy behaviours (e.g., body dissatisfaction, eating disorders). Thus, the conversation associated with *#childathlete* seems to suggest *fitspiration* promotes healthy lifestyles.

Although high levels of objectification have been associated with aesthetic sports and linked with increased internalization of thin ideals and self-objectification among athletes (Varnes et al., 2014), the majority of visual content did not promote objectification. Rather, in line with the text analysis, the visual content more strongly aligned with the promotion of positive attributes, such as activity, athleticism, and fitness. Overall, the indications from this study were that appearance and objectification were not prevalent within the text and visual analyses, rather there was a greater focus on athletics.

However, even the small presence of objectification may be of concern, as this study examined accounts that were dedicated to children. According to Instagram, visual content that depicts children as nude or partially nude may be removed for safety purposes, as this content could be used in unforeseen ways (Instagram, 2019). Allowing visual content that depicts children in an objectified manner to be posted on Instagram may indirectly and unknowingly expose children to predators, commercial exploitation, and/or surveillance, among other dangers (Minkus et al., 2015). As the results of this study indicate that some of the visual content was perceived as objectifying, it may be suggested that Instagram's screening of visual content should be improved to better protect children. However, it is also possible that images that were perceived, and thus reported, by other users or were flagged by Instagram, were already removed. Thus, our findings may be conservative. Furthermore, this study utilized two coders to analyze the visual content. Thus, the results reflect only two perspectives. Future research should consider conducting focus groups to gather more diverse and comprehensive perceptions of the visual content, as perceptions of objectification may vary by individual.

Nonetheless this study was able to identify that the text and visual content promoted healthy behaviours, such as physical activity, more than objectification. However, it is unknown if changes in behaviour occurred among users. Additionally, while this study may provide evidence that children were a topic of interest on Instagram, it remains unknown why children emerged as a theme, as this study was unable to determine the true valence of the words, as the words were viewed out of context. However, with the recent changes made to Instagram, Netlytic (Gruzd, 2016) is no longer able to collect data from Instagram making data collection for a more in-depth analysis difficult to complete using this method. Thus, this study was able to obtain and analyze data that are no longer easily accessible. Although more complex analyses could be conducted, the analyses selected for this study are a common approach within social media research and best addressed the research questions. Furthermore, while it was demonstrated within our sample selection that parents may manage Instagram accounts for their children, this study was unable to determine if those parents were knowledgeable about COPPA (FTC, 1998) and age restrictions for social media and/or if the account was truly managed by the parent.

As the popularity of social media continues to rise, additional research regarding children may be important. For example, investigating the impacts social media may have on children's development, in addition to better understanding the ways in which children are being presented and perceived online. *#childathlete* contradicted past findings regarding *fitspiration* by demonstrating low objectification and higher prevalence of athleticism, activity, and fitness focused content. Further, the dissociation of aesthetic sports from objectification and aesthetic-based success through the promotion of athletic endeavours may enhance the athletes' health by reducing the importance of body ideals in aesthetic sports. Due to its widespread reach, social media may be a strategy for the promotion of physical activity, which could lead to increased physical activity levels and overall improved health and well-being.

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Chapter 62

Does Using Social Network Sites Reduce Depression and Promote Happiness?

An Example of Facebook-Based Positive Interventions

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ABSTRACT

Positive interventions based on theories in positive psychology have proven effective in contributing to well-being. Although college students frequently use social networking sites, few studies have investigated the use of these sites to facilitate positive interventions. For this research, two positive interventions, photo diaries and the expression of gratitude, were developed and implemented in Facebook using a randomized controlled trial. 136 college students were recruited and randomly assigned them to one of two experimental groups or a control group. Results indicated that photo diary reduced depression during the posttest stage, and these effects continued during the follow up stage. Concerning happiness, the photo diary presented no significant effects in the posttest but did present significant effects in the follow up. Expression of gratitude showed no significant effects on happiness in the posttest but did show significant effects in the follow up. The results of the study demonstrate that social networking sites can be used to implement positive interventions.

1. INTRODUCTION

In the last half century, psychology researchers have made significant progress in the treatment of negative emotions and mental illnesses. However, excessive focus on negative psychological factors can only mitigate symptoms; it cannot help patients foster positive psychological factors (Seligman et al., 2005). Suppose we consider where an individual's psychological state falls on a normal distribution. Psycholo-

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gists generally concentrate on moving patients from the left (negative) side of the normal distribution to the middle mean; they have rarely explored techniques to move patients from the mean to the right (positive) side. Psychologists should not simply focus on treating mental illnesses; they should also strive to improve the mental well-being of patients and aid them in building more meaningful lives (Yu & Chou, 2009).

In view of this, Seligman promoted positive psychology during his term as president of the American Psychological Association and collated various past studies associated with positive emotions and happiness. Positive psychology can be roughly divided into three areas: positive emotions, positive characters, and positive institutions. These areas are associated with three corresponding lifestyles: the pleasant life, engaged life, and meaningful life (Seligman et al., 2005).

Research involving positive psychology has made progress in domains such as psychology, education, and business administration (Seligman et al., 2006). Methods that teach individuals how to enhance their positive thinking, emotions, and behaviors based on positive psychology are called positive interventions (PIs) or positive activity interventions (PAIs). A number of studies (Duckworth et al., 2005; Lyubomirsky, Sheldon & Schkade, 2005; Seligman et al., 2005) have established that PIs can effectively enhance happiness or reduce depression as well as improve internal locus of control and willingness to participate. One advantage of PI methods is that individuals can practice them independently. Moreover, PIs are less costly and time-consuming than psychotherapy and can swiftly improve moods while decreasing the degree of stigmatization, all without adverse effects. Nonetheless, although PIs have proven effective in laboratory scenarios, researchers have advised that understanding contextual factors associated with PIs, such as continued practice, motivations, and person-activity fit, is likely to further enhance the effectiveness of these methods (Biswas-Diener, 2011). Sheldon and Lyubomirsky (2004) also emphasized the importance of person-activity fit in PIs, which increases the personal motivation of individuals to participate in PIs and prevents hedonic adaption from impairing PI effectiveness.

In recent years, the proportion of college students with mental health issues has remained high and even continued to increase. Thirty percent of college students reported having felt depressed in the last year (Wickham, 2016). Another survey in Taiwan revealed that almost a quarter of college students had experienced depression (Yu & Hsu, 2013). Finally, a survey conducted by the Center for Collegiate Mental Health found almost half of college students attended co-counseling for mental health concerns, and 30.3% of college students who sought mental health services in 2013 reported having seriously considered a suicide attempt at some point in their life; this was up from 23.8% in 2010 (Novotney, 2014). These surveys show that mental health issues of college students cannot be ignored. Studies have showed that positive and negative emotions are in fact independent dimensions rather than opposite poles. That is, the present of one do not indicate the absence of the other (Lucas et al., 2003). In view of this, the absence of depression does not guarantee happiness. PIs are likely to be an effective tool in improving the mental health of college students, as they use positive psychology to promote mental health and develop resistance against negative life events.

Although that gratitude is a universal characteristic that transcends cultural, little research has focused on cross-cultural influences on gratitude (Wang et al., 2015). Parks & Biswas-Diener (2013) pointed that expressing gratitude have sometimes adverse effect when used by collectivism culture students. For collectivism culture (e.g. Taiwan, Singapore, China, and Japan) expressing gratitude publicly can make individuals discomfited, particularly if their cultural norm is to avoid attracting attention. Traditional gratitude intervention demands the thanker express their gratitude face-to-face, which may make the thanker embarrassment. Previous research has found that computer mediated communication, such as

Facebook or Twitter, can reduce the anxiety of face-to-face communication (Yu, 2015). However, little attention has been given to the use SNS for gratitude intervention.

We also believe that in terms of the person-activity fit for college student, social network sites (SNSs) such as Facebook are an effective medium for implementing PIs. The internet has become an integral part of modern life, and many PIs and psychological experiments have already been conducted over the internet (Mitchell et al., 2009; Seligman et al., 2005; Yu & Hsu, 2013). Visiting an SNS is one of the most common reasons for internet use, and Facebook is currently the most popular SNS (Hew, 2011). For college students, Facebook is an essential means of communication. On average, a college student uses Facebook for 2.70 hours a day and has 365.16 Facebook friends (Yu, 2015). At present, few studies have used Facebook to perform PI research.

We posit that the multiple functions of SNSs facilitate PI implementation for the following reasons. First, SNSs are a part of everyday life for college students; thus, using SNSs to perform PIs will minimize interference with student lifestyle and should also increase student willingness to participate in the study. Second, although some PIs are effective, they must be performed deliberately and may be challenging to implement in everyday life. In contrast, if SNS-based PIs are effective, they can exert more extensive and lasting influence since SNSs are already being used by college students. Third, the built-in functions of SNSs (such as wall posting and the like button) can record the frequency of interactions and the amount of feedback, which expedites data collection. Lastly, by using a preexisting SNS the researchers avoid the need to set up a separate website, which reduces costs and also interferes with participants to a lesser degree.

For this study, we developed two PIs using Facebook and adopted a quasi-experimental design to explore whether Facebook-based PIs can increase happiness and reduce depression.

2. LITERATURE REVIEW

2.1. A Brief Introduction to Positive Psychology

The field of positive psychology explores three domains: the pleasant life, the engaged life, and the meaningful life (Seligman et al., 2005). The pleasant life pertains to positive emotions experienced by an individual in their past, present, and future (Duckworth et al., 2005). Positive emotions are indicative of well-being and have been shown to be associated with strong work performance, higher productivity, greater marriage satisfaction, better social relationships, and better physical health (Layous et al., 2011).

The engaged life involves the use of positive traits in life, such as strengths and virtues. In their book, “Character Strengths and Virtues: A Handbook and Classification,” Peterson and Seligman categorized the 24 character strengths (i.e. curiosity, love of learning, judgment, originality, emotional intelligence, perspective, bravery, diligence, genuineness, kindness, loving and being loved, loyalty, fairness, leadership, self-control, prudence, modesty, appreciation of beauty and excellence, gratitude, hope, sense of purpose, mercy, humor, and zest) that are universal and across all aspects of life (Peterson & Seligman, 2004). Specifically, they categorized the 24-character strengths into 6 major virtues: wisdom and knowledge, courage, love, justice, temperance, and transcendence.

The third domain, meaningful life, refers to a person whose lifestyle is devoted to serving positive institutions bigger than him or herself, from which the individual can utilize positive traits. Devoting time and energy to matters greater than oneself often brings increased meaning to life (Duckworth et

al., 2005). However, there are a wide range of institutions that individuals can choose to serve, and different individuals generally choose to serve different positive institutions such as family, community, a religious organization, or work (Seligman, 2002).

2.2. A Brief Introduction to Positive Interventions

Based on positive psychology, positive interventions (PIs) are designed to teach individuals how to increase positive thinking, behaviors, and emotions. Duckworth et al. (2005) reported that techniques of cultivating positive psychology can be used to rebuff depression, anxiety, and anger. Below, we explain several PI-related studies, which are also summarized in Table 1.

Research has already shown that PIs can reduce depression. For example, Grant, Salcedo, Hynan, Frisch, and Puster (1995) conducted a reading therapy PI with 16 clinically depressed patients and no control group. Upon completion of the PI, 13 of the participating patients displayed significantly reduced depression. Seligman had individuals with severe depression participate in a PI called Three Good Things, which required the participants to keep a journal and explain three good things that happened each day. After 15 days, the CES-D score of participants decreased by 16.7, and 94% of participants felt more relieved (Seligman, 2002). In a week-long randomized controlled trial (RCT), Seligman et al. (2005) randomly assigned 411 subjects with mild depression to one of six groups, including a control group and five different PI groups. The PIs included 1. gratitude visit, 2. three good things in life, 3. you at your best, 4. using signature strengths, and 5. identifying signature strengths. Results from this experiment indicated a greater sense of well-being and reduced depression in PI groups, the effects of which remained even after the completion of PI activities. Gratitude visit contributed to greater well-being for a month, whereas the effects of three good things in life and using signature strengths in a new way lasted for as long as six months. The results of this study revealed that even simple self-guided activities can have long-term benefits for individuals with mild depression.

Some Internet-based PIs were also proposed. Redzic et al. (2014) conducted an Internet-delivered health promotion, named organic programming (OP), on seven classes of ninth-grade student participants over two semesters. OP is a psycho-educational program designed to teach skills related to positive psychology and depression prevention. The participants evaluated OP was helpful, interesting, fun, and reduced risk for depression. However, no empirical statistical data was provided in this study. Besides, Cohn, Pietrucha, Saslow, Hult, and Moskowitz (2014) developed Affective Health to Improve Adherence (DAHLIA), a self-paced online intervention for type 2 diabetes that teaches positive affect skills such as savoring, gratitude, and acts of kindness. Forth-nine participants were randomized to the five-week DAHLIA course or an emotion-reporting wait-list control. The results showed that DAHLIA participants showed a significantly greater decrease in depression than controls. With regard to the use of PIs to foster a sense of well-being, Emmons and McCullough conducted an RCT with a gratitude intervention. Results showed that the participants in the gratitude group felt better about their overall life, regarded the coming week more optimistically, and perceived better connections to other people. In addition, those participants displayed more positive emotions and fewer negative emotions (Emmons & McCullough, 2003).

Lyubomirsky, Sheldon, and Schkade performed two PIs, *count your blessings* and *kindness*, to investigate the effect of intervention duration and frequency. The results showed that the participants that had counted their blessings once a week felt happier, which led the researchers to conclude that less frequent interventions are probably more able to prevent habituation. For the *kindness* interven-

tion, the results revealed that participants who performed all acts of kindness within a single day were happier (Lyubomirsky et al., 2005). Mitchell et al. (2009) conducted a study over the internet, in which participants were asked to practice a six-step procedure for problem solving. Results demonstrated that the continuous promotion of well-being is feasible and that interventions related to well-being can be effectively introduced via the internet.

In conclusion, PIs can reduce depression and contribute to well-being. However, for college students, the aforementioned interventions can be modified for SNS implementation in order to improve person-activity fit. For example, the brief writing intervention used by Burton and King (2004) can be modified to internet writing in order to better conform to daily habits of college students. That is to say, nowadays college students rarely keep diaries on paper; they prefer to keep them online (e.g. on Facebook or a blog). For the expression of gratitude intervention, past research required participants to write a letter of gratitude then visit their benefactor in person and read their letter to them. However, expressing gratitude online is easier, and not having to speak in person could reduce anxiety and thus increase the willingness of students to participate in the intervention activity. Furthermore, expressing gratitude face to face may be less suitable in some cultures, such as collectivist cultures, the norms of which are to avoid attention (Parks & Biswas-Diener, 2013).

Thus, using the internet to show gratitude may be more appropriate in some contexts. Moreover, using Facebook to facilitate PIs can cut down on research costs related to the maintenance of an external website, such as that used in the study by Mitchell et al. (2009). In addition, college students already use Facebook often, thus this platform will present less interference with daily life and will increase student willingness to participate. In view of the aforementioned reasons, this study proposed and investigated the use of SNS-based PIs.

2.3. The Relationships Between Internet, SNS Use and Well-Being

Prior research has shown that the use of internet may detract from face-to-face relationships and reduce well-being (Kraut et al., 1998). But some skeptics have argued that perhaps people with lower well-being are more likely to use internet, rather than internet causing lower well-being (Yu & Chou, 2015). The Internet has many social applications (e.g., Facebook, Instagram) that encourage users to build and maintain on-line social networks. Through these SNS people could fulfill their social needs. Studies have found that Facebook use has a positive impact on subjective well-being and adjustment of college students (Ellison et al., 2007; Steinfield et al., 2008).

2.4. Person–Activity Fit of Positive Intervention

No single intervention is effective for everybody. A proper fit between a person and a particular happiness-increasing activity is likely to influence the effectiveness of an intervention (Sin, Della Porta, & Lyubomirsky, 2011). The preference, interests, values, motivation, and strengths of an individual might influence the participation and duration of intervention. Therefore, contextual factors such as personal lifestyle, interests and values should be considered when designing positive intervention (Biswas-Diener, 2011). For example, a college student may find it more rewarding to keep a journal on social network sites (such as blogs, Facebook, Instagram) than on traditional paper-based journal when performing the “Three good thing” intervention.

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Although person-activity fit influences the effectiveness of positive intervention, research on person-activity fit are rarely investigated. Sin et al., (2011) found expressing gratitude may be a difficult and disadvantageous for depressed individuals, in contrast with non-depressed general population. Sheldon & Lyubomirsky (2004) also pointed that the effectiveness of positive intervention varied hugely from one individual to another and be influenced by each participant's needs and interests. Judging from these, positive interventions using SNSs should be feasible for college students since they were accustomed to use SNSs. Using SNSs to perform PIs will minimize disturbance with student daily life and should also increase student willingness to participate and maintain the activity.

From what has been discussed above, the hypotheses of this study are as follows:

1. Facebook -based PIs can reduce depression;
2. Facebook -based PIs can increase happiness.

Table 1. Summary of positive interventions

Author	Research Design	Results
Grant et al. Reading therapy	No control group	The depression of participants was reduced, and continued to display effects of intervention one week following the completion of intervention activities.
Seligman Three good things	No control group	The CES-D scores of the participants decreased by 16.7, and 94% of the participants felt more relieved.
Emmons & McCullough Gratitude intervention	RCT	The gratitude group felt better about their overall life, was more optimistic about the coming week, perceived better connections to other people, and displayed more positive emotions and fewer negative emotions.
Lyubomirsky et al. a. Count your blessings b. Kindness	RCT	a. Only the participants that counted their blessings once a week felt happier. b. Only the participants that performed all the acts of kindness within a single day felt happier.
Seligman et al. Five PIs	RCT	The PI participants experienced an increased sense of well-being and reduction of depression, the effects of which continued after the completion of the PIs.
Mitchell et al. Three stages in learning and practicing a for problem solving	RCT	The results demonstrated that the continuous promotion of well-being is feasible and that the well-being intervention can be effectively introduced via the internet.
Redzic et al. OP	No control group	The participants evaluated OP was helpful, interesting, fun, and reduced risk for depression
Cohn et al. DAHLIA	RCT	DAHLIA reduced depression

3. METHODS

3.1. Participants

The participants of this study were recruited from a university in Central Taiwan. After receiving consent from teachers, we explained experimental procedures and terms of confidentiality during breaks between classes, and students who were willing to participate filled out a consent form.

We recruited a total of 151 participants and randomly assigned them to one of two experimental groups or a control group. Of these, 136 completed the pretest, 128 completed the posttest, and 115 completed the follow-up test. Attrition rate of post-test and follow up stages were 5.88% and 15.44%, respectively. A coupon raffle was organized to encourage participation. Our study population included 34 male (25%), and 102 female (75%) students. The number of first-, second-, third-, and fourth-year students were 45 (33.1%), 35 (25.7%), 50 (36.7%), and 6 (4%), respectively. A survey that was administered prior to the start of the experiment indicated that all participants had used Facebook before prior to induction into the study.

3.2. Instruments

The instruments of this study included the General Happiness Scale and the Center for Epidemiologic Studies Depression Scale.

3.2.1. Center for Epidemiologic Studies Depression Scale (CES-D)

Currently one of the most widely adopted depression scales in the world, the CES-D scale (Radloff, 1977) has been translated and verified for reliability and validity in a number of languages. This study used the Chinese version (Yu & Yu, 2007), which contains 20 question items scored on a four-point Likert scale. The analytical results revealed that CES-D Cronbach's alpha equals .891, indicating good reliability.

3.2.2. General Happiness Scale

This study used the Chinese version of the General Happiness Scale (GHS) employed by Yu and Hsu (2013), which was translated from the GHS developed by Lyubomirsky and Lepper (1999). The original scale contains four question items scored on a seven-point Likert scale. We conducted item analysis based on results of the pretest. The analytical results revealed that the fourth question item used reverse wording showed poor psychometric properties. Eliminating this item would increase the reliability of the scale from 0.80 to 0.87. Therefore, we eliminated the fourth question item and kept the remaining three for research analysis.

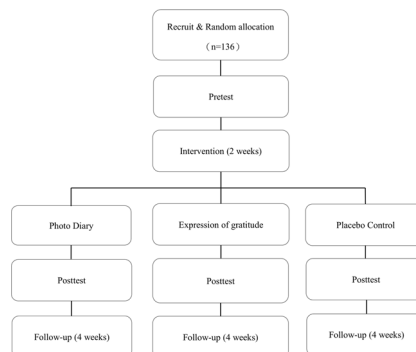
3.3. Experimental Procedure

We adopted a randomized controlled trial (RCT) for this study. The experimental groups took a pretest prior to the start of the experiment and were then required to complete a Facebook-based PI over the course of two weeks. Immediately following completion of the PI, participants took a posttest, and four weeks following completion of the PI, participants completed a follow-up test. The control group also

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took pretest, posttest, and follow-up test, but did not undergo any type of intervention. Figure 1 illustrates the procedure of the experiment. The PIs were designed based on theories in positive psychology; the details of PIs are in Figure 1.

Figure 1. Participant flow through the study



3.3.1. Experimental Group 1: Photo Diary

We designed this PI based on Character Strength and Virtues theory (Perterson & Seligman, 2004), “Three Good Thing” intervention (Seligman et al., 2005), and Savoring theory (Bryant & Veroff, 2007). We supposed that taking meaningful pictures is related to exercising some strengths and virtues such as creativity, spirituality, and the appreciation of beauty. Moreover, Facebook facilitates responses from friends and sharing with others, likely reduced negative emotions and promoting positive emotions.

Using the photo album function of Facebook, the participants were asked to post photos or videos that they felt were worth sharing and that made them happy in a personal album. Content could be related to department events, traveling, dates, cuisine, or shopping, and the participants were asked to record their reasons for choosing each photo or video, similar to a record of their lives, and to invite friends to respond with a “like”. The purpose of this psychological assignment was to promote emotional sharing, social support, and happiness using self-disclosure.

3.3.2. Experimental Group 2: Expression of Gratitude

We designed this PI based on Character Strength and Virtues theory (Perterson & Seligman, 2004), “Gratitude visiting” intervention (Seligman et al., 2005), and Cultural concerns on gratitude (Parks & Biswas-Diner, 2013; Wang et al., 2015).

Participants in this group were asked to write a declaration of gratitude to someone on their Facebook wall, such as “I would like to thank...for the past two days because...” or “Something good happened today, and it was probably caused by...” The participants had to change this declaration every two to three days and invite their friends to respond with a “like”. The purpose of this psychological assignment was to promote the expression of gratitude, which is a virtue mentioned in positive psychology, and to improve the positive emotional status of participants through this perception and expression of gratitude.

3.4. Statistical Analysis

We employed ANCOVA using the pretest scores as a covariate and the posttest and follow-up test scores as dependent variables.

4. RESULTS

To check on the PI manipulations, we surveyed participants' number of photo diary post and expression of gratitude on post-test and follow-up stages. According to participants' self-report, for the photo diary part, the average number of shares in the experiment groups per week was 0.75 (SD = 1.18) before the experiment and 6.00 (SD = 5.78) during the experiment. The results of the paired-t test indicate that the number of photo diary shares during the post-test stage was significantly higher than that in the pre-test stage ($p < .05$). This means that the subjects were indeed participating in the PI. During the follow-up stage, the subjects were not required to continue the PI. However, they shared an average of 1.40 (SD = 2.75) times per week, which is significantly higher than the average weekly number of shares during the pre-test stage ($p < .05$). This indicates that the subjects proactively integrated photo diaries into their daily lives.

With regard to the expression of gratitude, the subjects in the experiment groups expressed their gratitude 1.32 (SD = 2.23) times a week on average. During the experiment, this number increased to 6.93 (SD = 5.78). The results of the paired-t test show that the subjects expressed their gratitude more frequently during the post-test than during the pre-test stage ($p < .05$), which means that the subjects were indeed engaging in PI. During the follow-up stage, the subjects were not required to continue the PI. However, they expressed their gratitude an average of 1.41 (SD = 2.78) times per week, which is higher than the average weekly number of shares during the pre-test stage, but the difference was not significant ($p > .05$).

In contrast, during the experiment, the subjects in the control group shared their photo diaries an average of 0.60 times per week and expressed their gratitude an average of 1.18 (SD = 3.54) times per week.

Table 2 and 3 summarize the results in terms of outcome scores and treatment effect. The details of the analytical results were as follows.

4.1. Depression

Experimental group 1 (the Photo diary) displayed reduced depression in the posttests, and this reduction continued through to the follow up as shown in Figure 2 and Table 2.

Concerning the homogeneity of variance between the experimental group 1 and control groups, the Levene test results found homogeneity held for both posttest and follow-up stage ($p > .05$). For the posttest stage, ANCOVA results revealed a significant difference between the two groups ($F(1, 81) = 10.542, p = < .05$) and a medium effect size ($\eta^2 = .115 > .059$). For the follow up stage ANCOVA results also revealed a significant difference between the two groups ($F(1, 81) = 6.892, p = 0.05$) and a medium effect size ($\eta^2 = 0.077 > 0.059$).

Experimental group 2 (expression of gratitude) did not present significant effects on depression in the posttest ($F(1, 74) = 3.326, p > .05$) and in the follow up ($F(1, 74) = 3.086, p > .05$) as shown in Figure 2 and Table 3.

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Figure 2. CES-D means by group

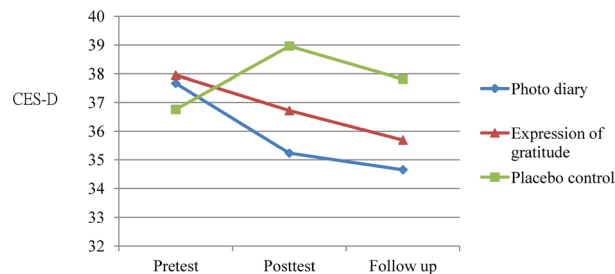


Table 2. CES-D treatment effect of Experimental Group 1

	Contrast Group	Experimental Group 1	Treatment Effect
Pretest	36.76	37.67	
Posttest	38.96	35.23	$F(1,81) = 10.542$ $p = .002^{**}$
Follow up	37.36	34.65	$F(1,81) = 6.892$ $p = .010^{*}$

* $p < .05$ ** $p < .01$

Table 3. CES-D treatment effect of Experimental Group 2

	Contrast Group	Experimental Group 2	Treatment Effect
Pretest	36.76	37.95	
Posttest	38.96	37.29	$F(1,74) = 3.326$ $p = .072$
Follow up	37.36	36.19	$F(1,74) = 3.080$ $p = .083$

* $p < .05$

4.2. Happiness

With regard to happiness, Experimental Group 1 presented no significant effects in the posttest but displayed significant effects in the follow up, as shown in Figure 3 and Table 4. Concerning the homogeneity of variance between the experimental group 1 and control groups, the Levene test results found homogeneity held for both posttest and follow-up stage ($p > .05$). For the posttest stage,

For the posttest stage, ANCOVA results did not reach the level of significance ($F(1, 80) = 0.198$, $p > .05$). In the follow up stage, ANCOVA results revealed a significant difference between the two groups ($F(1,80) = 5.353$, $p < .05$) and a medium effect size ($\eta^2 = 0.062 > 0.059$).

Expression of gratitude showed no significant effects on happiness in the posttest but did show significant effects in the follow up, as shown in Figure 3 and Table 4. Concerning the homogeneity of variance between the experimental group 2 and control groups, the Levene test results found homogeneity held for both posttest and follow-up stage ($p > .05$). For the posttest stage, ANCOVA results did not reach the level of significance ($F(1, 74) = 3.174$, $p > .05$). In the delayed follow up stage, ANCOVA

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results revealed a significant difference between the two groups ($F(1, 74) = 3.174, p < 0.05$) and a low effect size (eta square = .051 > .010).

Figure 3. GHS means by group

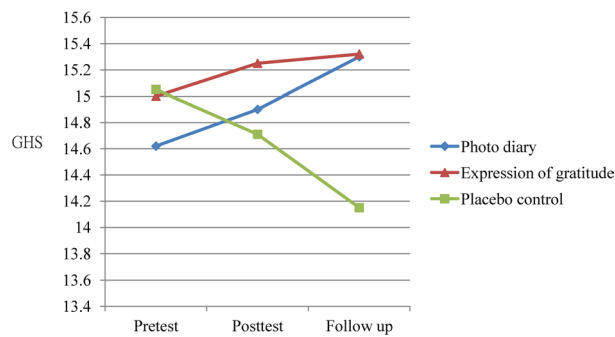


Table 4. GHS treatment effect of Experimental Group 1

	Contrast Group	Experimental Group 1	Treatment Effect
Pretest	15.05	14.62	
Posttest	14.71	14.90	$F(1, 80) = .198$ $p = .657$
Follow up	14.15	15.30	$F(1, 80) = 5.353$ $p = .023^*$

* $p < .05$

Table 5. GHS treatment effect of Experimental Group 2

	Contrast Group	Experimental Group 2	Treatment Effect
Pretest	15.05	15.00	
Posttest	14.71	15.25	$F(1, 74) = 3.174$ $p = .406$
Follow up	14.15	15.32	$F(1, 74) = 4.289$ $p = .042^*$

* $p < .05$

5. DISCUSSION

On the whole, the experimental photo diary intervention proved significant effect in relieving depression. Positive interventions rely on the participant's voluntary completion of intervention tasks; therefore, it's vital that the acceptance and daily habits of the participants are taken into consideration when designing a positive intervention. College students are already in the habit of using SNSs every day, so incorporating SNSs interfered with their daily lives the least, which made them more willing to complete the interventions. The results of this study indicate that merging positive interventions with the SNSs that

college students were already accustomed to using on a daily basis is an effective approach. Sin, Della, and Lyubomirsky (2011) stated that positive intervention experiments are generally more effective when the participants are accepting of them. Biswas-Diner (2011) also indicated that the contextual factors (personal and situational) of positive interventions influence experiment effectiveness. Moreover, Sin et al. (2011) suggested that factors such as duration of intervention, continued practice, person-activity fit, and motivation can affect the overall effectiveness of interventions for individuals. In summary, positive interventions must consider contextual factors such as personal interests and values to be effective. Therefore, positive interventions that integrate SNSs are found to be suitable for college students.

Experimental Group 1 displayed significantly reduced depression in both the posttest and the follow up. We infer that sharing photos can instantly reduce loneliness, increase the frequency of interpersonal interactions, and reduce depression with lasting effects. As the CES-D scale covers a wide range of aspects, including happiness, loneliness, and interpersonal relationships, it was able to reveal effects in all areas. This result is similar to those obtained by Grant et al. (1995), Seligman (2002), and Seligman et al. (2005) indicates that the depression-relieving effects of positive interventions not only apply to individuals suffering from depression but can also apply to their non-depressed counterparts. Mitchell et al. (2009) also found that positive interventions utilizing the internet as a medium could relieve depression. Unlike the website that Mitchell et al. (2009) specifically designed for their experiment, the results of this study show that SNSs are also effective.

Seligman proposed that positive psychology includes three major domains: the pleasant life, the engaged life, and the meaningful life. The pleasant life encompasses life satisfaction, positive emotions, and optimism; the engaged life emphasizes the display of strengths and virtues, and the meaningful life involves dedication to positive organizations. We believe that sharing photos can increase positive emotions, which is a sub-factor of the pleasant life. Furthermore, completing the photo sharing assignment is associated with the display of strengths and virtues such as creativity, spirituality, and the appreciation of beauty. Many of the participants' photos were of themselves with family members, classmates, or club members or contained a visual record of their activities, which can also be considered dedication to a positive organization (Yu & Chou, 2009).

In this study, the PI for Experimental Group 1, photo diary, required participants to share bits of their life on Facebook in the form of photos or videos of themselves interacting with classmates or friends. Without the internet, sharing diaries and photos would have required face-to-face invitations, thereby limiting the number of invitations. However, the photo album and chat functions of Facebook enable subjects to actively remind their friends to look at updates, which increases the frequency of sharing. Furthermore, sharing conventional paper photos is static, whereas sharing photos on SNSs can be a dynamic and continual process. For example, after an individual views photos on Facebook, they can use the Like button or leave a message, which may induce further communication. This can lead to continual discussions that last for several days, which may explain why the PI for Experiment Group 1 presented lasting effects on depression and happiness.

The PI used by Experimental Group 1 in this study did not present significant effects on happiness until the follow up. We thus infer that photo sharing activities may require some time in order to initiate changes. For example, after participants posted their photos, the number of responses was sometimes low initially; however, as the number of responses grew steadily, effects on happiness became more apparent. Furthermore, the GHS covers peer comparison (e.g. "Compared with most of my peers, I consider myself happy?") as well as one's own happiness (e.g. "In general, I consider myself a very happy person?"). For

this reason, the assessment of happiness does not only include one's own status. As the numbers of likes and responses grow, participants may feel that their happiness is gradually surpassing that of their peers.

The expressions of gratitude generated by experimental group 2 also showed a significant influence on promoting happiness at follow up stage. This indicates that the expression of gratitude on an SNS is effective for from collectivist-culture individuals (such as Chinese culture). Parks and Biswas-Diener (2013) indicated that public face-to-face expressions of gratitude are less desirable in collectivist cultures, which tend to emphasize group harmony rather than individual uniqueness. In such cultures, emotions are restrained and not directly expressed, and abasement and humility are required with regard to positive events. Chinese culture considers abasement to be an expression of modesty, humbleness, and politeness. Modesty and self-effacement are important virtues (Noronha, 2002). Face-to-face expressions of gratitude require the thanker to loudly recite their gratitude in front of the subject of gratitude (Seligman et al., 2005). In collectivist cultures, this can create embarrassment and discomfort for both the thanker and the subject of gratitude. It also violates the life principle of abasement and can therefore have the opposite effect and significantly reduce the willingness of participants to complete the intervention. In contrast, expressing gratitude via SNS is less direct and less discomfoting.

6. RESEARCH LIMITATIONS

The use of the internet to perform psychological experiments is limited by the popularity of internet use and the participants' ability to use the internet. Facebook users are mostly teenagers and middle-aged-and-under adults. The PIs used by this study are less suitable for individuals that do not have previous Facebook experience, such as older adults.

Neither of the PIs used in this study displayed significant effects in the GHS posttest. We believe that this result is associated with the item properties of the GHS, which emphasize personal happiness compared to that of peers but do not include many other aspects of happiness. Researchers may wish to consider other instruments to measure happiness or positive emotions in future studies, such as the Positive and Negative Affect Schedule.

Concerning the length of intervention procedures, the length of this experiment was two weeks, which may be too short to estimate long term effects. We suggest that the experiment period be extended in future research. Researchers can also encourage participants to make sharing or gratitude assignments a habit, which may prolong the effects of the experiment.

Next, applying two or more interventions may increase the beneficial effects observed in this experiment. However, when exploring the advantages of using two or more types of interventions, the order of the interventions and the interaction effects of the interventions must be taken into account.

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Chapter 63

Profiling the Users of High Influence on Social Media in the Context of Public Events

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ABSTRACT

The highly influential users on social media platforms may lead the public opinion about public events and have positive or negative effects on the later evolution of events. Identifying highly influential users on social media is of great significance for the management of public opinion in the context of public events. In this study, the highly influential users of social media are divided into three types (i.e., topic initiator, opinion leader, and opinion reverser). A method of profiling highly influential users is proposed based on topic consistency and emotional support. The event of “Jiankui He Editing the Infants’ Genes” was investigated. The three types of users were identified, and their opinion differences and dynamic evolution were revealed. The comprehensive profiles of highly influential users were constructed. The findings can help emergency management departments master the focus of attention and emotional attitudes of the key users and provide the method and data support for opinion management and decision-making of public events.

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INTRODUCTION

Public events often trigger a lot of reports and online discussions. Many users express their opinions on social media (Sharma & Lbansal, 2015). High influential users play an important role in guiding the online public opinion of events and can be divided into three types. The first type of users frequently expresses their opinions on an event. The posts that they generate often receive a lot of likes, retweets and comments and are marked as “popular posts” by Sina Weibo, a well-known microblogging platform in China. The “popular posts” is a function of the Sina Weibo platform. The platform calculates the heat value of each microblog post on the topic, and sorts the posts according to the heat value. “Popular posts” are those at the top of the list, which can be obtained directly from the platform (Sina Weibo, 2014). In this study, this type of users is called “topic initiators”.

The second type of users obtains much attention from netizens, thus forming a high influence and leading the public opinion, namely the “opinion leaders”. The posts published by the “topic initiators” often trigger a lot of discussion, but their views may not necessarily be approved. However, the posts by “opinion leaders” are more likely to be supported by others (Bamakan et al., 2019). Opinion leaders are identified based on the topic initiators. According to the spiral of silence theory, the formation of public opinion is a spiral process in which one side is more and more vocal while the other side is more and more silent (Noelle-Neumann, 1974). With the passage of time, some netizens do not agree with the “mainstream opinion” and dare to express their different opinions. Then the “silent majority” may respond positively, and their new opinions may gain more support. Users who express the new opinion “reverse” the mainstream opinion on the event, and are also high influential users. This type of users is named as “opinion reverser”.

The three types of high influential microblog users shape the public opinion in different manners, i.e., to attract, lead or reverse the attention of the public. To identify and profile the three types of high influential users can help the event management departments understand the evolution patterns of the public opinion and discover the key nodes in the social network. It is also of significance to reveal the relationship between the users’ basic attributes and their influence and whether users’ behaviors are associated with their support. Thus, the research questions of this study are (1) to divide the high influential microblog users into three roles, i.e., topic initiators, opinion leaders and opinion reversers and to propose their identification methods; (2) to profile the three kinds of high influential users; and (3) to reveal the correlations among the users’ basic attributes and microblog attributes. As the event of Dr. Jiankui He editing infants’ genes aroused a tsunami of public opinion, this study took the event as the investigated case.

The opinion initiators launch salient topics and the opinion leaders promote the consistency of public opinion, which facilitates the formation of the spiral of silence. The opinion reversers break the consistent opinion and bring about anti-spiral of silence. The contribution of this study is to propose the quantitative methods of identifying the key nodes in the process of the spiral of silence and anti-spiral of silence. The research findings can help the emergency management departments guide the public opinion in a timely manner.

BACKGROUND

The Identification of High Influential Users on Social Media

High influential users are also known as opinion leaders, innovators, prestigious or authoritative actors (Bouguessa & Romdhane, 2015). They are often seen as experts in a field (Liu et al., 2014). Finding opinion leaders is an important task in many fields (Aleahmad et al., 2016). Some scholars distinguished opinion leaders, influencers, and discussants according to the types of user behaviors and their influence (Jabeur, Tamine, & Boughanem, 2012). High influential users were also divided into creators and communicators of emerging topics (Li et al., 2014), or classified according to the content that they communicate and their rights (Xiao et al., 2014). Quercia et al. (2011) differentiated popular, influential, listener, highly-read and star users based on users' cognition and psychological behaviors. Wu (et al., 2011) used the Twitter Lists to divide high influential users into organizations, media, celebrities, and blogs.

Although existing studies have considered the degree of support of users when identifying high influential users of social media, they rarely examine the topic consistency of microblog posts and comments. There is a phenomenon that the comment content of commenters is emotionally supportive, but the comment content is not related to the original post. In this study, when identifying high influential users of social media, the comments that are not related to the topics of the original posts are removed to ensure the topic consistency between posts and their comments.

Existing studies on the indicator system of identifying high influential users usually consider retweets, mentions (@), the number of fans/original posts/replies and the total number of posts (Cha et al., 2010). Jin and Wang (2013) also measured user influence through the closeness and intermediary of the user network structure. The characteristic indicators varied in different studies. Bigonha et al. (2011) used betweenness centrality, eigenvector centrality, in-degree, the Twitter follower–followee ratio, mentions, replies, retweets and other indicators to determine user influence. Rübiger et al. (2015) adopted following, retweets, comments, mentions, user centrality and quality of tweets to measure user influence.

The existing studies on the characteristic indicators of identifying high influential users usually consider many characteristics of high influential users. This study combines the user's own influence with the effect of comments, and explores the influence of commenters.

Profiling the Users of Social Media

User profiling is to obtain the users' attributes and behaviors to understand the users' interests, needs, rules, settings, and other information (Araniti et al., 2003). Farnadi et al. (2016) used the machine learning model to infer the user's age, gender, and personality characteristics according to the content of the posts and various behavior dynamics. Lee et al. (2014) built user profiles based on their twitter timeline and activities at different time. Lakiotaki et al. (2011) constructed and improved the user profiles through the user's feedback results.

In the process of profiling social media users, the existing studies seldom focus on the special situation of public events, and do not divide the identified high influential users into different levels. In this study, the users' personal attributes are first obtained from their microblog homepage, and the users' profiles are constructed and improved according to the users' opinions on the event and the subsequent influence, i.e., the users' focus on the topics and the degree of support that they receive.

Topical and Sentiment Analyses of Microblogging

Topic models are widely used to identify topics of microblogging. It is found that the combination of a topic model and context information can achieve better results in topic extraction (Zhou and Zhang, 2018). The Biterm topic model proposed by Yan et al. (2013) transforms the document into co-occurrence word pairs, and directly simulates the generation process of the co-occurrence mode of all the words in the corpus to learn the topics in the short text. It overcomes the problem of information sparseness of microblogging and considers the semantic relationship between words. The model can better explain the content of microblogging than traditional topic models and can effectively adapt to the short text. Thus, this study uses the Biterm topic model to identify the topics of microblog posts and comments.

Sentiment analysis was proposed by Pang et al. (2002). The common method mainly includes machine learning methods (such as decision tree, support vector machine, neural network, and Bayesian network) and dictionary-based methods (Hu et al., 2013). Support vector machine (SVM) was first proposed by Vapnik (2000). It aims to improve the generalization ability of the learning machine by seeking the minimum structural risk, and to obtain good statistical patterns in the case of a small number of samples. It is found that the SVM has better performance than other methods in the task of sentiment analysis (Hajmohammadi, 2013; Karanasou et al., 2015; Huang et al., 2015). Thus, this study adopts the SVM technique to perform sentiment analysis of microblogging.

THEORIES AND METHODS

The Spiral of Silence Theory

According to the spiral of silence theory (Noelle-Neumann, 1974), with the passage of time, individuals with majority opinions are more and more active in expressing their opinions, while individuals with minority opinions tend to be silent under the pressure of public opinion. However, social media platforms support anonymous activities. People do not necessarily hide their true thoughts on the Internet, but may freely express their opinions and support the minority. Finally, the opinion of the minority can even reverse the opinion of the majority, forming the “anti-spiral of silence” (Zhu et al., 2018). One of the research tasks of this study is to identify high influential users. Based on the concept of anti-spiral of silence, users with different viewpoints but great influence as events develop are to be identified and are named as “opinion reversers”.

Data Collection and Preprocessing

Taking the event of “Jiankui He editing the infants’ genes” as an example, this study used “gene editing infant” as the keyword to obtain the content and comments of 154 popular microblog posts between November 1, 2018 and February 28, 2019 on the Sina Weibo platform. Generally speaking, only users who receive enough comments are likely to become high influential users. Thus, the posts with fewer than 100 comments were removed, and finally 42,959 comments of 138 microblog posts were obtained.

The jiebaR package was used for word segmentation. The original dictionary was expanded with *Sogou Daily Vocabulary*, *Sogou Online Popular New Words*, *Sogou Gene Vocabulary*, *Sogou Cell Biology Vocabulary*, and *Sogou Ethics Lexicon* (Sogou Dictionary, 2019) as well as 145 high-frequency

words generated by the online word frequency analysis tool Tuyue (Tuyue, 2019). In this study, 1893 stop words from the stop word dictionaries by the Harbin Institute of Technology, Machine Intelligence Laboratory of Sichuan University, and Baidu (Baidu Stop Words, 2019) were used to remove stop words.

Sentiment Analysis of Microblogging

The method based on the emotion dictionary is adopted to construct the training set. The words in the National Taiwan University Sentiment Dictionary (NTUSD) and the Chinese microblog emotion dictionary constructed by An et al. (2017) are selected as the basic emotional polarity words. Then, we calculate the chi square statistics (χ^2) of the remaining words. The words with high χ^2 values are selected as the feature words of the microblog posts or comments. The weight of feature words is calculated based on the Term Frequency-Inverse Document Frequency (TF-IDF) technique.

The emotion values of microblog posts are calculated and sorted. A certain proportion of posts with high emotion values and low emotion values is selected as the positive and negative training set respectively. They are trained by the SVM technique and an emotion classifier is obtained to classify the comments. There are three types of emotional tendencies, i.e., 1, -1, and 0. Here 1 indicates that the comment is of positive emotion; 0 indicates that the comment is rational discussion; and -1 indicates that the comment is of negative emotion. Finally, the sum of the emotional tendencies of all the feature words in each comment is calculated to determine the emotional support of the comment to the post, and judge whether the user who publishes the post is a positive or negative high influential user.

Identifying and Profiling High Influential Users

This study proposes the methods of identifying three types of high influential users, i.e., topic initiator, opinion leader and opinion reverser. The user who publishes a popular microblog post is a topic initiator. An opinion leader is defined as the user who has a high explicit influence (such as having many followers, fans and so forth) and a high implicit influence (e.g., his or her posts receive many related and supportive comments). In previous studies, a user's explicit influence is often considered, such as the number of retweets, the number of fans, the number of posts, the number of comments (Cha, 2010), personal profile, account authentication, the number of followers (Mei et al., 2015), the number of likes, the account level, and the average length of replies (Riquelme & González-Cantergiani, 2016). However, a user's implicit influence is hard to measure and usually ignored.

In this study, both explicit and implicit influence of a user are considered. An indicator system of high influential user identification is constructed to calculate a user's influence index, and to identify opinion leaders and opinion reversers. See Table 1. The indicators of high influential users include basic information of users and basic attributes of microblogging. The user's influence index is obtained by the weighted sum of all the indicators. Two novel indicators are added, i.e., support and topic consistency between microblog posts and their comments. The calculation method of support is shown in Equation (1), where $\text{Degree}(S_d)$ indicates the support degree of microblog post d . $\text{Count}(\text{support})$ represents the number of supportive comments of post d , and $\text{Count}(\overline{\text{support}})$ represents the number of negative comments of post d :

$$Degree(S_d) = Count(support) - Count(\overline{support}) \quad (1)$$

Table 1. The indicators of high influential users

Category	Indicators
Basic information of users	Account level
	Number of followers
	Number of fans
	Number of posts
	Account authentication
	Personal profile
Basic attributes of microblogging	Number of likes
	Number of comments
	Number of retweets
	Average length of replies
	Support
	Topic consistency

Sentiment analysis is conducted for all the comments of each popular post. To identify opinion leaders, the posts that are supported by their comments are retained. The biterm topic model is used to extract the topics of posts and comments and determine the topic consistency between a post and its comments. The comments that are inconsistent with the topics of the original post is removed. The standard deviation method (Al-Anzi et al., 2017) is adopted to determine the weight of each indicator. Finally, the opinion leader value of each user is calculated to determine opinion leaders.

The identification of opinion reversers is based on opinion leaders. We examine the publishing time of posts, and divide the evolution of public opinion into different time periods. The viewpoint composition of opinion leaders during each time period is explored. The users whose viewpoints are obviously different from the mainstream opinion at the late stage of the event are opinion reversers. They are a kind of special opinion leaders.

The static information of a microblog user's homepage is combined with her or his dynamic behavior data. Firstly, we obtain the account authentication, personal profile, and other information on a user's microblog homepage and construct a user's basic profile. Each user is labelled with some tags according to her or his basic information. For example, the account of Guoke is labelled with "Science, Technology". Then, according to the basic information of users and the basic attributes of microblogging, the role type of each user is identified and labeled. Finally, combining with the basic attributes and the influence of users, the characteristics and roles of different types in the event are analyzed.

DATA ANALYSIS AND RESULTS

Topic Identification and Sentiment Analysis

The Biterm topic model was used to determine the feature word pairs of each topic. The number of topics was determined by the minimum perplexity. Experiments show that the optimal number of topics was 20. They can be divided into five categories. See Table 2.

Table 2. The categories and keywords of the topics

Topic Categories	Topic No.	Keywords
I Contents related to the experiment of project team	V1	genes, CCR5, risk, HIV, discovery, virus, infection
	V2	ethics, committee, Shenzhen, innovation, hospital, experiment
	V3	projects, universities, technology, South, informed
	V5	Jiankui He, gene editing infants, gene editing, humans, research
	V18	Jiankui He, team, couple, content, platform
II Attitudes and statements from various organizations	V4	human, statement, clinical, link, web page
	V8	scientists, the world, condemnation, influence, life, union
	V15	science, ethics, research, regulations, China, law, morality
	V20	gene editing infants, AIDS, immunization, first cases, initiation, modification
III Relevant departments began to investigate	V6	national, violations, health commission, related
	V9	Ministry of Science and Technology, China, research, attention
	V10	gene editing infants, volunteer, Guangdong Province, implementation, investigation team
	V16	research, technology, reproduction, regulation, science and technology
	V19	related, regulatory, purpose, country, investigation, safety
IV Jiankui He introduced the content of the experiment	V7	video, response, Beijing News, controversy, immunization, future
	V11	health, birth, baby, Lulu, Nana, associate professor
	V13	Summit, editing, international, Genome, 2nd Session
V Opinions of experts on the experiment	V12	gene editing, testing, genetics, clinical, CRISPR, USA
	V14	gene editing infants, events, journalists, firsts, professors, experts, scholars
	V17	Jiankui He, speech, data, publicity, appearance, publication

After preprocessing, 138 popular posts were left, and then the topic consistency between the comments and the posts in question was examined. A total of 4,391 comments were found to be inconsistent with the topics of the corresponding posts and removed. Then 38,568 comments remained.

The sentiment analysis was conducted to classify the comments associated with all the popular posts on each topic. For all the 138 posts, only one post regarding Jiankuai He's remarks was generally opposed by the commenters. Jiankui He did not realize that his behavior trampled on the bottom line of morality and ethics and violated relevant laws and regulations. His comments intensified netizens' anger. The publishers of the remaining 137 posts were considered as the candidate opinion leaders.

Identification and Feature Analysis of Opinion Leaders

This study used the indicator system of high influential user identification that was constructed to identify opinion leaders. The weight of each indicator was determined by the standard deviation method and the sum of the weight values of each indicator was 1. See Table 3.

Table 3. Indicators and their weight values of high influential user identification

Indicator	Weight	Indicator	Weight	Indicator	Weight
Account level	0.061	Number of followers	0.144	Number of fans	0.162
Number of posts	0.153	Number of likes	0.078	Number of comments	0.084
Number of retweets	0.080	Average length of replies	0.095	Support	0.143

The influence indices of some users are shown in Table 4. It is seen that the influence indices of No.22 blogger “The People’s Daily” and No.6 blogger “CCTV news” are higher than other bloggers. “The People’s Daily” ranks the first. It has the largest number of fans among all the candidate opinion leaders, and its number of followers ranks the second. CCTV news has the second largest number of fans among all the candidate opinion leaders with its number of followers ranking fifth and the number of posts ranking sixth. They are considered as opinion leaders.

Table 4. Bloggers’ basic attributes and influence indices (partial data)

Blogger	BLogger No.	Account Level	Number of Followers	Number of Fans	Number of Posts	Number of Likes	Number of Comments	Number of Retweets	Average Length of Replies	Support	Influence Index
The People’s Daily	22	48	3034	88169306	98172	58331	33456	35321	32.869	148	0.754
CCTV news	6	48	2645	83791861	108756	19830	11840	8877	41.395	194	0.625
China News Network	4	48	1251	45335328	115106	30827	14930	12387	28.571	297	0.530
The Beijing News	8	48	2344	35805026	96211	23240	9356	8977	39.175	238	0.519
Xinhua viewpoint	19	48	2968	64079985	106623	9703	3077	3829	17.618	124	0.498

To reveal the correlation between the indicators of opinion leaders and the influence index, a Spearman’s test was conducted as shown in Table 5.

Profiling the Users of High Influence on Social Media in the Context of Public Events

Table 5. The correlation between the users' basic attributes and the influence index

			Account Level	Number of Followers	Number of Fans	Number of Posts	Influence Index
Spearman's rho	Account level	correlation coefficient	1.000	.534**	.597**	.646**	.501**
		Significance (bilateral)	.	.000	.000	.000	.000
		N	138	138	138	138	138
	Number of followers	correlation coefficient	.534**	1.000	.456**	.289**	.645**
		Significance (bilateral)	.000	.	.000	.001	.000
		N	138	138	138	138	138
	Number of fans	correlation coefficient	.597**	.456**	1.000	.818**	.811**
		Significance (bilateral)	.000	.000	.	.000	.000
		N	138	138	138	138	138
	Number of posts	correlation coefficient	.646**	.289**	.818**	1.000	.698**
		Significance (bilateral)	.000	.001	.000	.	.000
		N	138	138	138	138	138
	Influence index	correlation coefficient	.501**	.645**	.811**	.698**	1.000
		Significance (bilateral)	.000	.000	.000	.000	.
		N	138	138	138	138	138

**. The correlation was significant at 0.01 level (bilateral)

Table 6. The correlation between basic attributes of microblogging and the influence index

			Support	Number of Likes	Number of Comments	Number of Retweets	Influence Index
Spearman's rho	Support	correlation coefficient	1.000	.606**	.571**	.546**	.082
		Significance (bilateral)	.	.000	.000	.000	.337
		N	138	138	138	138	138
	Number of likes	correlation coefficient	.606**	1.000	.902**	.915**	.324**
		Significance (bilateral)	.000	.	.000	.000	.000
		N	138	138	138	138	138
	Number of comments	correlation coefficient	.571**	.902**	1.000	.853**	.434**
		Significance (bilateral)	.000	.000	.	.000	.000
		N	138	138	138	138	138
	Number of retweets	correlation coefficient	.546**	.915**	.853**	1.000	.305**
		Significance (bilateral)	.000	.000	.000	.	.000
		N	138	138	138	138	138
	Influence index	correlation coefficient	.082	.324**	.434**	.305**	1.000
		Significance (bilateral)	.337	.000	.000	.000	.
		N	138	138	138	138	138

**. The correlation was significant at 0.01 level (bilateral)

Table 5 shows that when the confidence level is 0.01, there are significant strong correlations between the influence index and the number of followers/the number of fans/the number of posts, and between the account level/the number of fans and the number of posts. Significant medium correlations exist between the account level and the number of followers/the number of fans/the influence index, and between the number of fans and the number of followers. In addition, there are significant weak correlations between the number of followers and the number of posts.

Table 6 reveals the correlation between basic attributes of microblogging and the influence index. When the confidence is 0.01, there are significant strong correlations between support/the number of comments/the number of retweets and the number of likes, and between the number of comments and the number of retweets. Significant medium correlations exist between support and the number of comments/the number of retweets, and between the number of comments and the influence index. Significant weak correlations exist between the number of likes/the number of retweets and the influence index. It is notable that there is no significant correlation between support and the influence index, which indicates that the two indicators measure different dimensions of users.

Identification and Feature Analysis of Opinion Reversers

The birth of the HIV/AIDS gene-edited infants triggered a huge discussion. In the following month, all the professors from the Biology Department of Southern University of Science and Technology and lawyers issued a statement on the incident. Subsequently, the discussion on the incident gradually weakened. On January 21, 2019, the investigation results of the Guangdong Provincial “gene-edited infant incident” investigation team showed that Jiankui He’s team deliberately evaded supervision and implemented the human embryo gene editing activities for reproductive purposes which was prohibited by the nation. The Chinese Academy of Engineering also said that the relevant departments should improve relevant laws and regulations dynamically, which caused a heated discussion on Sina Weibo. In the next ten days, the discussion on the microblogging platform gradually weakened again.

Since the incident clearly involved ethical issues and the survey results showed that the team’s experimental project violated relevant regulations, there was no large-scale opinion reversal phenomenon on the microblogging platform. However, the No.31 blogger “Intellectuals” published a post worthy of attention. The content was about the views of Professor George Church, a professor of genetics at Harvard University and the director of the Genome Research Center of Harvard Medical School. Before Jiankui He announced the birth of gene-edited infants, Professor Church knew about the clinical trial conducted by Jiankui He and held a neutral attitude towards the experiment. There were different voices in the comments on this post. Some netizens thought that while criticizing Jiankui He and pursuing his responsibility, people should also treat gene editing objectively and think about how to deal with the current results and similar situations in the future. After all, since it was invented, improving the technology was also the current goal of scientists. The emergence of this kind of view broke the absolute dominance of the condemnation view before November 29, 2018. Thus, the blogger “Intellectuals” who published the post was considered as an opinion reverser.

Construction of High Influential User Profiles

The high influential users were profiled from the perspectives of microblog authentication, the number of popular posts, influence index ranking, topics, and the role type. According to the information of

microblog users' homepages, combined with the performance of users in this event, we determined the role type of each high influential user and profiled them as shown in Table 7.

Table 7. Profiles of high influential microblogging users (partial data)

Blogger	Microblog Authentication	Number of Popular Posts	Influence Index Ranking	Topics	Role Type
CCTV news	Official microblog of CCTV News Center	7	2	V2, V5, V6, V7, V8, V9, V10, V12, V13, V14, V15, V17, V18, V19, V20	opinion leader
People's Daily	Legal person micro blog of people's daily	5	1	V2, V3, V5, V8, V9, V10, V14, V15, V16, V17, V18, V19	opinion leader
Intellectuals	Decai Jiebei (Beijing) Technology Co., LTD	6	90	V3, V4, V5, V7, V8, V12, V13, V14, V15, V16, V17, V18, V20	opinion reverser
This is America	Global network U.S. press station	2	121	V7, V8, V9, V14, V15, V20	topic initiators
Phoenix video	Ifeng.com video official microblog	1	72	V7, V12, V13, V14	topic initiators

DISCUSSION

In the context of public events, it is very important to identify high influential users of social media for the management of online public opinion. First, identifying the topic initiators can help the emergency management departments timely grasp the salient topics of public opinion that appear at the early stage of the event. Second, opinion leaders not only voice their opinions, but also can lead others' thoughts and have influence on the general public (Nunes et al., 2018). Finding opinion leaders can help emergency management departments grasp the focus and emotional attitudes of core users of social media. Third, the identification of topic reversers can help the emergency management departments discover the changes of public opinion at the later stages of the event, find the key users of opinion reversal, and explore the factors that induce the public opinion to reverse. At the same time, the management departments can also master the diversity of public opinions.

In general, the findings of this study can help the emergency management departments understand and guide the online public opinion at different stages of the event, and provide support for the follow-up emergency management. Through constructing the profiles of high influential users on the social media, the management departments can leverage the information to guide public opinion according to the characteristics of users. For example, scientific and technological microblog users can be encouraged to publish popular scientific information about the event. Media users can be encouraged to report real-time tracking information about the event. Public security users can release event processing information and so forth.

CONCLUSION

This study proposes a method of identifying high influential microblog users based on topic consistency and emotional support. Taking the event of “Jiankui He editing the infants’ genes” as an example, the topics of microblogging were extracted and the comments were screened for topical consistency. The indicator system of high influential user identification has been built upon the sentiment classification of comments and used to identify opinion leaders on social media. On the basis of opinion leaders, the time of publishing posts was introduced to identify users with different opinions but high influence, namely opinion reversers. Finally, the user profiles were constructed, combining the information of microblog users’ homepages and the performance of the users during the event. The topic initiators and opinion leaders tend to promote the formation of the spiral of silence to some extent and may potentially inhibit different opinions, which are proposed by opinion reversers. The contribution of this study is to propose the quantitative methods of identifying the key nodes in the process of the spiral of silence and anti-spiral of silence.

The results outline the characteristics and classification of high influential users of social media in the context of public events and can help related departments guide the public opinions according to the users’ characteristics, such as encouraging high influential scientific microblog accounts to publish popular scientific information, encouraging media accounts to publish real-time tracking reports of events, and using the public security accounts to publish the processing results of events. The limitation of the research is the lack of in-depth research on satirical comments. Another limitation is to identify microblog posts with different viewpoints by human judgment, which may be subjective. Natural language processing is developing rapidly in the field of emotion recognition and has great potential (Wang et al., 2019). In future, the authors will try to introduce the ironic calculation and other methods to improve the accuracy of sentiment classification of online comments, and explore the automatic recognition method of opinion reversal.

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Chapter 64

Social Networks and Cultural Differences: Adidas's Case on Twitter and Sina Weibo

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ABSTRACT

The purpose of this chapter is the comparison of social media strategy on Twitter and Sina Weibo by the German company Adidas. A successful social media campaign is pushing brand awareness and companies improve their focus on that. Due to the internet censorship of the Chinese government, the social media landscape in China differs from the Western world. Therefore, companies need cultural and linguistic know how to be successful on Chinese platforms like Sina Weibo. The chapter compares how Adidas uses Twitter and Sina Weibo for their marketing purpose. Cultural differences and the local adaption of their social media appearance will be presented.

INTRODUCTION

Marketing is a well-developed method and is constantly changing its rules according to the needs and developments being held in and around it. To establish itself, it has begun adopting new paradigms of business (Saravanakumar & SuganthaLakshmi, 2012). The rapid development of the Internet is producing new ways to connect with the customer. One of the new forms of advertisement is Social Media. Bonnie Sainsbury, who is a Canadian influencer says: “Social media will help you build up loyalty of your current customers to the point that they will willingly, and for free, tell others about you” (e-Clincher, 2015). A blog, post or tweet can be twisted and viewed by millions almost for free and enables companies to make their own interest content that viewers will follow.

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With the help of the Internet, social media campaigns can be launched globally. As a result, companies are able to increase their brand awareness around the world. Whereas famous social media platforms like Twitter, Facebook or Instagram are famous in most of the countries, it can not be used in one of the most important markets in the world. China has draconian internet restrictions and is blocking most of the western social media platforms. As a result, western marketing campaigns are stopping right at the Chinese border. However, the restriction has supported the development of Chinese social media platforms like Sina Weibo. This platform varies much from their western counterparts. Logically, they need specific advertisement approaches to be successful in the Chinese market. So, this work is based on one central research question: the presence of a brand on the social network Sina Weibo implies adjustments compared to the presence on the Twitter network?

The terms Social Media, Web 2.0, Social Media Marketing and Microblog will be described to set the framework of the article. Second, social media platforms Twitter and Sina Weibo will be described and differences will be exposed. Besides technical differences on the platform, the article also shows cultural differences by analyzing the United States of America, Germany, and China. Communication is always a matter of culture and needs to be adapted according to the target market. Furthermore, the paper introduces the company Adidas with its most important business categories. One of the main parts of the article is the usage analyzation of Twitter and Sina Weibo. Part of the analysis is the structure, frequency of posts, the use of mediums, content, design, language, and the use of models and celebrities.

BACKGROUND

Social Media and Web 2.0

The term Web 2.0 was introduced by Tim O'Reilly and defines the business revolution in the computer industry. The change is due to the movement of the internet as a platform and the attempt to understand the rules of success for this platform. The aim is to build applications that harness network effects to get better the more people use them. Internet users are no longer limited to a one-sided communication flow in which companies only inform through websites. Web 2.0 effects online users by how many things they can do, interact, combine, remix, upload and customize for themselves (Shuen, 2018).

The term social media refers to all posts in the form of text, pictures, videos or audio which are created in order to get an interaction. Therefore, social media is connecting technology, content, and creativity to achieve a communicational exchange on a virtual platform (Hettler, 2012). Besides the information exchange, Weinberg, Ladwig and Pahrman (2012) focus on the fact that social media enables communication without geographical boundaries and at every time. The values of social media sites are their users and the content which users are sharing. This term of information is referred as user-generated content.

Social media platforms can be divided into three groups (Kreutzer, 2018):

1. Communication: blogs, micro-blogs, private and business social networks, Messenger;
2. Cooperation between user: wiki, rating portal;
3. Content-sharing: text-sharing, foto-sharing, video-sharing, audio-sharing.

Social Media Marketing

In the today's world, companies change their marketing strategy from being product-centric to being customer-centric and relationship-driven (Sheth, Sisodia, & Sharma, 2000). Social Media Marketing (SMM) is a tool that supports that trend.

SMM is used to describe the use of social media platforms for the purpose of marketing. Akar and Topçu (2011) has defined SMM as the promotion of the company and its products through social media. On the other hand, Drury (2008) describes the increase of brand awareness among consumers through the word of mouth principle as a purpose of SMM. For Tuten and Soloman (2017), SMM is the utilization of social media platforms to create, communicate, deliver, and exchange offerings that has value for an organization's stakeholder. While the first definitions have a concentrated focus on the classical promotion of the company, Assaad and Gómez (2011) sees SMM as a great opportunity to talk with the customer on a personal level. Therefore, those social networking sites should be considered as an additional channel with unique characteristic and not like a traditional marketing tool. For them, SMM is an effective means of getting vital information that is essential to the success of the business.

Microblogs

This paper will focus on the use of Microblogs. Therefore, it is important in order to describe the term in detail. Microblogs are an established form in the group of social media platforms with a broad interest in consumers and companies. They differ from traditional blogs in that its content is typically smaller in file size. Mostly, the length of a text message is limited to less than 200 characters and focusses on the exchange of short sentences, individual images or video links (Kaplan & Haenlein, 2011). The limitation is also the main factor of their success story and they are typically used for crisis management, journalism, or politics (Aichner & Jacob, 2015; Mendoza, Poblete & Castillo, 2010). The biggest and most famous microblogging provider in Western countries is Twitter, whereas in China Sina Weibo is the most popular platform (Kreutzer, 2018).

What Is the Success Story of Microblogs?

First, microblogs create a concept called ambient awareness. The theory describes the feeling of closeness and intimacy a person gets by reading through various several small tweets of one blogger. Due to that ambient awareness, microblogs result in a relatively high level of social presence, that can be achieved between two individuals, and media richness, defined as the amount of information that can be transmitted in a given time interval (Daft & Lengel, 1986).

The second reason behind the popularity of microblogs is the unique type of communication. When a person decides that a tweet of another person is relevant, he can become a follower of that person. Following means, the user is getting all new posts of the person he decides to follow (Cha, Haddadi, Benevenuto & Gummadi, 2010). In many cases, the content of tweet may be read and immediately forgotten, but in other cases the post might be seen so relevant that the user chooses to retweet the post. Tweet is a message that the user receives from a person he follows and directly forward to his own followers (Weinberg et al., 2012). The initial tweet can be forwarded from one user to another and can transform from a simple piece of information to a word-of-mouth phenomenon (Kaplan & Haenlein, 2011).

The third reason for its popularity is the motivation of a user to get additional information about the tweeted subject because the tweet with its limited characters can not fully describe the topic. By using short URL's, microblogging messages become similar to traditional ads, which motivate users to click on it (Kaplan & Haenlein, 2011). The "click-through" can positively affect consumer behaviour (Manchanda, Dubé, Goh & Chintagunta, 2006).

Marketing Strategies of Companies Based on Microblog

Microblogs have a huge potential for companies to get the customer brand opinion, improve the relationship and communication with the customer and solve customers problems. Therefore, companies can use microblogs as a brand promotional tool. The brand image has a significant influence on customers buying decisions (Malik et al., 2013). Microblog messages contain much information about brands including brand sentiment, product experience and customer satisfaction (Sui & Yang, 2010).

The companies can use that information flow to increase their brand awareness, creating an official microblog account and publishes news and information about their product and activities via it. It is important that a company follows a clear strategy on how to present itself on a microblog platform (Kreutzer, 2018). The published information can impress the customers and engage them to receive more relevant information and intensify the brand image (Sui & Yang, 2010). For the right communication, companies have to safe all rights of their brand name (Kreutzer, 2018).

The content of a post is very important and has to be attractive to the customer. Therefore, companies should provide exclusive information about their products, their company or their industry. Moreover, they should attract customers by exclusive offers (limited and attractive in terms of price) and exclusive services (preview for new offers or new products). Those exclusive contents will bind customers closer to the company. The reason for that is, that customer will check the postings on the microblog frequently if they believe they will only receive the information through that channel (Kreutzer, 2018).

Microblogs are very suitable for big companies in order to start a community with their fans. In such a community, the company can directly or indirectly talk with its clients about the company or new offers. Moreover, companies can use those platforms to launch customer service and answer customer questions or complaints. The answers will be posted publicly and force the customer service to work quickly, respectful and solution-oriented and will result to a better customer service level (Kreutzer, 2018; Sui & Yang, 2010).

Twitter

Twitter can be categorized as a microblog and was founded in 2006 in San Francisco (Arceneaux & Weiss, 2010). It enables the user to post short messages to individuals who have chosen to follow the sender. Retweeting the post engages the follower to participate in the conversation (Burton, Dadich & Soboleva, 2013). A post is limited by Twitter to 280 characters (Geier & Gottschling, 2019). The platform is not just limited to text messages. Moreover, Twitter enables its users to use pictures, videos or quoting other posts. Through the use of "@" in their own post, users can refer to other accounts like a company or a private person (Hettler, 2012). The use of hashtags is also very popular on Twitter. It serves to refer to certain topics without the need to explain them. Hashtags are linked to posts with the same hashtag to help to connect a variety of different posts about the same topic. Users who have an interest

in a topic can use the search function of Twitter for looking up a hashtag. (Weinberg et al., 2012). The importance of Twitter has increased tremendously in our society based on the use of celebrities. The best example is the sitting US president Donald Trump who announces his political agenda on a daily basis on Twitter (Stolee & Caton, 2018).

In the first quarter of 2019, Twitter had 330 million active monthly users (Twitter, 2019). Moreover, Twitter generated 4.17 billion visitors on their webpage (SimilarWeb, 2019). 27 percent of all users are from the US, followed by Japan with 14 percent (SimilarWeb, 2019). In comparison to other social media platforms, Twitter is not used from a specific age group. The difference in the daily use of a 16-year-old person compared to a 49-year-old varies by only 4 percent (Brown, 2017). Besides Twitter, other microblogs exist but they play a niche role and are mostly in financial difficulties (Hettler, 2012). Therefore, Twitter can be described as the most important microblogging platform for the western world.

Social Media in China and Sina Weibo

China is by far the number one of internet users. In 2018, 828.51 million people in China used the Internet (Statista, 2020). Moreover, China has the world's most active environment for social media. Almost every Internet user in China uses social media. The Chinese internet is also a unique place. Western social media is not taking place in China. The country has blocked the world's four most visited websites: Google, Facebook, Youtube and Twitter and also denied other western social media platforms access to the Chinese market (Wang, 2016). In reality, most Chinese internet users do not really notice the absence of western social media because the country has accustomed themselves to indigenous websites. Today, China has a grown and unique social media landscape. Social media in China is experiencing a massive growth without copying the western equivalents. Instead, they are new creations customized for the Chinese culture, habits, and behaviour (He & Pedraza, 2015). Some of the social media innovations are even leading the global trend of media development. Chinese platforms live in a complicated and competitive environment and face quick changes. All in all, the Chinese social media platforms can be defined as unique, complex fragmented and local (He & Pedraza, 2015).

Sina Weibo is one of the most famous social network sites in China and has become a crucial medium to share information like breaking news, social events and products (Lei et al., 2018). The microblogging platform was launched in 2009 and has grown rapidly to influence millions of internet users in China. It can be described as the Chinese version of Twitter (Nooruddin & Zhang, 2012). In July 2019, almost 600 million unique devices have visited Sina Weibo (Statista, 2019), which is nearly two times more visitors than Twitter (330 million).

Chinese use microblogging platforms like Sina Weibo to get credible information about current events or news. The reason for that is, that microblogging sites allow to spread informations quickly (Liu, 2016). As already mentioned, Weibo is often compared to Twitter. Besides that, Weibo might be more social in terms of openness of network, applications and multimedia choices (Chen & Zhang, 2011). In the early days, Weibo had a limit of 140 characters but has removed this limit in January 2016 by allowing users to post up to 2.000 characters (Hlee, Cheng, Koo & Kim, 2017). Weibo allows their users to follow others, comment on other's weibos and click the "zan" button which is similar to a "like" button in western social media, and add weibos to the personal gallery (Hlee et al., 2017). Moreover, users can integrate graphical emoticons, pictures, music, and videos to their weibos (Guan et al., 2014). Comparable to Twitter is the use of hashtags which enable users to find weibos and news (Hlee et al., 2017).

An advantage of Sina Weibo is their cooperation with the big online market place Alibaba. Sina Weibo has connectivity to Alibaba which enables companies to sell their products through the microblogging page. They also invented their own payment system “Weibo Payment” in order to make the purchasing progress quicker and more efficient (Havinga, Hoving & Swagemakers, 2016).

Each social media platform in China attracts specific users with different characteristics (Sullivan, 2012). Consumers who favour Sina Weibo tend to be in higher income brackets, earning more than 1.300\$ a month, and they are much more likely to live in big cities (Chiu, Lin & Silverman, 2012). Very interesting for companies is the Enterprise-Version of Sina Weibo. It enables companies to analyze their followers (age, gender, regional differences). Those data can be used for further marketing strategies. Furthermore, Sina Weibo offers marketing tools which enable organisations to get in conversations with their follower and start online surveys (Liu, 2016). Companies can send private messages to either a specific percentage of followers or to all of them. The messages can be used to get customer attention, send them prize competitions, or interesting news in order to increase the interest to follow the company (Liu, 2016). Like Twitter, Weibo also requires a specific strategy of how to operate on the platform. In general, the plan is relatively similar. Companies should use hashtags cleverly, create a fan base, post relevant and interesting topics, take the respond of the followers serious. Weibo has to be seen as an influential marketing tool with all the different aspects it offers (Chen & Zhang, 2011).

A great challenge for using Sina Weibo is the cultural difference entrepreneurs have to face. A European or American company can not post or interact with their follower in the same way they are used in their home market. The Chinese culture has different rules and defines different taboo on topics like humour, erotic, politics and religion. This cultural framework can deviate extremely to the western usage. To be successful in the Chinese social media world, companies have to hire social media workers with explicit cultural competence about the Chinese culture. Companies should also consider to post in mandarin and therefore hire a Chinese speaking employee (Svensson, 2014).

Cultural Differences

While the explosive growth of social media is a phenomenon across many countries, the way people use the platform and their reason for doing so may vary according to their social and cultural milieu (Kim, Sohn & Choi, 2011). Therefore, it is necessary to adopt a deeper look at the cultural differences of China compared to the United States and Germany as a benchmark.

Hofstede, which is a leading expert on cultural studies, defines culture as a collective programming of the mind that distinguished the members of one group or category of people from others (Hofstede, 2011). Moreover, Hofstede (2011) is dividing culture into six dimensions which are: Power Distance, Uncertainty Avoidance, Individualism vs. Collectivism, Masculinity vs Femininity, Long Term vs Short Term Orientation, Indulgence vs Restraint. The chapter will focus only on two of the six Hofstede dimensions which are power distance and individualism vs collectivism.

According to Hofstede, power distance explains how societies deal with inequalities and hierarchies in terms of social status, wealth and power. In a culture with a high-power distance, less powerful members of an organization accept and expect that power is made available unequally (Hofstede, 2011). In a society with low power distance, equality is treasured and authorities are often challenged (Fi & McNeal, 2001). In terms of marketing, consumer in a high-power distance country has a tendency to use expensive, luxurious symbols and high-status appeals such as celebrity endorsement to highlight power, wealth, and elitism. In contrast, low power distance countries prefer down-to-earth appearances

with normal persons (Albers-Miller & Gelb, 1996). It is noted, that China has a very high score of 80, whereas Germany and the US only score 35 and 40 points. That illustrates that Chinese culture extreme values power distance.

Individualism describes a society in which everyone is only looking after himself and his family. Independence, individuality, and self-realization have a great importance. Moreover, actions are determined by personal goals and individual welfare. In comparison, a collectivistic side is a culture in which people are integrated into a robust, family-extended group which stays loyal and oppose other groups. The goals of a community and collectivistic welfare take precedence over personal achievement. Furthermore, they live in a “we” society in which interdependence with others is valued. (Hofstede, 2011). A collectivistic society is more likely to share content within its group (Ji et al., 2010). Social media appearances should respect the difference between individualism and collectivism. A collectivistic country appreciates collectivistic appeals like popularity, collective benefits, and group achievement, and less individualistic approaches like uniqueness or the promotion of adventures (Cheong, Kim & Zheng, 2010). According to the graph, China can be categorized as a collectivistic culture. Germany is tending to be more individualistic, whereas the United States can be characterized as strongly individualistic.

Another factor which is not described in the six dimensions model of Hofstede is the difference in communication. Hall (1973) states, that human communication always follows cultural and contextual patterns. Furthermore, Hall (1989) divides cultures into high context and low context depending on the amount of information transmitted at the moment of communication. The general term of context can be described as the information that surrounds an event and must be known in order to understand the meaning of an event or subject. A high context message is one in which most of the information is already in the person, while very little is explicitly transmitted in the message. Those cultures do not require or expect in-depth background information because they keep themselves informed about everything having to do with the people who play a significant role in their life. In contrast, in a low context message, the mass of the information is vested in the explicit code. For our article it is important to know that China is clarified as a high context culture whereas Germany and the United States are a low context culture. Low context people compartmentalize their personal relationships and many other aspects of day-to-day life. As a consequence, each time they interact with others they need detailed background information (Hall & Hall, 2001). In other words, low context communication tends to be more direct, is less focusing on context, and contains more factual information (Gudykunst, 2004; Kim, Cole & Gould, 2009). In comparison, high context communication is more indirect and ambiguous, favouring metaphors and symbols and is less understandable to persons who are outside the group (Kim et al., 2009). Societies which favour a low context communication style use rational cues such as product features, the functional value of a product or references to competing brands to promote a product. On the other side, high context cultures talking in a more direct and implicit way about a product or a brand (Gudykunst, 2004). They use a persuasive communication style which is more likely to use emotional appeals and symbolic association with a celebrity or lifestyle (Tsai & Men, 2012). For example, Chinese advertisements feature values that are symbolic and suggestive of human emotions. Moreover, web sites are more likely to offer information about consumers connection to their community (Lee, Geistfeld & Stoel, 2007). In high context cultures, the news are transmitted colourful, inspirational and in an interesting way. Pathos and entertainment are preferred (Corduan, 2018). Furthermore, high-context cultures prefer special graphics, design elements, and colourful background design. Users in those cultures place more emphasis on the appearance of posts, are less focused, and therefore prefer a variety of content types.

Companies operating in a high context should focus on building a relationship with the customer through the soft-sell approach (Pollay, 1983). Consumers in China focus on the intangible aspects of advertising messages. Of great importance is the aesthetic and entertainment values, rather than product features and benefits (Mooij, 2018). A successful way to transport good feelings and create a happy atmosphere is the use of celebrities and the approach of an emotional appealing (Johansson, 1994).

METHODOLOGY

The data analysis in this chapter is based on a quantitative approach, whereby the researcher obtained the data from observing the last 40 social media posts posted by Adidas company on Twitter and Sina Weibo. The observation of the posts was made during the month of November 2019. By counting specific characteristic the author was able to put the observation into a quantitative perspective and present the results. The variables analyzed were structure of account network, topic of the post, design of the post, language of the post, diversity of the post and cooperation with celebrities.

ADIDAS BACKGROUND

Adidas was founded in 1949 by Adi Dassler in the small German city Herzogenaurach. Today, it is a multinational corporation that designs and manufactures shoes, clothing, and accessories. It is the largest sportswear manufacturer in Europe and the second-largest in the world (Kreutzer, 2018). The brand has a long history and deep-rooted sports connection with a diverse portfolio of major global sports. Today, Adidas is one of the most recognized and iconic global brands. The company's mission is to be the best sports brand in the world by designing, building and selling the best sport products in the world, with the best service and experience and in a sustainable way (Adidas, 2018). In 2018, Adidas generated worldwide sales of 21.915 billion Euros (increase of 3.3% to 2017), 7.1 billion Euros were generated in China (increase of 14.9% to 2017) (Adidas, 2018).

Brand Adidas is divided into the following sub-brands (Adidas, 2019):

- Adidas Sport: sportswear for professionals
- Adidas Original: A lifestyle brand marked by the iconic Trefoil logo.
- Adidas Core: sportswear for everyone
- Reebok Running: innovative technologies for high-performance runners
- Reebok Training: specialized products of fitness
- Reebok Classics: sportive fitness clothes for the daily life

In 2019, Adidas has over 57000 employees and produced over 900 million sports and sports lifestyle products. Sales of 21.015 billion Euros were generated in 2018 by Adidas.

RESULTS

Network Presence of Adidas

Adidas Original has established themselves successfully in the western and Chinese microblogging platform. They have a structured and successful social media strategy by adapting to both regions. While addressing a wide customer range on Twitter, they focus especially on the Chinese culture on Sina Weibo. Language, colours, celebrities, and models are customized for Chinese preferences. Furthermore, Adidas is able to maintain its core values and recognition in both markets. They do adapt but do not change their branding. This is noticeable by having the same profile picture and the slogan “Three Stripes. Past. Present. Future” on both platforms.

Adidas states that their Original sub-brand is a main driver of their global success. The sub-brand has verified accounts on Twitter and Sina Weibo with millions of followers and will be used for the following comparison. Adidas Original’s Twitter account is addressing the users globally, whereas the Sina Weibo account is posting specifically for the Chinese market. This must be taken into consideration for the following analysis. According to the 2018s annual report, Adidas believes that possible changes in customer demands might be high. One reason is the quick changes in demand for fashion. Therefore, it is necessary to identify fashion trends. Social media interaction with the customer helps to spot changing fashion preferences (Adidas, 2018).

Today, the Twitter Account of Adidas Original has 4.07 million followers and cumulative 17,500 tweets. Retweets are included. The account was founded in February 2009 and has a global focus. In comparison, the Adidas Original Account of Sina Weibo has currently 2.46 million followers and 4,600 posts. Adidas posts regularly on Twitter and Sina Weibo. In this article, the last recent 40 posts of both platforms were analysed. Adidas needed 105 days for 40 posts on Twitter, whereas they needed only 73 days on Sina Weibo. Adidas is posting more frequently on Sina Weibo (1.8 days/post) than on Twitter (2.6 days/post). Table 1 presents the variables compared.

Table 1. Comparison of adidas on Twitter and Sina Weibo

Variable	Twitter	Sina Weibo
Followers	4.07 million	2.46 million
Posts	17500	4600
Number of days to make 40 publications	105	73
Range of days per post	2.6	1.8

Source: authors

Structure of Account Network

The structure of their Twitter and Sina Weibo account is relatively similar. Both platforms use the same Adidas Original logo as their profile picture and the slogan “Three Stripes. Past. Present. Future” in their profile description. Furthermore, both websites use their cover picture to promote the newest fashion advertisements. Currently, both sides are presenting the new shoe collection on their cover picture. In

the profile description of Sina Weibo, Adidas connects the user to other Adidas communities at Sina Weibo and to the external social network Douban. In contradiction, Adidas is not using links on their Twitter profile.

A visible contrast is the use of colours. The cover picture of Twitter is kept mainly white and makes a subtle but classy impression. In contrast, Adidas Original uses for Sina Weibo a very colourful background to promote their shoes. For using a cover picture at Sina Weibo Adidas needs to be a verified company.

Topic of the Post

One of the most important aspects of analysing a post is the topic which it is addressing. Every post is established of a different purpose. Promoting a product, a new collection, presenting new information about the company or just telling a story. Interesting content is bounding the customer closer to the company's profile. Big differences in the online topics were noticeable during the last 40 posts on both platforms. On Twitter, Adidas Original is focussing primarily on their shoe collection. More than 70% of their posts present the newest footwear and only 10% of the posts are promoting the street wear collections. The missing 20% are dealing with presenting the latest cooperation, telling a story, or dealing with diverse topics.

In contradiction, Adidas Original diversificate the topics on Sina Weibo. 43% of their posts are presenting the newest footwear and 38% promote the street wear collection. Likewise to Twitter, the final 20% is presenting the latest cooperation, telling a story or presenting diverse topics.

Design of the Post

By addressing the follower on social media, the design of the post is an important factor. Especially the used colour have to attract the users and reflect cultural standards. It is noted, that Adidas Original uses more colour for their posts on Sina Weibo than on Twitter. Most of the posts on Twitter are comparable to the left picture. The shoe is in front of a white and simple background. No colours that might distract the consumer from the product is visible. In contrast, Adidas uses colourful pictures on Sina Weibo. Most of the pictures offer a full range of different colours. The product is not part of the main focus. More than 80% of all pictures on Twitter show a subtle background, while Adidas posts more than 60% with a colourful one.

Language of the Post

The language on both platforms is different and adapted to the target market. On Twitter, Adidas is communicating for a global performance in english, whereas on Sina Weibo the used language is mandarin. However, the name of the shoes are not translated and remains in English. In order to compare the text messages, the post has to concern a similar topic. One good example is the promotion of the "YEEZY" collections that are also optically very similar. Adidas is keeping their messages on Twitter very short. They only introduce the shoe model and the date for the sales launch. The writing style is direct, offers factual information and therefore focus on a low-context culture.

On Sina Weibo, Adidas is using more text to interact with with their customer. They start the conversation with the question "What's the matter, let's talk outside the clouds ù" After that, they introduce the name of the shoe collection and present details about the used materials or the weight. The date of sales

launch is presented with the information that the collection is limited. Furthermore, they describe the shoe with the statement: “The iconic mid sole makes you feel like walking through the clouds” which refers to the first sentence of the post.

Diversity of the Post

When looking at the posts on Sina Weibo, it is noticeable that the majority of the models and beauty bloggers are from Asia. In contradiction, Adidas uses ethnically diverse models on Twitter. However, this result is understandable, and it makes sense that the Chinese market to select models with which the target group can identify with. Twitter is used globally. Therefore, Adidas has to have to address all different ethnicities with the goal that no one feels excluded.

Cooperation With Celebrities

As an outfitter to numerous famous athletes, sport teams and sports organizers, Adidas has gained international significance. According to their own annual report, they focus on promotional partnerships and brand marketing activities (digital advertising, point of sales) (Adidas, 2018).

Adidas’s brand awareness was achieved mainly through promotional partnerships. Adidas is sponsoring sporting events and equipping major football teams or athletes such as Lionel Messi or Aaron Rodgers. Marketing through promotional partnerships with famous athletes has been a tradition since the company’s foundation and is, therefore, an important factor in increasing Adidas brand awareness (Heiden, 2015). Moreover, Adidas also focus on non-sports celebrities such as American musician Kanye West and Pharrell Williams to expand the brand reach. In collaboration with Kanye West, Adidas Original created the “YEEZY” collection, which is very successful internationally (Yang, 2019). In October 2019, Adidas Original advertised the New “YEEZY BOOST 700” shoe and the Pharrell Williams collection on Twitter. Each of both posts has more than 1.400 likes which are a significant difference in other Twitter posts from Adidas Original. But, Adidas is not promoting the campaign with pictures or mentions of Kanye West and Pharrell Williams. The collection “YEEZY” stands for itself. One exception is the announced collaboration of Pharrell Williams’ Human Race with Nigo’s Human Made. For that advertisement, they used pictures of both designers to promote the new campaign. These types of cooperation are also suitable for the Chinese market. However, it is necessary to work with personalities who have a high reputation in China. As a result, Adidas is partnering with Chinese celebrities and public figures. One of the newest campaigns on Sina Weibo is promoting the shoe “Adidas Continental 80” in cooperation with the Chinese actress and singer Yang Mi. She can be considered as a superstar on Sina Weibo with more than 105,6 million followers. The post was liked 107.900 times and reposted more than 77.000 times. The figures are ten times higher than normal Adidas Original posts. Adidas is working closely together with celebrities. Almost every post is linked with a famous person like Lu Han (musician) with 60 Mio followers or Angela Yeung Wing (model) with 101 Mio followers. The “YEEZY” collection was the only posts that were not linked with a star.

The following table summarizes for the variables analyzed the differences between the two social networks.

Table 2. Major differences in Adidas' presence on social networks Twitter and Sina Weibo

Variable	Twitter	Sina Weibo
Structure of account network	Cover picture essentially white	Cover picture colourful background
Topic of the post	Focussing primarily on their shoe collection	Diversifying the topics
Design of the post	Few colors	Full range of different colours.
Language of the post	English	Mandarin, but the name of the shoes are not translated; more text
Diversity of the post	Ethnically diverse models	Beauty bloggers from Asia
Cooperation with celebrities	Partnering with famous athletes and non-sports celebrities	Partnering with chinese celebrities and public figures

Source: authors

DISCUSSION

The symbolism of color and the importance that people give varies between countries and is an element that marketing and in particular marketing on social networks can not belittle, to achieve go against the culture of the country. This situation is explored by Adidas on the cover of social networks and also in the number of colors used in the creation of posts.

Adidas Original is implementing the recommendations from the literature. By keeping their posts simple on Twitter they use the method that is favouring low context cultures. Sina Weibo is used in China which is categorized as a high-context culture. Consequently, they utilize colourful pictures, and special graphics and design elements in order to be adapted to the taste of the culture.

The theme of the post is more concentrated on the social network Twitter, than on the social network Sina Weibo. By using an inspirational and symbolic writing style, the post appeals perfectly to high-context cultures. Moreover, the aesthetic of a post is really important for a high-context culture. Therefore, Adidas uses the symbol of a cloud as an additional design element to increase the optical impression. The writing language used on Twitter - English - goes against a more global presence, but that in the case of China, the company felt the need to go against the local culture, using Mandarin, bearing in mind that language is one of the maximum expressions of a culture.

Also the use of personalities, incorporating in its communication Chinese celebrities and public figures, reveals that in the social network Sina Weibo, the company seeks to meet a local communication. On Twitter the diversity of nationalities is a reality, as well as the area of activity of these people, which demonstrates that there is a preference to be as comprehensive as possible, which fits into the transversality of various cultures. The difference in the diversity of the post, which in the social network Sino Weibo bet on beauty bloggers from Asia reinforces the focus of the Adidas brand on Asian culture.

CONCLUSION

Since introducing Web 2.0, Social media has become an effective tool for communication without geographical boundaries at every time. Companies benefit from that development by using social media marketing. This form of marketing contributes to interact with the customer on a personal level, increase brand awareness and push the success of the company. Microblogs are a form of social media

platform which is limiting the length of text messages. Their success story is built on several aspects. By creating ambient awareness the users feel a closeness and intimacy between themselves. Moreover, the unique type of communication through the function of resending posts can create a mass word-of-mouth phenomenon and motivate a user to get additional information on a specific topic. Companies have discovered the potential of microblogs and developed them as a brand promotional tool. Increasing communication with their customers, creating a community, inform about the newest products are some of the information a company shares on microblogs. The most famous microblog in the western world is Twitter with 330 million active monthly users.

Companies face difficulties when entering the Chinese social media markets. Famous western platforms like Facebook or Twitter are blocked by the government. As a result, China has developed its own unique social media landscape customized to the local culture. The most famous equivalent to Twitter is Sina Weibo with almost 600 million visitors per month. For a successful social media performance in China, companies need to understand the culture. Therefore, the article showed the differences between China, Germany, and the United States by using Hofstede's six dimension models. The main differences were noticeable in the categories "Power Distance", "Individualism" and Hall's division in "High context" and "Low context".

Company Adidas Original uses both social media platforms successfully. The analyse of their social media usage showed similarities and differences in both platforms. The structure, company profile and profile picture is relatively similar. Furthermore, both platforms use their cover picture for the newest product promotions. Commonly, the use of pictures or videos is also spread. However, social media team of the company is adapting its online presence on the market. In general, Adidas is posting more frequently on Sina Weibo (1,8 posts/day) than on Twitter (2,6 posts/day). By focussing on street wear on Twitter the focus of the microblogging platform is set differently to Sina Weibo which also concentrates on the street wear collection. Another adaption that both platforms do is on the design and the used language. On Twitter, Adidas provides only the main product information and focus on the design of the post on the product, whereas they do a different approach on Sina Weibo. By focussing on the use of a high-context culture, the language is more inspirational and provides more information. Moreover, the design can be described as more colourful.

Adidas uses the cooperation with celebrities differently on Twitter and Sina Weibo. With the help of celebrities, Adidas creates its own collections which they promote on Twitter. One of the famous product lines is called "YEEZY" that is promoted by models and not by the celebrities themselves. The promotional strategy on Sina Weibo is differently. First, Adidas collaborates only with celebrities known in China. Secondly, they use the reputation of the star by putting them in the main focus of their post. In Summary, Adidas is able to present the company on both platforms successfully. By adapting to the cultural standards they ensure that the followers can identify with the brand without losing their core values and brand recognition.

The study is positioned as exploratory and we consider that it provides some indications for the development of more structured and in-depth studies, namely on the elements that were analyzed in the two social networks and which contribute to check for differences in content and presentation, including graphics. It has several limitations, such as the mode used for the selection of posts, the number of posts used and the criteria used in the choice of the elements considered to analyze the post.

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Chapter 65

Communication on Social Network Sites: Assessing Cyberbullying Among Young Women in Nairobi, Kenya – Case of Facebook Platform

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ABSTRACT

Facebook is regarded as a popular social network in Kenya more so among the youth besides other sites like Instagram and Twitter. A study conducted by World Wide Web Foundation revealed that more than one in every five women in Kenya have experienced cyberbullying. Such study results justifies that the internet is rife with harassment with more women bearing the brunt as compared to men. The main objective of the study was to establish forms of cyber-bullying among young women between 25 to 35 years old on Facebook platform. It was established that unwanted trolls, doxing, and sexual harassment were the dominant cyberbullying trends on Facebook among young women in Kenya with men being the highest perpetrators of cyberbullying than women. It was also established that there is lack of awareness among young women on Facebook Safety, which is a resource developed by Facebook for reporting inappropriate content and help protect people who may be feeling self-injury due to cyberbullying on Facebook.

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INTRODUCTION

Mathews et al. (2000) define social media as any medium of communication that allows interaction and network of relationships. While social network sites (hence forth referred to as SNS) are platforms or sites that facilitate communication, interaction and social relations, Aggarwal and Charu (2011) state that SNS are more about the tools used to make that content available to others and to allow users to connect, to engage with it and to build online communities. SNS can as well be defined as internet based social spaces designed to facilitate communication, interaction, collaboration and content sharing across network of contacts. Furthermore, Aggarwal and Charu (2011) state that sites which are used for sharing online media content such as Flickr, Youtube, and Instagram can also be considered as indirect forms of social networks because they allow an extensive level of user interaction. Boyd and Ellison (2007) concludes that SNS are web-based services that allow individuals to construct a public or semi-public profiles within a bounded system, articulate a list of others with whom they share a connection.

It is with the advent of the 21st Century - the information age - that the explosion of social network took place. Impressive growth of social network tendency was recorded when Facebook was launched in February 2004. Facebook is considered as the largest network across the globe. Before the historical diffusion of SNS, with the launch of Facebook, other SNS were launched as well. According to Boyd and Ellison (2007), the first recognisable social network site launched was SixDegrees.com in 1997. It allowed users to create profiles, list their friends and beginning in 1998, they were able to surf the friend lists.

Preceding this historical diffusion of Facebook, SNSs like AsianAvenue, BlackPlanet, MiGente, LiveJournal and Friendster were launched and re-launched. This process of adding features and innovating the platforms, supplied as an advantage for the development of Facebook, as well as for the progress of the large number of SNSs used actually, such as Twitter, Skype, E-mail, YouTube and Flickr. In the beginning of 2005, as pointed by Boyd and Ellison (2007), with the large attendance of SNS platforms, SNS became a global phenomenon. In addition, SNS have changed the way people interact and communicate. Furthermore, these Web platforms provide tools, with open services, that facilitate the interaction, information sharing and online communication.

Moreover, in the digital age, with the advent of internet, people are becoming more and more dependent on SNS to interact and create social relations in addition to communication. This dependence is due to the tools that SNS provide that allow users to have social relations easily without any kind of constraints or fears created when it comes to a direct interaction and social relations with the society.

Kaplan and Haenlein (2014) define social media as a group of internet based applications that build on the ideological foundations of Web 2.0 and that allow the creation and exchange of user generated content. The advent of social media has presented a unique opportunity for communication. Social media platforms like Facebook and Twitter over the years have attracted a number of young people, especially the youth. These interactive platforms have made the world become a global village and what happens in Europe is business in Africa and vice versa. People are spending more time on SNS, which has grown at a rapid pace and has become more popular than any other interaction platform in history (Parvez et al., 2019). The SNS has since enabled social relations and networks between individuals, virtually connecting those with similar interests, experiences and/or real-life connections (Cheung et al., 2015). Just as social media platforms present opportunities for interaction, users are also faced with challenges of abuse from other online users.

In social media it is made compulsory for users to create digital identities which may include some personal information such as name, physical address, e-mail address, phone number, date of birth, e.t.c. Even though individuals disclose their personal information to the SNS providers, that same information can easily be accessed by social media users who learn more about your personal preferences, lifestyle, relationship status, e.t.c. (Krasnova et al., 2010).

Merchant (2006) posits that wider-reaching changes in the economic, political and social order which have had both global and local impact have produced the necessity and the desire to create and maintain new kinds of social networks which have led to the emergence of new social identities, identities that are more accurately defined by lifestyle, and media consumption. Scare stories tend to focus on the internet as constructed by popular media of being a place inhabited by weird and scary people, in which weird and scary things take place. Current trends of sexual, psychological violence that have been recorded on different social media platforms link our online identity to increased cyberbullying threats and scare stories, such as your virtual property is never secured - it can be stolen or maliciously corrupted by virus; your personal details are easy to locate - so easy that internet criminals can steal and use your identity; you are constantly under surveillance - where you go, what you do and what you say is always tracked; your personal safety is at risk - children and young people in particular are at risk from sexual predators; and, finally, you should not trust who you meet - people are not who (or even where) they say they are. The benchmarks of these fears are fuelled by the thought that engaging in internet based communication can actually pose a threat to a persons' identity. It is against this background that the study focused on the overall objective to establish forms of cyberbullying among young women on Facebook platform. The specific study objective is to establish ways in which young women protect themselves from cyberbullying on Facebook platform and to establish the motivation behind young women using Facebook as a social network platform.

STUDY BACKGROUND

According to a survey conducted by Communication Authority of Kenya (CA,2018), the use and access to information technology equipments (IT) was more prevalent among the youth between 20 to 35 years. This prevalence in IT use is further supported by statistics from International Telecommunication Union (ITU, 2018), which recorded that the number of internet users in Kenya grew from 21 percent in 2016 to 26 percent in 2017. Such steady rise in IT use also translates to exacerbate online vices such as cyberbullying.

As online communication is developing at such a fast pace that new ways of targeting and abusing individuals online are constantly emerging (Barrett, 2016). This is not limited to phony profiles for nonexistent people which neither social media companies nor technological innovations provide effective ways of identifying and deleting such accounts (Vishwanath, 2018). Although divulging personal information may provide a virtual safe space to victims of violence (where the victims report the abuser), digital identities can be misused by others, possibly resulting in serious negative results i.e. humiliation, destroying careers, reputations, and relationships, and drive victims to suicide, while presenting "honor" violence in societies. Phony profiles created to hide individuals' identities presents the 'dark side' i.e. cyberbullying, addictive use, trolling, fake news, online witch hunts, and privacy abuse. Regardless of the many opportunities offered by social media, there are a number of incidents indicating that social media undeniably has a "dark side" (Baccarella et al., 2018).

In the context of this study, cyberbullying can be defined as any online behaviour that constitutes assault of the well-being of the target individual or group. This form of harassment takes many forms that include unwanted trolls, unwelcome contact, sexual harassment, threats of rape or death, and cyberstalking. It can affect a persons' emotional and psychological well-being. In addition, cyberstalking also involves intimidation or explicit threats. Once a person realises that they are being stalked, they are likely to become paranoid, scared, and withdraw from social spaces.

Research and practice have mostly focused on the "bright side" of social media by highlighting opportunities offered by this technology (Baccarella et al., 2018). However, it is increasingly observable that social media presents enormous risk to individuals. Phony profiles, digital identities, cyberstalking and trolling have aided these risks. Former Facebook executive Chamath Palihapitiya, stated that he regrets that some of the tools he has helped to create "are ripping apart the social fabric of how society works" (Wong, 2017). This quote vividly underscores how the qualities of enormous presence of social media platforms are also undermining the freedoms and well being of individuals and community they serve. Communication Authority of Kenya (CA) in 2018 reported that cases of cyberbullying and general cyber security were on the rise among the youth and children, yet they are the fastest online growing demography. In the wake of new challenges in the digital space, the government of Kenya established Computer Misuse and Cybercrime Act, 2018 that provides for offences relating to computer systems to enable timely and effective detection, prohibition, prevention, response, investigation and prosecution of computer, cybercrimes; to facilitate international co-operation in dealing with computer and cybercrime matters; and for connected purpose (Government of Kenya, 2018). Despite the enactment of this law several forms of cybercrime have been on the rise, more so among women in Kenya.

A study conducted by World Wide Web Foundation (2016) revealed that more than one in every five women in Kenya have experienced cyberbullying. Such study results reveal that the internet is rife with harassment with more women bearing the brunt as compared to men. For example, in Kenya, a 29 year old female Facebook user is reported to have committed suicide after her appeal for help on a certain group was met with ridicule. In a Facebook post "the young woman alleged that her ex-boyfriend had defiled her daughter and while she had recorded a statement with the police, the culprit was still free". The young woman threw herself and her daughter in front of a moving car and she was pronounced dead on the spot while her daughter survived the incident. (<https://nairobi.news.nation.co.ke/life/cyberbullying-womans-suicide/>).

Indeed cases of cyberbullying continue to thrive among women, not leaving behind those in the public eye. More recently in April 2020 Kenyas' first CoronaVirus recovery patient was heavily bullied by Kenyans online after coming forward to speak to Kenyans on her recovery journey. A section of Kenyans took to online to discredit and question the truth in her story. To further escalate the scenario, her personal conversations and nude photos were leaked online which led to her being heavily trolled and bullied. In the wake of this, Kenyas' Health Cabinet Secretatry, Mutahi Kagwe, was angered by Kenyans' behaviour, calling them out for trivialising government efforts to combat the disease. The cabinet secretary called on police to arrest social media abusers. (<https://www.ifree.co.ke/2020/04/brenda-ivy-cherotich-and-yvonne-okwara-victims-of-cyberbullying-in-recent-times/>)

Sharing of nudes and sex tapes as revenge tool or form of shamming and bullying women has become the norm in Kenyas' social media platforms. Men are said to send photos of their private parts to women who accept their friend request on Facebook. Such men feel invisible when they are on the internet hence do things they can hardly do face to face (<https://www.nation.co.ke/lifestyle/sartuday/leaking-nudes-is-the-new-form-of-sexual-violence/1216-5527196-y8mh5t/index.html>)

The surge on cyberbullying on Facebook platform prompted the social media site to develop tools with sets of options that help one to determine who can read your posts including other security options one needs to adhere to while on the platform. “With the help of these new tools, if someone posts something on Facebook that makes you concerned about their well-being, you can reach out to them directly — and you also can also report the post to us. We have teams working around the world, 24/7, who review reports that come in. They prioritise the most serious reports like self-injury” (Facebook, 2016).

This study will therefore add knowledge on the risks social media present to its users, more so focusing on forms of cyberbullying and experiences among young women in Nairobi, Kenya. In addition, by highlighting the ‘dark side’ of social media use, young women will become more conscious of the potential risks they are likely to face while on social network platforms like Facebook.

PROBLEM STATEMENT

Facebook as a Social Network Site (SNS) is popular among the youth in Kenya. SNS have brought a number of opportunities since their advent; however, there are several indicators on their dark side. Baccarella et al. (2018) posit that research and practice have mostly focused on the ‘bright side’ of social media by exploring opportunities afforded by this technology, however, it is a reality that social media present enormous risks to individuals and even society as a whole. The dark side of SNS presents risks such as cyberbullying, and platform for proliferation of fake news. Communication Authority of Kenya (CA, 2018) reported that there were increasing cases of cyberbullying among the youth in Kenya. In the wake of this challenge the government of Kenya established Computer Misuse and Cybercrime Act, 2018 that provides for offences relating to computer systems, however, cyberbullying continues to thrive among young women in Kenya with recent case of Kenyas’ COVID-19 recovery patient bullied online (Daily Nation, April, 2020). According to a study on cyberbullying among university students, it was established that there is high prevalence of cyberbullying in universities where male students are more likely to commit acts of cyberbullying more than their female counterparts (Ndiege et al., 2020). It is, therefore, evident that cyberbullying continues to escalate on several SNS and if left unchecked then digital platform safety cannot be guaranteed. Therefore, the gist of the study is that despite laws being in place to protect online community where the youth forms a larger demography and exposure of the group on the online platforms, cyberbullying continues to take a worrying trend, more so among young women in Kenya. It is, therefore, a study interest to investigate forms of cyberbullying among young women in Kenya.

THEORETICAL FRAMEWORK

Theory in qualitative research presents a systematic way of understanding events or situations. It is a set of concepts, definitions, and propositions that explain or predict these events or situations by illustrating the relationships between variables (U.S Department of Health and Human Services, 2005).

Communication Theory of Identity (CTI) was used in the study to help establish the motivation for young women in using Facebook as a social network platform. CTI was developed by Michael Hecht and colleagues. The theory emerged in the 1980s as part of shift from identity being considered as central element of human existence to identity as a social phenomenon. (Littlejohn & Foss, 2009). The proponents

of the theory argue that humans are inherently social beings whose lives revolve around communication, relationships and communities who operate from multiple and shifting identities, just like the online community which is characterised by mixed identities of users, that is, from use of pseudo accounts, to use of nick names and exhibition of different behaviours during interactions. As a result, identities and identification are key processes through which people and groups orient themselves to each other and the world around them. This argument supports the reason why people join SNS, among them, to connect with others, and make new friends which in turn help to satisfy peoples' sense of belonging; to communicate and share, thereby connecting with online audience in deeper ways through interaction.

Muted Group theory was used in the study to help establish forms of cyberbullying among young women. As Littlejohn and Foss (2009) posit, the theory focuses on the ways that communication practices of dominant groups suppress, mute, or devalue the words, ideas, and discourses of subordinate groups. The theory is concerned with what and how much people with differing social status speak, when and where they speak, with what words and concepts, in what modes or channels and with what repercussions. The proponents of Muted Theory argue that members of the subordinate groups do speak and may have a lot to say, but in mixed situations they may have little power to say it without getting in trouble. Empirical studies done by Communication Authority (CA, 2018) and World Wide Web Foundation (2016) indeed indicate that women are the most targeted group when it comes to cyberbullying. The studies further reveal that men treat women as subordinate groups in most discussion forums, hence in cases where women would assert their ideas in public discourse they always find themselves on the receiving end by their male counterparts who devalue their opinions. While Facebook as a social network platform creates an environment for interactive communication among men and women, in most cases women are unfairly targeted and bullied when they give their contributions on these platforms and as a result they become victims to cyberbullying. This theory therefore helps us to understand various forms of cyberbullying among young women on Facebook platform.

METHODOLOGY

Qualitative research approach was used based on the type of data and method of data collection used which included informal conversations, and semi-structured interviews. Informal conversations were done on face to face basis with study participants to help follow up issues that arose during interaction with the study participants. For example, study participants were engaged to reveal whether all cyberbullying experiences were from the people whom they are connected to via Facebook or not. Narrative as a technique in qualitative approach was used to generate data, where study participants shared their experiences in regard to forms of cyberbullying they have been subjected to on Facebook platform, how they protect themselves against cyberbullying on Facebook and what motivates them to prefer Facebook as their social network site of choice. Jwan and Ong'ondo (2011) posit that narrative research is the study of how different human experience the world around them and involves methodology that allows people to tell the stories of their lives. It involves collecting data about the participants experience and the meanings they attribute to those experience.

Sample Size

A population is the group that research focuses on (Cooper & Schindler, 2003). The study targeted young women in Nairobi between the ages of 22 years and 35 years who were active on Facebook platform. The study participants were all accessing Facebook via their smartphones. Participants were asked to voluntarily state their age before data was collected. All study participants were willing to state their age which was between 22 and 35 years old. 50 percent of the study participants were university students while another 50 percent were working class. The target population was chosen because they were most vulnerable to cyberbullying according to a report by Communication Authority of Kenya (CA, 2018) and at the same time the demography registered an increase in use of information based technology services in Kenya.

Purposive sampling was used to select 20 study participants. 50 percent of the study participants were purposively sampled because research done by Ndiege et al. (2020) on cyberbullying among university students in Kenya revealed that cyberbullying in universities was indeed rampant among female students. Another 50 percent of the study participants were also purposively sampled based on report by World Wide Web Foundation which found out that in Kenya more than one in every five women have experienced cyberbullying. Qualitative research tends to work with relatively small number of cases/participants, therefore, qualitative researchers sacrifice quantity for detail. This means that scope in qualitative research is more considered in terms of detail of what we get from the case(s) than the number of cases (Silverman, 2005).

Data Analysis and Presentation

Thematic analysis as qualitative data analysis strategy was used, hence an inductive approach where themes emerged from data. Thematic analysis is the search for themes of relevance to the research topic under which reasonably large amounts of data from different sources such as observations, interviews and documents can be organised (Hammersley et al., 2001). During data analysis, the following stages were followed: transcribing data - here 10 study participants narratives were translated from Kiswahili to English language; re-familiarising with the data; first phase coding; second phase coding; third phase coding; and product report. Data was presented in form of narratives.

Study Trustworthiness/Credibility

Qualitative validity means that the researcher checks for the accuracy of the findings by employing certain procedures, while qualitative reliability indicates that the researcher's approach is consistent across different researchers and different projects (Gibbs, 2007). The research adopted multiple approach validity strategies to check on accuracy of the findings (Creswell, 2014). Strategies used were: data triangulation, use member checking to determine the accuracy of the qualitative findings through taking final report or specific descriptions or themes back to participants and determining whether these participants feel that they are accurate; clarification of the bias researcher brings to the study; use peer debriefing to enhance the accuracy of the account; and use external auditor to review the entire study.

SUMMARY OF FINDINGS

Forms of Cyberbullying Among Young Women on Facebook Platform

During semi-structured interviews the study established that most young women were experiencing sexual harassment from their male connections on Facebook platform. All the 20 study respondents interviewed said they had encountered sexual harassment. A study participant narrated her experience thus:

A male friend whom we connected with via Facebook stated asking about my nude photos. He persisted for so long that I had to block him from my connections list.

During informal conversations it was further established that it does not matter if you are connected to a person since there are people who go to your profile with intention of obtaining information such as mobile number, email address then they use the contacts to reach you and start requesting for sex. Young women also faced cases of doxing while on Facebook platform where their male connections have revealed personal information without their consent solely for the purpose of embarrassing them. All the 20 study participants responded to have experienced doxing of Facebook platform.

In one of the semi-structured interviews *dissing* was also noted to be another form of cyberbullying that young women faces on Facebook platform. This is an act where a bully spreads cruel information about their target through public posts or private messages to either ruin their reputation or relationship with other people. In these situations the bully tends to have a personal relationship with the victim either as an acquaintance or a friend. During informal conversation it was established that young women experience *dissing* mostly from male counterparts whom either they were in a relationship with or have shown interest in them but they were not interested. Another interesting thing is that *dissing* was also established to occur among young women as witnessed during observation where a study participant volunteered to reveal some of the alarming private messages she received from a male friend with intention of ruining her reputation.

Unwanted trolls where a bully seeks to intentionally upset others by posting inflammatory comments online with malicious and harmful intent. Trolling can also be an act of creating discord on the internet by starting quarrels or upsetting people by posting inflammatory or off topic messages in an online community. All the 20 study respondents said to have experienced unwanted trolls. This was established during informal conversations, semi-structured interviews and observations. These occur when a person post a comment online that shows their particular standpoint on an issue. A study participant during informal conversation opined that men still are uncomfortable when women comment issues on politics. In Kenya since politics is male a dominated field there is still some public expectation that women should not be active participants in political debates. Most young women admitted to have received unwanted trolls when they contributed on some emotive political debates on Facebook. In fact a study respondent said that at one point she was told by a male with whom she had been friends on Facebook for a long time that her place is in the kitchen and she had no moral authority to contribute in matters politics.

Masquerading was also noted as a form of cyberbullying experience, more so by young women who are public figures and are on Facebook platform. Masquerading happens when a bully creates a made up profile such as creating fake email account, fake social media profile, and selecting new identity and photos to fool the victim and the bully tends to be someone the victim knows very well. In one of the

interviews a participant opined that she had been threatened online to pay out money so that her private information is not revealed to the public by masquerading accounts on Facebook platform.

The Muted Group Theory has helped us to answer the research question on forms of cyberbullying among young women. The theory posits that communication practices of the dominant groups do suppress, mute or devalue words and ideas of the subordinate groups. As revealed during informal conversation young women experienced '*dissing*' from their male counterparts where their ideas were devalued so as to scare them from participating in debates.

Ways in Which Young Women Protect Themselves from Cyberbullying on Facebook Platform

From the results of both informal conversation and semi-structured interviews, study participants who have experienced cyberbullying have become paranoid on active interaction on Facebook platform and opted to become passive consumers of Facebook content by making a decision not to contribute in any discussion to avoid further bullies from their connections. Other ways young women stated to deal with cyberbullying include leaving Facebook platform by deleting their accounts, blocking those who bully them from their connections, and un-friending. Out of the 20 study participants only one person said to have reported case of cyberbullying to the police but none had flagged any content of cyberbullying as inappropriate through Facebook-Safety or visited Facebook Help Centre (<https://www.facebook.com/help/594991777257121/>)

Motivation of Young Women In Using Facebook as a Social Network Platform

The study established that most young women were on Facebook platform because it is a popular platform in Kenya hence they can connect with a number of their friends. Another reason was that the platform is user friendly and most enjoyed the recently added new feature where you can engage *Data Mode* to use Facebook when bundles are used or in case you are running low on data bundles you can use Free Data Mode, *Go to Free*, which allows you to only read texts. Another reason study participants gave is that Facebook is the first social network site they joined and for the past 10 years they had been on the platform, hence it gave them their first online experience of creating content, sharing information, connecting to new friends, getting informed in happenings around the world. Communication Theory of Identity used in the study posits that human beings are inherently social beings whose lives revolved around communication and relationships. As revealed in the study what motivated young women to use Facebook platform is the sense of belonging to a group so that they can communicate and create bonds.

CONCLUSION

The study concludes that sexual harassment, unwanted trolls and doxing are the dominant types of cyberbullying that young women in Nairobi, Kenya, face on Facebook platform. There are also other forms of cyberbullying such as *dissing*, and masquerading experienced by young women on Facebook platform. Forms of cyberbullying experiences were similar among study participants who were college students and the working class.

Young women experiencing cyberbullying on Facebook platform have not taken advantage of the new security features developed by Facebook platform to curb rising cases of online harassment i.e Facebook Safety platform developed in June, 14th, 2016. No single study participant noted to have reported any case of cyberbullying through Facebook Safety platform. Despite the enactment of the Computer Misuse and Cybercrime Act, 2018 by the Kenya Government to enable timely and effective detection, prohibition, prevention, response, investigation and prosecution of computer and cybercrimes; young women still haven't taken advantage of the new law in place to protect themselves from cyberbullying by reporting perpetrators to the authority, instead they suffer in private as they are bullied by their connections and those whom they are not connected to on Facebook platform.

RECOMMENDATION

The study recommends that there is need for sensitisation on how women in Kenya can protect themselves on social network platforms so as to reduce cases of cyberbullying. Communication Authority of Kenya (CA) and other stake holders should roll out campaigns to create awareness among young women on the need to actively report cases of cyberbullying on social network platforms. Facebook as a social network platform should as well sensitise its users through automatic prompts to be aware of the new safety measures it has developed to ensure safe online use.

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Chapter 66

Rise of Facebook in the USA and WeChat in China: Commodification of Users

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ABSTRACT

The owners of Facebook and WeChat repeatedly promote their media as the preferred platform for people to connect. Improving social relationships was marketed as the reason for their innovation. But users' urge to unite on these OSN services alone cannot explain the success of these media in the US and China. There is a different or rather new business approach underpinning these OSN services that contribute to their success. The author argues that there is an implication of owners' profit-based interest in ensuring the popularity of their online platforms. Audience commodity analysis as discussed by Dallas W. Smythe and Christian Fuchs is employed in the contexts of the US and China to comprehend the complex factors related to online social media owners' interest and their negotiation with the government in online media's prosperity. Through archival research including examination of newspapers, policy documents from OSN-based companies, and survey results from 2015 to mid-2018, this chapter demonstrates the political economy of Facebook and WeChat.

INTRODUCTION

Facebook in the US and WeChat in China are two of the most popular online social networking (OSN) services in the world. Both are trying to win the top place in the OSN market. This paper tries to understand the political economy aspect of these popular online social media. Facebook has been in the news in recent times with the way they deal with their users' data (BBC, 2018). The latest report suggests that Facebook has accumulated "... millions of user passwords in plain text files" (Cuthbertson, 2019, para. 1). This raised questions about how the other social media deal with their user base. In a world where commodification processes demand that companies look for new forms of consumer dependency, the

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rise of OSN platforms and the power of these media to actively engage users has become a new frontier. Whilst users have been engrossed in communicating within their online social networks, company owners have been busy designing the online platforms in a way that helped to harvest these communication contents for profit. Facebook (owned by Facebook) and WeChat (owned by Tencent) have used sophisticated algorithms to transform these online platforms into automatic personal data-collecting apparatus. Some of these OSN services have spread out from their originating country to other countries in the world and are not confined to specific geographic locations. The political economy factors that were associated with the success of these online services are analysed here in the context of the US and China. It is argued that there is an implication of owners' profit-based interest in ensuring the popularity of their online social platforms.

BACKGROUND

Audience commodity analysis as discussed by Dallas W. Smythe (1981) and Christian Fuchs (2016) is employed in the contexts of the US and China to comprehend the complex factors related to online social media owners' interest as well as their negotiation with the government in online media's prosperity. It is important to focus on the influence of government regulation and surveillance of OSN services. These companies function within laws and regulations set by the government of a country. Governments design and create a market economy which structures the way a company will run. Examples of these can be the structure of taxation and private data ownership and control in the case of OSN-based companies.

The limited inquiry on the political economy perspective of OSN services in China (in the English language) was evident while conducting this research. The central focus of the majority of research papers was censorship or use practices. The Chinese Internet scenario poses unique characteristics that separate it from others; namely, the obvious state control over the Internet activities. In the case of OSN services, Benney (2014) argues that the Internet in China was another tool for state control. He further argued that the Internet interfaces were designed in a way that the users were unconsciously led to use the technology in a certain manner conformed to the Chinese state and market. This, he showed, was congruent with Sina Weibo (Benney, 2014).

This article demonstrates how the companies of OSN services are monetising and commodifying the "attention economy" of media users (Goldhaber, 1997, para. 3; Christophers, 2010; Trottier, 2016). The greater the number of users of an online platform, the greater the potential for possible revenue. Following the work of Dallas Smythe (1981) on the audience commodity, this paper explores the way advertising has driven the development of OSN features. In turn, the advertising market is the basis for financial success with OSN services across China and the US. Christian Fuchs (2016) demonstrates that online social platforms have two forms of economies: the advertising economy and the finance economy. In the advertising economy, owners earn revenues from advertisement sales. In the finance economy, these owners of OSN services raise stock prices by "sell[ing] shares to investors" (Fuchs, 2016, p. 35).

Audience power is used by these OSN industries to gain revenue, in which audience time is referred to as a "commodity" (Smythe, 1981, p. 234). Smythe (1981) shows that audiences play the roles of being both a worker and buyer. He explains that, in the context of commercial television industry, audience's attention is sold to the advertisers and commercials are sold back to the audiences. These audiences participate in the consumption process of commercials, but in this process of buying and selling, they

do not gain financial profit (Smythe, 1981). Smythe (1981) argues that audiences work to produce commodities and all the hours spent not working and not sleeping are purchased by advertisers which he describes them as audience commodity.

As key artefacts for understanding the political economy of OSN services, the policy documents of Facebook and WeChat are brought into the article for analysis purposes. Archival research is needed to analyse the OSNs' policy-related reports as well as newspaper articles. In this paper, archival research consisted of the examination of newspapers, policy documents from OSN-based companies and their miscellaneous reports and survey results. These sources provided information to document the ways OSN companies use users' contents, companies' relationships with advertisers, the companies' profit-making and government's relationships to these companies.

Archival research has treated the policy documents of the OSN companies as texts, the investigation of which reveals the curious mechanisms of the political economy of OSN services. For audience commodity-related factors, research materials from 2015 to mid-2018 were collected. Archival materials such as statistical data are collected from Facebook.com, WeChat.com, Tencent.com, Alexa.com, Socialbakers.com, Statista and the Pew Research Center. Additionally, Factiva was used to search for newspaper articles.

AUDIENCE COMMODIFICATION AND OSN SERVICES

Fuchs (2012b, 2016) discusses how the commodification process takes place on commercial OSN services. He points out three main areas of concern related to this. First, basing his discussion on Marx's analysis of capitalism, Fuchs (2012b) argues that commercial OSN services like Facebook only offer their users a platform to communicate by commodifying their personal data. There exists no financial exchange between the owners and users for such activity, despite the owners gaining profit through this commodification process. So, for Fuchs (2012b), Facebook is a place for "consumption" and "production" (p. 714).

The second area for concern for Fuchs (2012b) is the emphasis on the advertisers' interest in the content created by the users. Within this process, the argument of Smythe (1981) is evident where "the audience itself – its subjectivity and the results of its subjective creative activity – is sold as a commodity" (Fuchs, 2012b, p. 704). Fuchs (2012b) claims that in the case of OSN platforms, work is outsourced to users who provide services without any financial gain. This helps the companies to invest less, save labour costs and "exploit" the workers (Fuchs, 2012b, p. 711). By content, Smythe (1981) was referring to television programs and radio broadcasts. But in this research content will be understood as the materials produced by the users. Most of the content on these OSN services is produced by users.

Despite the various online platforms and whether a user is using mobile or computer technologies, users provide free labour while creating content online. Beverungen et al. (2015) argue that Facebook provides not simply a space where people can communicate "freely" but actually contributes to a new form of free labour (p. 480). The workers of Facebook offer dual services: mapping out the website to allow for the creation of more content by the users and hence the production of more data; and building algorithms for collecting those data. Facebook's popularity is based on its power to retain its users through the search option and the inclusion of other popular OSN platforms, thus ensuring "compulsory friendship" (Gregg, 2011, p. 96).

It is important to note that users' data not only concerns the number of them using OSN services; advertising companies also build profiles of users with details including hobbies and interests as well as their online use patterns (Fuchs, 2012c). The commercials are tailored accordingly to meet the demand of the target audiences. The equation is simple: more user engagement with an online platform means better returns for the owners of that network as the company will make a bigger profit. For example, the existence of Facebook might be jeopardised if its users do not share or create content or communicate information with other that the advertising companies can collect and then direct advertisements to the users (Fuchs, 2012b). In simple terms, the political economy perspective argues that the more free labour is available on Facebook, the greater its chance for profitability as well as the promise of future profitability. The political economy perspective is not only limited to this form of economic surveillance but also the political surveillance (Fuchs, 2012a; Sandoval, 2012). This leads to the third point of focus.

As Fuchs (2012a, 2012b) highlights, the government has an interest in the commodification process. Along with these advertising companies, the state also has an interest in the users' data. OSN users and the contents they create are of great interest to both governments and the owners of OSN services.

THE COMMODIFICATION OF USERS

Source of Revenue

In order to understand the commodification of users' process, first the source of revenue needs to be discussed, followed by the users' role in the process. Facebook's (2014) Annual Report began with two clear statements in the overview section:

Our mission is to give people the power to share and make the world more open and connected.

Our business focuses on creating value for people, marketers, and developers. (p. 5)

The second statement quoted above clearly defines the business aspect of Facebook. Facebook, which is a commercial company, makes their revenue and profit mainly through advertising, a fact which is not clearly declared within the two quoted statements. Although Facebook does not mention its reliance on advertising for profit in its overview statement, it is explained in the section on how Facebook creates value for marketers:

We generate the substantial majority of our revenue from selling advertising placements to marketers. Our ads let marketers reach people on Facebook based on a variety of factors including age, gender, location, and interests. Marketers purchase ads that can appear in multiple places including in News Feed on mobile devices and personal computers, and on the right-hand side of personal computers. (Facebook, 2014, p. 5)

Small companies found Facebook a cheaper and more convenient place to advertise than other media. Initially, it was mainly small and medium-sized businesses that used Facebook space to advertise their products (Deagon, 2015; Swartz, 2015). These advertisements on Facebook's mobile devices are strategically placed within the News Feed, while advertisements on the desktop version are on the right-hand

side of the profile. Although Facebook do not release details about the companies that have advertised on the site, they do mention that large portion of the revenue comes from such small companies (Swartz, 2015). Understanding the lack of technical expertise of these small businesses, Facebook offers training regarding online advertisements. Also to support small businesses, Facebook has introduced tools such as Local Awareness ads that can lead these companies towards their targeted audiences. Through this feature, businesses can identify potential customers in a specific area belonging to particular age group and gender with specific interests (Swartz, 2015). This enables a much easier process of targeting online users with advertisement and companies are now more knowledgeable about their potential customers.

Additionally, to further support this, Facebook launched a mobile ad manager service (IOS apps) through which advertising companies can create, manage and monitor commercials from around the globe. Facebook frequently opens new avenues for advertising companies to create and reach suitable online users. All these business-boosting approaches relate to users being hit with more advertisements. Such initiatives have proven effective for Facebook, as the advertising revenue grew from US\$ 4,279 million in 2012 to US\$ 11,492 million in 2014 (Facebook, 2014).

Facebook's decision to focus on small and medium-size businesses by providing them with technical support encourages other companies to join. Hence, more and more companies are investing in advertising on Facebook. Facebook (2016d) reports that in 2016, the OSN service had three million companies advertising on their site, out of which 70 percent were from outside the US. Facebook might soon challenge Google's top position, as these are the only two leading companies for online advertisements. Google's online advertising market share fell from 32 percent in 2013 to 31 percent in 2014, while Facebook's share increased from 5.8 percent in 2013 to 7.8 percent in 2014 (Deagon, 2015). In terms of digital display advertising revenue, Facebook has overtaken Google. In the US market, this form of revenue for Google dropped from 13.7 percent in 2014 to 13.0 percent in 2015 (Sullivan, 2015). These figures reflect the strength of Facebook as a company. Increasing revenue provides a positive and strong image of the company to the advertisers and, due to growth in both revenue and the number of users on Facebook, the company earned trust and satisfaction in the market that led to rise in share prices by 33 percent in 2015 (Chaykowski, 2015). This in turn encourages more companies to invest in advertising on the site. It is interesting to note that although the price of each ad increased 285 percent in the first quarter of 2015, the viewership of advertisements fell 62 percent (Goel, 2015). So, either the advertisement viewership or the prices of it did not have an impact on the number of advertisements the company received; rather, the number of users and their activities on the site did, as discussed in the next section on the commodification of users' content.

Tencent, the owner of popular OSN service WeChat in China, relies on Value Added Services (VAS) for revenue (Tencent, 2016b). The Chinese OSN services' advertising environment is dominated by two main Internet companies, Tencent and Sina Weibo. Among the two, Tencent has the bigger market, as Tencent's advertising business increased 110 per cent in year-on-year revenue in 2016 from 2015, in comparison to Sina Weibo, which saw a rise of 52 percent (Perez, 2016). Tencent's revenue in 2016 from VAS rose by 34 percent to RMB 24,964 million. VAS includes online games, content subscription services, QQ membership and sales of virtual items. The company's second highest revenue came from online advertisements, which increased 73 percent (RMB 4, 701 million), as seen in Table 1 (Tencent, 2016b). It is interesting to note here that, just like Facebook, WeChat began its journey as an ad-free destination. However, in August, 2015 the company began to roll out advertisements on its "Moments" section.

Rise of Facebook in the USA and WeChat in China

Table 1: Revenue of Tencent

Revenues (Unaudited)	1Q 2016 (RMB in millions)	4Q 2015 (RMB in millions)
VAS	31,995	30,441
Online advertising	4,701	5,733
Others	2,330	1,640

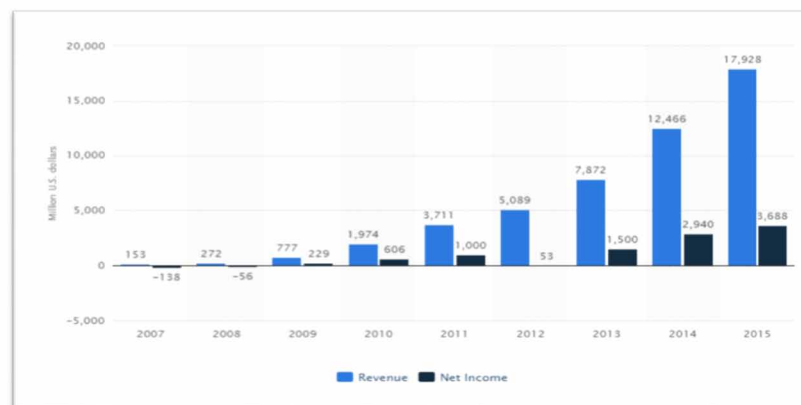
Source: (Tencent, 2016b)

Based on the sources of revenue discussion of Facebook and Tencent, two points stand out: the dependence on advertisement for revenue and also the dependence on advertisement for survival in the online social media market. These two perspectives also indicate that marketers and advertisers are inclined to select those OSN platforms that harness more membership, based on Facebook and WeChat's large user base. This will be explained in the following section.

Users' Relationship to the Revenue-Making Process

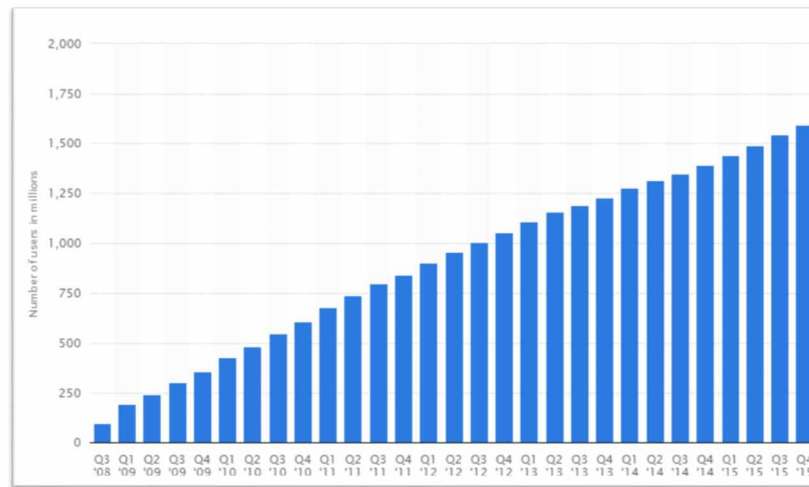
Users' contribution to the revenue-making process aspect can be seen through the relationship between the number of users and the profit earned. As the number of Facebook users continue to increase, so does its revenue. It makes sense that advertising companies would not be interested in advertising on websites that have a limited number of users or that are losing their users. There is a clear business motivation behind Facebook's reluctance to publish details on deactivating accounts. Another significant matter missing in their data is the number of people who have multiple accounts and also details of false accounts. Fear of losing advertisers may drive the company to publish only general data on the total number of users. In doing this, Facebook is maximising the market economy approach.

Figure 1. Revenue and net income of Facebook from 2007 to 2015



Source: Statista, 2016a

Figure 2. Number of Facebook users in millions from 2008 to 2015



Source: Statista, 2016b

Figure 1 shows Facebook's annual revenue and net income from 2007 to 2015. The figure clearly illustrates the increase of the company's revenue every year. In parallel to that, Figure 2 shows a constant rise in the number of Facebook users. The concept of "more users meant more advertisements" appears to be demonstrated here. Figures 1 and 2 are a clear indication of such a trend.

Figure 1 shows that Facebook as a company lost net income from US\$ 1 billion in 2011 to US\$ 53 million in 2012; however, the total revenue continued to increase in those years. In connection with the total revenue is the number of users, which continued to grow in 2012 (as seen in Figure 2). This is the time when Facebook gradually lost its stronghold position to other OSN services. During that period, new OSN apps began to emerge and online users were looking for online media that offered new and innovative features. Facebook realised that this new online media could potentially create an impediment to the success of Facebook. For instance, Instagram is one such OSN service which continued to attract new users, so Facebook purchased the company for US \$1 billion dollars in 2012. This merger proved to be a successful business deal, as in consecutive years Facebook had a rise in net income. Whenever Facebook faces a threat of extinction, the company quickly purchases popular mobile apps, often above their market value. The company has understood that Internet users are constantly shifting from one platform to another. From Friendster, MySpace and then Facebook, history shows that Internet users are always on the move.

WeChat's popularity also plays a role in Tencent's business revenue from advertisements. WeChat's monthly users' number is clearly correlated to revenue from advertisements, as can be seen in Table 2.

Despite being able to earn revenue successfully from advertising, Tencent's WeChat has ventured into payment services where purchases can be paid for with the app instead of using cards or cash. The mobile payment option has witnessed an incredible growth rate of 253.69 percent (2014) and 194.86 percent (2013). 90 percent of this "Code Scanning Group" is dominated by only two companies, Alipay and WeChat Payment (Chen, 2016, para. 1). In introducing this feature, WeChat appears to have taken control of the method of financial payment. In both the financial and communication sector, WeChat has retained their users. The app is designed so that users can use the one app to conduct their personal as

Table 2. Number of monthly users and revenue collection of WeChat

Year	Number of Monthly Users (WeChat) (in millions)	Revenue from Advertisements (in millions in RMB)
2013	355	5,034
2014	500	8,308
2015	697	17,468
2016	762	4,701 (First Quarter)

Source: Statista, 2016c; Tencent, 2015, 2016a, 2016b

well as financial activities. Stores also offer special discounts and promotions through the app payment option. Therefore, the retail stores as well as Tencent are being benefiting here while also providing convenience to the users. In 2015, WeChat Payment could be used at more than 300,000 retail stores, and approximately 200 million WeChat users conjoined their ATM cards with the WeChat Payment service (China Internet Watch, 2016). Part of this payment option is WeChat's successful initiative of digital red envelopes (known as *hongbao*), which could be sent through WeChat. During the Spring Festival holiday, 3.27 billion cash-filled virtual envelopes were sent in 2015 and this number jumped to 32.1 billion in 2016 (Meng, 2016b). The introduction of this feature was another attempt on the part of WeChat to retain its users and encourage more users to join.

In addition to the mobile payment option, Tencent has begun to target specific groups with WeChat. For instance, it has introduced a work-based app, known as Enterprise WeChat or Qiye Weixin, which can be used by big and small companies. This chatting option in WeChat allows users to do word-based activities including clocking in and out as well as seeking leave from the office (Meng, 2016a).

Mobile advertising is an example of how a larger user base attracts advertisers. Following the introduction of mobile apps, Facebook's number of daily active users rose to 894 million in September 2015, which was a 27 percent increase from 2014 (Facebook, 2015a). There seems to be a clear relationship between number of users and revenue collection. In the third quarter of 2015, mobile advertising revenue was around 78 per cent of total advertising revenue. This form of revenue was up from 66 percent in the third quarter of 2014 (Facebook, 2015a). This growth continued in the fourth quarter of 2015 as well. Mobile advertising revenue grew by 80 percent of the total advertisement revenue, which was also an increase from 69 percent in the fourth quarter of 2014 (Facebook, 2016a).

Tencent has also sensed the current pulse of the Internet users' reliance on mobile devices and has benefited from mobile advertising. Around 80 percent of Tencent's total advertising revenues came through mobile platforms. Tencent company's report proclaims that greater traffic on mobile-based apps and development in monetisation of advertising inventories led to this growth (Tencent, 2016b). Mobile advertising is a key area for revenue collection for these OSN services.

Facebook and Tencent embody the commercial entity in its full form and are similar to that of other conglomerates in the mass media industries around the world such as Time Warner and Disney. For instance, the Time Warner company owns businesses in different areas such as publishing (Time Inc., Little Brown and Co.), film (Warner Bros., New Line Cinema) and television production and distribution (Warner Television, WB Network) (Wasko, 2005). Disney also owns the American Broadcasting Company (ABC) television network and is a partial owner of ESPN, A & E and Lifetime channels along with its own home video, music and theme parks and resorts. Facebook and Tencent are taking the same

route. Facebook owns several companies such as Instagram, WhatsApp and Onavo, Tencent holds QQ, Tencent Weibo and WeChat. Facebook and Tencent are the leading Internet-based companies along with Amazon, Alibaba and Google. Wasko (2005) argues that companies that purchase other businesses belonging to a similar group are regarded as being horizontally integrated, using Time Warner, who owns more than 140 magazines, as an example (Wasko, 2005). Thus Facebook and Tencent belong to this form of conglomerate, as their businesses concentrate mainly on information and communication technologies.

In the first phase of understanding the role that users play in the revenue process and how users are being commodified, it is important to note that Facebook and Tencent are commercial Internet-based institutions whose aim is profit-making. In this process, both users and advertisements are correlated and are crucial for the companies' survival. By capitalising on the users, the owners of these online social media, especially Facebook and Tencent, are constantly presenting new features to attract more users. These users are used as data for advertisers who can target ads to users, based on their preferences. This process clearly resonates with Smythe's (1981) concept of a "free lunch," where users are encouraged to use online social media and then these users and their contents are sold to advertisers for profit. Users are part of the profit-making process but not part of the profit-sharing.

THE COMMODIFICATION OF USERS' CONTENT

Data Collection and Management

According to data published by STRATA in 2015, advertising agencies prefer to use OSN services to advertise on and Facebook was the predominant choice (93 percent chose Facebook) (Whitman, 2015). Similarly, another survey conducted by RBC Capital Markets found that ad buyers were more interested in spending money advertising on Facebook (61 percent) in comparison to Google (53 percent) and YouTube (43 percent) (Ray, 2015). In the current Internet era, advertisements are mainly targeted. On average, Internet users use Facebook and other sites owned by the company for over 46 minutes per day. In 2015, Facebook users performed 1.5 billion searches a day and the company "indexed" around two trillion posts, according to the owner of Facebook, Mark Zuckerberg (Seetharaman, 2015). In connection with that, advertising revenue is also escalating. The average revenue per user on Facebook in 2015 was US\$ 3.73, which is a 33 percent year-over-year increase (Gottfried, 2016).

In order to provide users with Internet-based advertisements, marketers or concerned companies need information about users. Marketers mainly target the young (8 to 24 years old), knowing that they hold the purchasing power of about US\$ 211 billion (Montgomery, 2015). Facebook discloses its interest behind collecting data on users. One such reason is for marketing communications (Facebook, 2015b). Although what is involved in these communications is not clear, Facebook explains that personal information such as names and emails that could identify individuals is not provided to third parties (Facebook, 2015b). Without users' consent, identifiable personal information is not disclosed to advertising or Facebook's analytics partners. Instead of identifiable information, they provide them with aggregated information (Facebook, 2015b). Within that aggregated information, what type of data are collected and shared with the companies are not clear. Additionally, how in-depth the data collection processes are remains void within the company's published documents. This is an ambiguous area regarding the type of information Facebook collects.

The more information collected means that companies can better target advertisements. Facebook uses a complex tracking system to monitor and monetise users' behaviours. Facebook not only collects information but also stores it for an indefinite period. Even after user's accounts have been deleted, Facebook retains their data. Once it has information on users, the information never goes away. In other words, the data collected are recycled and reused according to the needs of the company and the advertisers. In its data policy, Facebook affirms that data would be erased if the account did not exist anymore and when they "no longer need the data to provide products and services" (Facebook, 2015b). Therefore, removing accounts from the site does not mean the complete elimination of data. The company also warns that "information that others have shared about you is not part of your account and will not be deleted when you delete your account" (Facebook, 2015b). For profit accumulation, Facebook uses invisible tracking, data monitoring and data monetising processes.

In order to efficiently collect users' information, Facebook invested in an online advertising providing company and bought the e-commerce search engine company "The Find" in 2015 to provide target-oriented advertisements to the users. This company "connects people to products" (Sloane, 2015, para. 2). "The Find" incorporated its activities within Facebook's advertising services, so that online retail stores could target shoppers more efficiently.

Chinese OSN companies are also following Facebook in the matter of purchasing new apps and adding new features to its already existing OSN service. The Chinese economy is primarily focused on exports and investments but now it has shifted to innovation and consumption (Fu, 2016). The giant success of the Internet in China has led to constant innovation, introducing new elements that would encourage more consumption and consumption-created demand for advertisements and, in turn assist, both Internet-based company owners and marketers in profit-making.

The extraordinary buying capacity and the propensity of the brand shopping of Chinese Internet users means that online media in China is a fertile land for advertisers. In 2015, there were 659 million online media users in China, which was more than in the US and Europe combined (Kemp, 2015). Along with this, the number of online shoppers in China increased from 301.89 million in 2013 to 413.25 million in 2015 (Statista, 2016c). Advertising companies would clearly like to reach this large numbers of users. Targeted advertising requires information on users which has been revealed already. Tencent's policy related to users' data collection and management is similar to Facebook, and the company has similar policies concerning collecting data for the purpose of targeted advertisements. Although WeChat has announced that users' content is not provided to third parties, the terms of use state that users' content is shared with other organisations in the name of service developments:

... in using Your Content for these purposes, we and our affiliate companies may copy, reproduce, host, store, process, adapt, modify, translate, perform, distribute and publish Your Content worldwide in all media and by all distribution methods, including those that are developed in the future;

we may share Your Content with third parties that we work with to help provide, promote, develop and improve WeChat, but these third parties (other than our affiliate companies) will not make any separate use of Your Content for their own purposes (i.e. for any purposes that are not related to WeChat). (WeChat, 2016a, para. 23)

Such claims are broad enough to encapsulate advertising companies' interest in collecting users' personal information. Although Facebook and WeChat provide targeted advertisements on users' pages,

they do not clarify the type and amount of users' data collected for advertisers to provide targeted advertising. Socio-cultural or political differences have no control over how users' data are being used by these online OSN companies.

The Complex Process of Privacy Settings

The features of Facebook are designed to encourage users to provide more information about themselves. This structural design creates more involvement with the site, meaning more information for advertisers. Previously, this information about users was collected without their consent. European countries have investigated Facebook's use of personal data on the Facebook site as well as on external sites through "like" and "share" buttons. Belgium's Privacy Commission declared that, "Facebook processes the personal data of its members as well as other Internet users 'in secret,' without asking for consent or adequately explaining how the data would be used" (Fleisher and Fairless, 2015, para. 3). Due to allegations such as these, Facebook recently launched advertising preferences through which users could control the advertisements they saw. Under "Ad Choices" on Facebook, the company explained the process. Interestingly, users have to opt out from each device separately; in other words, opting out through mobile devices do not mean automatically removing advertisements from the other devices that a user uses. Introducing these options indicates that Facebook is aware of users' fear that personal data may be collected. Facebook also mentions that the users need to visit specific advertising companies to opt out i.e., Digital Advertising Alliance in the US, the Digital Advertising Alliance of Canada in Canada and the European Interactive Digital Advertising Alliance in Europe (Facebook, 2019). The association with these companies reflects Facebook's collaboration with powerful data analysis and research centres around the world to collect data on users in most effective manners.

The process for users to change their Facebook privacy settings is notoriously complex. Although the option to opt-out from advertisements and public views exists, several levels of approval automatically discourage the users from it. By default, users agree to share personal data with Facebook. When signing in to be a member of Facebook, users are inevitably roped into their tracking system. Content is posted as "public" by default. Not all Facebook users are familiar with privacy settings. In general, Internet users avoid the process of disabling tracking mechanisms due to its complexity. A survey showed that 91 percent of respondents in the US made no adjustments to their Internet or cell phone use to evade monitoring (Madden and Rainie, 2015).

Users' data are not only being shared with marketers and advertising companies but also with publishers. Facebook wants the site to become a one-stop destination where news, entertainment and communication are provided and the company is achieving this aim at the expense of users' personal data. The site allows certain news-based media houses to publish their news straight on the site and these houses "will keep all of the revenue on ads they sell directly; when the ads are sold by Facebook, revenue will be shared. Publishers will also get lots of data about how their stories are faring on Facebook" (Stelter, 2015, para. 6). Facebook has data on billions of users, which these media companies could easily access to gain insight into their audiences or readers. As Stelter (2015) mentions, no news-based companies in the USA or in other countries have such a vast array of audiences alone as Facebook does. Interestingly, the newsfeed algorithm through which Facebook controls what users see has generated controversy. News items with various perspectives usually seen on websites may not be viewed by the users. For instance, when the protests in Ferguson, Missouri in the United States were widely covered by all media

and became a major domestic issue, the proof of the incident on Facebook was limited (Miller, 2015). This raises the issue of who has control over news items that are made visible to the users on Facebook.

Users in WeChat also need to undertake several levels of tasks to opt out from receiving targeted advertisements. In their privacy policy, the company declares that a privacy officer or marketing communication page should be contacted for shielding personal information from advertising companies. Guaranteed protection through such a process is not ensured, as the users may continue to receive “advertisements that are not direct marketing” (WeChat, 2016b). WeChat seems to have followed Facebook’s footsteps in users’ information protection to pay heed to advertisers. Despite this growth, users are skeptical about storing information on the site due to fear of privacy leaks. Although 80 percent of WeChat users used their real names to register, the Internet Society of China found that around 78 percent of Chinese Internet users complained about stolen personal information including names and addresses (Ma and Cao, 2015). Due to the number of complaints such as these, Facebook and WeChat changed their privacy policies and introduced new options which involved layers of adjustments.

Surveillance by Governments

This section explores the political strategies and policies of online media, including the influence of state control on the owners of these online social media sites. The vested interests of online social media owners are linked to state interest as well. In the case of Facebook, the company’s policy towards government requests for users’ data states:

We may access, preserve and share your information in response to a legal request (like a search warrant, court order or subpoena) if we have a good faith belief that the law requires us to do so. This may include responding to legal requests from jurisdictions outside of the United States where we have a good faith belief that the response is required by law in that jurisdiction, affects users in that jurisdiction, and is consistent with internationally recognized standards. We may also access, preserve and share information when we have a good faith belief it is necessary to: detect, prevent and address fraud and other illegal activity; to protect ourselves, you and others, including as part of investigations; or to prevent death or imminent bodily harm. (Facebook, 2015c, para. 35)

This rather ambiguous policy has led the company to face legal battles many times within and outside of the US. A major legal action the company faced was related to users’ data transfer from European Union (EU) to the US. EU was concerned about the US’s data surveillance, especially as, unlike the US, they have a protection law for personal data (Fox-Brewster, 2015). EU countries have ensured their citizens have a fundamental right to know the information that companies have on them.

Through Facebook, some companies in the US were able to access European users’ data through the Safe Harbour Framework (agreement between US and EU where US could transfer EU citizens’ data). Due to concerns over the safety of personal information, the European Court of Justice ordered the Safe Harbour as invalid in 2015 (Fox-Brewster, 2015). Edward Snowden, the whistleblower, revealed that the US National Security Agency (NSA) was involved in online surveillance in 2013. According to him, the NSA in the US and the Government Communications Headquarter (GCHQ) in the UK collected Internet users’ information by using programs such as PRISM and XKeyScore (Fuchs, 2016, p. 31). These programs allowed NSA and GCHQ to gather detailed browsing and content data on Internet users including online social media content (Fuchs, 2016). Facebook publishes a record of countries whose

governments have requested users' details and the restriction to certain contents. These requests covered all Facebook services including WhatsApp. Regarding these requests, Facebook clarifies:

Every request we receive is checked for legal sufficiency. We required officials to provide a detailed description of the legal and factual basis for their request, and we push back when we find legal deficiencies or overly broad or vague demands for information. We frequently share only basic subscriber information ... We have included instances in which we have removed content that governments have identified as illegal, as well as instances that may have been brought to our attention by non-government entities, such as NGOs, charities, and members of the Facebook community. (Facebook, 2016c, para. 37)

Data published by Facebook shows that the US government made more requests than any other country, which supports the view that the US government intends to have some form of control over users' data (Facebook, 2016b).

That the government of China carries out surveillance on Internet users, Internet-based companies and the content created by users is well known. In order to monitor online activities, China imposed three forms of censorship: the Great Firewall (restrictions on foreign websites), the Golden Shield (monitoring local online activities) and the keyword blocking (online content with prohibited words or phrases) (Monggilo, 2016). Moreover, each website installed up to 1,000 censors and the government has employed around 20 to 50 thousand Internet police (*wang jing*) and Internet monitors (*wang guanban*) (King et al., 2013). China has engaged hundreds of thousands of people who are known as "fifty cent party" (*wumao dang*), based on their fees per post, to write positive notes on the government (Gunitsky, 2015). In the name of security, profiles are blocked, content is deleted and access to international websites such as Facebook, Twitter and YouTube are barred by the government.

For obvious reasons, WeChat follows the Chinese government's Internet surveillance rules. As with all of the Internet companies in China, WeChat is also held liable for all the information shared through the app. This implies that WeChat has to censor the users' content that is circulated within China. Hence, the company has different terms of services for those residents (in Chinese language) and non-residents of China (in English). The Chinese privacy policy provides more detail regarding the acceptability of users' content than the English version. For instance, section 8 in the Chinese language terms of services provides a detailed guideline of the subject matters that are prohibited "in violation of state laws and regulations" (WeChat, 2016c). Hence, it can be assumed that Internet surveillance exists in similar pattern for all OSN services in China. Ng (2015) shows that political issues that are most censored in public accounts of WeChat are Bo Xilai, Hu Yaobang, Hu Jintao, the freedom of the press, demolitions and the maintenance of stability. Nevertheless, WeChat is a more favourable tool for the government of China than other micro-blogging sites and social networking sites as the design of the messenger apps matches the interests of the government. As Ng (2015) points out, other forms of online social media's capability of convenient mass reach worried the government and WeChat is far more personal. Hence, the design of WeChat is appreciated by the government of China for two reasons: it avoids clashing with the government's strict censorship policy on collective action; and it makes a profit. This was also reflected in Monggilo's (2016) statement, who writes, "the Chinese government does not want the state and its citizens into the democratic activists, but activists on liberalism or capitalism with the Internet." (p. 948). So, the Chinese government allows the expansion of its market with a strict vigilance on online activities which perform against the party's interest. Micro-blogging site Weibo was seen as a threat to the stability of the regime, as it was increasingly becoming a place of protest for many Internet users. This

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led to government to make requests to the site to block content. Due to such pressure, researchers such as Ng (2015) assume that WeChat's popularity might be the result of strict control on Weibo. He argues:

Whether government officials intentionally set out to attack Weibo to push users to the less viral-enabling WeChat or whether this was an unintended consequence is unclear, but intention aside, the net result was a boon to regulators and policy makers who were concerned about Weibo's role in facilitating nationwide conversations and organizing capacities. (Ng, 2015, para. 14)

Since the 1990s the number of state-owned enterprises has decreased while the number of private institutions has increased. Nearly 12 million private companies were in business by 2013 (Tse, 2015). During Mao's regime, party members were mainly farmers and labourers but now they are more likely to be businesspeople. The composition of party workers in CCP related to business has increased over the years from 13 percent in 1993 to 34 percent in 2004 (Li, 2009). The following table shows the top wealthiest businesspeople and their membership to the state party.

Table 3. Businessmen's membership to state party in China

Name	Company	Wealth (in US\$ trillion)
Robin Li	Baidu	14.7
Ma Huateng	Tencent Holdings Ltd.	14.4
Lei Jun	Xiaomi	13.5

Source: (Shabrina and Winarsih, 2016)

In the case of China, the online media owners appear to have some form of affiliation with the government party. Data in Table 3 show that Baidu and Tencent owners have membership in state party which directs towards their connections with the authorities of China. For example, by 2012, Tencent developed Party committee and the owner of Tencent became part of the 25 vice-presidents of the Internet Society of China, "an intermediary organization under CCP guidance" (Creemers, 2016, p. 4). Moreover, Ma Huateng was also one of the delegates in the Chinese People's Political Consultative Conference (CPPCC) and the National People's Congress (NPC) in 2015 (AFP, 2015). Ma Huateng was also part of the team of businessmen who accompanied Xi Jinping on his first formal state visit to the United States.

The discussion in this section indicates that both the governments in the US and China conduct surveillance on users. The broad context of political culture in both contexts is different, as the US is democratic while China practices socialism. Despite the contrast in political culture, the government and owners share a mutual interest in users' data and their online content, which is also pointed out by Fuchs (2016).

CONCLUSION

Facebook and Tencent share certain commonalities between them in terms of audience commodity. OSN sites and messenger app companies such as these rely on advertisements for their revenue and Facebook

and WeChat are the biggest revenue earners in this respect. The more users an OSN service has, the larger number of users, marketers and advertising companies can reach with minimum investments.

The next resemblance among these companies is sharing users' information and user-created content with advertising companies. These companies share such information with the advertisers in order to generate financial revenue. Companies like Facebook and Tencent need to survive in the ever-competitive market of OSN services. Without the state's direct or indirect support, these companies may not be able to continue with their businesses. Hence, these companies share users' information with the government.

The main findings of this research supports the existence of the commodification process on OSN services. Owners of these OSN companies are making profits by commodifying the users of these services. Facebook and Tencent gain profit from selling users' data to advertising and marketing companies. But, their main intention is to provide more support to advertisers than to users. To benefit the advertisers, these companies design and incorporate many features that would force users to create more content and thus allow the company to gain more information on users, while users have been provided with only one or two options to protect their information from advertisers (i.e., an opt-out option). Moreover, how the protection of personal data works is not clear. On the one hand, for monetary gains, users' data are shared with advertisers and marketers. And on the other hand, information is not delivered to the government in the name of protecting users' privacy. It is also not clear if information is provided to the government without the users' consent. Therefore, economic and government surveillance is being conducted simultaneously on these OSN services where users are being taken advantage of on both accounts. OSN sites and messenger apps in both the US and China depend on two powerful institutions for their existence: advertising companies and the government. The substantial growth of their user base reflects not only the interest of the users to build social capital on online social media but also the sites' increasing dependence on advertising that has shifted from mainstream media to online social platforms.

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KEY TERMS AND DEFINITIONS

Attention Economy: A concept where media, in a modern competitive market, tries to gain and keep the attention of the audience to its channel, newspaper or online service.

Audience Commodification: A political economy concept related to media. Audiences contribute to media companies' profit-making process both as worker and buyer. But they gain no financial profit.

Government surveillance: A situation where the government observes the activities of an individual and group to collect information on them and in some cases it may affect their privacy.

Online Social Networking Services: Social platforms on the Internet that are created by building online profiles with valid email address. These are used to communicate and share contents with others.

Political Economy: The interdisciplinary study of the relationship between economy and politics.

Social Media Policies: Policies created and followed by the social media companies to conduct their activities and business.

User Data: All information and content collected and stored about a social media user by the government and/or companies of social media.

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Chapter 67

Loneliness, Disclosure, and Facebook Usage: Results From a Hong Kong Survey

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ABSTRACT

The authors conducted an online survey of 241 emerging adults in Hong Kong, China to assess potential associations between loneliness, Facebook usage, and self-disclosure on Facebook. Loneliness was not associated with Facebook usage, but rather inversely related with negative disclosure; the lonelier the Facebook user, the less he/she disclosed negative information. The pattern of associations between Facebook usage and self-disclosure indicated that the more time users spent on Facebook, the more they revealed positive disclosures and the less they revealed negative disclosures. The authors argue that these findings may provide evidence of a “remain positive” norm among emerging adult Facebook users in Hong Kong. They note that their findings may be unique to their cultural context.

INTRODUCTION

Emerging Adult Theory argues that a distinct life stage exists between adolescence and adulthood, a time when individuals “have not yet settled into the long-term choices and life-paths that make up adulthood” (Bigham, 2012, p. 533). As originally conceived by Arnett (2015), this life stage extended from late teens through the 20s when individuals address the challenging tasks that typically accompany the transition into adulthood. Munsey (2006) identified five features of emerging adulthood:

- Identity exploration concerning lifestyles and believe systems (e.g., religion, politics)

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- **Instability.** Individuals may change residents frequently, moving frequently for education, work, and/or family reasons. They may change intimate partners and friends frequently as well. The challenge for emerging adults is to find stability including negotiating on-going, positive interpersonal relationships and moving along a chosen career path that allows life in primarily one location.
- **Self-focus.** Given the above described instability and focus on identity exploration, emerging adults remain self-focused until they begin making commitments to specific career paths and to significant others—commitments that lead to adulthood.
- **Feeling in between.** Individuals know they are not children or teenagers anymore, but often do not see themselves as adults yet.
- **Endless possibilities.** This time of exploration and confusion leaves emerging adults with a sense of incompleteness but also with a sense of wonder and endless possibilities. The experience of endless possibilities can lead to a sense of empowerment or feeling overwhelming by too many options.

The Theory of Emerging Adulthood is not without its critics (Hendry & Kloep, 2007). Some adherents have argued that tying the definition of emerging adulthood to its challenges rather than specific ages is more sensible, given that individuals complete development tasks at differing paces (Bigham, 2012). Additionally, researchers argue that ethnicity (Munsey, 2006) and culture (e.g., Arseth, Kroger, Martinussen, & Bakken, 2009) may influence how individuals experience this life stage. Despite these concerns, an on-going line of research has emerged that examines the online behavior of emerging adults (e.g., Wu & Webb, 2016).

This chapter reports the findings of an original research study that continues an exploration of emerging adulthood among these newer concerns (i.e., extended age-frame, cultural differences, and online behaviors). We examined Facebook usage and its relationship to emerging adult users' perceived loneliness and self-disclosure on Facebook in a Hong Kong sample. This study fills a gap in the current body of research in two ways: (a) by examining the inter-relationships among this specific combination of three variables (i.e., loneliness, self-disclosure on Facebook, and Facebook usage per se) as well as (b) collecting data from a culturally unique sample, emerging adults in Hong Kong.

BACKGROUND

Motivations for users to join and use social networking websites (SNS) vary (boyd, 2006; Bryant, Marmo, & Ramirez, 2011; Chen, 2015), but the primary motivation is to communicate and maintain relationships with other users (Dwyer, Hiltz & Passerini, 2007). Individuals can form online communities around shared interests with others outside their pre-existing social group or location (Webb & Lee, 2011). However, many participants in large SNSs like Facebook primarily search for and communicate with their offline connections rather than looking for new people to meet (Lampe, Ellison, & Steinfield, 2006; Miller & Munday, 2015). Nonetheless, the more users want to maintain relationships on social media, the more likely they are to spend time in self-disclosing activities, such as updating Facebook profile information, posting status updates, and uploading photos and videos.

One of the largest, well known, and well-studied SNS in the world is Facebook (Rains & Brunner, 2015). On February 4, 2019, Facebook turned 15 years old and reported 1.5 billion daily, active users world-wide in May 2019 (Facebook, 2019). Indeed, Facebook is big business with offices in 20 U. S. cities and 47 overseas cities, including an office in Hong Kong (Facebook, 2019).

Facebook provides multiple opportunities for self-disclosure, here defined as consciously communicating messages about the self to others. For example, users can reveal personal information on their personal profiles including birthdate, education background, hobbies, sexual orientation, and relationship status. Additionally, users can upload photos and videos of their activities as well as reveal their thoughts and feelings via status updates; this information in turn appears on their friends' news feed. Therefore, it is not surprising that self-disclosure on Facebook is a well-researched topic (Caers et al., 2013). A google-scholar search using the two keywords Facebook and self-disclosure yielded over 30,600 results in May 2019.

This extensive line of research examines users' self-disclosure on Facebook in Argentina (Linne, 2014), Australia (Saling, Cohen, & Cooper, 2019), Germany (Utz, 2015), Japan (Omori & Allen, 2014), Korea (e.g., Kwak, Choi, & Lee, 2014), Mainland China (e.g., Liu & Brown, 2014), Poland (e.g., Blachnio, Przepiorka, & Rudnicka, 2016), Slovenia (e.g., Zlatolas, Welzer, Hericko, & Holbl, 2015), the United Kingdom (e.g., Green, Wilhelmsen, Wilmots, Dodd, & Quin, 2016), and the United States (e.g., Crabtree & Pillow, 2018). However, very little of this research was completed Hong Kong (i.e., Cheung, Lee, & Chan, 2015). Given the unique cultural aspects of Hong Kong, with its 99 years history of British occupation mingled with its ethnically Chinese roots, it is reasonable to question whether Hong Kong Facebook users would follow the same norms of self-disclosure documented in other cultures.

Indeed, perhaps in acknowledgement of its uniqueness, a growing body of over 25 published studies examines various Facebook behaviors of Hong Kong residents, including peer network characteristics (Chan, 2018), talk among colleagues (Nam, Chun, & Hin, 2014), and one specific type of self-disclosure, sharing sex stories (Yeo & Chu, 2017). However, only one previous research has examined Hong Kong Facebook users' self-disclosure as a general matter (Chenug et al., 2015). That study assessed perceived costs and benefits of self-disclosure on Facebook but failed to directly assess the relationship between Hong Kong users' self-disclosure on Facebook with their reported loneliness. This is concerning, given that previous studies linked loneliness and self-disclosure on Facebook among users in Australia (Al-Saggaf & Nielsen, 2014) and Korea (Jin, 2013; Lee, Noh, & Koo, 2013). Our study expands this fledgling line of research by testing whether such a relationship can be similarly documented among Facebook users in a Hong Kong sample.

Many studies have examined the relationship between loneliness and Facebook use (see Song et al, 2014 for a meta-analysis of this research). However, we could locate no previous work that examined this association in Hong Kong users. To address this gap in the literature, we elected to focus our study on Facebook use, loneliness, and self-disclosure among a Hong Kong sample of emerging adults.

Facebook

Facebook is the most popular SNS on Earth (Ahmad, 2019). Users can search for other registered users and initiate requests to become friends. Facebook friends range from established intimate relationships to acquaintances. While the research on self-disclosure and Facebook is extensive, as is the research on loneliness and Facebook use, nonetheless, much of the existing academic research on Facebook has focused on interpersonal processes more indirectly related to loneliness and/or self-disclosure. They

include boundary tending (Miller & Munday, 2015), privacy concerns (Tsay-Vogel, Shanahan, & Signorielli, 2018), feeling connected (Utz, 2015), social anxiety (e.g., Burke & Ruppel, 2015), social cohesion (Hollenbaugh, & Ferris, 2014), general interpersonal relations (Kwak et al., 2014), and the overarching concern of acquiring and maintained social capital (Liu & Brown, 2014). Additionally, recent studies report mixed outcomes associated with frequent Facebook usage including (a) lower depressive symptoms in females with high neuroticism (Simonic, Kuhlman, Vargas, Houchins, & Lopez-Duran, 2014) but (b) higher stress and lower quality of life among college students (Bevan, Gomez, and Sparks, 2014) as well as associations with narcissism (Blachnio et al., 2016) among emerging and middle-aged adults. In sum, loneliness and self-disclosure remain common targets of both direct and indirect investigation by Facebook researchers.

Loneliness and Facebook Use

We view loneliness as an uncomfortable psychological state associated with a desire for increased human interaction. Loneliness has been linked to reduced social support and reduced life satisfaction (Kong & You, 2013). For lonely individuals, online social media, such as Facebook, may offer a less demanding communication medium than face-to-face (FtF) interaction. Facebook makes connecting with others easy by facilitating connections in the following manner: Its customized features allow users with common interests to easily discover each other and converse.

In their meta-analysis of the research on loneliness and Facebook usage, Song et al. (2014) report that, early on, many studies documented an association between loneliness and Facebook use. Following recognition of this documentation, researchers focused on the question of whether Facebook usage decreased or increased loneliness. While the previous evidence was mixed, Song and associates (2014) presented definitive evidence that loneliness, driven by shyness and low self-esteem, leads to increased Facebook usage. Rather than retest the directionality of the association, our study tested whether loneliness and Facebook usage remain correlated with a Hong Kong sample.

Like Song et al. (2014), we located many studies of loneliness and Facebook use. These studies employed samples of emerging adults in diverse locations including Australia (e.g., Al-Saggaf & Nielsen, 2014), Belgium (e.g., Frison & Eggermont, 2015), Germany (Utz, 2015), Korea (Jin, 2013), Poland (Balachnio, Przepiorka, Boruch, & Balakier, 2016), Scotland (Phu & Gow, 2019), Turkey (Satici, 2019), and the United States (e.g., Wohn & LaRose, 2014). However, this association remain undocumented in a Hong Kong sample. Therefore, we posed the following research question:

RQ1: Is there an association between loneliness and Facebook usage?

Self-Disclosure and Facebook Use

In addition to testing whether Facebook usage is related to loneliness in a Hong Kong sample, we questioned whether either users' loneliness or Facebook usage is associated with their self-disclosure on Facebook. Self-disclosure (here defined as revealing information about the self to others) is widely considered an important factor in the development and maintenance of relationships in FtF and well as social media contexts (Bazarova & Choi, 2014). It has positive effects on online dating (Gibbs, Ellison, & Heino, 2006), online support communities (Turner, Grube, & Myers, 2001), virtual work teams (Walther, Slovacek, & Tidwell, 2001), and online interpersonal relationships (Kwak et al., 2014).

Relationship maintenance, often manifest as self-disclosure, is among the most prominent motivation for using Facebook (Dwyer et al., 2007; Ellison, Vitak, Gray, & Lampe, 2014; Lampe et al., 2006; Park & Lee, 2014). Users stay in touch with their offline relational partners via Facebook, (Miller & Munday, 2015), including both geographically distant and close friends (Waters & Ackerman, 2011) as well as current and previous romantic partners (Medeiros & Webb, 2019). In addition to relationship maintenance, users may employ Facebook to satisfy engagement and affiliation needs—and both are associated with self-disclosure (Chen, 2015). Furthermore, Ledbetter et al. (2011) reported a link between self-disclosure on Facebook and relational closeness.

Many researches argue for a direct relationship between Facebook use and self-disclosure (Webb & Temple, 2015). For example, Linne identified “interchanging personal information between friends” (in other words, self-disclosure) as one of adolescents’ the common uses of Facebook (2014, para. 1). Similarly, Park and Lee (2014) report that college students have four motivations for using Facebook, including self-expression and communication (in other words, self-disclosure). Finally, Hollenbaugh and Ferris (2014) documented an association between the breadth of self-disclosure on Facebook and relational maintenance per se as well as one of its specific components, openness.

A wave of recent studies documented a positive relationship between Facebook use and self-disclosure (Chang & Heo, 2014; Chen & Sharma, 2015; Crabtree & Pillow, 2018; Lee et al., 2013; Park & Baek, 2016; Tsay-Vogel et al., 2018). However, our study is the first to test this relationship using a Hong Kong sample. Such a sample-specific test appears relevant in light of increasing evidence that Facebook usage is influenced by cultural values such as individualism (Shneor & Efrat, 2014). Particularly relevant to our research, two studies reported cultural differences in self-disclosure on Facebook: Lee-Won, Shim, Joo, and Park (2014) documented cultural differences in self-presentation on Facebook between South Korean versus U. S. emerging adults; given that self-disclosure is the primary means through which users present their online identity, these cultural differences provide a warrant for our culturally-specific sample. Similarly, Omori and Allen documented differences in the willingness of emerging adult Facebook users in Japan versus the United States to post pictures of themselves “partying” and drinking (in other words, self-disclosing questionable recreational activities).

Valence of Disclosure

Given the extensive documentation of self-disclosure on Facebook, researchers recently turned their attention to examining the influence of the valence of self-disclosures on Facebook usage and other pertinent variables (e.g., Saling et al., 2019). As early as 1973, researchers noted that the valence of a disclosure (disclosing positive versus negative information) in FtF interactions influenced the receiver’s perception of the discloser (Pearce & Sharp, 1973). More recent findings indicate that valence of disclosure also can prove salient in online interactions. We could locate seven previously published studies that examined positive versus negative disclosures on Facebook; their results indicate that salience of Facebook disclosures may be a variable worthy of observation.

- Qiu, Lin, Leung, and Tov (2012) documented that, among a sample of Singapore college students, Facebook users were more likely to disclose positive versus negative emotions.
- Lee-Won et al. (2014) documented that U. S. versus Korean college-student Facebook users engaged in more positive self-presentation (in other words, self-disclosure).

- Liu and Brown (2014) examined self-disclosure among first-year college students at three universities in Beijing in mainland China on Renren, the Chinese version of Facebook. Their results revealed that social skills were positively associated with self-disclosure, which in turn was associated with receiving positive feedback from friends.
- Jin (2013) reported that, among a Korean sample of emerging adults, lonely users were more likely to engage in negative self-disclosure and less likely to engage in positive self-disclosure.
- Bevan et al. (2015) reported that, in a sample of emerging adults in the United States, users preferred to disclose negative life events directly (e.g., status updates) whereas they preferred to disclose positive life events indirectly (e.g., posting pictures).
- Utz (2015) reported that positive (not negative) Facebook disclosures were associated with feelings of connection among a sample of German university students.
- Saling et al., (2019) reported that Australian Facebook users of many ages preferred receiving negative disclosures off-line rather than online.

We extended this exploration of positive versus negative valence of disclosures on Facebook to examine their potential relationships between loneliness, Facebook usage, and positive versus negative self-disclosure on Facebook. We believed that emerging adult Facebook users were likely to disclose positive (versus negative) information about the self to shape desirable online images. Therefore, we posed the following research question:

RQ2: Is there an association between positive or negative self-disclosure on Facebook and Facebook usage?

Loneliness and Self-Disclosure on Facebook

The relationship between the use of Facebook and self-disclosure might be more profound for lonely people who desire social relationships but lack opportunities for self-disclosure in FtF interaction. It is possible that, because of the impersonality and participation equality of online communication, lonely people may be more willing to disclose in greater breadth and depth. Also, Facebook may be a more comfortable place for the lonely to disclose than less interactive online venues such as Instagram and Twitter. If Facebook serves as a comfortable place for lonely people to self-disclose, lonely Facebook users and/or high disclosing users may use Facebook more frequently than less lonely users.

We could locate only three previous studies (Al-Saggaf & Nielsen, 2014; Jin, 2013; Lee et al., 2013) that tested for such associations. Among a sample of Australian users, Al-Saggaf and Nielsen (2014) reported that lonely Facebook users disclosed more personal and more relational information but fewer viewpoints. Lee et al. (2013) reported that loneliness increased self-disclosure on Facebook among their sample of Korean college students. Jin (2013) reported that, among a Korean sample of emerging adults, users' amount of time on Facebook was not associated with loneliness; however, lonely users were more likely to engage in negative self-disclosure and less likely to engage in positive self-disclosure. To explore if this set of previously examined relationships existed in a Hong Kong sample, we posted the following research question:

RQ3: Is there an association between loneliness and positive or negative self-disclosure on Facebook?

It is noteworthy that we could locate no previous study that examined possible associations between the particular array of variables examined in this study (i.e., loneliness, self-disclosure by valence, and Facebook use). Thus, in addition to retesting previously documented associations with a Hong Kong sample of emerging adults, our study fills this additional gap in the research on Facebook.

METHOD

Sample

We recruited 251 Facebook users ages 16 or older residing in Hong Kong, China to complete our on-line survey. For many reasons explained below, a Hong Kong sample presents an almost ideal sample for studying Facebook behavior generally and an appropriate sample to test the queried associations:

- Hong Kong residents engage in the Chinese cultural practice of “guanxi”; they prize networking and place high value on having and maintaining connections. Thus, they may visit Facebook often and work diligently to maintain their Facebook connections.
- The vast majority of Hong Kong residents culturally identify as Chinese and thus feel an affinity with their immediate neighbor to the north, Mainland China. However, the government of Mainland China forbids the use of Facebook and affirmatively takes step to block its citizen’s Facebook usage. Because of this policy, Hong Kong residents prize their access to Facebook and find it useful for maintaining ties with intercity friends in Hong Kong as well as ethnically Chinese friends living in countries other than Mainland China such as Malaysia, Singapore, and Taiwan.
- Because Hong Kong serves as an international hub for law, business, fashion and so forth, native Hong Kong residents often become acquainted with people from multiple countries and cultures. Thus, Hong Kong residents, more than residents of most locations, have the opportunity to communicate with intercultural relational partners around the world via Facebook.
- Because Hong Kong serves as an international hub for law, business, fashion and so forth, many Hong Kong residents are citizens of outside countries and territories. Thus, our sample, collected in Hong Kong, accurately represented a wider variety of foreign nationals than typically seen in most locations.
- Hong Kong is a densely populated urban area and thus residents experience frequent close physical proximity to one another; they often fail to engage in eye contact or interaction as a way to maintain personal space in one of the most densely populated cities in the world. Thus, a fair number of residents may experience loneliness.

Furthermore, recent articles reported on Facebook behavior in Japan (e.g., Omori & Allen, 2014), Korea (e.g., Ha, Kim, Labaque-Saena, Chang, & Park, 2015), Malaysia (e.g., Abdulahi, Samadi, & Gharlegghi, 2014), and Singapore (e.g., Qiu et al., 2012). Our study adds to this growing body of knowledge concerning Facebook usage in Asia.

Our sample size of 251 was (a) consistent with recently research reports on the same topic such as Satıcı’s 2019 article examining the relationship between loneliness and Facebook use among 280 Turkish university students and (b) almost identical to the sample size of 264 reported in the only previously

published study of self-disclosure on a SNS that substitutes for Facebook among emerging adults in Mainland China (Liu & Brown, 2014).

Typical of survey research of emerging adult Facebook users (e.g., Phu & Gow, 2019), we employed convenience sampling. Our sample included 95 (37.8%) males and 156 (62.2%) females. Most of the respondents ($n = 157$; 62.5%) were ages 20-24. However, the sample also contained younger emerging adults ages 16-19 (14.3%) and older emerging adults ages 25-29 (15.1%). Only 4% of our sample were over age 29. Thus, our Hong Kong sample was almost exclusively comprised of emerging adults.

Respondents reported diverse educational experiences ranging from completing secondary level (13.6%) to holding a certificate or associate degree (11.6%) to an earned baccalaureate degree (61.8%) to a graduate degree (12.8%). The majority reported having a monthly income of HK\$10,000 or below (69.7%), followed by HK\$10,000-\$20,000 (23.5%). The respondents hailed from various walks of life, but were mostly students (60.6%). The second largest group provided social services (8.4%), a typical “starter job” for emerging adults in Hong Kong.

One advantage of collecting data in an international city is the sample’s diversity. Our convenience sample contained citizens of seven countries including France, Mainland China, Malaysia, Taiwan, United Kingdom, and the United States—but the majority of respondents claimed Hong Kong citizenship ($n = 231$, 92.00%). Similarly, the vast majority of our respondents self-identified as Asian ($n = 247$, 98.40%), with the remaining identifying as Caucasian.

Instruments

Because we recruited respondents in Hong Kong, a multi-national city, the survey displayed 64 questions in the city’s two dominant languages: English and traditional Chinese characters. We discovered existing instruments in English and then translated them into Chinese. Next, the questions were back translated by graduate students in Communication to ensure consistency and accuracy across the two language versions.

- **Loneliness.** The revised UCLA Loneliness Scale developed by (Russell, Peplau, & Cutrona, 1980) contains 20-items rated on 4-point Likert scales that range from 1 (never) to 4 (often). The scale included items such as “I am outgoing and friendly.” The scale proved reliable with our sample, yielding a Cronbach alpha of 0.90.
- **Self-disclosure on Facebook.** The Revised Self Disclosure Scale (RSDS) developed by Wheelless and Grotz (1976) is a self-report instrument of 31 items scored on 5-point Likert scales ranging from 5 (strongly agree) to 1 (strongly disagree). We reworded the items to address self-disclosure on Facebook. For example, one item stated, “I usually disclose positive things about myself on Facebook”.

A factor analysis of our respondents’ scores using principal components analysis with Varimax rotation yielded two self-disclosure factors, namely negative self-disclosure and positive self-disclosure.¹ Negative self-disclosure was comprised of two items with a Cronbach’s alpha of 0.80. Positive self-disclosure was comprised of 13 items identified in previous studies across four dimensions of self-disclosure (i.e., accuracy, depth, breath, intention) with a Cronbach’s alpha of 0.81.

- **Facebook Usage.** Following Leung (2002), we employed three measures to assess Facebook usage. We asked (a) how many days a week they visited Facebook, (b) how many hours a day they spent on Facebook, and (c) how much time they typically spent per visit.

Procedures

We pretested our survey with 21 users drawn from the research sample. Based on their feedback, we made minor word changes to the questionnaires to increase clarity; for example, we rewrote instructions using more specific terms.

We posted three versions of the revised survey, each at its own URL. Each version contained the same instruments but in differing, counter-balanced orders to ameliorate order effects. Based on their birth months, we directed approximately a third of the respondents to each of the three URLs.

Typical of survey sampling of Facebook users (e.g., Phu & Gow, 2019), we employed multiple methods of recruitment to increase the size and diversity of our convenience sample. Specifically, the authors each posted an invitation to the survey on their Facebook pages and urged their Facebook friends to *not* take the survey but to repost the recruitment invitation. Thus, members of the researchers' social network served as recruiters but not as respondents in the study, minimizing the introduction of researcher bias. Additionally, the survey's URLs were sent via an invitational email to undergraduate students in Communication classes at a large, state-sponsored university in Hong Kong. The URLs remained live for 14 consecutive days and thus allowed for the collection of 251 completed surveys.

RESULTS

Preliminary Analyses

We factor analyzed the scores from the items on the loneliness and self-disclosure instruments using principal components analysis with Varimax rotation.¹ The loneliness scale factored cleanly and, as mentioned above, the self-disclosure scale reduced to two factors: positive disclosure and negative disclosure.

Next, we examined the frequency distributions for the variables. Three indicators of Facebook usage (days per week, hours per day, and time per visit) were not normally distributed. Therefore, we conducted nonparametric tests for the analyses involving these measures. We conducted parametric tests to assess the potential relationships between loneliness and positive versus negative self-disclosure.

Primary Analyses

We computed Spearman's correlation coefficients to assess (a) the potential association between loneliness and Facebook usage and (b) the potential association between self-disclosure and Facebook usage. Facebook usage was not significantly associated with loneliness (see Table 1), suggesting that Facebook users' loneliness was not associated with increased or decreased Facebook usage. Conversely, both positive and negative self-disclosure were associated with Facebook usage (see Table 1). Positive self-disclosure was positively correlated with two measures of Facebook usage, indicating that the more days per week users visited Facebook as well as the more hours per day they spent on Facebook, the more they engaged on positive self-disclosure on Facebook. Conversely, negative self-disclosure was negatively correlated

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with hours per day on Facebook, suggesting that the more hours per day users spent on Facebook, the less they self-disclosed negatively on Facebook. In all three significant results, increased Facebook usage was associated with either more positive or less negative self-disclosure.

Finally, we calculated Pearson's correlation coefficients to assess the potential correlation between loneliness and self-disclosure on Facebook. Loneliness was not correlated with positive self-disclosure ($r = -0.05$, $p = \text{NS}$). However, loneliness was negatively correlated with negative self-disclosure ($r = -0.22$, $p = 0.01$). The lonelier the Facebook user, the less he/she disclosed negative information.

Table 1. Correlations between loneliness, self-disclosure, and facebook usage

	Facebook Usage Pattern		
	Days per Week	Hours per Day	Time per Visit
Loneliness	-0.01 (n.s.)	0.08 (n.s.)	-0.01 (n.s.)
Self-disclosure on Facebook			
Positive self-disclosure	0.18**	0.18**	-0.01 (n.s.)
Negative self-disclosure (R)	-0.08 (n.s.)	-0.17**	-0.01 (n.s.)

Notes: ** $p < 0.01$, $n = 251$

DISCUSSION

Loneliness and Facebook Usage

Our results answer RQ1 in the negative. Loneliness was not significantly associated with Facebook usage. Our results are consistent with a few previous studies (i.e., Baker & Oswald, 2010; Wohn & LaRose, 2014) conducted with U.S. freshmen, but inconsistent with the conclusion of Song et al.'s (2014) meta-analysis and with the vast majority of previous studies testing for such an association.

We offer three explanations for our findings: (a) We may be observing cultural differences. Given that Facebook is very popular in Hong Kong, it may be too cool to be on Facebook for anyone to ignore its draw; thus, differences across loneliness scores could not be documented. (b) We assessed positive and negative self-disclosure rather than using overall self-disclosure scores as was typical for the earlier researched that documents a positive correlation. Thus, both measurement and sample differences may explain our results. (c) Previous research indicates that factors other than loneliness influence Facebook usage; such factors include shyness (Baker & Oswald, 2010), self-esteem (e.g., Leighton, Legate, LePine, Anderson, & Grahe, 2018; Varnali & Toker, 2015), self-inferiority (Hong, Huang, Lin, & Chiu, 2014), and stress (Bevan et al., 2014). Thus, loneliness was not associated with Facebook usage across samples in two locations: the United States and now Hong Kong.

For at least two reasons, Facebook may offer limited appeal to lonely users looking for new relational partners online: (a) Facebook users primarily search for and communicate with existing, offline connections rather than looking for new people to meet (Lampe et al., 2006; Miller & Munday, 2015). (b) Facebook users primarily reveal their profile information to existing, offline connections (Lampe et al., 2006). Attempts to befriend users unknown in the FtF world are typically ignored or rejected.

Instead of Facebook, lonely people may turn to SNS that focus on connecting strangers based on shared interests, political views, or activities like dating websites, blogs, forums, and chatrooms where they can present themselves as more extroverted, less shy, more intelligent, more fun loving, and generally more favorable. In such alternative forums, they can enjoy a greater sense of safety and perceived ability to control anonymity as well as communicate with multiple fellow users in real time.

Loneliness and Facebook Usage

Our results revealed associations between self-disclosure and Facebook usage, thus, answering RQ2 in the affirmative. These results are consistent with previously published findings (Chang & Heo, 2014; Chen & Sharma, 2015; Crabtree & Pillow, 2018; Lee et al., 2013; Park & Baek, 2016; Tsay-Vogel et al., 2018). However, our results are the first to document this association in a Hong Kong sample.

An association between self-disclosure and Facebook usage may be the result of the reciprocity norm of self-disclosure (Pearce & Sharp, 1973). Users' Facebook pages, posts, and comments contain self-information that functions as self-disclosure. Therefore, the more time a user spends on Facebook, the more he/she is exposed to the self-disclosures of others and then may disclose reciprocally, perhaps disclosing in greater depth and breadth to further prompt the disclosure of others.

Additionally, social exchange theories argue that people develop and maintain relationships based on reciprocal exchange of rewards (Dunbar, 2015). Applying this principle to self-disclosure, online interactants may reveal themselves to people who self-disclose to them. Facebook seems an ideal medium for such exchanges.

Valence of Disclosure and Facebook Usage

Perhaps the most interesting findings of the study surround the valence of Facebook self-disclosure. We report three significant findings that add to the growing understanding of how the valence of self-disclosure functions on Facebook.

- First, we adapted our self-disclosure instrument by add the words “on Facebook” to each item. Recall that its factor analysis yielded two factors divided by valence (positive versus negative) rather than the expected four factors found in previous studies (i.e., accuracy, depth, breath, intention). This result was our first indication that valence of disclosure may be a salient factor for our respondents.
- Second, our analyses revealed the significant negative correlation between hours per day on Facebook and negative self-disclosure. The more hours spent per day on Facebook, the less the respondents tended to self-disclosure negatively on Facebook.
- Third, two measures of Facebook usage (number of days per week and hours per day) were positively correlated with positive self-disclosure. The more Facebook usage, the more positive self-disclosure.

Our results, consistent with previously reported findings (Qiu et al., 2012; Lee et al., 2014), indicate that disclosure on Facebook tends to be positive. In fact, our results indicate that the more time spent on Facebook, the less negative self-disclosure. We believe our results provide evidence for the existence of a “stay positive” Facebook norm. As users learn the norms of Facebook, including the norm of posting

primarily positive status updates, they might desire to obey the “stay positive” norm as well as to interact in a positive manner to maintain their relationships.

We are not the first researchers to discuss Facebook norms. McLaughlin and Vitak (2012) documented ways users enforce Facebook norms. Miller and Munday (2015) identified three Facebook norms. Our data results may identify a fourth norm: Stay positive in posts and status updates. The notion of a “stay positive” Facebook norm is consistent with the findings of two recent studies: Toma and Carlson (2015) report that college students’ perception that they portray a positive version of the self in their Facebook profiles as well as Burke and Ruppel’s (2015) finding that users report greater interaction success on Facebook on days when they report more positive self-presentation.

Loneliness and Self-Disclosure on Facebook

Our RQ3 analyses yielded mixed results. Negative self-disclosure correlated negatively with loneliness, whereas positive self-disclosure did not correlate with loneliness. The lonelier the user, the less he/she revealed negative information. Conversely, the less lonely the user, the more he/she revealed negative information. This finding was *not* consistent with previous research findings including Lee et al.’s (2013) report that that loneliness increased self-disclosure on Facebook among their sample of Korean college students. Also, these results are inconsistent with Jin’s (2013) report that, among a Korean sample of emerging adults, lonely users were more likely to engage in negative self-disclosure and less likely to engage in positive self-disclosure. Our results are the first to document this exact relationship: Negative self-disclosure correlated negatively with loneliness, whereas positive self-disclosure did not correlate with loneliness.

Our findings are consistent with recent results documenting that Facebook users prefer receiving negative disclosures offline (Saling et al., 2019). Perhaps lonely users are especially sensitive to communication norms and endeavor to follow them conscientiously. Indeed, lonely users might be attempting to maintain and develop Facebook relationships—and might avoid negative disclosure to do so. Less lonely users may feel sufficiently secure in their relationships to be comfortable revealing negative information.

Loneliness and Facebook Usage

In sum, based on data from our sample and a few previously published studies, loneliness appears to be unrelated to Facebook usage, at least among certain populations. Perhaps previously identified user characteristics such as shyness (Baker & Oswald, 2010), self-esteem (e.g., Varnali & Toker, 2015), self-inferiority (Hong et al., 2014), and stress (Bevan et al., 2014) exercise more influence over Facebook usage than loneliness.

However, loneliness may prompt cautiousness, as loneliness appears to be associated with less negative self-disclosure on Facebook. In general, the more time the emerging adults in our sample spent on Facebook, the more likely they were to engage in positive self-disclosure and the less likely they are to reveal negative information. This pattern of self-disclosure seems reasonable, given that the primary way to interact on Facebook is to post a comment or status update, thus revealing information about the self, and given the potential existence of a Facebook norm of “staying positive.”

Given the inconsistencies between our findings and previous results with alternative populations, our outcomes may indicate that culture may play a role in Facebook users’ communication patterns. Such a conclusion would be consistent with previously published results that emerging adult behavior can dif-

fer from culture to culture (Arseth et al., 2009). Additionally, examining valence of self-disclosure may allow more nuanced understandings of the norms governing Facebook disclosures.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

We acknowledge multiple limitations to our study. Our sample was gathered in one location, Hong Kong. The sample proved fruitful for a study of Facebook usage, given the many significant findings of the study. However, the generalizability of the findings to other locations awaits testing. Furthermore, multiple Chinese cultural norms (i.e., social hierarchy, monitoring displays of strong emotion, face concerns, and emphasis on group harmony) can influence respondents' replies in research (Kwan, Chun, & Chesla, 2011).

Furthermore, because there is no directory of Facebook users, probability sampling was impossible. Thus, the representativeness of our convenience sample remains unknown. Additionally, because this was a one-time survey, causality could not be established. Future research could examine the causal relationships between loneliness, self-disclosure, and Facebook use, perhaps employing experimental interventions and longitudinal methods. Finally, the limitations of self-report data include recall problems and social-desirability biases.

Although beyond the scope of our study, future research might examine further the link between self-disclosure and users' motivations for disclosure on Facebook (Bazarova & Choi, 2014). Certain motivations may account for the amount and valence of disclosures. Additionally, future studies of disclosure could move beyond survey data to examine actual Facebook profiles, as such examinations have proved fruitful in previous studies of Facebook behavior of emerging adults (e.g., Bouppha, Grisso, Morris, Webb, & Zakeri, 2013; Taraszow, Aristodemou, Shitta, Laouris, & Arsoy, 2010; Webb, Wilson, Hodges, Smith, & Zakeri, 2012).

CONCLUSION

Despite these limitations, our study contributes to scholarly understanding of user-interactions on SNS. We offer the first examination of the relationships between loneliness, self-disclosure on Facebook, and Facebook usage among a Hong Kong sample of emerging adults. We now know that, at least among one sample of Facebook users, the more time spent on Facebook, the more users engage in positive self-disclosure on Facebook. The more hours per day users spent on Facebook, the less negative self-disclosure they reveal on Facebook. However, two measures of Facebook usage (days per week on Facebook and time spent on Facebook per visit) were not significantly correlated with negative self-disclosure. The higher the loneliness score, the less users reveal negative self-information on Facebook. We offered two logical explanations for our results: the reciprocity norm of self-disclosure and the proposed Facebook norm of remaining positive. Finally, our study offers evidence that Facebook norms may be culture specific and measuring self-discourse valence may provide a more nuanced understanding for those norms.

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KEY TERMS AND DEFINITIONS

Emerging Adulthood: A distinct life stage exists between adolescence and full adulthood when individuals are exploring long-term choices.

Facebook Use (or Usage): Active engagement on Facebook across time operationalized as the amount of time the individual spends reading or writing in the social medium platform located at Facebook.com.

Hong Kong, China: A semi-autonomous city-state in the south-eastern corner of China, located on the South China sea. It is a densely populated urban center comprised of one main island and a small part of the mainland territory. Its native language is Mandarin, although English is widely spoken.

Loneliness: The individual experiences an uncomfortable psychological state associated with a desire for increased human interaction.

Self-Disclosure: An individual reveals information about the self to others.

Valence of a Disclosure: The perception of revealed information as either positive versus negative by either the sender, the receiver, or an observer.

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Chapter 68

Transformation of China's Most Popular Dating App, Momo, and Its Impact on Young Adult Sexuality: A Critical Social Construction of Technology Analysis

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ABSTRACT

This chapter explores China's most popular dating app 'Momo' and its impact on young adult sexuality. It examines three interrelated questions at three different levels: First, at the macro level, in what social situations and institutions were mobile dating apps such as Momo invented in China? Second, at the meso level, if we consider Momo as a constantly changing social process, what are the transformations it has experienced, and, during this process, what societal forces have impacted the trajectory of changes and in what ways? Third, at the micro level, how the transformation of Momo's 'intimate infrastructures' at different developmental stages has impacted the sexuality and intimate relationships of its young adult users? It argues that mobile dating apps have to timely transform their design, functions, and market positions to adapt to the changing market competition and governmental regulations in China. The transformation of the intimate infrastructures of the mobile dating apps has also shaped the young adult users' intimate practices and sexuality.

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INTRODUCTION

Technology has significantly transformed our emotional practices and intimate relationships – from love letters to telephone calls, from the use of the internet to the popularization of mobile phones. In China's increasingly digitized society, digital media becomes an important avenue for encountering, practicing and experimenting intimacy and love (Pei, 2010). The internet has been coded into Chinese people's intimate practices since China officially came online in 1994. In the early years of internet popularization, Chinese people used online forums, chat rooms and QQ (instant messaging) to experience intimate interactions. From 2000, dating websites, such as Jiayuan, Zhenai and Baihe, became more popular and professionalized and from 2010, the exponential growth of smartphone use, geolocation technologies and mobile apps encouraged the rapid emergence of mobile dating apps. These apps, such as Momo, Tantan and Blued, have significantly transformed young people's sexuality as well as China's traditional sexual culture and ideology.

In recent years, mobile dating apps have received increasing attention in everyday life and academic research around the world. In the US, 15% of adults have used online dating sites or mobile dating apps (Smith, 2016). In 2014, Momo, the Chinese version of Tinder, was listed on the Nasdaq, and by March 2019, had attracted 114 million active monthly users (Sina Finance, 2019). According to statistics released by iiMedia Research Group in June 2018, 55.82% of Momo users are male and 44.18% are female. Users under 24 years old, 25–30, 31–35, and 36–40 account for 38.34%, 31.34%, 14.22% and 7.41%, respectively of the total users (iiMedia, 2018). If we adopt the age range 18–35 to classify young adults (Petry, 2002), we can see that up to 70% of Momo users fall into this category. As China's most popular mobile dating app, the 'intimate infrastructures' (Liu 2016) Momo provides, and the transformation of the app, have greatly impacted the sexuality of Chinese young adults.

Existing research on mobile dating apps, mainly in the Western contexts, either studies the functions, features and formats of mobile dating apps (David & Cambre, 2016; Timmermans & Courtois, 2018), or explores how mobile dating apps are used by consumers, examining motives and self-representation (Chan, 2017; Wotipka & High, 2016). This body of research overemphasizes the 'intimate infrastructures' but neglects 'how these intimate infrastructures are produced and/or allowed and accepted' (Liu, 2016, p. 559). Therefore, it is timely and important to go beyond the dominant 'technology-consumption' framework to further study mobile dating apps from a production perspective and examine how the evolving product design of mobile dating apps has impacted the sexuality of their users.

To fill the gap, this chapter studies Momo with a production perspective, drawing upon the theoretical resources of social construction of technology (SCOT) that we will detail in the next section. More specifically, it explores three interrelated questions. First, at the macro level, in what social situations and institutions were mobile dating apps such as Momo invented? Second, at the meso level, if we consider Momo as a constantly changing social process, what are the transformations it has experienced, and, during this process, what societal forces have impacted the trajectory of changes and in what ways? Third, at the micro level, how has the transformation of Momo's 'intimate infrastructures' at different developmental stages impacted the sexuality of its young adult users?

Social Construction of Technology (SCOT): An Analytical Framework

Technological determinism has impacted the discussion of relations between technologies and societies in different historical periods. Neither technological utopianism nor pessimism has sufficiently consid-

ered technology as a 'sociotechnical phenomenon' (Bijker, 1995; Suchman, 1996). Even theories that treat technology as neutral, objective and natural, such as technological instrumentalism, have simplified technology as material infrastructure and neglected the related cognition, practices and the wider social situations and institutional arrangements (Dierkes & Hoffmann, 1992; MacKenzie & Wajcman, 1999).

As a notable theory that challenges technological determinism, science and technology studies (STS) conceptualize technology as a relational and interactional social process. It emphasizes that no technology is invented in a vacuum, but is a result of a variety of social forces (Mackay & Gillespie, 1992, p. 688). Therefore, in contrast to technological determinist claims that assume the relationship between technology and society is a one-way or linear process, STS foregrounds mutual impacts that are more complex, dynamic and intricate.

As an extension of the STS theory, SCOT aligns with these perspectives and assumptions. For example, it regards the development of technology as 'an alternation of variation and selection' (Pinch & Bijker, 1987, p. 135). More importantly, SCOT has developed a set of core concepts and a comprehensive interpretative framework. Specifically, SCOT starts from the identification of a series of relevant social groups. These groups have differing imaginaries and expectations of technologies because of their divergent demands of interests and cultural values. Moreover, these different interpretations of technology compete with each other and exemplify a form of 'interpretive flexibility', which 'suggests that technology design is an open process that can produce different outcomes depending on the social circumstances of development' (Klein & Kleinman, 2002, p. 29). Consequently, the trajectory of technological development does not follow a pre-determined direction, but is situated in varied possibilities brought about by the interpretive flexibility. During this process of intense conflict, a particular explanation and understanding of technology gradually prevails; thus, the design of technology becomes stabilized and finalized. However, what should be noted is that this stable condition is temporary because new themes keep emerging.

The theoretical approaches of STS and SCOT have received significant attention from media and communication studies. Researchers have started to adopt this frame for analyzing the development and changes of media technologies in areas such as broadcasting (Slotten, 1995), personal computers (Bardini & Horvath, 1995), blogs (Siles, 2012) and augmented reality technology (Liao, 2018). Nevertheless, few have employed this framework for exploring mobile dating apps. A recent study of China's gay social network app Blued closely examined the political and market environments and the company's visions that have shaped the platform's development (Miao & Chan, 2019). But no research has been conducted on heterosexual dating apps in China or elsewhere adopting this frame.

Despite the strengths of SCOT, it does face various challenges and has received criticism. One of the most notable criticisms argues that SCOT lacks attention to macro structural factors. Such criticisms (Klein & Kleinman, 2002) highlight the importance of considering the political economy, social structures and histories and cultures of different regions and countries. Bearing the promises and limitations of SCOT in mind, we adopt SCOT as an analytical framework while simultaneously considering China's political, social and cultural contexts to study Momo's transformation and the impact of this transformation on young adult sexuality.

METHODS

This study adopts a mixed-methods research design. First, we collected news coverage of Momo published between 2011 and 2018 by searching the Chinese characters for 'Momo' on Baidu, China's largest Internet search engine. More than 500 news reports were collected and read. In addition, we also examined Chinese academic publications on Momo, including journal articles and conference proceedings on China National Knowledge Infrastructure (CNKI), to understand both the popular and academic discourses on the popular mobile dating app.

To more reveal the functions and structures of the app and observe users' interactions on this platform, we adopted the popular 'walkthrough method' (Light, Burgess, & Duguay, 2018) used in app studies. We downloaded Momo onto our mobile devices and registered as a Momo user. In this way, we managed to acquire observational data through watching continued live streaming on Momo, reading Momo users' profiles, self-presentations and real-time posts and interacting with nearby users. In addition, we also conducted in-depth interviews with six young adult users of Momo between 18 and 30 years old.

Based on our close reading of the collected news coverage of Momo, we observed three stages of Momo's changing product positioning since its invention, from its initial position as a 'stranger-oriented' social network, to an 'interest-based' social network, to its current role of live-streaming social network. In the following sections, we will examine each of the three stages to understand what societal forces have impacted Momo's changing product positioning. We also examine how the transformation of Momo's 'intimate infrastructures' reflects and incorporates trends in sexuality of Chinese young adults but also enables and shapes new trends.

THE 'SUPER HOOK-UP' APP: A STRANGER-ORIENTED SOCIAL NETWORK

The most important thing is that when you are on a business trip and you are alone in the hotel, you can use the location-based service (LBS) of your mobile phone to find out that there is a young woman next door who is experiencing the same thing with you. (Tang Yan, Founder of Momo, cited from Fu, 2019)

Momo was established in 2011 as a stranger-oriented social networking app. Why did the founder position Momo as a 'stranger-oriented' social networking app? And why did it gain such great popularity among young people in so short a period of time? Tang Yan, the founder of Momo, believes that the emergence of LBS laid the most important technological foundation for Momo and other similar apps. However, it has been argued that the application of technologies is determined by their social meanings – that is, the particular social groups that use the technology, in what social contexts, and with what social implications and consequences (Yang, 2012). However, to Tang Yan, a profit-driven entrepreneur, the complex social meanings have been simplified into a 'motivation–demand' relationship. According to the relevant media interviews with Tang Yan, he developed a strong interest in the potential of LBS before founding Momo. As Tang reflected:

Why do people check in online? Is it really that they are keen to let themselves know where they are? There must be a very strong motivation for them to do this. Otherwise there is no point sharing their location. (Sina Technology, 2012)

Wang Li, chief operations officer of Momo, gave a more detailed explanation:

We aim to explore the biggest value of LBS. We believe it has great potentials. It can make a lot of changes. Many LBS products were in a wrong direction from the very beginning. They think it's meaningless to check in. They believe that no one cares about where people are. But if you place LBS in a social networking and the local contexts, it becomes an opportunity for the transformation from online to offline connections. (Huxiu.com, 2012)

Clearly, we can see that Momo has emphasized the association between technology and social relations to promote offline interactions, but what social relations does Momo create? What are the motivations of looking for strangers nearby? As Liao (2018) argues, visions of the functional orientations of an emerging technology can shape, contest and stabilize the development of the technology. What is equally important is its leaders' understanding and imagination of the future of technological development (Borup, Brown, Konrad, & van Lente, 2006). From the very beginning, Tang Yan positioned LBS in the context of sexual networking. His assumption is confirmed by recent research that showed 'sex' as the only expected motivation of Momo users' requests to meet offline (Solis & Wong, 2019).

Therefore, meeting people's dating and sexual desires has become a key component of Momo's self-imaginary of its products. To argue for the importance of this imaginary, Tang constantly highlights 'inelastic demand'. Tang believes that it is human nature to socialize, and this is a need that must be fulfilled. More specifically, the inelastic demand here is sexual networking (Sohu, 2018). As Chen Zhilin, Momo's product manager, put it: 'Besides drug taking, sex should be the most irresistible desire for human beings' (China Venture, 2014). To prove the naturalness and legitimacy of this demand, Tang Yan, in many of his interviews, referred to the popularity of QQ's virtual floating bottle, same-city chatroom and WeChat's 'People Nearby' service (Douban, 2014). In so doing, Tang essentializes sexual networking as a crucial constituent of human behavior, creating continuous energy for the support of Momo's imagination of its expansive market share. Similar to how the general public imagine and practice the 'rigid demand' for Chinese real estate properties (Wang, 2018), the demand for sexual networking exemplifies a mechanism designed and maneuvered by particular social groups.

However, Tang's personal imaginary of technology should not be taken as an individual effort. Rather, it must be interpreted as a negotiation of the social, political and cultural environments, as well as industry competition and technological affordance. Clearly, the exploration of sex and new intimate relationships is the core of Tang's imaginary of Momo. Nevertheless, profiting from the operation of sex or advocating for sexual freedom cannot be done explicitly in China's restrained political atmosphere. Therefore, 'stranger-oriented networking' has become a euphemism for Momo to avoid political risk and negative self-branding.

The blurry and fluid boundaries between stranger-oriented networking and sexual relationships also create opportunities for public imagination. Stranger-oriented apps provide safe spaces for users to evade social bias. As noted in recent studies, Momo was developed in the context of China's urbanization, individualization and transformation of sexual culture (Xu & Wu, 2019). In this context, the general public enjoy the freedom of independence and mobility but also face the challenge of integrating into a new structure (Sun & Lei, 2017). The rise of Momo, therefore, is contextualized in a series of cultural politics between the traditional and the modern, the conservative and the progressive, loyalty and pleasure, stability and mobility. China thus becomes a laboratory for the Chinese to experiment with new intimate practices. This experimentation is, at the same time, subject to the influence of Chinese society's

traditional values. The expression and practice of sex has long been reserved in China. Accordingly, in the name of stranger-oriented networking, Momo has turned the exploration of sexual relationships from a serious and traditional cultural experience into a new, pan-networking digital practice that is relaxing and entertaining.

At the user level, how has Momo's initial positioning as a stranger-networking app influenced its users' sexuality? We interviewed six young adult users of Momo who have been using the app for more than five years and asked them to talk about their understanding of dating, love and sex since using Momo. All six interviewees said that Momo had made dating easier and had created more opportunities to develop intimate relationships with strangers. As Interviewee A (male) said:

Momo is a convenient and costless platform for dating. I can search suitable dating partners on Momo whenever I have time and wherever I am. Before using Momo, I had to rely on my friends, colleagues and relatives to introduce dating partners to me and the opportunities to meet new dating partners are limited. It looks that I have unlimited opportunities on Momo as long as I'd like to spend time. Dating is not a serious thing as before but is more like eating fast food. However, I am still single. I found that the more I date the harder I can find the right person. I always think that the next one is better.

As a super-hook-up app, Momo has also become a popular platform for sexually active young people to look for one-night stands, though this was not the initial positioning of the platform. The use of Momo for one-night stands, to some extent, has promoted casual sex among young adults, which has been widely criticized by media and the government. As Interviewee B (male) described: 'Don't be serious. Just be happy! Most people are just playing around. No one should be responsible for anyone or feel guilty on Momo as we are all adults and know what we are doing'. Interviewees C and E (female) told us that they found it is hard to find a suitable dating partner to develop a serious relationship as many men were just looking for fun on Momo. But these interviewees still use Momo as they don't want to miss out on potential good partners. Both interviewees said they have to be careful when selecting dating partners to meet offline. Interviewee F (male) said that he doesn't want people around him to know he is on Momo because of the platform's stigma as a one-night stand app.

We can see that different users have their own interpretive flexibility towards Momo. Momo is like a digital supermarket of 'intimate relationships', in which different users can look for one or more types of intimate relationships, including dating, flirting, a serious relationship or casual sex. The speed, low-cost and unlimited possibilities for achieving intimacy with strangers enabled by the technological structure, and the functions and affordances of Momo to some extent have transformed young adult users' imaginations and practices of intimacy and sexuality in the digital era.

INTEREST-BASED SOCIAL NETWORKING: REBRANDING, PROFIT AND TRANSFORMATION

On 11 December 2014, Momo went public on the NASDAQ. The company's market value increased to US\$3.151 billion (Sina Technology, 2014). Three years after Momo's August 2011 launch, Momo had become the second largest social networking app in China. However, it was increasingly being seen as a 'one-night stand' app and was accused of compromising family cohesion by the media and public

alike. Media coverage of prostitution, sexual and other crimes conducted using Momo also proliferated (Alltehasia.com, 2017).

Momo's reported negative social impacts soon caught the attention of the Chinese government. In March 2015, Momo was fined CNY 60,000 (People.cn, 2015). To survive in the state-controlled internet industry, Momo had to adjust its service to stay within government regulations. In the 4.0 version, launched in April 2015, its once foremost service, 'People Nearby', was downgraded to the secondary menu. The 'groups' function, used to specify places where people were looking for sex partners or sexual fantasies, was removed. However, if we see the Momo case as an example of how governmental forces shape technology products, we then must admit that in the Chinese context, politics often only play a role of guiding a company's direction. It sets the bottom lines for technology companies, with directives such as no discussion of politically sensitive topics and no challenge to mainstream ideologies, values and social morality. The market more substantially influences the trajectory of technological development (Miao, 2019). As pointed out in some comments, since its initial public offering, Momo is no longer a start-up company, but a for-profit company that should be responsible to its investors (Alltehasia.com, 2017). Momo experienced setbacks on its second trading day, the share price dropped 11% on 12 December 2014. In the following six months, the share price dropped a further 40%. The response from investors was: 'Momo has still got no sophisticated business mode that can bring profit' (Guancha.cn, 2015). During this new stage, the founder's control of the company gave way to, or more accurately, became subject to the influence of market forces. Driven by capital, various types of technology firms have become standardized after they went public. New and existing users and the profit model become the decisive forces in technological development (Miao, 2019).

As a dating app that is dedicated to meeting users' particular needs, Momo is faced with a difficult dilemma under the influence of capital: when users' demands are satisfied – that is, when they find a stranger around them on Momo – they will soon leave the platform and switch to other social media such as WeChat for further conversation. But if their demand is not satisfied, they will want to leave the platform as it is not meeting their needs. The first situation is a common challenge faced by all dating services (Fiore & Donath, 2004). Fundamentally, this is because users cannot be constantly exposed to strangers.

Momo's transformation to an interest-based social networking app exemplifies an alternative imagination of how technology reshapes social relations. This is reflected directly in the changes of its product functions and design. In Momo version 6.0, the 'People Nearby' function was hidden in the secondary menu. It was replaced by a newsfeed function similar to that in WeChat, showing updates of people nearby or chosen by platform algorithms. The weakening of the 'People Nearby' function aims to highlight 'interest' functions. Now, when users log in to the latest version of Momo, they need to fill in personal details as well as six of their interests. In other words, Momo started to experiment with other dimensions of social networking aside from geolocation. Moreover, Momo has added a new function called 'chatroom'. Users can enter chatrooms with different themes any time to chat with people on topics in which they are interested. Momo has also created groups based on different themes, such as Karaoke, place of origin, board games and hiking. Users can choose to join groups according to their location, interests and ages. At the same time, Momo has added a new function of 'Offline Gathering' for group members. Users can send group messages or initiate gatherings by using web links embedded in these virtual groups.

Just like the role of sex in stranger-oriented networking, interest is merely a tool through which Momo promotes social networking. The focus of Momo has always been 'networking'. As Tang pointed out (Ifeng, 2014): 'Pure interest-based social networking is a false proposition. Interest must be related to a different dimension (such as geolocation) in order to become the foundation for social networking.' Clearly, we can see that although Momo has transformed from sex-oriented to interest-based, what remains unchanged are the intersection of geolocation and the conversion of online connections to offline interactions.

A few interviewees expressed that Momo's transition to interest-based networking could help them find people with the same interests as them. Moreover, they said it was easier to sustain online conversations with people who share the same interests. Interviewee D (female) likes the new 'Offline Gathering' function based on interests. She said:

I feel a bit awkward when meeting a dating partner offline, as sometimes we don't have much in common to talk about. The group gathering offline allows me to meet more people at one time. I can do my interested things and hunt for the right person at the same time.

Admittedly, Momo's transition to interest-based social networking mainly aims to dilute its stigma as a one-night stand app. It also began to promote 'interest' as an important element in intimate relationships, suggesting young adults should consider this more when pursuing relationships. This can be seen in a popular personalized signature available on Momo and adopted by thousands of users after this transition, that is, 'good-looking faces are invariably monotonic whereas interesting soul is truly one in a million'. As pointed out by Liu (2017), digital genres are increasingly converging. In her research on a popular Chinese dancing video game, QQ Dazzling Dance, she found that many players use the video game as a space for dating based on their common interest in the game, demonstrating that 'interest' can be used as an effective agency to build up intimate relationships among young adults in the digital space. Momo's transition to interest-based networking, to some extent, has pushed this trend forward.

LIVE-STREAMING SOCIAL NETWORKING: BECOMING A PAN-ENTERTAINMENT PLATFORM

Momo's transformation to interest-based social networking was pragmatic and strategic, but not very successful in market competition. The 6.0 version did not, in fact, cultivate user loyalty but slowed down the growth of user numbers. As mentioned by Tang in an interview, the changes brought about by interest-based social networking were in many ways too reckless (Sina, 2019). This failure provided a timely opportunity for Momo to ride China's live-streaming wave and complete its second strategic product adjustment. Since 2016, China has experienced exponential growth in the live video-streaming industry, with an estimated market value of CNY ¥20.8 billion (Xiang, 2017). It was not long before this emerging service became Momo's main source of revenue.

Some people might think that Momo was 'waiting for the wave'. However, a SCOT perspective helps us unpack the rationale behind Momo's shift, to see the complex transformation trajectory. As Tang explained, before the introduction of live streaming to Momo, the company had internal discussions about potential new services. Some options included ride sharing, e-commerce and even internet financing. But Tang insisted on maintaining the company's positioning, as he believed that these services were beyond

Momo's scope and it was impossible to make profit with such diverse offerings. After much exploration, Tang selected live streaming as Momo's newest service. Although this decision was opposed by the whole management team, Tang claims he insisted on it (Sohu, 2017a). In the second half of 2015, Momo launched a new service, 'Momo Live'. The aim of this new service was to cultivate 'concert-level' live streaming of famous entertainment stars. This attempt failed because of the high maintenance cost and low user interest. In early 2016, Momo entered the field of mobile live streaming. In April, it launched the live streaming service for ordinary users. The transformation of Momo's position has also encouraged changes in its functions. In April 2016, Momo launched its 6.7 version. The previous 'Discover' function became the 'Live streaming' function. In September that year, it added a new function for making micro videos called 'Moment'. These changes indicated that videos had become an important strategy for Momo's development.

Live streaming soon brought Momo enormous profits. In 2016, Momo's annual net revenue was three times higher than the previous year. The net profit of the fourth quarter of 2016 was 674% above 2015, of this, live streaming contributed to 80% of the profit (Xinhua, 2017). Therefore, the positioning of Momo has experienced tremendous change. It has evolved from stranger-oriented networking to interest-based networking, and later to a pan-entertainment platform. To explain this, Tang made an interesting comparison: 'Momo used to be like the dating corner in Shanghai People's Park. People come and people go. But now, Momo is like the Disneyland with all the fun facilities. People can come to meet strangers, but also experience other things' (36Kr, 2017). The introduction of live streaming has amplified the app's entertainment function but has weakened its networking function. 'More on entertainment and less on networking' thus becomes an alternative market positioning.

However, although live streaming has become the new engine for Momo's revenue and a pan-entertainment platform has become its new positioning strategy, Momo has declared and insisted on many occasions that it is still focused on social networking. Tang clarified: 'We still believe that Momo is more like a social networking platform, rather than a live streaming site. Social networking is still the foundation. Live streaming is more of an important part of our platform, or a strategy through which we make money, but it's not the foundation' (Sohu, 2017b). Live streaming could be understood as an alternative form of social networking, at least when compared with traditional mass media such as television. Users can directly interact with hosts and hostesses; such interaction normally takes place through watching, liking, following, commenting, gifting and sharing. Therefore, we can see that although the scenarios in which users consume are different, Momo has always focused on social networking, despite its transformation from interest-based social networking to live streaming networking.

Undoubtedly, Momo's transition into a live-streaming app has been successful. This is evident in its huge revenue. What has also been successful is Tang Yan's positioning of Momo as a pan-entertainment live-streaming platform. All of our interviewees agreed that 'using Momo now is so much more fun than before'. However, the questions remain, what has led so many users to join Momo's live-streaming services, including both viewers and performers? What types of live-streaming styles and content have they created? And how does this form of live streaming contribute to the formation of youth culture?

We identified three forms of live streaming in our online fieldwork: everyday life (e.g. family life, pets and cooking), entertainment (e.g. singing, dancing, gaming and travelling) and social interactions (e.g. networking, talk shows and chatting). Among all automated recommendations by the platform, female, particularly young and good-looking, casters are always on top of the list. From our observation, most of the viewers of these live streamers are male. Although Tang Yan has claimed that Momo live streaming is an example of transition into pan-entertainment, users' gendered practices, as we have identified, reveal

that Momo's newly introduced entertainment functions are still imbedded in sexual relationships. This is evident in the fact that a large number of female live streamers display gendered content, deliver sexual messages and establish intimate relationships with their viewers. Indeed, such a gender performance is widely observed in the emerging live-streaming industry in China (Zhang & Hjorth, 2017).

What is worth noting is that the recent wave of user growth brought by Momo live streaming highlights the commodification, monetization and datafication of sexual relationships. Audience admiration and support of these performers can be monetized through virtual gifts on the platform, and Momo shares a proportion of performers' income from these virtual gifts. In China's mass media, topics such as 'female internet celebrities' and 'monthly income of over one million' have become common. For the users, practices such as liking, commenting, reposting or even gifting have become the means through which they express their admiration of casters, or even attain their personal contact details. Studies have found that live streaming in dating apps has produced a body of data that is based on sex and emotion. The flow of views and visits embedded in these data has become important assets for app companies to attract investment (Wang, 2019).

CONCLUSION

This chapter uses Momo as a case study to investigate how the digital infrastructure for intimate relationships is produced, transformed and developed, as well as how the transformation of the infrastructures has impacted young adult sexuality. Three conclusions can be drawn based on our case study.

First, mobile dating apps emerged in the context of China's rapid modernization, privatization and digitization. To some extent, the popularity of mobile dating apps represented by Momo has challenged the traditional values, cultural norms and sexual culture. Such apps are always subject to governmental regulation while also having to explore innovative business models to attract market capital. The sustainable profits of these businesses are dependent on finding a balance between the Party and the market.

Second, as demonstrated in the case of Momo, mobile dating apps have to transform their design, function and market positioning to increase their competitiveness in the market. The transformation has to consider a series of factors, including changing preferences of users, new technologies, and changing government regulations.

Last but not least, as a platform for intimate relationships, mobile dating apps have not only reflected and satisfied the intimate and sexual desires of Chinese young adults but also have created and shaped new sexual and intimate relationships between them. This chapter on Momo has shed light on the interrelations between the transformation of the intimate infrastructures and the transformation of young adult intimacy and sexuality enabled by mobile dating apps.

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Section 6

Critical Issues and Challenges

Chapter 69

Positive vs. Negative Emotions and Network Size: An Exploratory Study of Twitter Users

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ABSTRACT

This chapter looks at the relationship between the expression of positive and negative emotions in Twitter and users' network size. The questions that guided this study are: Do users who tweet twice or more "I am bored," "I am excited," "I feel lonely," "I feel loved," "I feel sad," and "I feel happy" gain more followers and friends or lose them? Do users who express positive emotions twice or more have more followers and friends compared to users who express negative emotions or less? Do users who express boredom, excitement, loneliness, feeling loved, sadness, and happiness twice or more interact more with their networks or less? To address these questions, the study collected 35,096 English tweets in 2016. The findings indicate that users who tweeted these emotions, their number of followers and number of friends have increased, not decreased and that only users who expressed excitement had more followers and friends than users who expressed boredom. The study contributes to the literature on the benefits that lonely, sad, and bored users can reap from expressing emotions in Twitter.

INTRODUCTION

Self-expression is one of the main motivators for sharing content in social media (Shao 2009). Self-expression is not only a way of presenting the self, but it can also be used to control the impressions of viewers and foster supportive relationships (Shao 2009). However, emotions expressed in status updates can have an impact on a user's network size (Lin and Qiu 2012). Hutto et al. (2013), for example, found that negative emotions expressed in tweets reduce, while positive emotions facilitate, network growth. In a similar vein, Al-Saggaf & Ceric (2016), who explored the relationship between the expression of boredom and excitement on Twitter and network size, i.e. the number of followers and number of friends,

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found that generally speaking users who expressed boredom had smaller network sizes compared to users who expressed excitement. Similarly, Al-Saggaf, Utz, & Lin (2016), who explored the relationship between the expression of loneliness, emotion loved, sadness and happiness on Twitter and network size, found that users who expressed loneliness had smaller network sizes compared to users who expressed emotion loved and users who expressed sadness had less friends than users who expressed happiness. Al-Saggaf, Utz, & Lin's (2016) findings are consistent with Dunder's et al. (2016) findings. The explanation given by Al-Saggaf, Utz, & Lin (2016) was that it could be because expressing negative emotions is less attractive to a user's network (Utz 2015) or that loneliness might lead to personality attributions, i.e. the assumption that something is wrong with the lonely person. Regardless, these findings suggest not all users reap the benefits of self-expression; especially when they don't address others in their status updates. Both Al-Saggaf & Ceric and Al-Saggaf, Utz, & Lin (2016) studies compared users who tweeted a negative emotion with users who tweeted a positive emotion using a single tweet. While these studies contributed to the limited literature on the relationship between emotions and network size, the fact that they made inferences about the relationship between expression of emotions and network size based on a single tweet weakened the strength of their inferences. This study looked at network size for each group of users, i.e. 'bored', 'excited', 'lonely', 'loved', 'sad' and 'happy,' separately at Time 1 when they expressed these emotions and at Time 2 when they expressed these emotions again later. Comparing network sizes for each group of users at Time 1 and Time 2 allowed within group comparisons. The study also compared the network sizes of each negative emotion with its opposite emotion. The study collected 35,096 tweets posted in English to Twitter between 16 December 2016 and 24 December 2016 and performed several statistical tests to address the following research questions:

- Do users who express excitement, happiness and being loved twice or more in their tweets gain more followers and friends than users who express boredom, loneliness and sadness twice or more in their tweets or less?
- Do users who express positive emotions twice or more have more followers and friends compared to users who express negative emotions or less?
- Do users who express boredom, excitement, loneliness, emotion loved, sadness and happiness twice or more interact more with their networks or less?

METHOD

Process of Collecting and Preparing Data for Analysis

35,096 tweets posted in English were collected from Twitter between 16 December 2016 and 24 December 2016. The tweets were retrieved using the Digital Methods Initiative Twitter Capture and Analysis Toolset (DMI-TCAT)¹. For the TCAT to work, an App was developed in Twitter to automatically authorise TCAT to retrieve data from Twitter on behalf of the author. To retrieve the tweets of users who explicitly expressed the above mentioned emotions, i.e. boredom, excitement, loneliness, emotion loved, sadness and happiness, the phrases "I am bored", "I am excited", "I feel lonely", "I feel loved", "I feel sad" and "I feel happy", in double quotations marks, were used. After downloading the data of interest, it was queried using SQLite for users who expressed these emotions one, twice or more and three times or more. Only tweets for users who expressed these emotions with these criteria were stored in datasets

Positive vs. Negative Emotions and Network Size

and imported for analysis after the process of data preparation. Table 1 shows the breakdown of users who tweeted these emotions twice or more during the data collection period.

The datasets were imported into SQLite, R 3.3.1 and SPSS (IBM SPSS Statistics Version 20) for analysis. Along with the tweets, TCAT also returned the `from_user_id`, `from_user_name`, `to_user_name`, the date and time the tweet was created, the user's language, the source of the tweet, the user's profile image url, the number of user's followers and the number of the user's friends. The retweets (RTs) were not removed during analysis as retweeting these tweets was considered an expression of such emotion.

The following attributes were used to prepare data for analysis: `from_user_id`, `created_at` (date and time tweet created), `to_user_name`, `from_user_followercount` and `from_user_friendcount`. Twitter does not use the term "friend", but tools that retrieve tweets from Twitter, such as TCAT call users who follow each other 'friends' (Al-Saggaf & Ceric, 2016). It is not possible, however, to know if TCAT actually checks a Twitter user's followers to see if the user also follows them before deciding the number of friends a user has (Al-Saggaf & Ceric, 2016). The reason for using 'numbers of friends' in this paper is because TCAT uses this term.

To compare the users network sizes the first time (in the dataset) they expressed one of the above six emotions and the last time, SQLite was used to query the dataset, using `created_at`, `from_user_followercount` and `from_user_friendcount`, for the number of followers and number of friends at the earliest time in the dataset a user's first tweet was posted (Time 1) and also at the last time (Time 2). Table 2 shows an example of such data for a de-identified user.

Table 1. The breakdown of users who tweeted these emotions twice or more

Emotion	Term used to refer to groups	N
"I feel lonely"	Lonely	2186
"I feel loved"	Loved	4144
"I feel sad"	Sad	8405
"I feel happy"	Happy	3201
"I feel bored"	Bored	5540
"I feel excited"	Excited	11620

Table 2. Example of data used in the statistical analysis

From_user_id	from_user_followercount at T1	from_user_friendcount at Time 1	Time 1	from_user_followercount at Time 2	from_user_friendcount at T2	Time 2
XXXXXXXXXXXX	263	3	16/12/2016 10:35	272	3	24/12/2016 7:31

Statistical Analysis

The number of followers variable at Time 1 and the number of followers variable at Time 2 were both of type metric or continuous. Both variables did not display a normal distribution. A log-transformation, using $\text{LN}(\text{variable} + 1)$, did not bring these variables to normality. In a similar vein the difference between

the variables, i.e. the number of followers variable at Time 1 - the number of followers variable at Time 2 also did not display a normal distribution and a log transformation also did not bring the difference between these two variables to normality. For these reasons the Wilcoxon procedure, which corresponds with the paired t-test, was performed on the two variables to compare their means. This process was followed for all users who tweeted twice or more or three times or more “I am bored”, “I am excited”, “I feel lonely”, “I feel loved”, “I feel sad” and “I feel happy”.

The number of friends variable at Time 1 and the number of friends variable at Time 2 were both of type metric or continuous and both variables as well as the difference between them did not display a normal distribution and a log transformation also did not bring them to normality. For these reasons, the Wilcoxon procedure was performed on the number of friends variable at Time 1 and the number of friends variable at Time 2 to compare their means. This process was followed for all users who tweeted twice or more or three times or more “I am bored”, “I am excited”, “I feel lonely”, “I feel loved”, “I feel sad” and “I feel happy”.

To compare the means of the number of followers and the number of friends of users who expressed a negative emotion and users who expressed the opposite positive emotion, i.e. “I am bored” vs. “I am excited”, “I feel lonely” vs. “I feel loved” and “I feel sad” vs. “I feel happy”, a series of Mann-Whitney tests were performed. This was done for all users who tweeted twice or more “I am bored”, “I am excited”, “I feel lonely”, “I feel loved”, “I feel sad” and “I feel happy.” Mann-Whitney tests were also performed to compare the means of the number of followers and the number of friends variables for users who tweeted “I am bored” at Time 2 (last time) three times or more vs. users who tweeted “I am bored” only once.

FINDINGS

Network Size of Users Who Tweeted an Emotion Twice or More at Time 1 vs. Time 2

Wilcoxon signed-rank tests on the number of followers variable at Time 2 and the number of followers variable at Time 1 for users who tweeted twice or more “I am bored”, “I am excited”, “I feel lonely”, “I feel loved”, “I feel sad” and “I feel happy” were significant. Table 3 shows the results of the Wilcoxon tests. Table 4 shows the means of the difference, i.e. no. of followers at T2 - no. of followers at T1, the median and the standard deviations for all user groups. It appears that users who expressed these emotions twice or more in their tweets their number of followers has increased, not decreased. This suggests that these users gained more followers, not lost them. This may mean that either users who express negative emotions are reaping the benefits of having online connections (Lee et al. 2013) or that expressing negative emotions is not as costly as earlier studies have found. Similarly, Wilcoxon signed-rank tests on the number of friends variable at Time 2 and the number of friends variable at Time 1 for users who tweeted twice or more “I am bored”, “I am excited”, “I feel lonely”, “I feel loved”, “I feel sad” and “I feel happy” were significant. Table 3 shows the results of the Wilcoxon tests. Table 4 shows the means of the difference, i.e. no. of friends at T2 - no. of friends at T1, the median and the standard deviations for all user groups. It appears that users who expressed these emotions twice or more in their tweets their number of friends has increased, not decreased. This suggests that these users added more friends, not unfriended the users they followed.

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Table 3. The results of the Wilcoxon tests

No. of followers at T2 - no. of followers at T1					No. of friends at T2 - no. of friends at T1				
Users	N	Z	p	Scores: +ve vs. -ve	Users	N	Z	p	Scores: +ve vs. -ve
Lonely	67	-2.99	.003	23 vs.8	Lonely	67	-3.1	.002	21 vs.6
Loved	80	-4.97	0.000	42 vs.5	Loved	80	-4.37	0.000	30 vs.5
Sad	242	-4.72	0.000	68 vs.28	Sad	242	-3.16	0.002	56 vs.24
Happy	107	-2.94	0.003	34 vs.12	Happy	107	-3.37	0.001	28 vs.7
Bored	278	-7.42	0.000	117 vs.41	Bored	278	-4.67	0.000	84 vs.39
Excited	390	-6.34	0.000	143 vs.59	Excited	390	-5.94	0.000	130 vs.40

Table 4. The means of the difference, i.e. No. of followers at T1 - no. of followers at T2, the median and the standard deviations

Dif = No. of followers at T1-no. of followers at T2					Dif=no. of friends at T1-no. of friends at T2			
Users	N	Mean (Dif)	Median	SD	N	Mean (Dif)	Median	SD
Lonely	67	-46.99	0	246.8	67	-30.66	0	173.23
Loved	80	-4.44	-1	10.02	80	-2.96	0	9.057
Sad	242	-12.88	0	140.37	242	-7.52	0	149.53
Happy	107	-20.72	0	169.23	107	-12.63	0	95.00
Bored	278	-14.98	0	80.29	278	-9.83	0	59.22
Excited	390	-1.31	0	52.38	390	2.18	0	55.87

Network Size of Users Who Tweeted a Positive Emotion Twice or More vs. Users Who Expressed a Negative Emotion

To compare the means of the number of followers and the number of friends of users who expressed a negative emotion and users who expressed the opposite positive emotion, i.e. “I am bored” vs. “I am excited”, “I feel lonely” vs. “I feel loved” and “I feel sad” vs. “I feel happy”, a series of Mann-Whitney tests were performed. This was done for all users who tweeted twice or more “I am bored”, “I am excited”, “I feel lonely”, “I feel loved”, “I feel sad” and “I feel happy.” The Mann-Whitney tests revealed a significant difference in scores between users who expressed excitement and users who expressed boredom with users who expressed excitement having more followers and friends than users who expressed boredom. There were no significant differences in the means of the number of followers and the number of friends for users who expressed emotion loved vs. emotion lonely and those who expressed emotion happy and emotion sad. It is not clear why bored users had smaller network sizes than excited users but this is a question for future research. Table 5 shows the significant results of the Mann-Whitney tests.

Table 5. The results of the Mann-Whitney tests

No. of followers					No. of friends			
Users	N	U	p	Mean Rank: Excited vs. Bored	N	U	p	Mean Rank: Excited vs.Bored
Excited vs.Bored	668	49229	0.043	347.3 vs.316.6	668	40099	0.000	370.7 vs. 283.7

Network Size of Users Who Tweeted Twice or More “I Am Bored” vs. Users Who Tweeted This Emotion Three Times or More

The smaller network size of the bored group compared to the excited group raised another question: Do users who expressed boredom three times or more ended up with smaller or larger network sizes? To compare the means of the number of followers and the number of friends variables at Time 2 and the number of followers and the number of friends variables at Time 1 for users who tweeted twice or more “I am bored” vs. users who tweeted “I am bored” three times or more Wilcoxon signed-rank tests were performed. The results were significant. Table 6 shows the results of the Wilcoxon tests. Table 7 shows the means of the difference, i.e. no. of followers/friends at T2 - no. of followers/friends at T1, the median and the standard deviations for these two user groups. (For users who tweeted twice or more “I am bored”, this information was obtained from the earlier analysis). It appears that users who expressed “I am bored” three times or more in their tweets their number of followers has increased more compared to users who tweeted “I am bored” twice or more (Mean difference: -30.6 vs.-14.9). Similarly, it appears that users who expressed “I am bored” three times or more in their tweets their number of friends has increased more compared to users who tweeted “I am bored” twice or more (Mean difference: -17.42 vs.-9.82). However, these observations are only indicative as some users are present in both groups i.e. those who tweeted twice or more and those who tweeted tree times or more.

Table 6. The results of the Wilcoxon tests

No. of followers at T2 - no. of followers at T1					No. of friends at T2 - no. of friends at T1				
Users	N	Z	p	Scores: +ve vs. -ve	Users	N	Z	p	Scores: +ve vs. -ve
Bored (twice or more)	278	-7.42	0.000	117 vs.41	Bored (twice or more)	278	-4.67	0.000	84 vs.39
Bored (three times or more)	65	-3.79	0.000	33 vs.15	Bored (three times or more)	65	-3.99	0.000	28 vs.9

Table 7. The means of the difference, i.e. no. of followers at T1 - no. of followers at T2, the median and the standard deviations

No. of followers at T1 - no. of followers at T2					No. of friends at T1 - no. of friends at T2			
Users	N	Mean (Diff)	Median	SD	N	Mean (Diff)	Median	SD
Bored (twice or more)	278	-14.98	0	80.29	278	-9.83	0	59.22
Bored (three times or more)	65	-30.6	-1	148.53	65	-17.42	0	84.31

Network Size of Users Who Tweeted “I Am Bored” Three Times or More vs. Users Who Tweeted this Emotion Once

To compare the means of the number of followers and the number of friends variables for users who tweeted “I am bored” at Time 2 (last time) three times or more vs. users who tweeted “I am bored” only once, a random sample of 65 tweets were selected from the 4831 single tweet dataset (to match the number of users who tweeted three times or more). Using a Mann-Whitney the means of the number of followers and the number of friends for the two groups of users were compared. The results were only significant for the number of friends of these two groups with those who tweeted “I am bored” three times or more ending up with fewer friends compared to those who tweeted “I am bored” once. There was no significant difference in scores between the number of followers for users who expressed boredom three times or more and users who expressed boredom once. Table 8 shows the results of the Mann-Whitney test.

Table 8. The results of the Mann-Whitney test

Users	No. of friends			Mean Rank once vs.3 times or more
	N	U	p	
Bored once vs. Bored three times or more)	130	1479	0.003	75.25 vs.55.75

The Presence of @Replies for Users Who Tweeted an Emotion Twice or More

The presence of @replies is a more meaningful indicator of interaction between two users than the size of their networks (Ackland, 2013). When @replies are included at the beginning of a tweet, it become a direct message to a user. When it is included in the middle of a tweet, it is simply a mention of another user (Ackland, 2013). To compare the percentage of @replies across the six groups SQLite was used to query the dataset with the help of the to_user_name attribute of a tweet, which contains the name of the user after the @ sign at the beginning of a tweet. A chi-square test $\chi^2(5, N=4249) = 12.69, p = 0.026$ indicated interesting differences between one group and the other five. While the percentage of @replies within the tweets of five of the groups ranged between 18% and 21.3%, only 9.42% of the “I feel lonely” tweets included @replies. While the percentage of @replies within the tweets of the five groups is relatively low, it appears the lonely users interacted with their networks the least. This is in line with Al-Saggaf & Ceric’s (2016) finding. Table 9 shows the percentage of @replies across the six groups.

Table 9. The percentage of @replies across the six groups

Group	Percentage of @replies
Lonely	9.42%
Loved	19.3%
Sad	21.3%
Happy	18%
Bored	18.5%
Excited	20.5%

DISCUSSION AND CONCLUSION

Al-Saggaf & Ceric (2016) and Al-Saggaf, Utz, & Lin (2016) studies compared users who tweeted a negative emotion with users who tweeted a positive emotion using a single tweet. While these studies contributed to the limited literature on the relationship between emotions and network size, the fact that they drew conclusions about the relationship between expression of emotions and network size based on a single tweet limited the value of their conclusions. This study looked at network sizes for each group of users, i.e. 'bored', 'excited', 'lonely', 'loved', 'sad' and 'happy' separately, at the time of expressing these emotions and using two or more tweets posted later and three or more tweets posted later to find out if the expression of these emotions affects network size. The study also compared the network sizes of each negative emotion with its opposite emotion. The study collected 35,096 tweets posted in English to Twitter between 16 December 2016 and 24 December 2016 and performed several statistical tests to address the research questions listed above.

The preliminary findings of this study indicate that users who tweeted "I am bored", "I am excited", "I feel lonely", "I feel loved", "I feel sad" and "I feel happy" twice or more at different times their number of followers has increased, not decreased. It appears that these users gained more followers, not lost them. Similarly, these users number of friends has increased, not decreased which suggests that they must have added more friends, not unfriended the users they followed. However, when the means of the number of followers and the number of friends of users who expressed a negative emotion and users who expressed the opposite positive emotion, i.e. "I am bored" vs. "I am excited", "I feel lonely" vs. "I feel loved" and "I feel sad" vs. "I feel happy", were compared only users who expressed excitement had more followers and friends than users who expressed boredom. There were no significant differences in the means of the number of followers and the number of friends for users who expressed emotion loved vs. emotion lonely and those who expressed emotion happy and emotion sad.

This finding encouraged a closer look at the bored group. Users who expressed "I am bored" three times or more in their tweets their number of followers has increased more compared to users who tweeted "I am bored" twice or more. The same happened with their friends. That is, users who expressed "I am bored" three times or more in their tweets their number of friends has increased more compared to users who tweeted "I am bored" twice or more. This finding may suggest that users who tweet about boredom more often their number of followers and number friends increase. However, when the means of the number of followers and the number of friends variables for users who tweeted "I am bored" three times or more vs. users who tweeted "I am bored" only once were compared the results were only significant for the number of friends of these two groups with those who tweeted "I am bored" three times or more ending up with fewer friends compared to those who tweeted "I am bored" once. There was no significant difference in scores between the number of followers for users who expressed boredom three times or more and users who expressed boredom once. Further research is needed to shed light on these preliminary findings.

Al-Saggaf & Ceric (2016) and Al-Saggaf, Utz, & Lin (2016) found that Twitter users who expressed negative emotions had less followers and less friends compared to Twitter users who expressed positive emotions. The explanation given was that it could be because expressing negative emotions is less attractive to followers (Utz 2015). The preliminary findings of the current study suggest that users who tweeted negative emotions more often ended up having more followers and more friends. This suggests that either users who express negative emotions are reaping the benefits of having online connections (Lee et al. 2013) or that expressing these emotions is not as costly as earlier studies have found. But

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some groups, such as the 'bored' group behaved slightly differently when compared with the 'excited' group. Further research is needed to explore the relationships between these groups and their network sizes using more data collected over a longer period of time. Also, Kivran-swaine and Naaman (2011) found that users are more likely to express emotions of joy and sadness in larger and sparser networks. When their network is dense, users' posts seem to be less emotional. A future study could look at the relationship between these groups and their network sizes taking into account the size of their networks, i.e. the effects of emotions on users with smaller networks vs. users with larger networks.

Only 9.42% of the tweets expressing loneliness contained @replies, in contrast to 21.3% of the tweets expressing sadness, 18% of the tweets expressing happiness and 19.3% of the tweets expressing emotion loved. The interactivities for boredom and excitement were similar to the interactivities for sadness, happiness and emotion loved. Thus, while all these five emotions were expressed in direct interactions and non-direct interactions, loneliness was expressed mainly in a non-direct way. That lonely Twitter users express loneliness directly less frequently is in some way consistent with Al-Saggaf and Nielsen (2014) study findings that fewer lonely Facebook users revealed their status updates compared to those emotion connected and more lonely users did not disclose their wall compared to the few who did. As mentioned above, expressing loneliness might lead to personality attributions, i.e. the assumption that something is wrong with the lonely person. However, that sad and bored people are not less likely to share their emotions with a specific other person could be because sadness and boredom are often caused by external factors. For example, a person can become sad because of a loss of a loved person and this is not in the control of the person.

Lonely people have difficulties in receiving social support which can decrease their well-being and eventually lead to depression. They also disclose less about themselves both offline and online (Al-Saggaf and Nielsen 2014). According to self-disclosure is the mediating mechanism between use of online media and decreased loneliness. Their study investigated whether loneliness has a direct/indirect effect on well-being when mediated by self-disclosure. The findings of their study showed that loneliness positively influences self-disclosure in a way that lonely people rely on social network sites to compensate for their unsuccessful offline relations. On the other hand, their study also found that self-disclosure can reduce emotions of loneliness thereby enhancing well-being. Thus, if lonely Twitter users interact directly less frequently, then they do not fully reap the potential benefits of interacting with others online so as to reduce their emotions of loneliness.

There are a number of limitations that must be acknowledged. (1) Data collection occurred around Christmas time, this may have influence the findings. A future study should collect data during different periods of time to ensure the findings are not specific to a certain period of time. (2) The effects of other confounding factors, such as a user's total number of tweets, the number of favourites, the number of lists and the date an account was created, were not considered in this study. A future study should consider these variables as control variables to explore their effects. (3) Only tweets that expressed these emotions using the phrases "I am bored", "I am excited", "I feel lonely", "I feel loved", "I feel sad" and "I feel happy", in double quotations marks were retrieved. Emotions expressed in tweets differently such as "very sad today" were not retrieved. This was done to achieve consistency when comparing the various emotion groups and also because it is difficult to think of all the possible ways to express such emotions. However, a future study should use data mining algorithms to first classify tweets into emotional categories and then conduct these analyses.

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ENDNOTE


¹ <http://www.intersect.org.au/research-tools/tcat>

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Chapter 70

Usage Behaviors on Snapchat, Instagram, and WhatsApp: Between-Group Analyses

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ABSTRACT

The main objective of this research is to investigate usage behaviors of different age groups across popular social-media platforms and show what usage behavior is mostly utilized in each social media platform. A sample of 2,883 social media users was used to run a series of t-tests to support the research hypotheses. The findings show that young users (compared with old users) are more likely to use social media platforms for social and personal needs. In addition, across platform analyses indicate that users of WhatsApp (compared with Snapchat and Instagram) are more likely to use the platform for socially integrative needs (e.g., connecting with friends and family and talking), while Instagram and Snapchat users are more likely to use the platforms for affective needs (e.g., entertaining), personally integrative needs (e.g., enhancing self-expression and getting to know new people), tension release (e.g., escaping from boredom), and cognitive needs (e.g., seeking information). A more detailed analysis of age groups across the platforms are further discussed.

INTRODUCTION

Social media usage has grown exponentially over the last decade, especially with the vast development of mobile applications. Among the different social media platforms, Facebook is the leader of social media. Other popular social media applications are Snapchat, Instagram, Twitter, Pinterest, Tumblr, and Vine, while popular mobile-chat applications include WhatsApp, WeChat, and Facebook Messenger. There were an estimated 3.46 billion active social media users worldwide in 2019 (Statista, 2019). Although social media presence is dominating users daily activities, it is especially widespread among

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teens and young adults. It has become an essential form of communications for young individuals and thus has drawn researchers' interests in several disciplines including social psychology, communications, sociology, and marketing. By large, marketing field covers an increasing number of researches and articles that have addressed social media issues (Alalwan et al., 2017). This growing stream of research provides strong evidence that social media and their implications should be the center of attention for both practitioners and researchers.

In 2020, marketers are expecting to spend over \$102 billion on social media advertising (Statista, 2020) to engage their users and get them to convert to their brands. Social media has become an essential part of many marketing campaigns due to its influential effects. Despite the importance of social media as a communication channel for both business and individual users, little is understood about how and why users use new social media platforms and how these platforms affect users' lives. More importantly, most of the communication messages that have been directed toward users are randomly placed on social media platforms with very little knowledge about usage behaviors. The traditional paradigm of integrated marketing communications (IMC) suggests that marketers should send a unified customer-focused message using different promotion tools in order to intensify the message effectiveness on target segments and achieve organizational objectives (Boone and Kurtz, 2007). However, the tools and strategies for communicating with customers have changed considerably in the era of social media (Mangold and Faulds, 2009). Given the distinctive designs and features of social media platforms, one may argue that, in the new paradigm of social media communications, marketers should develop unique strategies for each social media platform in order to match the usage behaviors of platform users.

Overall, consumers are turning away from the traditional media and demand more control over their media consumption (Mangold and Faulds, 2009). These consumers use social media to create personalized profiles and engage with their friends and acquaintances with no time or space limitations. The majority of consumers depend on social media applications to share views, give opinions, and generate content (e.g., information, photos, and videos) in order to stay in contact with their friends and informed about trending news or events (Amichai-Hamburger and Vinitzky, 2010; Kuss and Griffiths, 2011). Past research has demonstrated different social motives of Internet-communication users such as user's need to belong and self-presentation (Nadkarni and Hofmann, 2012). In addition, group identification, collective self-esteem, and keeping in touch with friends are other types of social motives for a continuous user engagement on social media (Floros and Simos, 2013; Kuss and Griffiths, 2011). Researchers have also shown that social media is a prospering environment for consumers who have higher levels of shyness and anxiety in face-to-face interactions since it is easier to fulfill social needs online than via offline communications (Banjanin et al., 2015; Steinfield, Ellison, and Lampe, 2008).

For almost a decade, academic researchers and practitioners have given much attention to consumer participation on social media (Alalwan et al., 2017; Kamboj and Rahman, 2017; Zhang and Luo, 2016). In addition, the Marketing Science Institute (MSI) highlights researchers' interests in customer participation on social media (MSI, 2016). Most studies concerning customer participation on social media are mainly focusing on the conceptualization with little empirical evidence (Khan, 2017). The opportunity to strengthening the relationship with customers using social media has seen as a significant scholarly work (Kamboj et al., 2017). Marketers have emphasized their presence on social media to communicate directly with customers and increase customer involvement in the brand. Therefore, understanding customer involvement and usage behaviors on social media may assist academic researchers and marketers develop suitable communication strategies unique to social media platforms in order to effectively target customers.

The present research aims to describe usage patterns in three most popular and under-researched social media applications (i.e., Snapchat, Instagram, and WhatsApp). Specifically, the researcher will investigate how social media usage behaviors differ across age groups and social media platforms. In addition, the researcher will utilize the uses and gratifications theory to explain how social media fulfills different needs and wants. Although uses and gratifications theory has been researched extensively in the communications literature, it has received little attention in the marketing and social media literatures (Kamboj, 2020; Phua, Jin, and Kim, 2017). In fact, some researchers have argued that the “question why people use different features cannot truly be explained without the most prominent theoretical framework for active media use behavior: The uses-and-gratifications approach” (Leiner, et al., 2018, p. 195). Leiner et al. (2018) have argued that the implication of the uses and gratifications theory to explain social web usage is rather complicated due to the continuous development of platforms and their features. Social media has brought about a series of disruptive challenges to the marketing field. Therefore, the present research will contribute to research and practice on social media marketing by implicating the uses and gratifications theory in order to demonstrate the different usage behaviors of social media platforms and give directions for marketers who are interested in engaging users with their communication messages on Snapchat, Instagram, and WhatsApp. Furthermore, like Mangold and Faulds (2009), the present researcher advocates that the traditional IMC paradigm is no longer applicable in the new era of social media and hence marketers should design distinctive messages that match with the usage behaviors of each social media platform.

In the next sections, the researcher will provide an overview of the literatures pertaining to social media and uses and gratifications theory. Then, the researcher will explain the research methodology and discuss the research findings, theoretical contributions, practical implications, and future research directions.

COMMON SOCIAL MEDIA PLATFORMS

The last decade has seen a surge of mobile technologies, especially in the social media platforms. Social media is defined as “a group of internet-based applications that build on the ideological and technical foundations of Web 2.0, and that allow the creation and exchange of user generated content” (Kaplan and Haenlein, 2010, p. 61). Examples of popular social media platforms include Snapchat, Instagram, and WhatsApp. These social media platforms have become very common social networks among users. As of 2018, the average daily social media usage mounted to 136 minutes per day, up from 135 minutes in the previous year (Statista, 2019). Users access social media for a variety of reasons. They use social media to search for entertaining content, share photos and videos with friends, and mainly to stay close with friends. The next section describes the functions of Snapchat, Instagram, and WhatsApp.

SNAPCHAT

Snapchat is a multimedia sharing mobile platform. Although it has other sharing features, it has become famous for video sharing. Snaps is a popular feature for the creation of photos or videos. Users can edit Snaps with texts, filters, or stickers. Users specify a time limit for how long recipients can view their Snaps before they will be deleted. Snapchat is the most popular social media application among teens

and young adults aged less than 25 years. Brands have used Snapchat as a strategic platform to target teens and millennials. The number of active users reached 186 million in 2018 (Statista, 2019).

INSTAGRAM

Instagram is one of the most popular photo-sharing platforms. It has over one billion monthly active users (Statista, 2019). The Instagram application allows users to edit and share photos with other users publicly or privately. Like Snapchat, Instagram users can apply shaded filters to their photos before posting them to their profiles. In 2019, photo sharing in Instagram alone reached 500 million daily active stories users worldwide (Statista, 2019). Stories is a popular feature in Instagram for posting photos and video sequences that disappear after 24 hours. Most users use Instagram to keep contact with friends and family, get entertainment, and follow brands.

WHATSAPP

WhatsApp is a cross-platform instant messaging application for mobile devices, which uses the Internet to transmit messages. As of 2019, WhatsApp reached 1.6 billion monthly active users, making it the most popular mobile messenger application (Statista, 2019). In fact, it is the third most popular social network after Facebook and YouTube. Most users access WhatsApp to stay in close contact with friends and family.

USES AND GRATIFICATIONS THEORY

Past researchers have adapted Maslow's theory to describe how individuals use mass communication channels to fulfill personal needs (Katz, Blumer, and Gurevitch, 1974). These researchers along with others (Rubin, 1994) have utilized uses and gratifications theory to understand individuals' social and psychological needs that influence media choice and engagement. Uses and gratifications theory is a theoretical model for explaining how and why individuals search for different media to fulfill specific needs and wants (Katz et al., 1974). One of the theory assumptions is that users are goal-oriented in their media selection to achieve optimal levels of gratifications (Rubin, 1986). The theory has been implicated in several media such as television (McQuail, Blumler, and Brown, 1972), radio (Mendelsohn, 1964), newspapers (Elliott and Rosenberg, 1987), and video games (Sherry et al., 2001). Recently, research has used the uses and gratifications theory to examine usage behaviors in the context of social media (e.g., Chi, 2011; Kwon et al., 2014; Taylor, Strutton, and Thompson, 2012). Human needs attained through media in general have been classified into five categories: cognitive, affective, personally integrative, socially integrative, and tension release (West and Turner, 2010). In addition, other researchers have explored social media needs by investigating users' psychological and behavioral characteristics (Ko, Cho, and Robert, 2005; Korgaonkar and Wolin, 1999; Par, Kee, and Valenzuela, 2009; Raacke and Bonds-Raacke, 2008; West and Turner, 2010). These researchers have argued that social media users not only search for information and entertainment content, but also socially interact with other users and engage with them using interactive tools (Korgaonkar and Wolin, 1999). Due to numerous designs and features of social

media platforms, users obtain different gratifications. For example, Snapchat, Instagram, and WhatsApp offer interactive tools, such as Snaps, Stories, and Group Chatting, that are utilized by users to gratify their social needs. Park, Kee, and Valenzuela (2009) have found that socializing and self-presentation are social needs attained by young individuals through social media as well as personal needs such as entertainment and information seeking. In some occasions, users also discuss information about brands with other users. Sharing brand content is very common among brand communities on social media. This type of users is motivated to differentiate themselves by talking about their brand experiences with other users in order to create a group membership or brand community (Muniz and O'Guinn, 2001). Given the previous discussion, it has been argued that social media is a popular communication and socializing platform among teens and young adults and these users utilize the platform to fulfill their social and personal needs. Furthermore, Volkom, Stapley, and Malter (2013) show that there is a significant relationship between age and the perception of technologies. That is, compared to other age groups, older adults are less likely to use new technologies for new purposes such as communication and entertainment. In addition, Magsamen-Conrad et al. (2015) argue that different studies have shown how age groups have different motives for using technological devices, but current uses and gratifications research treats all effects the same regardless of age groups. Therefore, the present research argues that users of social media, in general, utilize these platforms to fulfill social (e.g., connecting with friends and family, getting to know new people, self-expression, and talking) and personal needs (e.g., entertaining, escaping from boredom, and seeking information); however these gratifications are more pronounced in younger individuals compared to older groups, leading to the following hypothesis:

Hypothesis 1a: Younger social media users (compared to older users) are more likely to use social media for connecting with friends and family.

Hypothesis 1b: Younger social media users (compared to older users) are more likely to use social media for getting to know new people.

Hypothesis 1c: Younger social media users (compared to older users) are more likely to use social media for talking.

Hypothesis 1d: Younger social media users (compared to older users) are more likely to use social media for entertaining.

Hypothesis 1e: Younger social media users (compared to older users) are more likely to use social media for escaping from boredom.

Hypothesis 1f: Younger social media users (compared to older users) are more likely to use social media for self-expressing.

Hypothesis 1g: Younger social media users (compared to older users) are more likely to use social media for seeking information.

Katz et al. (1974) claim that different media offer a unique blend of characteristics that distinguish their gratifications from each other. That is, each medium offers content that is characteristic of its format. Although social media is described as interactive, there are differences between each platform in terms of the nature of interactions they provide. Hence, users obtain different types of gratifications. Past research has shown that Facebook and Instant Messaging (IM) are used to pastime, have fun, relax, and escape from everyday pressures and responsibilities (Quan-Haase and Young, 2010). One thing that Quan-Haase and Young (2010) have found to be different is that Facebook is used to find out about social events and activities (i.e., social information). In the present research, the researcher argues that

the three social media platforms (i.e., Snapchat, Instagram, and WhatsApp) are different in nature and have distinguishable attributes and thus users may utilize the platforms in different ways and obtain different gratifications. WhatsApp has Private and Group Chatting features that are focused toward socially integrative needs (e.g., connecting with friends and family and talking), while Snapchat and Instagram have sharing features such as Snaps and Stories that are more oriented toward affective needs (e.g., entertaining), personally integrative needs (e.g., enhancing self-expression and getting to know new people), tension release (e.g., escaping from boredom), and cognitive needs (e.g., seeking information). Since Snapchat and Instagram features are so similar, the present researcher believes that these platforms tap on the same users' gratifications. Whereas, WhatsApp is another platform that is more about private conversations with family and friends. To expand on the literature, the three social media platforms are compared in terms of the types of gratifications that they support. This comparison would offer insights into the motives that make users continue using each tool. Therefore, the present research argues that the three social media platforms fulfill different uses and gratifications, leading to the following hypothesis:

Hypothesis 2a: WhatsApp (compared with Snapchat and Instagram) is more likely to be used for connecting with friends and family.

Hypothesis 2b: WhatsApp (compared with Snapchat and Instagram) is more likely to be used for talking.

Hypothesis 2c: WhatsApp (compared with Snapchat and Instagram) is less likely to be used for entertaining.

Hypothesis 2d: WhatsApp (compared with Snapchat and Instagram) is less likely to be used for escaping from boredom.

Hypothesis 2e: WhatsApp (compared with Snapchat and Instagram) is less likely to be used for self-expressing.

Hypothesis 2f: WhatsApp (compared with Snapchat and Instagram) is less likely to be used for getting to know people.

Hypothesis 2g: WhatsApp (compared with Snapchat and Instagram) is less likely to be used for seeking information.

METHODOLOGY

Participants

The present research utilized a student-snowballing sampling procedure to distribute the research questionnaire using an online-survey platform. Students were given survey links and asked to distribute the links to their friends and family in their Snapchat, Instagram, and WhatsApp applications for extra class credits. The researcher used the ballot-box-stuffing option in the online-survey platform to prevent the submissions of multiple surveys. In addition, the users' IPs were checked and there were no redundancies. Generally speaking, students are a good population for this type of research because it is evident that the age distribution of active social media users worldwide is between the ages of 16 and 34 years old (Statista, 2019). Snapchat, Instagram, and WhatsApp are among the topmost popular social media platforms among these young individuals. Therefore, the current research focused on individuals who are active users of these three platforms as research participants. The sampling procedure resulted in a sample of 2,883 social media users. The sample consisted of 661 males and 2,224 females. The age

was distributed as follows: <18 (5.3%), 18-25 (55.7%), 26-35 (20.1%), 36-45 (10.9%), 46-55 (6.1%), and >55 years of age (2%). The social media platforms were distributed as follow: Snapchat (35.6%), Instagram (45.3%), and WhatsApp (19.1%).

Measures

Due to the nature of this research, the researcher developed three online surveys that had identical measures and directed to different social media platforms (i.e., Snapchat, Instagram, and WhatsApp). All participants were asked to indicate whether they used the platform in a daily base. If they responded positively, then they were asked to rate the extent to which they used the platform to perform the following usage behaviors (adopted from Sultan, 2014): 1) connecting with friends and family members, 2) getting to know new people, 3) talking, 4) entertaining, 5) escaping from boredom, 6) expressing the self, and 7) seeking latest news and information, ranged from 1 (never) to 5 (always). At the end of the survey, participants were asked to indicate their gender and age group (<18, 18-25, 26-35, 36-45, 46-55, and >55 years of age).

Results

Before conducting the main analysis, the data set was screened for missing data in rows and found no missing data. Moreover, the researcher removed 11 cases due to being not engaged (they gave almost the same answer to every Likert scale item), resulting in a total of 2,872 social media users. The correlations among the examined usage-behavior variables were checked. The correlations ranged from 0.11 to 0.42, which showed no signs of multicollinearity, see Table 1. Moreover, convergent validity was demonstrated by showing that the usage-behavior variables were positively correlated, which proved that these variables were related. While discriminant validity was demonstrated by showing that the usage-behavior variables were correlated weakly (below 0.30), which proved that they measured different constructs.

In addition, the researcher utilized a principle component factor analysis using promax rotation to analyze the different factors emerging from the usage-behavior variables. The variables were suitable for factor analysis because the Kaiser-Meyer-Olkin (KMO) statistic indicated a value of 0.75, which is greater than 0.60, and communalities are greater than 0.30. Based on the analysis, the usage-behavior variables loaded on two unique factors: social needs (e.g., connecting with friends and family, getting to know new people, self-expression, and talking) and personal needs (e.g., entertaining, escaping from boredom, and seeking information), see Table 2. Furthermore, the reliability analysis indicated that the usage behavior had a Cronbach Alpha of 0.70, which is regarded to be good.

Before examining the research hypotheses, the usage-behavior variables, for each social media platform, were checked for normality using Kolmogorov-Smirnov test in SPSS. The results showed mixed findings, see Appendix. Due to the non-normality of some usage-behavior variables, the Wilcoxon-Mann-Whitney (WMW) test was utilized. The age predictor was first recoded using median split to divide users into two groups (younger and older groups). This resulted in aggregating the first two age groups to form the younger-user category (25 years and less) and the other three age groups to form the older-user category (26 years and more). When contrasting the recoded-age groups on usage-behavior variables using WMW test, the results demonstrated that age was statistically significant for connecting with friends and family ($M_{\text{younger}}=3.69$, $M_{\text{Older}}=3.39$, $Z=-6.55$, $p<0.001$; hypothesis 1a was supported), talking ($M_{\text{younger}}=2.67$, $M_{\text{Older}}=2.22$, $Z=-10.26$, $p<0.001$; hypothesis 1b was supported), getting to know

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new people ($M_{\text{younger}}=2.50$, $M_{\text{Older}}=2.22$, $Z=-5.98$, $p<0.001$; hypothesis 1c was supported), entertaining ($M_{\text{younger}}=4.04$, $M_{\text{Older}}=3.76$, $Z=-6.79$, $p<0.001$; hypothesis 1d was supported), escaping from boredom ($M_{\text{younger}}=4.12$, $M_{\text{Older}}=3.73$, $Z=9.64$, $p<0.001$; hypothesis 1e was supported), and self-expressing ($M_{\text{younger}}=2.93$, $M_{\text{Older}}=2.65$, $Z=5.62$, $p<0.001$; hypothesis 1f was supported). However, younger users did not differ from older users in using social media for seeking information ($M_{\text{younger}}=3.82$, $M_{\text{Older}}=3.89$, $Z=-1.50$, $p=0.12$; hypothesis 1g was not supported).

Table 1. Correlations among usage behaviors of social media platforms

	Connecting	Talking	Entertaining	Escaping	Self-expressing	Knowing people	Information
Connecting	1						
Talking	0.33**	1					
Entertaining	0.19**	0.11**	1				
Escaping	0.13**	0.16**	0.47**	1			
Self-expressing	0.39**	0.42**	0.19**	0.18**	1		
Knowing people	0.31*	0.41**	0.15**	0.12**	0.41**	1	
Information	0.18**	0.18**	0.29**	0.23**	0.22**	0.20**	1

** $p<0.001$

Table 2. Factor analysis of social media usage behaviors

Pattern Matrix ^a		
	Component	
	Social Need	Personal Need
Talking	.819	
Knowing People	.747	
Self-expressing	.724	
Connecting	.657	
Entertaining		.813
Escaping		.778
Information		.668
Extraction Method: Principal Component Analysis. Rotation Method: Promax with Kaiser Normalization.		
a. Rotation converged in 3 iterations.		

To test for the research hypothesis 2, the social media platform predictor was recoded by aggregating Snapchat and Instagram in a single group and WhatsApp in another group and used the WMW test to contrast both groups on the usage-behavior variables. The results indicated that WhatsApp (compared with Snapchat and Instagram) was more likely to be used for connecting with friends and family ($M_{\text{WhatsApp}}=4.40$, $M_{\text{Snap+Inst}}=3.37$, $Z=-18.39$, $p<0.001$; hypothesis 2a was supported) and talking

($M_{WhatsApp}=3.01$, $M_{Snap+Inst}=2.37$, $Z=-12.41$, $p<0.001$; hypothesis 2b was supported), while Snapchat and Instagram (compared with WhatsApp) were more likely to be used for entertaining ($M_{WhatsApp}=3.82$, $M_{Snap+Inst}=3.96$, $Z=-3.15$, $p<0.001$; hypothesis 2c was supported) and escaping from boredom ($M_{WhatsApp}=3.82$, $M_{Snap+Inst}=4.01$, $Z=-4.48$, $p<0.001$; hypothesis 2d was supported). However, contrary to the researcher's predictions, WhatsApp (compared to Snapchat and Instagram) was more likely to be used for self-expressing ($M_{WhatsApp}=3.74$, $M_{Snap+Inst}=2.60$, $Z=-19.26$, $p<0.001$), getting to know new people ($M_{WhatsApp}=3.11$, $M_{Snap+Inst}=3.79$, $Z=-15.70$, $p<0.001$), and seeking information ($M_{WhatsApp}=4.10$, $M_{Snap+Inst}=3.79$, $Z=-5.58$, $p<0.001$), hence hypothesis 2e, hypothesis 2f, and hypothesis 2g were not supported.

Based on the previous factor-analysis findings, the two factors that emerged were identified as social and personal needs. To further enhance the research findings, the researcher added another WMW test to show the significance of these needs among the social media platforms. The analysis indicated the WhatsApp (compared to Snapchat and Instagram) had significantly higher levels of social needs ($M_{WhatsApp}=3.56$, $M_{Snap+Inst}=2.64$, $Z=-22.48$, $p<0.001$), while the three platforms had similar levels of personal needs ($M_{WhatsApp}=3.91$, $M_{Snap+Inst}=3.92$, $Z=-0.28$, $p=0.77$). This finding indicated that WhatsApp had a unique characteristic when compared to Snapchat and Instagram and thus marketers should handle it exclusively.

A post-hoc analysis was conducted to examine the differences in usage behaviors for Snapchat and Instagram users. The WMW test indicated that Snapchat and Instagram users differed significantly in connecting with friends and family ($M_{Snapchat}=3.70$, $M_{Instagram}=3.08$, $Z=-12.94$, $p<0.001$), information seeking ($M_{Snapchat}=3.56$, $M_{Instagram}=3.97$, $Z=-8.49$, $p<0.001$), talking ($M_{Snapchat}=2.62$, $M_{Instagram}=2.17$, $Z=-9.63$, $p<0.001$) and self-expressing ($M_{Snapchat}=2.70$, $M_{Instagram}=2.52$, $Z=-3.64$, $p<0.001$), while the differences were not significant for getting to know new people ($M_{Snapchat}=2.27$, $M_{Instagram}=2.19$, $Z=-1.45$, $p=0.147$), entertaining ($M_{Snapchat}=3.92$, $M_{Instagram}=3.98$, $Z=-1.77$, $p=0.076$), and escaping from boredom ($M_{Snapchat}=3.99$, $M_{Instagram}=4.02$, $Z=-0.77$, $p=0.438$).

Further analyses were conducted using the WMW test to examine the differences in the recoded-age groups within the three social media platforms on usage-behavior variables. The results showed some interesting findings. When examining Snapchat users only, younger users were more likely to use Snapchat for connecting with family and friends ($M_{Younger}=3.82$, $M_{Older}=3.61$, $Z=-2.76$, $p<0.01$), talking ($M_{Younger}=2.70$, $M_{Older}=2.46$, $Z=-2.91$, $p<0.01$), entertaining ($M_{Younger}=3.99$, $M_{Older}=3.80$, $Z=-3.18$, $p<0.001$), and escaping from boredom ($M_{Younger}=4.14$, $M_{Older}=3.71$, $Z=-6.25$, $p<0.001$). However, the difference was not significant for getting to know new people, seeking information, and self-expressing ($p>0.05$), see Table 3. When examining Instagram users only, younger users were more likely to use Instagram for talking ($M_{Younger}=2.37$, $M_{Older}=1.96$, $Z=-6.47$, $p<0.001$), entertaining ($M_{Younger}=4.08$, $M_{Older}=3.89$, $Z=-3.71$, $p<0.001$), escaping ($M_{Younger}=4.21$, $M_{Older}=3.81$, $Z=-7.35$, $p<0.001$), and knowing people ($M_{Younger}=2.31$, $M_{Older}=2.07$, $Z=-3.67$, $p<0.001$). However, the difference was not significant for connecting with friends and family, seeking information, and self-expressing ($p>0.05$), see Table 4. When examining WhatsApp users only, younger users were more likely to use WhatsApp for talking ($M_{Younger}=3.08$, $M_{Older}=2.78$, $Z=-3.11$, $p<0.01$), entertaining ($M_{Younger}=3.10$, $M_{Older}=3.10$, $Z=-8.30$, $p<0.001$), escaping ($M_{Younger}=3.95$, $M_{Older}=3.42$, $Z=-4.60$, $p<0.001$), and knowing people ($M_{Younger}=3.17$, $M_{Older}=2.95$, $Z=-2.22$, $p<0.05$). However, the difference was not significant for connecting with friends and family, seeking information, and self-expressing ($p>0.05$), see Table 5. Figure shows the plots for usage behaviors across the social media platforms and age groups.

Usage Behaviors on Snapchat, Instagram, and WhatsApp

Table 3. Results of the Wilcoxon-Mann-Whitney test between age groups for Snapchat users

Test variables	Age group	n	Average rank	Contrast significance
Connecting	Younger Older	672 349	529 477	Z = -2.76 p < 0.01
Knowing people	Younger Older	672 349	516 502	Z = -0.74 Non-significant
Seeking information	Younger Older	672 349	512 508	Z = -0.21 Non-significant
Entertaining	Younger Older	672 349	531 472	Z = -3.18 p < 0.001
Talking	Younger Older	672 349	530 475	Z = -2.91 p < 0.01
Escaping	Younger Older	672 349	550 435	Z = -6.25 p < 0.001
Self-expressing	Younger Older	672 349	516 501	Z = -0.82 Non-significant

Table 4. Results of the Wilcoxon-Mann-Whitney test between age groups for Instagram users

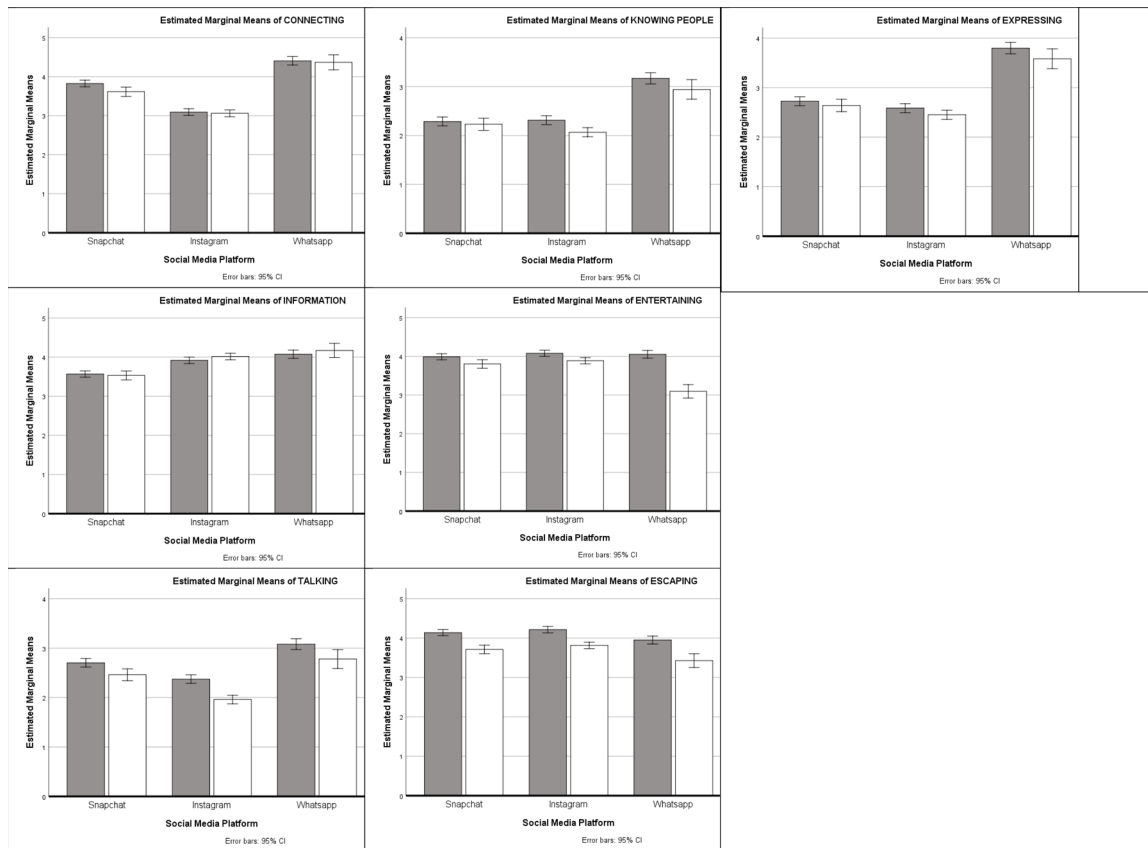
Test variables	Age group	n	Average rank	Contrast significance
Connecting	Younger Older	661 638	655 645	Z = -0.54 Non-significant
Knowing people	Younger Older	661 638	686 613	Z = -3.66 p < 0.001
Seeking information	Younger Older	661 638	640 660	Z = -1.04 Non-significant
Entertaining	Younger Older	661 638	686 613	Z = -3.72 p < 0.001
Talking	Younger Older	661 638	713 584	Z = -6.47 p < 0.001
Escaping	Younger Older	661 638	721 577	Z = -7.35 p < 0.001
Self-expressing	Younger Older	661 638	668 632	Z = -1.80 Non-significant

Last, the researcher ran a MANOVA, as a post-hoc analysis, to test for the interaction effect of re-coded age and social media platforms on usage behaviors as dependent variables, the interaction effect was statistically significant for entertaining only. The same interaction was non-significant for all other usage-behavior variables ($p > 0.05$), see Figure for plots of age groups and social media platforms on usage-behavior variables.

Table 5. Results of the Wilcoxon-Mann-Whitney test between age groups for WhatsApp users

Test variables	Age group	n	Average rank	Contrast significance
Connecting	Younger Older	415 137	278 271	Z =-0.52 Non-significant
Knowing people	Younger Older	415 137	285 251	Z =-2.22 p<0.05
Seeking information	Younger Older	415 137	271 292	Z =-1.43 Non-significant
Entertaining	Younger Older	415 137	307 183	Z =-8.30 p<0.001
Talking	Younger Older	415 137	288 242	Z =-3.12 p<0.01
Escaping	Younger Older	415 137	294 225	Z =-4.60 p<0.001
Self-expressing	Younger Older	415 137	283 255	Z =-1.84 Non-significant

Figure 1. Usage behaviors between age groups across social media platforms



SUMMARY OF RESEARCH FINDINGS

The present research is based on one of the grounded works (i.e., uses and gratifications theory) in academic research that focuses on social media uses and gratifications. The researcher hypothesized that younger users are more likely to use social media platforms to fulfill social needs (e.g., connecting with friends and family, getting to know new people, and talking) and personal needs (e.g., seeking information, entertaining, escaping, self-expression). In addition, it was expected that users of Snapchat and Instagram turn to these platforms for affective needs (e.g., entertaining), personally integrative needs (e.g., enhancing self-expression and getting to know new people), tension release (e.g., escaping from boredom), and cognitive needs (e.g., seeking information), while users of WhatsApp focus on socially integrative needs (e.g., talking and connecting with friends and family). In general, the research findings partially supported the proposed hypotheses and provided several insights into how different social media users utilize Snapchat, Instagram, and WhatsApp.

It was determined that Snapchat, Instagram, and WhatsApp were more likely to be utilized by younger users (compared with older users) for talking, entertaining, escaping from boredom, self-expressing, and getting to know new people. With regards to seeking information, both younger and older users had similar tendencies to use the platforms. One explanation for not showing a statistical difference in the tendencies of seeking information across the age groups might be the fact that people, regardless of ages, have reasonable gratifications for knowledge and thus use different channels to gather as much information as possible in order to fulfill their basic need for knowledge. However, satisfying other types of gratifications mostly depend on convenience and lifestyles. For example, younger individuals might find it more convenient to use social media for entertainment, whereas older individuals may rely on different activities to get entertained. Moreover, older users have matured personality and their self-expression is well developed and do not rely on social media as much as younger users to express their opinions freely. In fact, older users do not spend long time on social media since they are busy with everyday activities and have other ways to obtain their gratifications. It was also shown that social media influenced younger generations more than older generations because the ages of 16 and 34 years old are, in general, the most active social media users.

The present research demonstrated that users fulfilled their gratifications at different levels in each platform. Users of WhatsApp (compared with Snapchat and Instagram) used the platform to connect and talk with friends and family, while users of Snapchat and Instagram used the platforms to entertain and escape from boredom. When examining the difference across the platforms with regards to self-expressing, getting to know new people, and seeking information, WhatsApp (compared with Snapchat and Instagram) users were less likely to depend on the platform to fulfill these gratifications. To explain these unexpected findings, one may argue that Snapchat and Instagram have important privacy features to which users may turn to stay anonymous as they are expressing themselves and getting to know new people. Once they feel conformable with other users, they may reveal their identities. These features are not fully available in WhatsApp platform because other users can still view mobile numbers and hence will be able to know their partners' identities. About the information seeking gratification, Snapchat and Instagram have features such as Snaps and Stories that promote a great amount of information about users, societal affairs, and businesses. However, WhatsApp has a limited capacity with its Status feature to share information with personal contacts only. Therefore, the features in Snapchat and Instagram (compared with WhatsApp) are more oriented toward making information available to the general public and hence users rely on these platforms as a main source of general information.

THEORETICAL CONTRIBUTIONS

The present research contributes to the existing literature in four ways. First, despite the increased interest that researchers have shown to study social media, most studies have focused on a single platform, overlooking the different natures of social media platforms. The present study fills this gap by comparing Snapchat, Instagram, and WhatsApp in order to highlight the different gratifications each platform offers to users. Second, the present research extends the uses and gratifications theory pertaining to new social media platforms. Most of the published research implicates the uses and gratifications theory on different communication-media platforms, including Facebook. However, new social media platforms such as Snapchat, Instagram, and WhatsApp have received little attention from social media researchers (Phua et al., 2017). In the present research, the researcher highlights important usage behaviors that users practice on these social media platforms in order to fulfil their gratifications. The results indicated that users who frequently used Snapchat, Instagram, and WhatsApp differed significantly on seven gratifications: connecting with friends and family, getting to know new people, talking, entertaining, escaping from boredom, self-expression, and seeking information. Third, the research provides insights into how different age groups use social media platforms. Considering the seven gratifications that different age groups obtain from new social media platforms may offer understanding of how to improve customer involvement particularly on Snapchat, Instagram, and WhatsApp. It has been shown in the present research that younger users (compared with older users) are more likely to utilize these platforms for talking, entertaining, escaping from boredom, self-expressing, and getting to know new people. These findings indicate that users' participations in these social media does have a positive effect on their daily life and hence is expected to increase their involvement with communication messages directed toward them. Last, the researcher puts forward an important argument about the applicability of the traditional IMC paradigm on social media platforms. Prior to social media, marketers believed that the control was predominately in their hands. This assumption is no longer valid with the introduction of social media platforms. Social media users have taken over the control and demanded more customized messages that fit their needs and wants. Past research has described these users as prosumer, which is the distinction between consumer and producer (Toffler, 1980). Considering new social media challenges, IMC seems to have some boundaries that limit its applicability in new media channels. Therefore, the present research advocates to revisit the IMC assumptions and consider the distinctiveness of social media platforms.

PRACTICAL IMPLICATIONS

In addition to the theoretical contributions, the research findings provide practical implications for marketers who utilize different social media platforms as marketing tools. Social media has been largely realized as an effective media to achieve marketing strategy goals. In order to increase the effectiveness of marketing campaigns, it is essential to design communication messages that match the usage behaviors of users in each platform and enhance a two-way communication. As it has been shown in the present research, users were more likely to turn to WhatsApp to connect and talk with friends and family. Thus, including WhatsApp as a tool in the marketing campaign requires a careful designing of communication messages that increase users' momentum for connecting and talking. For example, marketers might target WhatsApp users with contents that relate to the topics that bring conversations in their social circles such as announcing a long-awaited product launch or use WhatsApp as a customer-support service since it

brings in conversations with customers. Furthermore, Snapchat and Instagram users use the platforms to entertain and escape from boredom. They are preferred platforms for humorous content due to their filters and custom effects. As such, it is possible to introduce creative messages that increase users' engagement with entertaining contents such as introducing a competition for creating filters/emojis, taking followers backstage inside the company, taking over the business account by a popular influencer, living a day in someone's shoes, and/or sharing favorite summer activities. All these campaigning ideas will spark interests and get the audience entertained and engaged with the communication messages. Therefore, social media marketers must infuse brands with personalities that match with users' gratifications on different social media platforms to effectively reach their target segments.

Furthermore, marketers have been utilizing the IMC model to communicate brand values to their target customers by designing consistent communication messages through different channels. The main goal of IMC is to have consistent and compelling messages in order to attract customers' attentions and intensify marketing effects. Although the IMC concept works well in traditional channels, it has some limitations on social media. The present research advocates to limit the usage of IMC on social media and adopt different communication strategies for each social media platforms due to the unique gratifications of platform users. These unique strategies will increase user engagement with brand messages.

LIMITATIONS AND FUTURE RESEARCH

Despite the theoretical and practical contributions of the present research, there are some limitations that deserve mentioning for future researchers. First, the research findings were mainly based on self-reported responses. It is possible that users evaluated their responses inaccurately due to telescoping bias. Future researchers should rely on behavioral data that are taken from social media analytics to improve the data accuracy and establish greater generalizability of the results. Second, the researcher utilized a student-snowball sampling procedure to collect the research data. Although a snowball sampling with students is convenient, it is a nonprobability sampling technique that leads to biased data because it depends on data coming from students' friends and family only. Third, the researcher used a median-split method to divide users into younger and older groups. Although, the median-split method is a well-accepted method in academic research to dichotomize research participants, it resulted in younger group aged 25 and less and older group aged 26 and older. One may argue that the data were skewed toward a young population and thus the older group included participants that could be considered young too. Future researchers should account for this issue by collecting data from a wider age range in order to get results applicable to the general social media population. Fourth, the measure of usage behaviors (i.e., uses and gratifications) was utilized from one prior study (Sultan, 2014). Future researchers should combine more measures and use factor analysis to validate the items of these measures. Fifth, the present research relied on the uses and gratifications theory to identify and compare usage behaviors of different social media platforms. Future researchers should utilize other theories such as the technology acceptance model (TAM) to show how users come to accept and use social media platforms. Perhaps, a comparison between uses and gratifications theory and other theories are useful to shed light on additional theoretical explanations. Last, the research provides early descriptive findings about the different uses and gratifications of new social media platforms. Future researchers should offer more theoretical explanations to elucidate processes and utilities of different usage behaviors particularly for new social media platforms and identify more implications for social media marketing.

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Chapter 71

Hispanic Humor Styles on Facebook: An Analytical Study

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ABSTRACT

To better understand how humor is used in today's multicultural virtual environment, this study investigates the humor styles of Hispanic Americans in a virtual community. Based on the four humor styles, the current study builds a theoretical framework to explain why cultural norms, gender role, acculturation, and education influence the humor styles of Hispanic Americans in computer-mediated communication. Two research questions and five hypotheses are developed in the research framework. The statistical analysis is based on content analysis of 400 Hispanic Facebook users, 93 of whom use humor in most recent News Feed. The results provide preliminary evidence of the influences of cultural norms, gender role, acculturation, and education on Hispanic humor styles.

INTRODUCTION

The excessive psychological benefits of humor have long been studied in research. Previous research found that humor not only can be used for relieving intrinsic stress (Dixon, 1980), but also helps build personal relationships and cope with interpersonal tension (Ziv, 1984). Wise usage of humor can elicit many positive signals, therefore lubricating personal appeal and interpersonal communications (Cann, Calhoun, & Banks, 1997; Martin, 2007). In particular, people appear to be creative and intelligent when

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using humor in relationship building (Cann & Calhoun, 2001; Miller, 2000). People equipped with a good sense of humor are also viewed as sociable and self-confident (Chafe, 2007). Many past studies have highlighted the positive role of humor in effectively building and maintaining interpersonal relationships (Cann, Zapata, & Davis 2011; Li et al., 2002; McGee & Shevlin, 2009; Sprecher & Regan, 2002).

In advertising research, a general premise is that humor messages can create positive emotional reactions through delivering a “surprise” (Elpers, Mukherjee, & Hoyer, 2004). From this perspective, using humor in advertising and communications has been shown to have high effectiveness in stimulating consumers’ positive psychological responses (Chung & Zhao, 2003; Cline, Altsech, & Kellaris, 2003; Lee & Mason, 1999). The positive impacts include some of the most important outcomes, such as viewers’ positive attitudes toward the message and its sender, as well as attention to the message (Eisend, 2009). Given that our understanding of humor has been focused on traditional face-to-face and advertising contexts (Cann, Zapata, & Davis 2011; Galloway, 2010; Martin et al., 2003), it will be very interesting to examine how humor is used in the fast-growing virtual community.

Computer-mediated communication has fundamentally changed the way interpersonal interaction is carried out (Walther, 1996). In a virtual community, interpersonal communications are rather hyperpersonal because the members have a greater tendency to use an optimized presentation of self (Walther, 1996). Virtual community members also found it hard to make accurate impressions about others due to the absence of nonverbal cues (Okdie et al., 2011; Walther, 2007). Although humor can be strategically used to build emotional ties in the lack of nonverbal cues, previous research has not yet explored the determinant cultural and demographic factors that shape humor usage by virtual community members.

Thus, to bridge this research gap and better understand how humor is used in today’s multicultural virtual environment, this study attempts to investigate the humor styles of Hispanic Facebook users. Based on the four humor styles conceptualized by Martin et al. (2003), we intend to find the percentage of Hispanic Americans using humor on Facebook and the popularity of the different humor styles used by Hispanic Americans. Furthermore, the current study builds a theoretical framework to explain why cultural norms, gender role, acculturation, and education may influence the humor styles of Hispanic Americans who are involved in computer-mediated communication. Further, the investigation on humor styles may provide further evidence on whether humor is significantly used by the Hispanic culture, and which humor styles are more popular than others in this culture. The findings also offer insights into understanding the communication styles of Hispanic Facebook users from psychological and sociological perspectives.

LITERATURE REVIEW

Humor Styles

In advertising research, Speck’s (1991) typology of humorous advertising styles, which consists of incongruity-based, arousal-safety-based, and disparagement-based humor, has been used in many studies dealing with humorous advertising (Beard, 2008; Hatzithomas, Zotos, & Boutsouki, 2011; Lee & Lim, 2008; Spotts, Weinberger, & Parsons, 1997). By the same token, Martin et al. (2003) provided rich insights into humor styles, with a greater social discernment. The Humor Styles Questionnaire in Martin et al.’s (2003) study contains four humor styles with respect to individual use of humor from an

intrapyschic standpoint. Follow-up studies have confirmed high reliability of the humor style measures reported in the original Humor Styles Questionnaire (Galloway, 2010; Kazarian & Martin, 2006).

Martin et al.'s (2003) Humor Styles Questionnaire specifies four humor styles: affiliative humor, self-enhancing humor, aggressive humor, and self-defeating humor. The *Affiliative Humor Style* portrays jokes and flirts in a group where the “entertainer” articulates humor and expects to charm others during this process. The *Aggressive Humor Style* is a harsher form of humor that typically implements humor as mockery, loss, and it also tends to omit others without considering the consequence. The *Self-Enhancing Humor Style* is described as an affirmative humor style that is closely aligned with coping and an optimistic viewpoint on life. Lastly, the *Self-Defeating Humor Style* is used by individuals who tend to present and accept a low self-efficacy through excessive self-downgrading and self-mockery.

Humor can be divided into positive (adaptive) and negative (maladaptive) kinds (Duncan, Smeltzer, and Leap, 1990; Zeigler-Hill and Besser, 2011). The affiliative humor style and the self-enhancing humor style are positive based on its effects, whereas the aggressive humor style and the self-defeating humor style result in negative disparagement (Martin et al., 2003). Martin et al.'s (2003) humor style framework is based on two dimensions: the direction of humor (positive versus negative) and the target of humor (on oneself versus on others). Martin et al.'s (2003) Humor Styles Questionnaire is provided in Table 1.

Table 1. Humor styles questionnaire by Martin et al. (2003)

<p><i>Affiliative Humor Style</i></p> <p>I usually don't laugh or joke around much with other people.*</p> <p>I don't have to work very hard at making other people laugh—I seem to be a naturally humorous person.</p> <p>I rarely make other people laugh by telling funny stories about myself.</p> <p>I laugh and joke a lot with my closest friends.</p> <p>I usually don't like to tell jokes or amuse people.*</p> <p>I enjoy making people laugh.</p> <p>I don't often joke around with my friends.*</p> <p>I usually can't think of witty things to say when I'm with other people.*</p>
<p><i>Aggressive Humor Style</i></p> <p>If someone makes a mistake, I will often tease them about it.</p> <p>People are never offended or hurt by my sense of humor.*</p> <p>When telling jokes or saying funny things, I am usually not very concerned about how other people are taking it.</p> <p>I do not like it when people use humor as a way of criticizing or putting someone down.*</p> <p>Sometimes I think of something that is so funny that I can't stop myself from saying it, even if it is not appropriate for the situation.</p> <p>I never participate in laughing at others even if all my friends are doing it.*</p> <p>If I don't like someone, I often use humor or teasing to put them down.</p> <p>Even if something is really funny to me, I will not laugh or joke about it if someone will be offended.*</p>
<p><i>Self-Enhancing Humor Style</i></p> <p>If I am feeling depressed, I can usually cheer myself up with humor.</p> <p>Even when I'm by myself, I'm often amused by the absurdities of life.</p> <p>If I am feeling upset or unhappy I usually try to think of something funny about the situation to make myself feel better.</p> <p>My humorous outlook on life keeps me from getting overly upset or depressed about things.</p> <p>If I'm by myself and I'm feeling unhappy, I make an effort to think of something funny to cheer myself up.</p> <p>If I am feeling sad or upset, I usually lose my sense of humor.*</p> <p>It is my experience that thinking about some amusing aspect of a situation is often a very effective way of coping with problems.</p> <p>I don't need to be with other people to feel amused—I can usually find things to laugh about even when I'm by myself.</p>
<p><i>Self-Defeating Humor Style</i></p> <p>I let people laugh at me or make fun at my expense more than I should.</p> <p>I will often get carried away in putting myself down if it makes my family or friends laugh.</p> <p>I often try to make people like or accept me more by saying something funny about my own weaknesses, blunders, or faults.</p> <p>I don't often say funny things to put myself down.*</p> <p>I often go overboard in putting myself down when I am making jokes or trying to be funny.</p> <p>When I am with friends or family, I often seem to be the one that other people make fun of or joke about.</p> <p>If I am having problems or feeling unhappy, I often cover it up by joking around, so that even my closest friends don't know how I really feel.</p> <p>Letting others laugh at me is my way of keeping my friends and family in good spirits.</p>

*Reverse-coded items.

Humor and Culture

Humor has been widely used across diverse cultures. Feinberg (1971) found that, in many well-known cultures, humor is manifested through criticism, sarcasm, irony, exaggeration, disguise, unforeseen changes of reasoning, and superiority over criticized victims. Based on the evidence collected from hundreds of ethnic groups, Apte (1985) stated that humor is widely used by all cultures in interpersonal communications. In empirical research, Ruch (1992) found that people from the U.S., Europe, and the Middle East use humor in similar ways. Other studies also found a great amount of likeness in the use of humor by people from Asia and North America (Chen & Martin, 2007; Nevo, Nevo, & Yin, 2001). Previous findings have also suggested that humorous advertising is popular across the world (Cruthirds et al., 2012; Laroche et al., 2011; Toncar, 2001).

However, cultural differences in the use and reaction to humor have been recognized in previous advertising research (Cruthirds et al., 2012; Hatzithomas, Zotos, & Boutsouki, 2011; Laroche et al., 2011; Lee & Lim, 2008; Toncar, 2001). Many differences found in cross-cultural humorous advertising reflect consumers' tradition and cultural preferences. For example, British advertising is found to use more subtle, understatement-type humor because its culture is more tolerant of ambiguity, while American advertising employs more straightforward, ludicrous humor because of the high uncertainty-avoidance culture (Toncar, 2001).

Kalliny, Cruthirds, and Minor (2006) found that it is common for Arab men to use aggressive humor in jokes with women because of the male-dominant culture, suggesting that interpersonal relationship characteristics in a culture silently influence how humor is used between individuals. The humor styles identified in the Humor Styles Questionnaire are said to be culturally bound because humor styles mirror the cultural environment people live in (Martin et al., 2003). It indicates that people's intended humor styles are culturally induced. Culture is defined as "the way of life of people, for the sum of their learned behavior patterns, attitudes, and material things" (Hall, 1976, p. 20). At the individual level, culture includes the social, ethnical, and educational experiences a person accumulates (Arnould & Thompson, 2005). Overall, humor is a very important language beyond cultural boundaries. Based on the similarities and differences of humor, the extant literature reveals that every culture is prone to the use of humor and effective humor styles are culturally defined. It is critical to examine humor styles from a cultural perspective.

RESEARCH FRAMEWORK

In view of the positive role of humor in general, the intensity and types of humor used by Hispanic Americans in the virtual environment are still subject to exploratory investigation. Due to the lack of field data, this study starts the scientific inquiry by proposing two research questions below:

RQ1: What is the percentage of Hispanics who regularly use humor on Facebook?

RQ2: What are the most and least popular humor styles used by Hispanics on Facebook?

Following the two broad research questions assessing the usage of humor by Hispanics, we articulate a theoretical framework built upon cultural context (Hall, 1976), gender role and identity theory (Burke

& Tully, 1977; Tajfel & Turner, 1986), and acculturation theory (Padilla, 1980). The research framework consists of five hypotheses.

Unlike the mainstream Anglo-Saxon culture in the United States, the Hispanic culture rooted in Latin America tends to deliver high context messages (as compared to low context ones) in interpersonal communications (Copeland & Griggs, 1986; Hall, 1976). The high context communication style is an outcome of the high context Hispanic culture in which inferences and customs are well understood based on shared experiences of collectivistic members (Hall, 1976). On the contrary, people pertaining to the low context communication style, such as mainstream Americans, are considered more verbally explicit in interpersonal communications because of the individualistic low context culture (Hall, 1976). It has been highlighted that high and low context cultures have different patterns in computer-mediated communication (Wurtz, 2005).

It has been recognized that one of the drives determining the formation of a high context culture is the long-term, well-established relationship bonds among the members (Copeland & Griggs, 1986; Hall, 1976). As such, Hispanic individuals are more likely to exhibit a relationship orientation in the virtual community. By default, the cultural norms require Hispanics to keep a strong and stable social tie with others in the loop. According to Hofstede (1980), people from an individualistic culture tend to highlight self-interest, whereas people from a collectivistic culture such as Latin America consider the interests of the group over the individuals. Caucasian Americans belong to the individualistic culture and thus, are more likely to address personal wants and interests in their virtual interactions. In contrast, Hispanic Americans inherited their collectivistic culture from Latin America and thus, are more likely to put emphasis on group values and harmonious social behavior in the virtual community surroundings. Thus, the affiliative humor style can be a strategic match for Hispanics. The affiliative humor style reflects jokes and flirts in an interpersonal context where the humor initiator has the tendency to say funny things with the purpose of amusing and approaching others (Miczo, Averbek, & Mariani, 2009). As such, Hispanics are more likely to express affiliative style jokes and flirts in a virtual context where they have the tendency to say funny things with the purpose of amusing and approaching others in the virtual community. It is also reasonable for Hispanics not to use aggressive humor in virtual communications because such humor messages are typically used to ridicule, defeat, or exclude others without regard for the negative effect.

H1: There are a higher percentage of Hispanics using the affiliative humor style than Hispanics using the aggressive humor style on Facebook.

For Hispanics, acculturation means the process of merging to a leading culture, the mainstream Anglo-Saxon Caucasian culture (Padilla, 1980). Although the acculturation process has been found to change Hispanic Americans' behaviors and lifestyles, Hispanic Americans are said to be loyal to their own culture (Wilson, 2007). Previous research found that Hispanic Americans are the most resistant to acculturation in the U.S., holding to their own norms, lifestyles, and behaviors (Alba, 1995; Livingston, 1992).

In a cultural context, social behavior is a function of in-group norms that members will conform to (Triandis, 1989). However, previous studies found that college students of different ethnic backgrounds have comparable behaviors and expectations (Duffy & Klingaman, 2009; Teng, Morgan, & Anderson, 2001). After going through higher education, students may not be bound to their own socio-cultural restrictions (Gushue & Whitson, 2006). College graduates from a collectivistic, Hispanic cultural back-

ground can experience a high level of acculturation, through many years of exposure to the individualistic, Caucasian style of culture.

Thus, the higher education experience can make tremendous impact on the use of certain humor styles commonly found in the mainstream culture. In many previous studies, educational level is said to be an important predictor of behavior (Grinstein & Nisan, 2009; Herpen, Nierop, & Slood, 2012; Jansson, Marell, & Nordlund, 2011; Robb, Reynolds, & Abdel-Ghany, 2007). In a low context culture, people pay greater attention to self-interest and care more about own feelings (Hall, 1976). As such, the self-enhancing humor style and the aggressive humor style are more popular for Americans with a low context communication style. Hispanics, who are culturally sensitive to interpersonal conflict, tend to avoid the use of self-enhancing and aggressive humor styles. However, the educational learning experience will instill a sense of self into Hispanic individuals, making them act like Caucasians in social interactions. With learned manners, they are more likely to use the humor styles Caucasian Americans often use. Vice versa, those Hispanics lacking higher education are more likely to follow old demeanors and use their culturally bound humor styles.

H2: For Hispanics using the aggressive humor style, there is a higher percentage of those with university education than those with lower levels of education.

H3: For Hispanics using the self-enhancing humor style, there is a higher percentage of those with university education than those with lower levels of education.

Gender role expectation is a crucial component of cultural norms (Burke & Tully, 1977; Triandis, 1989). From a behavioral perspective, people abide by their expected gender role because gender is the primary identity (Burke & Tully, 1977). An individual's self-identity is usually constructed according to the cultural definitions of desirable male and female figures (Bem, 1981; Fritzsche & Jonas, 2005; Triandis, 1989). A culturally bound individual encodes information about himself or herself according to the cultural definitions of desirable male and female attributes (Bem, 1981; Hoffman & Borders, 2001). High-context, collectivistic cultures tend to feature female gender roles as wives, maids, caregivers, and other service-oriented figures that show the subordinate status (Triandis, 1989; Kashima et al., 1995). Thus, Hispanic females, who conform to the collectivistic culture, have stronger gender role norms and tend to use the self-defeating humor style to reflect their perceived subservient status of self.

H4: For Hispanics using the self-defeating humor style, there is a higher percentage of women than men.

The high context Hispanic culture tends to have formed networks, long-term relationships, and strong boundaries (Hall, 1976). Besides, the high context culture shares a great deal of tacit knowledge within a community (Hall, 1976). Often, the communication patterns can only be fully understood by in-group individuals because they are hard to explain to people out of the culture (Copeland & Griggs, 1986; Hall, 1976).

Hispanics are usually bilingual individuals, and their unique code-switching communication style is a product of the socio-cultural environment (Bishop & Peterson, 2011; Luna & Peracchio, 2002). As a notable verbal behavior for Hispanic Americans, code-switching is a linguistic practice through the use of mixed expressions in English and Spanish (Luna & Peracchio 2002). Previous research found that less acculturated Hispanics are more prone to the use of Spanish language (Wilson, 2007). Less acculturated Hispanics may express a greater amount of humor using code-switching because the subtle meaning of

many jokes can only be expressed and understood in the Hispanic context with the use of several Spanish words or expressions. On the flip side, acculturated Hispanics are less culturally bound, and are able to engage in interpersonal communication with explicit humor messages that can be understood by people outside the cultural context. Thus, it is expected that the educational experience can influence Hispanic individuals' code-switching behavior when humor is expressed.

H5: For Hispanics using code-switching in expressing humor, there is a lower percentage of those with university education than those with lower level of education.

METHODS

Media Selection

The objective of this study is to examine Hispanic humor styles in a virtual context. Data for this study is collected in a popular social networking website, Facebook.com. Facebook.com is selected as the target media based on the following four reasons. First, launched in 2004, Facebook.com is the largest online social networking website worldwide, with around 1.4 billion registered profiles. Thus, the virtual communities affiliated with Facebook.com can provide researchers a viable sampling frame as well as full access to the subjects of study. Second, user-submitted profiles on Facebook provide self-reported, detailed information about users' demographic information, such as age, gender, ethnicity, and educational level. Such demographic information is necessary for testing the hypotheses in this study using the content analysis approach. Third, Facebook offers a technologically advanced virtual community, allowing users to freely and quickly interact with friends and respond to received messages. Thus, the website creates an ideal condition for researchers to collect a sample of humor messages expressed in interpersonal two-way communication rather than human-computer interaction. Fourth, the humor styles of the users on Facebook are exhibited through News Feed updates. A content analysis on their self-supplied News Feed messages can help critically understand whether and how their humor styles are manifested.

Variables and Coding

In order to examine the two research questions and test the five hypotheses, the statistical analysis require a number of dependent and independent variables coded through content analysis. The required variables include two independent variables, gender and education level, and three dependent variables, humor usage, humor style, and code switching. Age is coded as a screening variable. Only users between 18 and 50 are selected.

Hispanic ethnicity is validated during data collection. Ethnicity is a culturally defined identity based on common characteristics shared by a cultural group, such as history, racial heritage, language, traditions, and religion (Camoroff & Camoroff, 2009). Americans usually self-report ethnicity as part of their demographic profiles. The U.S. Census Bureau (2012a, p. 2) defines Hispanic American as "a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race." Thus, as an ethnic group, Hispanic Americans share many common ethnic characteristics similar to those in Latin American cultures. In this study, ethnicity information is coded through self-reported

Facebook.com user profiles. To investigate the humor styles due to cultural heritage, the current study only examines profiles marked with self-reported full Hispanic ethnicity and excludes multi-cultural and multi-racial profiles.

Gender, educational level, and age are other demographic variables that are coded based on self-reported information. This study uses education as a proxy for acculturation. It is hypothesized that educated Hispanics tend to stress the use of the aggressive humor style more often than uneducated Hispanics do. The threshold set for the study is whether a Bachelor's degree is obtained or not reported in user profiles.

Humor usage and humor style are coded based on coder subjective evaluation on Facebook user's most recent News Feed update. The coders' job is three-fold: (1) to record the subjects' News Feed update, (2) to interpret the humor styles these messages carry, according to the Humor Styles Questionnaire (Martin et al., 2003), and (3) to transcribe code-switched humor messages. Specifically, based on Martin et al.'s (2003) humor style categories, the coder will judge if each update denotes any humor message, and what the primary humor style is if a humor message is identified. Following Mueller's (1992) suggestion for simplification, the coder only draws a single value from each message with one of the four humor styles. As such, only the dominant humor style is coded for each message. The coding sheet used in data collection is provided in Table 2.

Table 2. Coding sheet

Variable	Source	Categories
Gender	Self-reported	1 = Male 2 = Female
Education Level	Self-reported	1 = High school 2 = Associate degree 3 = Bachelor's degree 4 = Grad degree
Age	Self-reported	(Ratio variable, actual age is reported)
Humor Usage	Coder-interpreted	1 = Yes (Humor message is not found in the update) 2 = No (Humor message is found in the update)
Humor Style	Coder-interpreted	1 = Affiliative humor style (The individual uses jokes and flirts with others in order to please others during this process) 2 = Aggressive humor style (The individual uses sarcasm or mockery to omit others without considering the consequence) 3 = Self-enhancing humor style (The individual uses jokes in coping with adversity and showing an optimistic viewpoint on life) 4 = Self-defeating humor style (The individual uses jokes to reveal own weaknesses and flaws in exchange for others' understanding and sympathy)
Code-Switching	Coder-interpreted	If humor is found, then: 1 = No (Only English is used in the update) 2 = Yes (code-switching or Spanish is used in the update)

Sample and Reliability

The subjects of study are Hispanic Americans in general. The sample size is estimated following Voelker and Orton's (1993) sample size formula for binominal measures. With $\pm 5\%$ sampling error and 95% level of confidence, the study is desired to have 400 cases. To obtain an active group of Hispanic

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American Facebook users, we attempt to seek Hispanic Americans affiliated with a Facebook group of a city in Texas. The city has approximately 150,000 residents, 85% of who are Hispanic Americans. The Facebook group has more than 5,000 self-reported Hispanic American users. Consequently, a sample containing 400 Hispanic Facebook user profiles that meet the criteria of this study is obtained via the convenience sampling approach.

Inter-coder reliability is an important aspect of the reliability for content analysis (Kassarjian, 1977). Three graduate students who are familiar with the Hispanic cultures are used as coders for this study. All the coders have previous content analysis experience. In addition, the three coders are trained to be proficient with the coding procedure in this study and the humor styles. The three coders independently determine the values in the coding sheet. Scott's Pi will be used as the measure for assessing inter-coder reliability of nominal data in content analysis (Scott, 1955). The inter-coder reliability is 100% for Humor Usage, 93.5% for Humor Style, and 96.7% for Code-Switching, reaching a 96.7% overall percentage of agreement.

Analytical Procedure

Using the coding sheet, the 400 Hispanic profiles collected from Facebook.com are examined through content analysis. The two research questions attempt to find (1) the percentage of Hispanics who regularly use humor on Facebook, and (2) the most and least popular humor styles used by Hispanics. Descriptive statistics will be used to illustrate the results.

RESULT

Answers for Research Questions

The two research questions respectively ask: "What is the percentage of Hispanics who regularly use humor on Facebook?" and "What are the most and least popular humor styles used by Hispanics on Facebook?" The result reveals that 93 out of 400 Hispanics use humor on Facebook. Thus, the corresponding percentage of humor usage by Hispanics is 23.3% on Facebook. To answer RQ1, approximately one out of four messages is a humorous message used by Hispanics. In addition, the result for RQ2 is summarized in Table 3. As it shows, being the most popular humor style, the affiliative humor style accounts for 62.4% of the total humor usage by Hispanics. The self-enhancing humor style is the least popular one for Hispanics, accounting for 7.5%.

TABLE 3. Hispanic humor styles on Facebook

	Number	Percentage
Affiliative Humor Style	58	62.4%
Aggressive Humor Style	20	21.5%
Self-Enhancing Humor Style	7	7.5%
Self-Deprecating Humor Style	8	8.6%
Humor Overall	93	100%

Hypotheses Testing

H1 argues that there are more Hispanics using the affiliative humor style than those using the aggressive humor style on Facebook. The Hispanic sample has 62.4% using affiliative humor style versus 21.5% using aggressive humor style. By comparing the percentages, H1 is supported with a clear difference seen in the sample ($\chi^2 = 7.31$, $p = .00$).

H2 argues that the aggressive humor style is more likely to be used by Hispanics with university education than Hispanics with lower level of education. In the sample, among the 20 Hispanics who use aggressive humor style on Facebook, 17 (85%) have received university education, while 3 (15%) have not. As seen, the aggressive humor style is mainly used by Hispanics with university education, more so than those with lower level of education ($\chi^2 = 3.11$, $p = .08$). Therefore, H2 is marginally supported ($p < .10$).

Similarly, H3 argues that the self-enhancing humor style is more likely to be used by Hispanics with university education than Hispanics with lower level of education. In the sample, among 7 Hispanics who use the self-enhancing humor style, 5 (71.4%) have received university education while 2 (28.6%) have not. The sample has a higher percentage of Hispanics with university education using the self-enhancing humor style. However, the result is not statistically significant to support H3 ($\chi^2 = .02$, $p = .88$) due to the small size of the users of this humor style.

H4 argues that the self-defeating humor style is more likely to be used by Hispanic women than Hispanic men. It shows that a total of 8 Hispanics use the self-defeating humor style in the sample, 5 women (62.5%) and 3 men (37.5%). The sample shows a higher percentage of women using the self-defeating humor style. However, the result is not statistically significant to support H4 ($\chi^2 = .63$, $p = .43$) due to the small size of the users of this humor style.

H5 argues that Hispanics with university education are less likely to use code-switching in expressing humor than Hispanics with lower level of education. It reveals that 75 out of 93 Hispanics in the sample use code-switching in expressing humor. Among them, 25 (33.3%) are university educated whereas 50 (66.7%) are not. The sample shows a smaller percentage of Hispanics with university education using code-switching in expressing humor than Hispanics with lower level of education, showing support for H5 ($\chi^2 = 7.10$, $p = .00$).

DISCUSSION

Through studying Hispanic users on Facebook, the results help to illustrate Hispanic humor styles in computer-mediated, virtual communications. RQ1 shows that humor messages accounts for approximately one quarter of all messages. This highlights the importance of understanding when and how humor is used by the Hispanic ethnic group in the virtual environment. In RQ2, it is found that the affiliative humor style is the most often used humor style by Hispanics. This is consistent with the cultural norm of the Hispanic culture, which is high context and relationship oriented. Furthermore, the self-enhancing humor style is least used by Hispanics. This is also logical from a cultural perspective. To maintain group harmony, Hispanics tend to avoid the expression of self-interest and the subsequent interpersonal conflict due to the emphasis on self-interest.

Based on the results of the five hypotheses, the findings provide preliminary evidence on how Hispanics are influenced by cultural norms, gender role, acculturation, and education in their use of humor. The

humor styles of Hispanic Americans in computer-mediated communication are found to be congruent with their high context cultural norms. In the sample of 93 Hispanic Facebook users who use humor messages, 58, or approximately 60%, use the affiliative humor style in expressing humor interpersonal communications. The affiliative tendency implies that Hispanics enjoy use humor to make others laugh so that close relationship can be strengthened.

Education is seen to impact on Hispanic Americans on their interpersonal communication. With the sample collected, university education has made a difference in the humor styles of Hispanic Americans. Compared to their less educated counterparts, educated Hispanics tend to use the self-enhancing humor style and the aggressive humor style that are usually used in a low context culture. These humor styles are used to express self-interest and own feelings. The self-enhancing humor style and the aggressive humor style can be seen as outcomes of higher education in which a minority group learn to adopt the low context communication style of the majority group. On the contrary, when lacking university education experience, those Hispanics tend to follow culturally bound demeanors, which do not encourage the self-enhancing humor style and the aggressive humor style in interpersonal communications.

It is seen in the sample that the self-defeating humor style is more frequently used by Hispanic women than Hispanic men. The underlying reason is the impact of gender role on women in a collectivistic culture. It can be seen that Hispanic females tend to use the self-defeating humor style because of the subordinate status self-expected by them.

Lastly, it is found that code-switching is more frequently used by less educated Hispanics in the sample to express humor. University education helps Hispanics to become more acculturated and less culturally bound. Thus, those less educated/acculturated Hispanics rely on code-switching for the expression of humor because the message is best expressed in a intra-culturally understandable way using Spanish vocabularies. Overall, cultural norms, gender role, education, and acculturation are found to influence the way humor is expressed by Hispanics in a virtual community.

Theoretical Implications

Our findings extend important theoretical paradigms into the virtual environment. Combining cultural context (Hall, 1976), gender role and identity theory (Burke & Tully, 1977; Tajfel & Turner, 1986), and acculturation theory (Padilla, 1980), we illustrate humor usage patterns and humor styles in a virtual community based on gender and education. Theoretically speaking, this study provides a solid understanding of the relationship between humor styles and consumers' demographic differences. More importantly, culture shapes how humor is socially used. Our findings highlight that the choice of humor style is a learned behavior. Hispanic Americans increasingly use certain humor styles common to Caucasian Americans, indicating learned relational and social behavior. In a broader sense, globalization will increasingly make humor less culturally bound, eventually forming an individualistic, low context environment in the borderless virtual space.

Managerial Implications

Digital marketing managers usually aim to understand consumers' interpersonal communication styles before creating effective strategies for targeting. Linking humor styles to culture, gender, and education, the findings provide clear patterns guiding digital marketing managers in targeting specific segments. For example, when targeting less educated Hispanic consumers via electronic means, using both English

and Spanish humor messages can be more intriguing for the audience. When crafting targeting strategies using humor messages, digital marketing managers should deliberately consider culture, gender, and education to create exceptional humor cues. Vice versa, the misuse of humor styles in communication with certain consumer segments may cause adverse effects. For example, it may not be wise to use aggressive humor style to start an electronic message to Hispanic consumers.

LIMITATION AND FUTURE RESEARCH RECOMMENDATIONS

A noteworthy limitation of the current study is the small sample size of humor usage. Although a total of 400 Hispanic Facebook users are coded, only 93 are actually in the sample to study humor usage. The small sample size limits the power of statistical testing. If there were sufficient number of cases collected and content analyzed for the comparison of different humor styles, compelling evidence can be provided to the five hypotheses. Thus, future research should collect a larger sample to validate and re-test the hypotheses.

The sample collected consists of ages between 18 and 50. The youth generation across cultures has a unique “young culture” that is not culturally bound (Kjeldgaard & Askegaard, 2006). In today’s social environment in the U.S., Hispanic youth may share great similarity with Caucasian youth in interpersonal communications. However, the impact of age group is not taken into consideration. Future research should include the impact of young culture in the study of Hispanic humor styles.

The results of this study rely only on content analysis of a convenience sample of Facebook user profiles. Behavioral variables used to compare the consequences of different humor styles are not included. Future research should extend the findings in the current study to include the behavioral outcomes associated with humor usage. For example, are those individuals who use affiliate humor style more effective in virtual networking compared to those who use aggressive humor style, or those who do not use humor at all? Besides examining additional quantifiable information in the Facebook user profiles, interviews or surveys might offer much interesting other variables to be included in future analysis.

Our early attempt to investigate humor usage and humor styles of Hispanic Americans in the virtual environment may inspire cross-platform and cross-cultural studies in the future. Future research should collect additional data in face-to-face settings to compare the differences of humor usage between computer-mediated communication (e.g., Facebook) and face-to-face communication. Another approach is to collect multicultural data and make comparisons between Hispanic Americans and other cultures to gain insights on the differences of humor styles across cultures.

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Chapter 72

The Tipping Point: A Comparative Study of U.S. and Korean Users on Decisions to Switch Social Media Platforms

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ABSTRACT

While previous researchers have addressed motivations to join and continue using social media, this paper focuses on why users quit certain social media and change their favorite platforms, such as the current shift from Facebook to Twitter to Instagram and Snapchat. Furthermore, this exploratory study seeks to build an understanding of social media usage and motivations for switching from a cross-cultural perspective by comparing findings from Korean and U.S. users. Findings from 19 focus group sessions ($n = 118$) highlight influences regarding modes of usage, user control, commitment, addiction, privacy, perceived relationships, self-construals, and social/cultural trends. Findings are further analyzed and compared in light of relevant theoretical frameworks and cultural differences.

INTRODUCTION

Popularity of social media platforms changes constantly, and there seems to be no infinite winner. For instance, MySpace was the most visited social networking site in 2008, attracting almost 80 million visitors a month (Robards, 2012); now its service has been discontinued. Cyworld used to be Korea's most popular social media site 15 years ago when it had 18 million members, which accounted for a third of

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the nation's population (Han, 2017). Its user base declined drastically and has been replaced by other services. Likewise, KakaoStory once had monthly active users of 42 million (Sprinklr, 2017), only to lose a significant number recently.

The trend continues on: Facebook, the most active and popular social media site in the last decade, is undergoing a decrease in the number of daily active users for the first time, dropping by a million users compared to the previous year (Wagner & Molla, 2018). The social networking service is losing users in the younger demographic, who are increasingly abandoning it for other social media sites such as Snapchat and Instagram (Smith & Anderson, 2018). Twitter also reported losing one million monthly active users in the second quarter of 2018, resulting in a 21% one-day plunge in stock prices (Shaban & Timberg, 2018).

While motivations for using social media have been well-studied (Park & Lee, 2014; Ross et al., 2009; Ryan & Xenos, 2011), there is relatively limited understanding as to why users decide to reduce their use of one social media *and* start another. We believe different cultural norms could influence reasons for discontinuing use of an SNS platform. Therefore, examining the role culture plays in social media usage would be important for establishing scholarly and practical foundations regarding why some platforms retain users and others do not.

To address these questions, the present study attempts to identify why people shift to other platforms by examining motivators and deterrents for using social media, and also by incorporating cultural comparisons. In so doing, this study presents an exploratory look into how cultural background influences the motivation to switch among platforms, resting on the interface of new media research coupled with a cross-cultural approach.

LITERATURE REVIEW

As social media have evolved, users have engaged with the platform, the content and each other, establishing a way of life as it pertains to online—a digital culture (Miller, 2011). Digital culture is unique in that it is shaped and reshaped so quickly, highly participatory and unpredictable (Deuze, 2006), and also because it is highly influential (Enli, 2017). Scholars and practitioners examine social media culture to understand trends (Chae, Stephen, Bart, & Yao, 2017; Jiang, Luo, & Kulemeka, 2016).

Digital culture influences the platform on which they engage, and vice versa. Digital users form virtual communities and culture (Wu Song, 2009). Members determine desired ways to interact with each other, including community-specific practices on word usage and adequate behavior (Sherman, Payton, Hernandez, Greenfield, & Dapretto, 2016). At the same time, the very online space on which users interact influences the usage and culture. That is, specific features and characteristics of social media platforms also determine a collective set of attitudes, behaviors and trends among users (Robards, 2012).

We focus specifically on how these attitudes, behaviors and trends have changed, particularly to understand why people switch to new social media. We believe that the “switch” behavior occurs in two ways: *Switching from a platform* and *switching to a platform*. Users may decide to move away from a platform due to deterrents in their current usage, but also to move toward a new platform due to incentives that attract them to do so. Drawing from pertinent literature, theoretical frameworks for understanding the decision to switch from or to a social media platform can be explained in two levels: 1) at the individual level, associated with the user's own approval (or lack thereof) and 2) at the social level, having to do with communal interactions or pressure/appeal based on such.

Switching From Existing Platforms

An emerging line of research illustrates various factors regarding why users may elect to opt out of social media platforms. This is an important aspect to examine, since quitting one social media does not necessarily stop usage altogether; usage is reshaped in continuation because users still seek engagement through social media.

At the individual user level, studies have found that switching from/quitting a platform occurs due to decreased interest, information overload and concerns on addiction. Empirical findings indicate that users express dissatisfaction when they perceive content to be uninteresting, trivial or banal (Baker & White, 2011; Baumer et al., 2013). Another significant factor deterring usage of social media is information overload. In the age of multiple channels and an abundance of data, escalating amounts of content become too much for a user to handle (Maier, Laumer, & Eckhardt, 2015). This is also closely associated with users' discomfort regarding increased amounts of annoying content (e.g., too many/irrelevant posts, advertisements) (Rainie, Smith, & Duggan, 2013). Also, as users immerse themselves in social media, they become weary of their addiction (Young, Kuss, Griffiths, & Howard, 2017), which at times results in leaving as a countermeasure (Schoenebeck, 2014).

From a social point of view, privacy concerns are a significant factor for quitting a social media platform. This has particularly been prevalent in Facebook studies. For instance, Stieger and colleagues (2013) found that concerns for privacy were stronger among Facebook quitters than current users. Another study posted that violation of privacy may be a make-or-break factor for social media participation (Dindar & Akbulut, 2014).

Moreover, peer and social pressure is another significant factor: When close friends suggest that a certain platform is outdated or undesirable, one may decide to leave (Baumer et al., 2013). This is particularly notable because influences from a collective of users and their behavior shape users' decisions to move away from a social media platform. We believe this could be further explained through the role that culture plays in creating social pressure or diminishing one's satisfaction of a platform.

Switching to New Platforms

On the flipside, people may be motivated to move to new social media platforms because of some kind of appeal. At the individual level, users are enticed with desired features and content. A new service may become available with multimedia components, interactive functions (e.g., commenting, "like" or "share" buttons), or an attractive user interface (Nelson-Field, Riebe, & Sharp, 2012). Such features enhance the user experience and results in increased usage and popularity of a platform (Martin, 2012).

When it comes to social level factors, trends in society—often recognized through activities of social influencers (e.g., celebrities, politicians)—increase the willingness of a user to move to a new platform (Colapinto & Benecchi, 2014). If someone sees their favorite public figure on new social media, they are inclined to try the platform to engage with the mediated figures (Claessens & Van den Bulck, 2015; Colapinto & Benecchi, 2014). Increased media coverage and exposure also hint a new trend or perceived popularity, making the move appealing. As noted in the scarcity principle, the individual does not want to miss out on a trendy social media platform by not acting fast enough (Mittone & Savadori, 2009).

Moreover, a combination of the above increases the likelihood of content receiving more spotlight. This can be further explained with how new platforms become the go-to venue for viral content (Alhabash & McAlister, 2015; Yang & Wang, 2015).

Finally, attitudes and behaviors of other users influence the motivation to move to new platforms. When close friends move to new platforms, users will be inclined to move as well because they seek to interact with their companions (S. L. Lee, Kim, Golden, Kim, & Park, 2016). Credibility is another related factor, since close acquaintances are trusted more for decision making, even when online (Chae et al., 2017). In addition, this kind of user connection spreads through multiple networks at a rapid rate, significantly affecting how social trends are gauged.

Motives to leave current platforms or to move to new platforms are reciprocally associated with why people transition among platforms. However, we note that the literature is scarce when it comes to pinpointing influences that bring about the “switch.” Therefore, this study integrated the two motives in addressing why users shift from one platform to another.

Cultural Considerations

Concurrently, this study explores how the aforementioned motives can be analyzed across cultures. This is especially important because social media usage is influenced by culture, and vice versa. Pertinent literature highlights a number of relevant theoretical frameworks.

Hofstede's Cultural Dimensions

Hofstede (1983) discussed various differences among cultures, particularly Eastern and Western, with the concept of cultural dimensions. Considering the abovementioned social-level factors for switching, a key concept for this study is that of collectivism vs. individualism: In Eastern culture an individual emphasizes the group needs over his/her own needs and the opposite in Western culture. The GLOBE study (Chhokar, Brodbeck, & House, 2007) of 25 cultures further divided collectivism into two sub-categories: Institutional collectivism (collectivism I), referring to the degree to which societal institutional practices encourage and reward the collective distribution of resources and collective action, and in-group collectivism (collectivism II) where individuals express pride, loyalty, and cohesiveness in their social institutions (Schlagwein & Prasarnphanich, 2014, p. 125).

In the context of social media, the differences between individualist and collectivist cultures and corresponding social media usage suggest that social media motivation differs across cultures. Choi and Im (2012) found that Korean users displayed collectivistic behaviors, posting more tweets promoting group harmony than their U.S. counterparts. Kang et al. (2015) also found that U.S. participants use multiple social media (individualistic characteristics) and Korean participants stick to a single one due to their collectivistic culture. We also believe that in the East, in-group collectivism will be especially stronger when it comes to social media use. This is also related to social influence theory (Kelman, 1958, p. 32), where an individual behaves to be more like others (conformity; p. 53). In a culture where in-group collectivism is strong, needs for belonging and esteem are sought through approval from others—we believe the same applies to social media behavior.

High vs. Low Context

Hall (1976, 1989) posits that societies can be categorized as high or low context. This refers to the amount of shared context within cultures that enable the meaning-making of communication messages. Eastern countries such as Korea, Japan, Taiwan, and China are considered high-context societies, where most of

the information in a communication message is readily shared by members of society. Therefore, little information is needed in the coded message, and more implicit and indirect communication may occur. On the other hand, low-context societies such as the U.S., Germany and northern European countries (Hall & Hall, 1990, pp. 6-14) require an abundance of information to be explicitly embedded in communication messages. This is because a low context society lacks a common understanding that allows for facilitated decoding. Relating this differentiation to the abovementioned cultural dimensions, high-context communication is used predominantly in collectivist cultures and low-context in individualistic cultures (Chan, Li, Diehl, & Terlutter, 2007, p. 162).

Relating to the switching to/from discussion above, high vs. low context cultures pose theoretical grounds for understanding the switch motives at the social level. In a high context culture, an individual seemingly has a better understanding of others' ideas, attitudes and behaviors. Thus, motives such as peer pressure (switching from) and social trends (switching to) would have higher influence in these cultures. On the other hand, in low context cultures we may see that individual level motives are stronger, especially if a platform's features enhance or reduce the ability to express one's opinions.

Self-Construal

Self-construal is another noteworthy concept for understanding cultural differences in the social media context. It refers to how an individual construe themselves in light of how they are perceived by others. Markus and Kitayama (1991) argued that Eastern and Western individuals have "strikingly different construals of the self, of others, and of the interdependence of the two." (p. 224) The interdependence results in self-definition and how features of the self are influenced by relations with others. Individuals in many Asian cultures define the self closely based on the fundamental relatedness of individuals to each other—the emphasis is on harmony, "we-ness," and fitting in. On the other hand, Western culture values autonomy in social practice, fostering a more independent self-construal, where uniqueness is promoted and the individual is less conscious of how their own thoughts, feelings and actions will be perceived by others.

To elaborate, Yoo's (2012) analysis of why and how people use social network sites revealed that Korean participants focused on others, pursuing social/emotional support. Moreover, Koreans hesitated to publicly post their thoughts on social media because they were concerned with how others will judge them, whereas U.S. participants stated they freely post their ideas on Twitter and Facebook. Another study found that Asians used social media to maintain contacts and updates with friends rather than going in depth to view others' profiles or posts (S. L. Lee et al., 2016).

This is related to social bridging as well as the need to engage in self-construal by managing relationships based on how others will view the self. Kim and Papacharissi (2009) found that Korean web authors tended to use interlinks and photos of others, which allow for an indirect expression of social status and linking themselves to social groups and institutions (associated with interdependent self-construal in collectivistic cultures). On the contrary, U.S. virtual actors engaged more frequently in direct expression of the self, utilizing direct texts/photos and indicating their likes/dislikes, which is relevant to individualistic and low-context societies. In sum, primary self-construals may differ in individualistic and collectivist cultures, possibly influencing social media usage and discontinuance.

Incorporating theoretical frameworks on social media usage behavior and cultural contexts, we believe that the current study sheds light on understanding users' attitudes and behaviors related to switching social

media. This inquiry is valuable as it extends our knowledge on how social media usage trigger changes in social trends from a cross-cultural perspective. Therefore, we pose the following research questions:

RQ1: What social media platforms do users in the U.S. and Korea use, and what aspects attract them to use those platforms?

RQ2: What do social media users in the U.S. and Korea dislike about social media?

RQ3: What makes U.S. and Korean social media users switch to another platform?

RQ1 and RQ2 seek to address the switching to/from factors—by understanding what social media platforms are being used and what users like/dislike about them, we are able to come up with possible causes that make a user abandon certain platforms or adopt new ones. The third question puts these potential factors in a continuum of social media usage by asking participants about what happened when they actually switched platforms. Synthesizing findings from the three questions will further help compare this phenomenon in the two cultures, U.S. and Korea.

METHOD

This study compared social media users in the U.S. and Korea. We conducted focus group interviews as they allow for a rich, in-depth look at topics through inter-participant interactions (Adams, 2000). We deemed the method appropriate for identification of key themes for exploratory inquiries and an elaboration of those findings through follow-up questions and group discussion (Morgan, 1996).

Sample

Total of 118 social media users were recruited for qualitative data collection. Specifically, nine sessions in Korea and ten in the U.S. were conducted with the goal of eliciting information about the respondents' uses of and motivations on social media, aspects they like or dislike, reasons for joining, reasons for quitting, and reasons for switching to a new social media platform (see table 1). Given the exploratory nature of the study, the sample size was considered adequate. In previous studies with similar approaches, Yoo (2012) interviewed 37 participants, Schoenebeck (2014) had 12 interviewees in a study about giving up Twitter, and Turan, Tinmaz and Goktaz (2013) recruited 20 participants for their social media motivation study.

These countries were selected because of salient differences noted in the literature regarding their communication styles based on cultural contexts. Both countries display high social media usage rates, but comparative studies have noted distinct differences regarding user preferences (H. Kang et al., 2015), modes of online interaction (S. L. Lee et al., 2016), responses to social/political issues (S. Y. Choi & Cho, 2017; S. Kang, Shim, & Kim, 2019), and trends (Oh & Choi, 2017).

Participants from both countries were undergraduate students between 19 and 25 years of age, which represents a key social media user demographic. They were recruited from undergraduate classes from universities in the U.S. and Korea. This recruiting method provided convenient access to the target population, and allowed for stronger social ties (i.e. affinity) as well as similarity in age, education, and social value. Therefore, the sample was a proper representation for addressing the research questions. Everyone in the sample had an experience of switching social media. Almost all participants from Korea

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had Facebook accounts ($n = 47$) and 75% of them used Instagram ($n = 42$). On the other hand, U.S. participants ($n = 65$) mainly comprised of Instagram and Snapchat, users, with about 30% of them no longer using Facebook.

Procedure

Each session lasted 45 to 60 minutes and was audiotaped. Sessions in each country were conducted in participants' native tongue (English and Korean respectively), and the translation of Korean materials to English was adequately executed as all authors are fluently bilingual in both languages. Transcripts of Korean and U.S. sessions were separately analyzed in order to examine cross-cultural differences.

Questions were drawn from existing literature (Baumer et al., 2013; Borowitz, 2013; Rainie et al., 2013; Robards, 2012) on motivations for quitting social media and further developed through a pilot session. In relation to motives regarding the switch to/from platforms, we asked about deterrents or incentives on using social media, and more specifically, how and why participants made the transition. Our questions included, "What was your first social media?" "Why did you stop using previous social media?" "What do you look for in social media?" "What prompted you to start a new one?" and "Why did you move from one to another?" Additional follow-up questions were posed in response to the group discussions.

Table 1. Focus group sessions in U.S. and Korea

	Number of Participants	
	Korea	U.S.
Session 1	6	7
Session 2	7	8
Session 3	8	8
Session 4	7	6
Session 5	7	7
Session 6	5	5
Session 7	5	7
Session 8	5	6
Session 9	4	6
Session 10	N/A	5
Total	53	65

Analysis

By listening to audio recordings and reading the transcripts, the researchers analyzed the data for any emerging ideas regarding motivational and behavioral elements associated with switching social media, and also contextual/cultural factors associated with these issues. Once an initial analysis of the data was complete, concepts were then grouped under larger categories to extract themes. These themes and their

relationships were further analyzed and developed into theoretical constructs. Researchers also reviewed the themes and concepts for their consistency across each cultural context to ensure reliability of the data.

FINDINGS

RQ 1 asked what social media platforms participants in the U.S. and Korea use, and what aspects attract them to use those platforms. The following themes emerged.

Adopting Social Media: Breadth, Depth and Differences

Participants in the U.S. showed they adopted more new platforms and used them on a regular basis. U.S. participants mentioned more social media platforms that have used or are currently using (e.g., Facebook, Twitter, Instagram, Snapchat, Reddit, Tumblr, Pinterest, LinkedIn, YouTube, Tinder, and formerly Vine). Korean participants, with the exception of few, only spoke of Facebook and Instagram. U.S. participants in particular noted a more extensive history of adopting new platforms, and showed more depth and activeness in utilizing social media. For them, exploring new platforms and introductory features (e.g., filters on Snapchat, direct messaging on Twitter and Instagram, stories on Instagram) were attractive. On the other hand, Korean participants spoke of less variety in their social media activities, explaining that they are passive in usage, mostly to view content and kill time:

- “I started with Facebook, and then created a Twitter account, Instagram, and then Snapchat. I joined each service because of some new feature they had, like filters and stories. I stay in touch with all of those platforms still.” (U.S. participant)
- “I do have a wide variety of social media I use on the daily ... Before I go to sleep, there is like this ritual where I go around each one and perform specific tasks, like reacting to a story [on Instagram] or retweeting [on Twitter].” (U.S. Participant)
- “I actually deleted other social media apps. I just have Facebook and Instagram, and I only open them when I’m waiting for the subway or just to kill time, like for five minutes. I only scroll to see if there is something interesting, and that’s it.” (Korean participant)

Using Social Media: To Each Their Own

Over time, the participants reported they formed a specific purpose, usage pattern and liking for each platform. Responses differed for the two countries. Korean users for instance specifically pointed to a clear distinction on how each platform is used, citing “cultural norms.” In several group discussions participants agreed that Facebook is normally used to post more significant events in life while Instagram serves as a place to document everyday life. According to the group conversations, Koreans treated Facebook as a “loud, open public space” while Instagram was regarded as a “quiet, private place.” A notable finding related to this theme was that only Korean participants keen on sharing political ideas chose Facebook or Twitter as their favorite platform. All others preferred Instagram.

On the other hand, U.S. participants used Facebook mainly for networking, Twitter for information consumption and quick expression of ideas/opinions, and Instagram/Snapchat for entertainment. Unlike Korean participants who noted making distinctions for how to use the platforms based on what they

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perceived to be the social trend, U.S. participants reported establishing usage habits based on individual preferences:

- “I observed posts from others, and it looked like this is the way Instagram was supposed to be used, to post little things about life.” (Korean participant)
- “I know that people don’t use Twitter just to get news, but over time it’s become like that. I don’t interact with anybody on Twitter—for that I use Facebook or Instagram ... I try to figure out what works best for me.” (U.S. Participant)

RQ 2 asked participants about things they did not like about social media, because negative perceptions or experiences on social media could arguably be key a key reason for a user’s decision to leave the platform. From this discussion, the following themes were identified. In general, participants’ current “dislikes” were focused largely on Facebook.

Leaving Social Media: No Control, No Friends, No More

This was a theme in both countries regarding Facebook. Because the platform does not allow for much control over what the user sees on the feed (i.e., in comparison to follower-based platforms such as Twitter and Instagram), participants discussed their dissatisfaction on both the content and layout.

Overall, we were able to conclude that this issue arose due to two main elements: 1) The Facebook network becomes overwhelming due to the fact that participants have had the longest history of using the platform and the massive network they had as a result; and 2) irrelevant content such as advertisements, posts from strangers, etc.

- “Some of us call Facebook a wrecked social media, because it shows you irrelevant content that one distant friend of yours may have ‘liked’ or commented on. It looks so ugly and when you see the comments from strangers, they are so mean and messy.” (Korean participant)
- “I hate that Facebook has so many ads that don’t even interest me. I think it’s because it misunderstands my interests.” (U.S. participant)

Related to the above, the kinds of relationships, or lack thereof, were possible turnoffs for participants. For instance, participants from both countries have had Facebook for a long time (five years or longer), and therefore the friends they have on the platform are not as relevant anymore. Also, because it is the most widely used platform, participants (more saliently in the U.S.) mentioned that they do not feel comfortable posting things on Facebook because there are too many eyes (e.g., parents, relatives, employers, distant friends).

A key difference was that Korean participants in particular raised concerns regarding what “friend” on social media really means. For many Korean participants, friendship required a sense of closeness and affection. Therefore, Korean participants showed a tendency to steer away from posting on Facebook, but only on Instagram to comment on close friends’ posts. For them to continue being active on social media, relational values were key.

Leaving Social Media: The “Push Notification” Pushes You Away

Analogous the “lack of control” theme, participants stopped using Facebook because it pushed too much information (e.g., targeted/sponsored ads) to the participants, and they were overwhelmed or irritated by it. Korean participants also mentioned similar experiences when leaving blogging platforms due to over-commercialization.

U.S. participants also brought up privacy concerns regarding Facebook, Instagram (targeted advertisements) and Snapchat (unknowingly being featured on a stranger’s snap post). Of those mentioning personal information-related issues, Facebook was the only platform they actually ended up quitting. Instagram and Snapchat’s trendiness and gratifying factors seemed to outweigh potential concerns for privacy:

- “Fake news on Facebook is very irritating and agitating.” (Korean participant)
- “Facebook distributes sponsored content that are no longer user-generated. They are posts from politicians, advertisers, and entertainers. I don’t want to waste my time reading those.” (Korean participant)
- “I deleted Facebook because all of a sudden I saw too many targeted ads. If I bought a pair of sneakers somewhere, Facebook would show me shoe ads every day. I got a little creeped out, to be honest ... (when asked about whether Instagram ads aren’t worrisome) ... Instagram is creepy too sometimes, but it’s too fun for me right now to quit.” (U.S. participant)

With the final research question, we specifically examined why users left previous social media *and* moved to new platforms. The following were recognized as themes illustrating motives for moving to a new platform.

Switching To: Peer Pressure

Peer pressure was the most prominent reason for moving to a new platform. U.S. and Korean participants alike referred to “I moved because my best friend(s) did” as the most important reason why they moved to new platforms. In fact, this reason was brought up in each of the nineteen sessions that were conducted. This aspect was most salient in the switch from AIM or MySpace to Facebook (U.S.) and Cyworld to Facebook (Korea).

However, we note the stark contrast between the two groups regarding the motives behind switching because of friends. U.S. participants sought more to express and share their thoughts and stories with their friends. To them, “sharing life” was important across all platforms, regardless of which one they switched to (less so with Facebook, as discussed below). Korean participants, en masse, consistently mentioned that they wanted to read or view content from their peers. If content from familiar users weren’t available, the platform was less appealing to them. One Korean participant summed up their perspective as follows:

- “Once my friends leave the platform, there is no one posting things that I want to read. Also, no matter what I post, there is no longer an interaction because no one reads it. So, the enjoyment disappears.” (Korean participant)

Switching To: The In- and Out- of Social Media Trends

This theme highlights the fact that as technology evolves, so do people and the trends/culture they create. Ever since their first social media, participants could gauge how “in” or popular the platform is, and were quick to adapt. Participants in both countries said they tried to understand social media trends from their peer groups, celebrities, news, and by exploring new platforms. This was discernible in the mention of “cool” and “hip” with regard to social media usage among participants in both countries.

Participants from both countries seemed to be sensitive to the trends from their peer groups as all reported on how they took friends’ suggestions by heart. Also, as mobile technologies advanced, participants noted that their taste for interface and appearance evolved. The appearance factor was a key reason mentioned for transitioning from MySpace (U.S. only), KakaoStory (Korea only) or Facebook to Instagram:

- “I made it a point to learn how to use Twitter and all the functionalities, since that was the one now. I didn’t want to fall behind.” (U.S. participant)
- “Instagram looked very clean and visually appealing. I am a visual person, so it looked more stylish than the old-fashioned KakaoStory.” (Korean participant)

In addition, participants from both countries stated how their interests changed over time. As they grew older, they became more fixated on certain hobbies or topics; considering that users’ social media usage patterns were compartmentalized by platform, some users saw themselves heavily using one platform over another. An example could be found with those who quit previous social media that served general functions (e.g., MySpace, Cyworld, Facebook) and took to Twitter (politics, celebrities, sports) or Pinterest (fashion, crafts) for their interests.

Leaving, Switching, Then Streamlining

Once switching (or newly adopting), users reported simplifying or limiting the various social media platforms at hand. Participants, more so in Korea, commented on the difficulty of committing to and maintaining several social media accounts. One participant questioned, “Why do I need another platform when I have this one?” Notably, this discussion was brought up in discussing why Korean participants stopped using Twitter—it was too cumbersome to actively use it, resulting in a number of participants who either dropped it or never got to use it regularly.

Another key external factor unique to the Korean group came up: Spare time. Korean participants agreed that in their teenage years, social media use just was not feasible due to the heavy workload in school. Many participants experienced a lapse in social media use during their high school years, which naturally led them to stop using existing platforms, and then start new ones that were available when they entered college. Such lapses were never mentioned in the U.S. groups.

With the U.S. participants, addiction was also notable factor for limiting social media use. For instance, three sessions had a discussion about being concerned with addiction to social media. Some mentioned that they intentionally stopped using a social media platform (e.g., deleted the app), but also recalled that they came back after a taking a temporary leave. Interestingly, being overly committed to social media was the reason for leaving, but at the same time a reason they decided to come back:

- “I was worried about how much time I spent on Facebook and Twitter, and so I decided to delete both apps. But that only lasted for a couple of weeks because I needed to stay in touch with my family on Facebook and I missed venting on Twitter.” (U.S. Participant)

DISCUSSION

The purpose of this study was to understand why people choose to leave current social media platforms and also why they start different ones. To this end, we explored 1) how participants use social media and what aspects they like about social media, 2) what they dislike about social media platforms they are currently using, and 3) in relation to the above, what made them (or make them want to) switch. In addition, we sought to compare cultural differences between U.S. and Korea based on findings from the above inquiries. The current study illustrates a number of theoretical implications, including those associated with cross-cultural differences.

From the literature, motives to switch to/from social media can be discussed in two levels: individual and social. Our findings are congruent to those from pertinent studies. At the individual level, focus group participants cited reasons such as changing interests, information overload, perceived user control, and addiction for leaving a platform. They mentioned new forms of usage and features as a motive to start a new platform. At the social level, reasons for leaving included peer pressure, privacy concerns and declining popularity of a platform, whereas finding friends and emerging trends were reasons for joining a platform.

We further sought to pinpoint users' motives for actual switching behavior (leaving one *and* starting another). Our key finding here was that these factors are interlinked and work together to influence the switch, a set of circumstances that might be called the *tipping point*. At this juncture, participants lose interest in a platform due to decreased interest at the individual level, confirming this weakened affection through observing a decline in meaningful social interactions. At the same time, these users pay attention to social trends and platforms that are growing in popularity. Eventually they try the new platform, and find ways to adopt its features and enjoy it. For participants in this study, the tipping point was salient in their recent or current move from Facebook (partly Twitter as well) to Instagram. From accounts of many others, a surge of users and content on Snapchat could be explained similarly.

Our approach to look into the switch behavior rather than just quitting or newly adopting was adequate, as we found that social media usage was constantly a continuum for all users, regardless of gender, age or nationality. Leaving one platform did not necessarily mean a steep decline in social media usage overall, as participants migrated to another platform. We also note that the continuous leaving/adopting/switching still resulted in a balanced and consistent level of usage. This was evident in our findings on commitment and self-control regarding how many social media platforms are used, by how much.

This study also explored the influence of culture and how participants from two different countries explained their social media switch decisions. Our findings can be analyzed and discussed in light of a number of theoretical frameworks on cross-cultural comparisons.

Our finding on the diversification and amount of social media usage is applicable to what Luo (2014) calls “width and depth” across cultures (p. 13). Indeed, U.S. participants showed more width and depth, whereas Koreans displayed reservations with regard to self-disclosure and maintained only few platforms (H. Kang et al., 2015). Koreans inclined to use social media for monitoring those around them, rather than for interacting with others (J. Y. Lee, Park, Na, & Kim, 2016). This is also consistent with

previous studies showing U.S. users value social interaction (Pentina, Basmanova, & Zhang, 2016) as opposed to Koreans who seek social recognition and acknowledgment from others in their activities (Y. Kim, Sohn, & Choi, 2011).

Our findings can also be discussed in light of Hofstede's (1983) individualism and collectivism. U.S. participants utilized social media based on individual preferences/needs whereas Koreans allocated their social media resources based on social media culture perceived to be dominant. Particularly, Korean participants' discontinuance can be discussed in light of collectivism. Korean responses hinted in-group collectivism (Schlagwein & Prasarnphanich, 2014), where harmony and uniformity within smaller and emotionally close-knit groups are valued. Koreans' dissatisfaction towards and eventual abandoning of Facebook and Twitter for extremist content (political, social) may have stemmed from feeling placed out of the in-group comfort zone—disruption of harmony was a strong deterrent for Korean participants, whereas U.S. participants only mentioned individual grievances for other users or features.

The contrast between U.S. and Korean participants are also related to Hall's (1976, 1989) notion of high- vs. low-context societies. In a high-context culture, common understanding of coded messages is key. Exemplifying this, a unique concept known as "*nun-chi*" (van Rjin, Bahk, & Stappers, 2007, p. 157) was mentioned a number of times in the Korean sessions. It refers to the need and effort to quickly grasp this common understanding and comply with it—as Korea falls under a high-context society, participants attempted to apply their culture's shared and implied contexts in their social media usage. On the flipside, findings from the U.S. can be interpreted with low-context culture: In low-context societies, individual's intended messages are rarely read in the same ways by others because they do not share similar contexts in decoding messages. Therefore, those in a low-context society need to be more explicit and direct. We posit that this characteristic is associated with U.S. participants' propensity to actively post one's ideas, and also for more tolerance toward highly opinionated posts from others.

Such cultural differences help us further understand why transitions among platforms looks different in the two countries. For example, in the U.S. group, higher levels of interaction and active posting on social media led to more frequent use of social media, and in turn resulted in concerns for addiction. Some participants "shut off" the platform for a while but came back to it later because they wanted the interaction. On the other hand, Korean participants tended to permanently leave a platform once they determined it wasn't for their taste. In other words, underlying motives for using social media influenced social media selection, how much they were used and what the switch behavior looked like in the long run (Stieger et al., 2013).

Both U.S. and Korean responses mentioned friends and peers were key factors for moving to new social media. However, influence from friends and peers resulted in opposite behaviors: Viewing oneself based on how one is construed by others (especially close others) elicited more outward activity for U.S. participants and more passivity and reservations among Korean participants (H. Kim & Papacharissi, 2009; S. L. Lee et al., 2016).

When U.S. participants were concerned about what others might think of them, they looked for additional platforms and more opportunities to communicate with others so as to maximize positive interactions (e.g., views, likes, comments). This was pertinently visible in how participants described their move to Instagram and Snapchat. When they first started these platforms, they knew that their close friends were already users and wanted to post the best selfies (Instagram) and funniest content (Snapchat) that guaranteed, to quote a participant, "at least five likes." In many cases, increased interaction on the platforms seemed to contribute to an improved self-esteem and self-confidence regarding their own portrayals (Thumim, 2012).

On the other hand, Koreans were more careful and passive, often times refraining from seeking out new platforms or actively expressing their ideas due to concerns about others passing negative judgment. An exemplary concept that came up in the Korean sessions is the notion of “*gwan-jong*.” The term translates into “attention-seeker” and is used in a negative way. It was mentioned multiple times in the Korean groups, both as something they disliked about social media platforms (Facebook, Twitter) and a reason why they did not actively post content. Many participants stopped using a platform when they saw “*gwan-jong*” users, or when starting a new platform, chose not to be as active lest they might be labeled as such.

In Korea’s case, a culture critical of the overly active (Tobin, Vanman, Verreynne, & Saeri, 2014) and modesty being a virtue (Hahm, 2004; Zhang, Lin, Nonaka, & Beom, 2005) impacted social media activity, both within and across platforms. Perhaps due to this reason, Korean participants generally downplayed the amount of their social media activity—through follow-up questions, we learned that many Korean participants were using social media more than what they had stated at the beginning. This may closely be associated with how self-representations and modes of participation are shaped by cultural formations and expectations that come as a result (Thumim, 2012, p. 62).

Such findings on awareness of others call for future research on self-construals at the individual level. Throughout the focus group interviews, concerns on how friends/peers would view the self were a key topic that influenced both switching to/from platforms. In addition to overall cultural differences, reasons for quitting and switching could depend on individuals’ self-construal tendencies: Even in collectivist culture, those with strong independent self-construal may object to dominant collectivism on social media. Meanwhile, those with strong interdependent self-construal may choose to move to a new platform because their in-group members have switched, regardless of dominant cultural contexts.

Other findings on reasons for switching included commitment and trendiness. As for commitment, we noticed how external factors such as spare time during teenage years could be a key determinant for a participant’s social media usage and habits in their twenties. This is not solely a cultural matter, as factors such as spare time and daily tasks are determined by many aspects of society and its cultural practices. Trendiness and popularity have to do with changing interests and preferences. Participants reported that these interests changed due to many different influences—some mentioned peers or influencers, and others mentioned one’s own desired personal growth, which are all elements that differ largely based on culture (Martin, 2012).

This paper presents practical implications for the industry as well. Inquiries made in this study aid our understanding of users’ dissatisfactions that drove them to seek other social media. In turn, findings suggest the industry could better adapt to meet user needs and preferences when it comes to their switch behavior—engaging users sufficiently in this regard would bring more users and activity, thereby fostering successful business operations.

Many users reported Twitter or Cyworld to be confusing to use, and MySpace, KakaoStory and Facebook to be unattractive in image/text presentation. Such firsthand accounts call upon the social media industry to better grasp the user experience (UX) aspect (Ferrucci & Tandoc, 2015; Hermida, Fletcher, Korell, & Logan, 2012).

Also, the practitioners ought to revisit approaches to personalized content on social media. In both cultures, abundance of targeted content was a significant turnoff; social media companies and advertisers should carefully review the effectiveness of such content and properly control them. Moreover, modes of personal interaction (e.g., “friending,” “following”) should also be reconsidered to better suit the needs of current users and their digital culture. Obtaining and utilizing information on how users feel

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about the content, interface, people, or features will enable companies to enhance people's motivation to use the platform.

Finally, the cross-cultural analysis from this study will be helpful for catering to different cultural groups or possibly in localization efforts. That is, social media companies ought to examine what their services are being used most for in different cultural contexts, and focus on developing/promoting functionalities tailored to such.

While this study explored important aspects of social media use and sought to provide meaningful cultural comparisons, it is not without limitations. First of all, the topic of social media is a moving target, and new trends as well as platforms may arise—with different features and content—and change the dynamics greatly. Therefore, findings from a study such as this may become outdated rather quickly. For example, changes implemented to a social media platform may quickly result in dissatisfaction, just as this study found that a recent Snapchat update was cause for grief. Future scholars should continue to pay attention to trends and engage in the most relevant and meaningful inquiry. Second, while we were able to conduct focus groups with 118 participants, the sample is still somewhat small and limited to students. We do believe these choices were adequate for an exploratory study of this nature, but we should be careful not to overgeneralize from the findings. Rather, we hope that the detailed, qualitative inquiry from this study would help future studies consider expanding on the scope of this paper. Lastly, we acknowledge that for a future study opportunity on the topic, a more comprehensive, mixed-method approach may help enrich findings. That is, by first conducting a quantitative study to discern generalities and trends of social media usage and then following it up with qualitative data, future studies could explore more profoundly the underlying motivations for making the switch to new social media platforms.

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