Handbook of Research on

Nurturing Industrial Economy for Africa's Development

Fredrick Muyia Nafukho and Alexander Boniface Makulilo

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Handbook of Research on Nurturing Industrial Economy for Africa's Development

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This chapter highlights the extent to which the Tanzanian secondary education expansion policy shaped teacher identity and thereby affecting the country's industrial economy. The study approach was 'qualitative', and social 'cognitive theory' was adopted. The participants' lived experiences were gathered through interviews and document analysis. Findings revealed that the objectives stated in the policy were inconsistent with the actual enactment of strategies in relation to the improvement of teaching career. This has resulted in eroding teacher identity, particularly teacher efficacy. Teachers of this category would not (the author argues) help students to develop their capabilities of crucial to fully engage in industrial development. This chapter, therefore, supports a view that taking into account the social positioning of teachers when educational policies are developed and enacted would enhance their level of professional standards. These teachers may prepare competent school graduates, and hence be able to realise the set country's industrial development goals.

The future for all people in Africa lies in the provision of quality education, promotion and sustaining of lifelong learning. This chapter critically examines quality education, lifelong learning, and a learning society for Africa's sustainable development. Issues pertaining to quality education and lifelong learning are ever evolving and may not be completely addressed at any one time, hence the need for win-win solutions from within and without Africa. The chapter provides evidence-based guidance on how to implement rigorous approaches to quality education as an effective lifelong learning strategy to advance Education 2030 agenda and the Sustainable Development Goal (SDG4).

Early childhood investment in young children 0-8 years is important. It offers a good start in life involving caring, nurturing, and safe environment to children who are the future hope of any society and nation. This chapter seeks to clarify the significance of investing quality early childhood education services for future industrial development and economic growth in Tanzania underpinned by economic growth perspectives. This chapter reports findings from an interpretive phenomenological design in three Teacher education and preschool settings in Tanzania with 10 tutors, 8 preschool teachers, and 8 parent participants. Data was generated using semi-structured interviews, focus group discussions, and documentary reviews. Findings indicated that parents and community from the areas studied lack knowledge of benefits of early investment in education. The study recommends the need for effective future practice directed at improving human development in early years in Tanzania. To achieve these aims, government policy planners need to locate favorable teaching and learning environments.

The objective of this case study is to examine how a farmer, Mr. Alex Omwela Adala, has utilised his talent to create self-reinforcing agricultural enterprises to stand on his own feet. This study addresses a gap in past research on entrepreneurship which tended to focus on profiles of entrepreneurs as well as development and outcomes of investment in businesses. Starting literally from scratch, this farmer has currently nine self-reinforcing agricultural enterprises that have enabled him to cater for his family needs and provide technical support to other small-scale farmers. He has played a key role in founding and managing the Dairy Goat Association of Kenya, Western Kenya Branch. The contribution of this chapter is in using a case study method and a transformative story to learn about talent exploitation for individual and community development. The chapter does not only provide an approach of data collection but also experiential insights and wisdom of an entrepreneur who has travelled the path of investment for 30 years.

The chapter using participatory communication for development approach seeks to gauge the performance of LGAs in drawing the grassroots into taking a leading role in micro-manufacturing development. The study was conducted in Bahi district and it involved two wards, namely Mpamantwa and Bahi-sokoni. Focus group discussions, observation, and interviews were used as data collection methods. A total of 51 participants were used in the study. The results revealed the relationship between industrialization awareness and achievement of industrialization vision. People at the grassroots are still not aware of their role in industrialization process due to lack of education and capacity. At the same time, LGAs also still wait or depend on the central government on the process. The study recommends awareness creation

This study sought to find out the effect of video marketing as a strategy to create awareness on industrial goods and services in order to promote trade in Africa and alleviate poverty in line with the SDGs and the African Agenda 2063. Video marketing involves the use of product content in the form of videos so as to promote a brand, product, or service. An online survey used Google Forms to collect primary data. The respondents answered the questions from web browsers of their choice. Descriptive statistics were used to analyze the data. The study found that most internet users preferred to access the internet via their smartphones and that they usually downloaded entire videos and other advertisements. In addition, a majority preferred You Tube and Instagram. The study recommends the use of you tube and Instagram to advertise goods within the East African market.

DM practices in medical sciences have brought about improved performance in analysis of large and complex datasets. DM facilitates evidence-based medical hypotheses. Nowadays, health diseases, especially obstetric fistula, are increasing. CCBRT reports, approximately 3,000 women suffer from obstetric fistula annually. Since efforts to eradicate obstetric fistula have been inadequate, the researcher was motivated to employ MLA in BIO informatics to detect obstetric fistula. The purpose of this chapter was to use DM techniques to predict obstetric fistula. The datasets involving 367 patient records from January 2015 to February 2019 were collected from CCBRT. The environment was used to describe the accurate of predictive model was CV, ROC, and CM. The research was performed using six different MLA. The accuracy performance between algorithms shows that LR has better accuracies of 87.678%, precision measures of 91%, recall measures of 82%, f1-score measures of 86%, and support measures of 74%. Thus, the researcher chose to use LR as the proposed obstetric fistula prediction model.

In recognition of the importance of ensuring adequate supply of highly educated workers, many countries have expanded and reformed their educational programmes. Despite this, many manufacturing companies are struggling to recruit. Employers have to recruit and organize for trainings to bridge skill gaps. This raises questions on the preparedness of human resource with regard to supporting economic development in countries. It is also a wakeup call for universities to reexamine the kind of education propagated through systems in their countries. The chapter presents ideas on concept of enterprise

In Tanzania, public secondary schools, family, and community partnerships are considered to be low and students' performance in academic and discipline continues to be poor. The objective of this study was to investigate whether school-family-community partnerships in public secondary schools influence students' achievement in Ilemela Municipal. The study employed mixed research methods where questionnaires and interview were used to collect data. The total sample size was 141. Descriptive statistics analysis and thematic analysis was used, and the findings revealed that partnerships have great influence on students' achievement. The study recommends that the Ministry of Education and Vocational Training make policy reforms to encourage a national wide involvement of families and community in school development activities to ensure quality provision of education which will enhance best socio-economic returns.

As the sector of commercialization is expanding, within Tanzania and globally, finding wider markets has become a great challenge. The authors opine that businesses will be enhanced by using local languages. The study maintains that language links with the culture that has a great influence on global marketing such as product design, branding, and distribution process. The study collected data through surveys, interviews, and observation in three regions, namely Iringa, Dodoma, and Dar es Salaam. The results were later analyzed qualitatively using descriptions and tables. Results revealed that out of 60 respondents that took part, 23% of the customers are from the western countries, 20% are from East Africa, 16% from other African countries, and 51% are within Tanzania. The majority, 80%, stated that even though they market their products outside Tanzania, the only languages used are English and Kiswahili. It is anticipated that companies that use indigenous languages will bring their customers individualistically or collectively much closer, widening the products' markets in Tanzania.

This study was designed to analyze the participation of farmers in the public and private extension organizations in Nigeria. Multi-stage random sampling methods was used in selection of 30 beneficiaries from ADP, FADU, and JDPM-RUDEP in three states from Nigeria. Questionnaires were used to collect data and analyzed with descriptive and inferential statistics. Kruskal Wallis test of difference (X2 =0.79, assymp. Sig of 0.72) shows that beneficiaries' participation in the extension services of public and private organizations was not different but correlation results indicated association between farmers' participation

Foreword

This book shares some means of unlocking Africa's manufacturing potential by exploring some key areas that may help Africa mature and launch modernized economies that benefited the developed world industrial economy. The book is unique because, unlike others that have examined industrial economy, the contributors to this book are academics and practitioners who work in Africa and thus their reflections are based on real situation of the continent. Thus, it is destined to be an important footprint in the literature of nurturing industrial economy for Africa's development. Too often this literature is replete with examples for different models and approaches of Africa's human and sustainable development, but with little grounding in empirical data. The chapters in this book are based on research findings and a deepening look at the literature in selected countries in Central, Western, Southern and Eastern African Countries.

The authors discuss many nuances and evolving understandings of nurturing industrial economy for Africa's development in the global economy. As demonstrated by the authors, industrial development is a strategic advantage of critical importance to human and sustainable development in Africa.

In reading Handbook of Research on Nurturing Industrial Economy for Africa's Development, one notices that it examines various innovations necessary for Africa's economic development including drivers of the manufacturing economy such as education, agriculture, human capital, science and technological innovations, language, politics, and business environments.

The book explores strategies to increase Africa's economic diversity, complexity, productivity, and ultimately competitiveness, and for the continent to realize its manufacturing/industrial potential. Further, chapters focus on African countries' industrial economies in the African context and facilitating the fulfillment of the Sustainable Development Goals (SDGs) and the African Union's Agenda 2063.

This book is a valuable reference tool for government officials, economists, industrialists, practitioners, stakeholders, researchers, academicians, and students interested in the industrial economic development of Africa. It is also for use by innovators who have interest on industrial economy development in Africa.

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Preface

INTRODUCTION

Africa is one of the richest continents endowed with diverse natural resources including oil and gas, minerals, water, wind, clean air, and arable land. In addition, Africa is endowed with human resources by being the world's youngest continent. Thus, sixty percent of Africans are under the age of 25 years with a median age of 19 years. During this Fourth Industrial Revolution era, there is an urgent need in Africa to optimally utilize the existing resources to support manufacturing, however, abundance of these resources, the continent lags behind in industrial economy. It is truism that a robust manufacturing sector is not only a necessary but a sufficient condition for any country's human and economic development.

This handbook shares some innovative strategies of unlocking Africa's manufacturing potential especially in the Fourth Industrial Revolution Era by exploring some key areas that may help Africa mature and launch modernized economies that benefited the developed world's industrial economy. The book is unique because, unlike others that have examined industrial economic growth in Africa before, the contributors to this book are academics and practitioners who work in Africa and thus their reflections are based on real situation of the continent. The book presents relevant research on various sectors pertinent to industrial economy. Specifically, it focuses on drivers of manufacturing economy in Africa including education, agriculture, human capital, science and technological innovations, language, politics and business environment.

This book examines various innovations necessary for Africa's economic development. The book recognizes that nurturing industrial economy for Africa requires not only investments in relevant sectors but also supportive policies must be embraced. For the continent to realize its manufacturing/industrial potential, public as well as private sectors must form partnership to increase Africa's economic diversity, complexity, productivity and ultimately competitiveness.

This book informs policymakers, investors, and practitioners on potential areas that may be relevant for nurturing the African countries' industrial economy and thus facilitating the fulfillment of the sustainable development goals (SDGs) and the African Union's Agenda 2063. The book helps scholars focus and rethink on the exact catalyst that will help nurture industrial economy for Africa. This is an academic book to be used by both undergraduate and graduate students including students enrolled in technical training institutions. In addition, policy makers, practitioners, foreign investors in the continent and development partners should find this book quite relevant to their work. The book has the potential to attract close to ten million students in African universities that are the heart of Africa's economic rise. Innovators and investors who have interest on industrial economic development in Africa should also find this book very useful.

In Chapter 1, Lawrent addressed the important topic of educational change and teacher identity in Tanzania and the implications for Industrial Development. This chapter highlighted the extent to which the Tanzanian secondary education expansion policy has shaped teacher identity and thereby affected the country's industrial economy. The author relied on a 'qualitative' and social 'cognitive theory' to conduct the study. The study participants' lived experiences were gathered through interviews and document analysis. The study findings revealed that the objectives stated in the policy were inconsistent with the actual enactment of strategies in relation to the improvement of the teaching career in Tanzania. This has resulted in eroding teacher identity, particularly teacher efficacy. Lawrent argues that teacher who lacked efficacy would not help students to develop their capabilities and to fully engage in industrial development when they transit from school to workplace. This chapter, therefore, supports a view that considering the social positioning of teachers when educational policies are developed and enacted would enhance their level of professional standards. And that teachers who are professional in their work will be successful in preparing competent school graduates, and hence be able to realize the country's industrial development goals.

In Chapter 2, Nafukho and Muyia discussed the idea that the future for all people in Africa lies in the provision of quality education and promotion and sustaining of lifelong learning. They examined important terms such as quality education, lifelong learning and a learning society for Africa's sustainable development. The chapter attempted to provide answers to the following critical questions: What solutions exist for the challenges facing the provision of quality education and lifelong learning in Africa? What legislation and policies should be addressed to promote lifelong learning and quality education? What innovative funding strategies should be implemented to develop and sustain quality education? How do African countries harness technology to enhance quality education and promote lifelong learning? How can gender equity in education be achieved while pursuing quality education? While the authors made effort to provide answers to these pertinent questions, they honestly welcomed and engaged the readers in providing answers to key policy, strategic and practical issues related to quality education and lifelong learning for sustainable development in Africa. They correctly noted, that it would be a mistake on the part of the authors of this chapter to try and provide all the answers to the critical questions raised in this chapter. They added that issues pertaining to quality education and lifelong learning are ever evolving and may not be completely addressed at any one time, hence the need for win-win solutions from within and without Africa. The chapter also provides evidence-based guidance on how to implement rigorous approaches to quality education as an effective lifelong learning strategy to advance Education 2030 agenda and the sustainable development goal (SDG4).

In Chapter 3, Mligo looked at early childhood investment for future economic and industrial development in Tanzania. Early childhood investment in young children 0-8 years is important for it offers a good start in life involving caring, nurturing, and safe environment to children who are the future hope of any society and nation. This chapter clarifies the significance of investing in quality early childhood education services for future industrial development and economic growth in Tanzania; underpinned by economic growth perspectives. Chapter findings are presented from interpretive phenomenological design in three Teacher education and preschool settings in Tanzania with 10 tutors, 8 preschool teachers, and 8 parent participants. Data was generated using semi-structured interviews, focus group discussions, and documentary reviews. Findings indicated that parents and community from the areas studied lacked knowledge of benefits of early investment in education. The study recommended for the need for effective future practice directed at improving human development in early years in Tanzania. To achieve these aims government policy planners, need to create and nurture favorable teaching and learning environments.

In Chapter 4, Khayesi discussed the important notion of talent and the need for Africa to stand on its own feet using a case study of a successful farming enterprise in Kenya. The objective of this case study was to examine how a farmer, Mr. Alex Omwela Adala, had utilized his talent to create self-reinforcing agricultural enterprises to stand on his own feet. This study addresses a gap in past research on entrepreneurship which tended to focus on profiles of entrepreneurs as well as development and outcomes of investment in businesses. Starting literally from scratch, this farmer has currently nine self-reinforcing agricultural enterprises that have enabled him to cater for his family needs and provide technical support to other small-scale farmers. He has played a key role in founding and managing the Dairy Goat Association of Kenya, Western Kenya Branch. The contribution of this chapter is in using a case study method and a transformative story to learn about talent exploitation for individual and community development. The chapter does not only provide an approach of data collection but also experiential insights and wisdom of an entrepreneur who has successfully travelled the path of investment for 30 years.

In Chapter 5, Mwakisisya, Rugeiyamu, and Cyprian looked at blending local government authorities (LGAs) and grassroots for industrial economy through participatory development and effective communication in Tanzania. The chapter used participatory communication for development approach, and sought to gauge the performance of LGAs in drawing the grassroots into taking a leading role in micro-manufacturing development. The study was conducted in Bahi district and it involved two wards of Mpamantwa and Bahi-sokoni. Focus group discussions, observation and interviews were used as data collection methods. A total of fifty-one subjects participated in the study. The results revealed the relationship between industrialization awareness and achievement of industrialization vision. The results of the study revealed that people at the grassroots are still not aware of their role in industrialization process due to lack of education and capacity. At the same time, LGAs also still wait or depend on the central government on the process. The authors recommended awareness creation through participatory communication strategies to both LGAs and the grassroots; and the need to improve the line of communication between the LGAs, grassroots and other key players in the development of industrial economy.

In Chapter 6, Rwamuhuru and Tegambwage investigated types, sources of innovation, and corresponding challenges to commercialization among small and medium-sized industries (SMIs) in Tanzania. A qualitative research design was utilised and semi-structured interview method was used to collect data from study subjects. Findings indicated that incremental, product, and process are common types of innovations introduced among SMIs studied. The major sources of innovations included employees, consumers, user-manufacturer life styles, consequential needs, and best practices by manufacturing firms. Also, it was revealed that SMIs do not follow all steps of the innovation commercialization process. The major challenges facing SMIs in the commercialization process included lack of commercialization knowledge, lack of development infrastructure and fast logistics, lack of strong university industry and public institutions linkage, and regulatory authorities' bureaucracy. The study recommended that SMIs needed to establish strong research and development units, and collaborations with key stakeholders in order to improve identification and commercialization of innovations in Tanzania.

In Chapter 7, Suru and Mwampulo explored sources, symptoms and strategies employed in the management of job stress among teachers for improved work performance. They examined the sources, symptoms and strategies used to cope with job stress among secondary school teachers. The study objectives focused on ascertaining: i) perceived sources of job stress, ii) experienced symptoms of job stress and iii) strategies used to cope with job stress to improve work performance among teachers. Qualitative research approach was utilized. Purposive sampling technique was adopted and data were collected through focus group discussions and interviews. Results of the study revealed that heavy salary deductions, delayed promotion, persisting claims and heavy workload were perceived as the sources of job stress by Science and Mathematics teachers. These factors had undesirable effect on teachers, which intensified absenteeism, turnover, and poor work performance. Sports/games, listening to music and watching television were reported as workable strategies used to cope with job stress. Although these strategies were helpful, others opined them as temporal in relieving job stress. Therefore, school heads should design sustainable socialization programs to lessen stress among teachers.

In Chapter 8, Kangu, Kyule and Mosoti sought to find out the effect of Video marketing as a strategy to create awareness on industrial goods and services in order to promote trade in Africa, and alleviate poverty in line with the SDG's and the African agenda 2063. As pointed out in the chapter, Video marketing involves the use of product content in the form of videos so as to promote a brand, product, and/or service. An online survey using Google Forms was utilized to collect primary data. The respondents answered the questions from web browsers and provided their choice. Descriptive statistics was used to analyze the data. The study found that most Internet users preferred to access the Internet via their smartphones and that they usually downloaded entire videos and other advertisements. In addition, a majority preferred You Tube and Instagram. The study recommended the use of you tube and Instagram to advertise goods within the East African market.

In chapter 9, Fihavango, Mohsini, and Mselle looked at data mining (DM) practices in medical sciences for improved performance analysis of large and complex datasets. They observed that DM facilitates evidence-based medical hypotheses especially during this time when health diseases, such as obstetric fistula, are increasing. As pointed out in the chapter, CCBRT reports, approximately 3,000 women suffer from obstetric fistula annually. The authors noted that since efforts to eradicate obstetric fistula have been inadequate, the researchers were motivated to employ MLA in BIO informatics to detect obstetric fistula. The purpose of this chapter was to use DM techniques to predict obstetric fistula. The datasets involving 367 patient records from January 2015 to February 2019 were collected from CCBRT. The environment that was used to describe the accuracy of predictive model was CV, ROC, and CM. The research was conducted using six different MLA. The accuracy performance between algorithms shows that LR had better accuracies of 87.678%, precision measures of 91%, recall measures of 82%, f1-score measured 86% of the cases, and supported measures of 74%. Thus, the researchers chose to use LR as the proposed obstetric fistula prediction model.

In Chapter 10, Mugambi and Miriti in a conceptual chapter, stated that in recognition of the importance of ensuring adequate supply of highly educated workers, many countries world over have expanded and reformed their educational programmes. Despite these reforms, many manufacturing companies are struggling to recruit talented and skilled employees. They noted further that employers have to recruit and organize for trainings to bridge, skill gaps among newly recruited employees. Mugambi and Miriti observed that disconnect between knowledge and skills offered in the universities and the needs of the workplace raised questions on the preparedness of human resource with regard to supporting economic development in these countries. They pointed out that this was a wakeup call for universities to reexamine the kind and quality of education provided. The chapter discusses novel ideas on the concept of enterprise education, role of university education in nurturing industrial economy, theoretical base for enterprise education, designing curriculum for enterprise education, strategies for incorporating enterprise education in university curriculum, available opportunities for universities to embrace enterprise education and the likely challenges. The chapter presents concludes by discussing some of the progress made by universities in Kenya in embedding enterprise education and implications for educational theory and practice.

In Chapter 11, Shuma and Basela explored the role of career guidance and counseling in promoting graduates' employability skills in Tanzania Higher Learning Institutions. A total of 123 respondents were involved in the study. Data were collected through questionnaires, interviews, and focused group discussion. Results revealed that the higher learning institutions that participated in the study did not have professionals in career guidance and counseling who were solely employed to offer such services, instead the task was left to lecturers and wardens. Career guidance and counseling services were also found to be inadequate and not formalized thereby limiting students' acquisition of employability skills. The authors recommended that Higher Learning institutions in Tanzania should explore the possibilities of preparing students in various competence areas such as academic excellence, career aspects, personal and social skills. This can only be achieved by establishing comprehensive career guidance and counseling units within the institutions.

In Chapter 12, Opiyo discussed role-play as a holistic pedagogy in teaching. For example, the technique instills critical thinking in pupils, enhances emotional intelligence, and improves morality and forms of realism about information being learned. The chapter examined the influence of role-play teaching technique on English performance among pupils with hearing impairment in Kenyan primary schools. In addition, the chapter looked at several elements of role-playing such as games, real-life expression, imitation, positive impact, and the challenges facing the effective implementation of the use of role-play in teaching and learning in primary schools of learners with hearing impairment. The author relied on library research of secondary materials on this very important topic for role-paly technique for hearing impaired students can be effective . The literature was sourced in various databases. The review revealed that role-play improves the self-efficacy of the learner since the technique is grounded in reality. Learning is enhanced when the activities involved are memorable and engaging.

In Chapter 13, Ulomi and Kilavo discussed a Dual Band Frequency Reconfigurable Metasurface Antenna (DBFRM). They developed a single feed metasurface antenna with smooth dual-band frequency reconfiguration. The designed antenna has a simple and compact structure to be used in portable wireless communication devices. The antenna consists of two circular layers of substrate material placed one on top of the other. The lower layer is printed with a rectangular patch antenna on one side and the other side is a ground plane. The upper substrate layer lying on top of patch antenna side is printed with a number of unit-cells on its upper side. To achieve frequency reconfiguration, the upper substrate layer is mechanically rotated at an angle θz in a clockwise direction along Z-axis. Based on rotation angle, the antenna scattering parameters (S11 and S21) of the of the unit cell are subjected to change thereby affecting relative permittivity of the upper layer resulting into a frequency reconfiguration.

In Chapter 14, Kukali investigated challenges and strategies towards Teenage Mother Re-entry Policy (TMRP) implementation in Public Secondary Schools in Bungoma County, Kenya. Given the COVID-19 challenge, there has been a very large number of teen pregnancies in Kenya, hence this importance of this chapter. The stated objectives of the were to: examine extent of TMRP implementation, establish challenges faced and assess strategies towards implementation. Data collection instruments were interviews, questionnaire and document analysis. Convenience, snowball and purposive sampling techniques were used to select 36 parents of TMs, 49 TMs, 19 Principals and Sub County Director of Education respectively. The study established that extent of implementation was low (M=2.40), while the overall challenges were high (M=3.20) with fear, shame and stigma (M=3.73). Strategies to address the problem (M=3.40) with need for parental involvement (M=4.15). The study concluded that implementation was low due to lack of commitment. The author recommended that the Ministry of Education needed to conduct seminars for school administrators and parents on TMRP to realize individual and national economic development benefits associated with TM re-entry into the school system.

In Chapter 15, Engdaw examines the link between decentralization and good Governance. This chapter has mainly four sections. The first section deals with the introduction and background to good governance and decentralization. The second section highlights the meaning, concepts, and elements of good governance as they relate to decentralization. Also examined are the concepts, forms of decentralization, dimensions of decentralization, and factors that determine success of decentralization. The third section insights the relationship between decentralization and good governance. The fourth section of the chapter provides insights about decentralization and good governance in Africa, and when and why decentralization has been introduced among African nations.

In Chapter 16, Mwalongo and Hassan discussed the Massive Multiple-Input Multiple-Output (MIMO) based tetwork planning and performance evaluation for high speed broadband connection in rural areas of Tanzania. The need for high speed broadband connection in rural areas is inevitable since services like e-governance; virtual class rooms, telemedicine, video-on-demand, and home entertainment are needed by the majority of people who live in rural areas. However, in order to provide broadband services, service providers must incur high deployment costs and wait for long time for return on investments. Thus, Massive Multiple-Input Multiple-Output (MIMO) with its favorable propagation phenomenon can be exploited as an alternative to boost signal coverage in rural areas while providing high speed broadband connection. In this chapter planning and performance evaluation for massive MIMO network has been conducted for rural areas in Tanzania. Infovista and MATLAB tools were used for network simulation. The results show that massive MIMO network at 5MHz bandwidth performs better in terms of RSRP and SINRu when compared to 10 MHz and 20MHz channel bandwidths.

In Chapter 17, Otieno, Karanja, and Okuku focused on primary socialization and the formation of child behaviors in Kenya. It is noted in this chapter that early childhood socialization is particularly important in the formation of personality. Through socialization, children learn to make important future choices in all spheres of life. This can be in terms of political, social, and economical and physical decision making. The authors noted that in contemporary society, some children have been reported to use inappropriate language on adults and their mates. In addition, children have fought with their teachers, parents, and adults, burning schools, abusing drugs, engaging in premarital sex, and even trafficking drugs among other social vices. Children have also been seen to value ethnic and religious pessimism. The pessimism has led to the retention of negative ethnicity leading to prejudice and stereotyping. Studies have pointed out poor parenting as the main cause for this disturbing trend of students' behavior. The authors were guided by the social learning theory and cognitive development theory. They adopted a simple analytical framework – the Search, Appraisal, Synthesis and Analysis (SALSA) to examine extant data which was analyzed using discourse and content analysis.

In Chapter 18, Massave, Kiriti, and Mbwambo examined the rating cash crop insurance contracts in Tanzania using nonparametric statistics. Thus, nonparametric methods were used to establish the parameters of cash crop insurance contracts based on zone yields. Secondary historical yields data obtained from the Food and Agriculture Organization of the United Nations (FAO), for the period of 1961 through 2018, for cotton and cashew nuts, were used both in estimating the kernel density function and forecasting the mean yield. The estimated kernel density and mean forecasts were used to tabulate, at a different level of coverage, the probability of loss, the expected yield shortfall (kilogram per hectare, denote kg/ha), and the actuarial-fair premium rates for each crop. The results showed that, at different levels of coverage (i.e. from 50% to 90%), the actuarial-fair premium rates ranged between 0% and 32% of the sum assured. However, the range for cashew nuts was narrow (0% to 8%) while that of cotton was 4% to 32%, a very wide range when compared to cashew nuts. Further, the expected losses for cotton, in the same coverage intervals, ranges from 11.58kg/ha to 256.06kg/ha while that of cashew was 0.44kg/ha to 19.69kg/ha.

In Chapter 19, Byerengo and Onyango examined school-family-community partnerships and its influence on students' achievement in public secondary schools in Ilemela Municipality, Tanzania. As stated in the chapter, in Tanzania public secondary schools, family and community partnerships are considered to be low and students' performance in academic and discipline continues to be poor. The objective of this study was to investigate whether school-family-community partnerships in public secondary schools influenced students 'achievement in Ilemela Municipal. The study employed a mixed research method where questionnaires and interviews were used to collect data. The total sample size was 141. Descriptive statistics analysis and thematic analysis was used to analyze data collected. The findings revealed that partnerships had great influence on students' achievement. The study recommende that The Ministry of Education and Vocational Training needed to make policy reforms to encourage a national wide involvement of families and community in school development activities to ensure quality provision of education which will enhance best returns in the nation's socio-economic development.

In Chapter 20, Mapunda and Alphonce examined the use of indigenous languages for enhanced global Marketing in Tanzania. They pointed out that as the sector of commercialization was expanding within Tanzania and globally, finding wider markets has become a great challenge. The authors opine that businesses will be enhanced by using local languages. The authors argue that language links with the culture and has a great influence on global marketing such as product design, branding and distribution process. The researchers collected data through surveys, interviews and observation in three regions namely Iringa, Dodoma and Dar es Salaam. The results were analyzed qualitatively using descriptive statics and cross tabulations. Findings revealed that out of the total respondents that took part in the study 23% of the customers were from Western countries, 20% from East Africa, 16% from other African countries, while 51% were from Tanzania. The majority 80% stated that even though they marketed their products outside Tanzania, the only languages used were English and Kiswahili. It was anticipated that companies that used indigenous languages would bring their customers individualistically or collectively much closer, widening the products' markets in Tanzania.

In Chapter 21, Ayansina, Adedeji, Ayinde, and Obayelu analyzed the determinants of farmers' participation in private and public extension organizations in Southwestern Nigeria. Multi-stage random sampling methods were used in selection of 30 beneficiaries from ADP, FADU and JDPM-RUDEP in three States from Nigeria. A questionnaire was used to collect data. Descriptive and inferential statistics were utilized in data analysis. Results showed that beneficiaries' participation in the extension services of Public and Private organizations was not different. Correlation results indicated there was an association between farmers' participation in public ($r = 0.279$, $p < 0.10$) and FADU ($r = 0.790$, $p < 0.10$); and benefits derived. It was concluded that farmers' participation in the study organizations were not significantly different, but was associated with benefits from some organizations. Benefit oriented extension programmes were recommended for extension organizations in order to benefit the participants in their specific needs.

In Chapter 22, Said, Manyilizu, and Mohsini developed a dropout predictive system for Secondary schools using classification algorithm. The authors noted that there had been an increase of enrollment rate in government schools, as a result of fee free and expansion of compulsory basic education to form four in Tanzania. However, the completion rate of students was negatively affected by extremely high dropout rates. This study, therefore set out to develop dropout predictive measures in which classification algorithm was used in developing dropout predictive system. The targeted population of this study was obtained by employing purposive and non-probability sampling techniques. The study was guided by system theory and conducted in four councils of Tabora Region in Tanzania because of high rate of school dropout reported in the previous studies. After the analysis, it was established that social factors and academic factors had strong impact on the targeted dropout time. The study recommended the use of dropout predictive system in secondary schools so as to predict the possibility of students dropping out from school and initiate solutions to reduce the high dropout rates.

In Chapter 23, Msoroka pointed out that prison education in Tanzania could be tapped into for industrialization of the country as a strategy to kill two birds using a single stone. This qualitative study explored how prison education could be used to provide necessary work skills to prisoners to enable them become employable, and hence reduce recidivism rates. The author addressed two research questions: (1). What is the link between prison education and industrialization? and, (2). How relevant prison education is, in reducing recidivism among the Tanzanian prisoners? The data were collected through documentary analysis. The findings suggest that there was a close relationship between prison education and industrialization. The chapter also suggested that prison education was a relevant approach in reducing recidivism rates among prisoners. The author argued that providing prisoners with relevant educational programmes might equip them with proper skills to become productive in society, and hence become employable after their release. Thus, giving prisoners a chance to education is like killing two birds with a single stone – developing a skilled labour force for industrial development, and reducing recidivism rates.

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Chapter 1
Educational Changes and Teacher Identity in Tanzania:
Implications for Industrial Development

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ABSTRACT

This chapter highlights the extent to which the Tanzanian secondary education expansion policy shaped teacher identity and thereby affecting the country's industrial economy. The study approach was 'qualitative', and social 'cognitive theory' was adopted. The participants' lived experiences were gathered through interviews and document analysis. Findings revealed that the objectives stated in the policy were inconsistent with the actual enactment of strategies in relation to the improvement of teaching career. This has resulted in eroding teacher identity, particularly teacher efficacy. Teachers of this category would not (the author argues) help students to develop their capabilities of crucial to fully engage in industrial development. This chapter, therefore, supports a view that taking into account the social positioning of teachers when educational policies are developed and enacted would enhance their level of professional standards. These teachers may prepare competent school graduates, and hence be able to realise the set country's industrial development goals.

INTRODUCTION

Reform is an inevitable part of any education system. Most educational reforms, particularly in the developing nations aim at increasing access to education, achieving equity and improving the quality of education. The change in the world market-oriented economy is one of the factors which intensify most educational reforms (Barker, 2008; Tabulawa, 2011). For this reason, creation of learning environment that facilitates better acquisition of a more market-oriented education is an inevitable endeavour as it enhances individuals' creativity, curiosity, and innovation for social and economic success (Barker, 2008). In the last two decades, the international agenda such the World Conference on Education for All, Millennium Development Goals, and Sustainable Development Goals also served as a catalyst for

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most educational reforms. Literature (Hardman, Abd-Kadir, & Tibuhinda, 2012; Vavrus, 2009) points out that educational changes and/or reforms have far-reaching impact. For example, financial educational reforms and elimination of school fees in particular, may enhance enrolment rates of the poor. The introduction of school fees may, however, reduce enrolment among the same low income households. This has implications for labour power availability of potential to contribute to national development.

Educational changes enactment varies from one country to another. In England, for example, teachers are familiarised with, reskilled and upskilled enough before implementing reforms (Braun, Maguire, & Ball, 2010). While teachers are held accountable for this activity, less attention was taken into account by policy-makers about the complexity of environments in which these reforms will be enacted and implemented. Educational reforms in China are top down with decision-making being held by few selected actors (Han & Ye, 2017). Teachers, citizens and other interest groups are strictly prohibited from participating in education reform processes. This suggests that the role teachers' play in reforms implementation is highly overlooked. Akyeampong, Lussier, Pryor, and Westbrook (2013) asserted that reforms which do not involve teachers are likely not to be well achieved. Unlike in developed world, however, political will in developing countries dominates the implementation of educational changes (Little, 2011). As a result of this, changes are enforced to be either autocratically or democratically implemented. However, how this determines and impacts on the quality of education delivery is still questionable.

As with other countries, Tanzania has enacted and implemented various changes and or reforms in its education system. From 1967 to early 1990s, for instance, the integration of education and the world of work was a priority in both primary and secondary schooling levels (Ministry of Education and Culture, 1995). This aimed at ensuring that each school leaver would have at least knowledge and skills useful to the economy (Psacharopoulos, 1996; Vavrus, 2009). Despite this effort, however, teaching and learning resources such as teacher guide and textbooks were extremely limited. In the recent few decades, moreover, Tanzanians have also been witnessing a rapid change in their education sector. These changes include the adoption of primary and secondary education development programmes (Hardman et al., 2012). The secondary education expansion policy, for example, required at least two, three or four villages to build at least one community school. Given the need to address the quality of the tremendously increasing teaching force in the established schools, the Ministry of Education initiated a nationwide in-service teacher preparation, and Teacher Development and Management strategies. The initiation of the two strategies relied upon the assumption that African pre-service teacher inadequately prepared teachers for the conditions they faced in their workplaces (Akyeampong et al., 2013). Similarly, the government promised in the expansion plan that it would hire adequate number of competent teachers in order to enhance teaching and learning. Regular classroom teaching observation was also emphasised in the policy as an important strategy to help teachers grow professionally. Notwithstanding the ministry endeavours to enhance teaching professionalism, evidence shows that most teachers influence student learning below standard (Hardman et al., 2012). This raises concern about whether or not in-service teacher career development was effectively implemented.

Scholars (Schultz & Ravitch, 2013; Thomson & Palermo, 2014) argue that no education reform can be better accomplished without improving the quality of its teachers. These scholars assert that high-quality teachers can increase student learning outcome as compared to low-quality colleagues. The poor student performance trends in the context of the secondary education expansion plan in Tanzania suggest that teacher professionalism was adversely affected. This study, therefore, investigated how the expansion policy affected teacher identity and thereby shaping their abilities to produce proficient labour force. Teacher identity is a crucial factor in determining their professional lives and their commitment to teach, especially when changes are initiated in education systems (Beauchamp & Thomas, 2009). More specifically, this study was guided by one main research question: What category of working conditions in the context of the expansion policy affected the professional identity of teachers? The link between expansion plan, teacher identity, and industrial development will be provided in the discussion and conclusion section.

TEACHER IDENTITY AND HOW IT IS CONSTRUCTED

Teacher identity is a subjective concept because different people perceive it in different ways depending on their environment. Some authors (Beltman, Glass, Dinham, Chalk, & Nguyen, 2015; Siobhan, 2014), however, defined teacher identity as a concept which embraces how teachers view themselves as professionals in the community, their perceptions on how others view them and how they are viewed by the society at large. Typically identity provides a framework for teachers to construct their own ideas, of 'how to be', 'how to act' and 'how to understand' their work and their place in society (Beauchamp & Thomas, 2009, p. 178). According to Canrinus, &, Beijaard, Buitink, and Hofman (2012), five elements provide better understanding of teacher identity: teachers' self-image, job motivation, self-esteem, task perception and future perspective. Teachers' self-image and self-esteem are closely connected to teacher efficacy, which is one of the indicators of teacher identity.

Some scholars (Izadinia, 2013; Kelchtermans, 2009) also argue that emotional states in the form of job satisfaction are related to teacher identity. Teachers' interactions with their own contexts contribute to the construction of these emotions which subsequently impact them as teachers. Beltman et al. (2015) in their study found that prospective teachers in Australian Universities developed their identities as they interacted with their colleagues and their teacher educators. However, in their qualitative phenomenological study, Yamin-Ali and Pooma (2012) revealed that in-service professional development programmes enhanced teacher professionalism in terms of their identities. This suggests that teachers' collaboration with programme facilitators provided their opportunities to develop professionally. Wells (2017) investigated head of preschool teachers' psychological work attitudes and their effect on their career. Findings indicated that job attitudes of the preschool head teachers were influenced by support from their schools and relationships they developed with their colleagues. The lack of support, however, instigated preschool head teachers developing negative identity which consequently increased their risk of quitting from their career of choice.

Co-teaching and co-planning tasks play an important role in the development of teacher identity. Anh (2013), for example, examined the evolution of prospective teachers' identities in a paired placement teaching practicum in Vietnam. The activity theory and Vygotsky's notion of Zonal Proximal Development underpinned their study trajectory. It was observed that supervised collaboration and collegial planning helped to resolve most of conflicts among prospective teachers constructively and in turn shaped their identities. Similar views are well illustrated in Bandura's seminal work. According to Bandura (1977), collaboration in teaching profession provides teachers with opportunities for vicarious learning. When teachers observe their role models, they can also develop their perceptions about their ability to perform the task. If a teacher observes a teaching strategy that fails, he or she may feel less confident. However, if a teacher observes a successful teaching strategy, he or she may feel capable of using it. These feelings have implications for teacher efficacy which one of the elements of teacher professional identity (Canrinus et al., 2012).

Studies have also pointed out diverse ways through which pre-service teachers construct their identities. Ruohotie-Lyhty (2013), for example, explored how Finish novice language teachers developed their identities during their first years at work. This longitudinal study revealed that teachers constructed their professional identity through storytelling. While positive storytelling enhanced their sense of themselves as teachers, negative stories resulted in them developing negative attitudes towards their teaching profession. Some authors (Beijaard, Meijer, & Verloop, 2004; Furlong, 2013) claim that identity is formed through an organised representation of individuals' theories, attitudes and beliefs about themselves. These authors also maintain that identity does not exist in isolation with one's perceptions constructed in their life experiences. This implies that even if novice teachers have limited experiences, they may develop their image about themselves as teachers through observation and their previous life backgrounds as students (Knowles & Holt-Reynolds, 1991). Beauchamp and Thomas (2009), however, conclude that although teacher identity is broadly illustrated, the power of stories in understanding teacher identity, and the role of emotions and reflection in shaping identity is seldom investigated.

THEORETICAL CONTEXT

Understanding teacher identity is complex, because it is socially constructed and dynamic in nature (Furlong, 2013; Naraian, 2010). After formation, identity is shaped and reshaped by contextual factors which typically operate and interact in a reciprocal fashion. Such reciprocity varies depending on the contexts in which individuals and communities belong to (Bandura, 1997; Izadinia, 2013). This study, therefore, was grounded by Bandura's social cognitive theory in an attempt to understand such reciprocal relation as far as the introduction of secondary enactment plan and its impact on teacher identity is concerned. The theory claims that teacher identity in terms of efficacy beliefs is a result of personal, behaviour and environmental factors. According to Bandura (1986), these factors interact in a reciprocal conditioning fashion to shape the functioning of each of the three factors. The theory postulates that individuals' behaviour is affected by environmental factors which subsequently shaped by their behaviour. Individuals act on their environment, but are also shaped by the environments in which they perform their duties. Finally, the theory maintains that personal factors such as ways of thinking, beliefs and values are influenced by individuals' behaviour which in turn impacts on their behaviour (Bandura, 1997).

This study anticipated that teacher identity of Tanzanian secondary schools was likely to be shaped by a range of factors. In the course of the secondary education expansion enactment plan, teachers interacted with diverse contexts such as inadequate resourcing, frequent curriculum changes and inadequate school inspection. Teachers' interactions with such contexts would have an impact on the construction of their identity in terms of self-efficacy which would have influence on student achievement. The nature of the teaching environment strongly determines their attitudes and beliefs which consequently may shape their teaching behaviour (Bandura, 1977). Teachers who perform their duties in supportive learning and working contexts are likely to construct positive identities that will enhance their ability to affect students' outcomes (Bandura, 1986; Jungert, Hesser, & Traff, 2014). By contrast, unsupportive learning, teaching and working environment may result in lowering teachers' aptitude and in turn impact on their sense of themselves as teachers. In the same way, it was understood that the Tanzanian secondary schools function in numerous intimidating challenges such as inadequate professional development and enrolment expansion which would intensify teachers' personal beliefs and attitudes to affect teaching and learning. Inadequate opportunities for in-service career development, for example, would prompt teachers to feel less supported as teaching professionals. This study, therefore, explored the impacts of such challenges on teacher identity.

METHODS

This study employed a qualitative case study approach with interpretivist epistemological position. As Liberty and Miller (2003) emphasise, this research attempted to use a qualitative study in order to discover new and more complex social world in relation to the phenomenon (i.e., teacher identity as constructed by the study participants). The diverse contexts in which the teachers enacted and implemented the new secondary education policy would, (the author) surmised, elucidate how such different contexts impact on teacher identity to bring about meaningful learning. Therefore, a qualitative case study was deemed desirable in generating rich and holistic data about the context in which the newly introduced policy was implemented. According to Kervin, Vialle, Herrington, and Okely (2006) different categories of data can be used in order to enhance the quality of data. This study employed one-to-one interviews, focus group interviews, and documentary reviews. Evidence suggests that once secondary data are incorporated with interviews, they can provide an in-depth overview of the issues under investigation (Hancock & Algozzine, 2006; Hatch, 2002). Therefore, these multiple data collection sources were utilised in order to broadly comprehend the complexities of the impact of the expansion plan and maximise validity and reliability of study results.

Participants and Data Collection

In a qualitative study, sample size depends on the data collection strategies, the purpose of the research and availability of information-rich cases (MacMillan & Schumacher, 1993; Suter, 2006). However, in order to generate thick descriptions and rich data, qualitative studies suggest that sample size should not be so large (Cohen, Manion, & Morrison, 2011). Based on this, only a total of 14 teachers were purposively recruited from two newly established schools. Prior to data collection, permission was sought from the District Executive Directors who were in charge of primary and secondary schools. Then, upon arrival at potential participating schools, the researcher reported to the heads of schools and provided them with an introductory letter and information sheet and a copy of a consent form. Both the District Executive Directors and the heads of schools granted permission to conduct the study. If the head of school volunteered to participate in the study, the author then asked him or her to arrange at a convenient time a short meeting of all the teachers for introductory purposes. Again, during the meeting an introduction letter and a consent form were distributed to teachers for them to decide if they would like to participate in the study. Only teachers who returned a signed consent form were allowed to participate in my study.

The selected schools were synonymised by being given a pseudonym as Riverside and Rock City. Eight out of 14 teachers participated in the focus group interviews (FG) and six of them were individually interviewed (IT). The researcher started with the focus group interviews, and then the individual interviews followed. The purpose of doing this was that the one-to-one interviews allowed the researcher an opportunity to follow up with specific key threads of the conversation that had ensued in the focus group. Evidence demonstrates that teacher identity varies across years of service and teaching qualifications (Pajares & Graham, 1999). Therefore, teachers participated in the individual interviews and group interviews were respectively selected on the basis of years of service and teaching qualifications. Three teachers in each school had at least 10 years of service, while two teachers with diploma in education and two teachers with bachelor's degree in education formed a single group. Teachers with adequate years of service were chosen to take part in the study as they were involved in the implementation of the policy and thus they had first-hand experience of its effects.

Data Analysis

Usually, qualitative studies use inductive logic in analysing data. In this light, the data gathered were analysed using diverse procedures as suggested by Cresswell (2002). Initially, the researcher read the data over and over again in order to become familiar with them. Thereafter, a large amount of data were organised into categories through coding. This aimed at minimising the bulk of data so that it became manageable (Lauer, 2006). After categorisation, the researcher continually scrutinised the data so as to generate more subthemes, as well as identify unique topics. Finally, data chunks were grouped together under subthemes. This process continued until massive data fitted into the identified categories (Kervin et al., 2006; Suter, 2006). In order to allow sound linkage of ideas, themes were logically sequenced. Next to this, the construction of a narrative account and interpretation of findings was done. Once the interpretation was drawn, findings were linked with literature and theory which underpinned the study. This stage is crucial because it does not only provide insights into what is already known in the field of study, but also what is not known from the review of literature (Wellington, 2008). Teachers interviewed were invited to bring any documents and reports that had written about them as teachers. After receiving these documents the researcher discussed these with teachers in order to identify their feelings about their teaching and student learning processes.

FINDINGS

The Tanzanian government promised in the expansion plan that enhance the quality of secondary schooling delivery, it would employ adequate number of teachers and equip their support mechanisms with facilities (URT, 2010). The identified support mechanisms were school inspectoral department as an external feedback provider and appraisal system as an internal feedback provider. Increasing of teaching and learning materials and provision of professional development opportunities for teachers were also among some of the policy priorities (Ministry of Education and Culture, 2004). This study found that there was a mismatch between what was stated in the secondary education reform and the actual implementation strategies in relation to the improvement of teaching career. The general process of increasing teacher numbers, less government's endeavours to enhance feedback support mechanisms, and science subject under-resourcing impacted on teachers' professional identities in terms of their self-efficacy. This lowered the possibility of enhancing secondary schooling teaching and student experience and consequently undermined the expansion reform even further. The sections underneath illustrate the participants' experiences and perspectives with regard to each of the aforementioned policy challenges and their impacts on teachers' professional lives. The link between educational reform (expansion plan) and teacher identity, and their implications for industrial economy in Tanzania will be provided in the discussion section.

The Impact of Increasing Teacher Numbers

Findings show that the increase in the number of schools did not go hand in hand with an increase in the number of teachers. To address this problem, the government developed devised and implemented four week induction courses. Experienced teachers believed that teachers who were exposed to only interim training would not be professionally competent as they lacked knowledge and skills necessary for the teaching profession. These teachers pointed out that many teachers did not learn in detail about how to deal with some professional documents. One of the teachers from Rock City School, for example, provided this evidence: "During the programme, we were only given the schemes of work and lesson plans to look at how they were written, but we were not taught how to prepare them" (Experienced Teacher/IT). Therefore, teachers who participated in this study felt less prepared to influence effective student learning as a result of being exposed to such short course programmes. According to one of the teachers from Riverside School, teachers of this category had a hard time in making sense of the content and taught students without considering their intellectual needs (Experienced Teacher/IT). This circumstance exacerbated students to become truants, thus producing mass failure in the National examinations.

There was also ample evidence which indicated that teachers who engaged in crash programmes were harbouring inferiority complex. This was due to the fact that upon completion of their training programmes these teachers were referred to as licensed teachers. Qualified teachers viewed licensed colleagues as teachers who knew little or nothing at all about teaching. A typical example of opinion from one of the teachers at Riverside School, who was a product of crash programme before he reskilled and upskilled his career confirms this:

It reached a time when, despite our teaching aids, we overheard qualified teachers whispering sarcastically that we were incapable of teaching anything. We felt inferior and lost confidence. Because of this, we developed negative attitudes towards the teaching profession. (Diploma/FG).

The teachers pointed out that the increase in the number of schools prompted the government to expand enrolment in teacher colleges and universities to enable more people to undertake teacher training who, upon graduating from those institutions would be posted to new schools to ease the teaching burden. Although these government efforts to expand institutions were well-intended, teachers were concerned that when their colleagues were in these institutions for upskilling, students were left with few teachers and thus many of the students were not taught the full syllabi. In relation to this, one of the teachers from Rock City School, remarked, "Given that the school had only three teachers, those teachers were being overworked as same they were required to teach, deal with student discipline and also work as a head of department. These numerous roles prompted teachers to become very tired" (Experienced Teacher/IT). This practice was reported to be one of the reasons for the mass failure of students at his school. In the group interview, one of the teachers complained that even though the authorities were aware of this problem, after this mass failure of students, the same authorities blamed teachers that they were not teaching.

Feedback Support

It became apparent that during the enactment of the expansion policy, school inspectors hardly visited schools and provided teaching feedback to teachers. There was a range of perceptions from teachers regarding the impact of school inspectors' irregular visits to the schools. They admitted that school inspectors are important stakeholders in the improvement of education. Therefore, these teachers were of the opinion that a lack of or limited inspection meant that they lacked constructive criticism that would enable them to improve their teaching practice. More specifically, the experienced teachers illustrated that if teachers were regularly inspected they would know the areas in which they had faring well, and would also discuss those weak points in their teaching to rich an amiable consensus. In this regard, one of the teachers from Rock City School remarked: "I might say that I am a professional teacher because I attended teacher training college, but this is not enough as I might still be having problems in my teaching which are best addressed through classroom inspection'' (Bachelor's Degree/ FG). One of the main arguments in favour of these comments is that the infrequent visits of school inspectors prevented teachers from sharing experiences and strategies which would improve their teaching.

The Ministry of Education documents indicated that the secondary education development plan was accompanied by curriculum changes. In order to ensure that these changes were effectively implemented, teachers were expected to be exposed to various professional development programmes. However, evidence showed that while in-service professional development opportunities were available for science teachers, such opportunities were rarely conducted to social and humanities colleagues. As a result, teachers lacked constructive comments of significant to enhance their teaching abilities from their seminar or workshop facilitators. With regard to this, one of the teachers from Riverside School confessed:

In Mathematics, there is a topic known as probability which is very difficult to teach and hence hard for students to grasp it. In these in-service career development programmes, teachers discuss it at length and eventually give what they think are the solutions to the problems that they face when they teach it to their students. Therefore, a lack of or limited in-service teacher preparation programmes resulted in teachers remaining professionally stagnant and less capable of implementing proposed changes to the highest level that is expected of them. (Diploma/FG).

However, once asked to demonstrate how a few teachers who had opportunities for in-service staff development affected their teaching career, one of the teachers commented from the same school remarked:

When a teacher sees a fellow teacher has appointed to attend a seminar or workshop that teacher starts harbouring inferiority complex elements by asking oneself why he or she was not also appointed to attend. This may even affect such teacher's performance in teaching because of the lack of exposure to those seminars and workshops which would enable one to learn different things thus boosting one's knowledge hence confidence in teaching. (Bachelor's Degree/FG).

While the government was criticised for not investing enough resources in the school inspection department to ensure quality teaching and learning, it did implement the Open Performance Review and Appraisal System (OPRAS). The teachers reported that every year they usually filled in these forms which were deliberately established to gauge their accountability and effectiveness in teaching. Although OPRAS forms were supposed to be filled in under the supervision of school heads, many teachers lamented that they always filled in such forms without supervision and they never received any feedback. One of the teachers at Rock City School stated: "In order to realize the strategies that have been devised, there are things which the teacher has to do to implement them and those which the school administration requires of him or her" (Experienced Teacher/IT).

Evidence indicated that since no supervision was made concerning the OPRAS, the goals which were written on those forms were not realistic. This was because what teachers wrote down as weaknesses and recommendations end up only on paper. One of the teachers from Riverside School concluded that the lack of follow up on the filled in OPRAS forms left teachers teaching without any clear focus (Experienced Teacher/IT). Teachers expressed that they were told promotion would be based on the OPRAS criteria. They, however, noted that there were teachers who filled these forms in every year but had never promoted, and there were those who never filled in these forms who got promoted. It was observed that because of this circumstance, teachers filled in the forms simply to avoid being constantly harassed by authority figures.

Science Subject Resourcing

Effective teaching for science related subjects requires students to engage in performing exercises and practical activities. The government promised in the secondary expansion plan that newly built schools would be resourced with equipment and chemicals in order to enhance effective student learning. Despite this promise, however, teachers interviewed were concerned that new schools were not adequately resourced with science materials. One of the teachers at Riverside School complained: “You might find that the school has only five bullets whereas there are 70 students. Given the limited number of available equipment and large classes, how is it possible to conduct a sound experiment?” (Experienced Teacher/IT). The teachers emphasised that since chemicals and equipment were scarcely available, one might find a student who never saw any of these and only came into contact with such during the national examination time. One of the participants from Rock City School pointed out the strategy teachers employed to influence student learning in such large class:

If the teacher is limited with the 80 minutes of teaching, it is difficult for all groups to conduct practical because of the shortage of the materials needed. This shortage of the equipment reduces teachers' ability to implement what they aim at a particular time. It is also difficult to finish the syllabus within time. In order for the teachers to manage time effectively, they may decide to involve a few students in the practical whereas others simply remain onlookers. (Diploma/FG).

Teachers were of the view that in order to perform better in the National Examinations, students were required to memorize and reproduce the theoretical knowledge taught by their teachers. They, however, concerned that less government initiatives in equipping the schools with laboratory resources meant that the government ignored the fact that learning is a process which involves assisting students to comprehend, and regularly rehearse the learned knowledge and skills before they sit any examinations. These teachers were anxious that when students performed poorly in their National Examinations, the first culprits were the teachers. Parents and the community labelled teachers as incompetent and unprofessional. In this regard, one of the teachers from Rock City School stated:

Because our students generally perform poorly, we as teachers do not have a free interaction in the communities which we live. Parents whose children have failed the examinations point a finger at and accuse us that we have nothing to celebrate or be proud of since their students always fail. (Bachelor's Degree/FG).

There was evidence that laboratories and their resources have a great influence on student subject learning interests. The experienced teachers argued that the availability of these possibly attract students' interest in the science subjects. However, the critical shortage of it brings difficulties for teachers to convince students to like science subjects. Laboratories and their resources, therefore, act as motivators for students to opt for science subjects. These teachers went on to explain that the inadequacy of science resources in the newly established schools was among the factors which caused many students to graduate their secondary schooling with no or limited applicable life skills. Again, because of this, teachers were taken to task by being labelled as incompetent to teach. It was observed that with the shortage of laboratories and their resources teachers lost skills they formerly had, therefore making them feel intellectually inferior.

DISCUSSION AND CONCLUSION

The Tanzanian education system encourages secondary-school graduates to be self-reliant and self-employed, and to utilise global market available opportunities (Ministry of Education and Culture, 1995; URT, 2014). However, it is unlikely that these students will be competent when their schools are not provided with quality teachers who can assist them to master appropriate skills, with quality assurance mechanisms, and with the resources to facilitate teaching and learning processes. Before the adoption of educational reforms, especially between 1980s and 1990s, for example, the United Kingdom negotiated with quality assurers and teacher training agency (Poulson, 1998). While quality assurers provided teachers with professional support in order to become proficient in implementing the reforms, teacher training agency devised best fit strategies to meet the pre-service teachers' demands. The assumption here is that educational reforms focusing on improving the quality of teachers prior to their implementation yield more positive results than reforms which do not (Kelani & Khourey-Bowers, 2012; Peng et al., 2013; Wang, Odell, Klecka, Spalding, & Lin, 2010). This is because quality teachers improve classroom teaching practice and thereby facilitating better student learning achievement. Therefore, without recognising factors which affect teachers to develop professionally, effort to reform education systems is likely to have limited impacts (Vavrus, 2009). The multiple roles of teachers in improving quality of education have also become widely acknowledged in diverse international community, particularly the Jomtien Conference in 1990 (UNESCO, 2014; UNICEF, 2000; United Nations, 2015). This has resulted in various governments' to reform and improve quality, with substantial attention to enhancing the quality of teacher preparation.

The present study, however, found that little effort was taken by the government to improve the quality of education delivery departments, and provide teaching and learning resources. This adversely affected the teaching professionalism in terms of identities. As earlier noted, for example, it was evident that since teachers influenced teaching below standard due to the lack of professional support, students failed their examinations. The blames teachers received from parents and the community as a result of poor student performance, I surmise, discouraged teachers as professionals to produce creative, innovative and curious students. This was because these teachers might feel victimised for problems beyond their control and thus diminished the sense of goodwill to help students to learn and perform better in future. Scherr and Johnson (2017) assert that workplace elicits teachers' emotions, and in turn affects their teaching effectiveness. While teachers' supportive working environment enhances their quality of teaching, poor environment, especially labelling from the community leads to higher degree of stress, anxiety and tension (Skaalvik & Skaalvik, 2010). These negative emotional states reduce teachers' job satisfaction and their self-efficacy (Bandura, 2001; Sagone & Caroli, 2014). In this research, however, blames and stigmatisation teachers received from the community as a result of the expansion plan inadequacies prompted them (teachers) to feel incapable of influencing teaching and learning, and subsequently lowered their sense of themselves as teachers.

One might also argue that science related subject under-resourcing not only compromised teachers to demonstrate their skills, but also impeded the students' ability to become competitive enough in the industrial world. However, teachers may feel guilty once such students fail to demonstrate competences needed for the world of science and technology, and the market economy. Peng et al. (2013) contend that in order to enhance economic growth, the developing nations should establish a clear link between individual competences and national development. To Peng and colleagues, failure to create such a link may result in poor quality teaching and realisation of curriculum reforms in particular. Should this happen, teachers feel disenchanted as educational professionals. Hong (2010) in his research found that teachers who were discontent perceived themselves less confident to teach and therefore left their career of choice. Similarly, if teachers interviewed in the Tanzanian context would think of leaving their teaching because of under-resourcing, students would be denied of their opportunities to quality education

In line with Oketch (2016), and Nicoletti and Rabe (2018), this research revealed that educational reforms and school financing are inseparable entities. If the government would allocate adequate financial resources, the Ministry of Education would be able to equip new schools with science teaching and learning materials, provide adequate professional development, and improve school inspectoral department. Once these were realised, the quality of teaching and learning would be enhanced and student learning achievement would increase. Consequently, teachers would earn great respect and trust from parents and the community because they believe that these teachers are capable of teaching and producing good results. Teachers of this category could feel valued, proud, elated and comfortable. This enables teachers to teach energetically with the sole aim of maintaining the teaching personality in its positive image.

Given that secondary education reforms in Tanzania operated under intimidating challenges which impacted on the quality of teaching and learning, I would argue that graduate students not only lacked the competences central for sustaining their livelihoods but also competences significant for contributing to the socio-economic development of their country. Research by Devos (2010) indicates clearly that students who learn in poor or substandard or unsatisfactory environments or have a high probability of being taught by under-prepared teachers will exhibit poor academic performance. This paper, therefore, draws the attention of the government of Tanzania to the importance of the social positioning and adequate preparation sufficient high-quality teachers when educational policies are developed and enacted. These teachers may devise different strategies of how to bring about meaningful student learning. Students who are well prepared in these two aspects are likely to become capable of implementing the Tanzanian economic policies and the Integrated Industrial Development Strategy 2025 in particular (URT, 2014). However, if teachers are inadequately prepared their professionalism in terms of their identities will be detrimentally affected. As a result, the set educational and industrial policies will be not successfully accomplished.

As earlier noted, findings of this study revealed that the mismatch between the policy statements and the actual implementation of strategies affected teacher identity. The insights gained from this study, therefore, have the potential to directly influence educational policy, practice and theory in Tanzania. The government may integrate the issue of industrial economy in various levels of secondary schooling curriculum. The identification of any such limiting influences offer guidance for the government of Tanzania as it endeavours to create an environment conducive to enhancing the quality of secondary education delivery. This research provides useful information towards helping the government, through the Ministry of Education, Science and Technology, to initiate programmes that will foster a teacher's ability to teach in an enthusiastic, confident, capable and professional manner.

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KEY TERMS AND DEFINITIONS

Educational Reforms: Changes or innovation introduced in the education system in order to improve the quality of teaching and learning.

Industrial Development: The growth of industrial sector as a result of initiatives taken by the government in collaboration with other individuals.

Policy: A plan of action geared towards achieving the set goals.

Policy Enactment: Ways in which policy is interpreted and translated by different policy makers or actors in different contexts.

Professionals: Individuals or teachers who usually use knowledge and skills to teach and or solve different problems related to teaching and learning.

Teacher Professionalism: How teachers integrate their roles with knowledge and skills in order to enhance effective teaching and learning.

Chapter 2
Lifelong Learning and Quality Education for Sustainable Development in Africa

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ABSTRACT

The future for all people in Africa lies in the provision of quality education, promotion and sustaining of lifelong learning. This chapter critically examines quality education, lifelong learning, and a learning society for Africa's sustainable development. Issues pertaining to quality education and lifelong learning are ever evolving and may not be completely addressed at any one time, hence the need for win-win solutions from within and without Africa. The chapter provides evidence-based guidance on how to implement rigorous approaches to quality education as an effective lifelong learning strategy to advance Education 2030 agenda and the Sustainable Development Goal (SDG4).

INTRODUCTION

The Association for the Development of Education in Africa (ADEA), correctly noted that building strong partnerships among governments, organisations, agencies, communities and individuals was the best to support the provision of quality education in Africa. (ADEA, 2015). In addition, ADEA argued that lifelong learning should be advanced by creating opportunities for people to learn through formal, informal and nonformal settings.

The African Union Commission (AUC) on the other hand noted that the Pan African Vision for Africa is a*n integrated, prosperous and peaceful Africa, driven by its own citizens, representing a dynamic force in the international arena*. In order to achieve this vision, the Golden Jubilee Summit of the Union in September 2015 came up with a solemn declaration which identified key areas including: social and

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economic development; integration, democratic governance and peace and security. In order to make the solemn declaration a reality, the Golden Jubilee Summit of the Union directed the African Union Commission (AUC), supported by the New Partnership for Africa's Development (NEPAD) Planning and Coordinating Agency (NPCA), the African Development Bank (AfDB) and the UN Economic Commission for Africa (UNECA), to prepare a continental 50-year agenda through a people-driven process outlining the Africa We Want, namely Agenda 2063 (AUC, 2015).

It is argued in this chapter that quality education for the youths and women and lifelong learning for all are fundamental to the achievement of the Pan African Vision for Africa. It is significant to note that the concept of lifelong learning goes back to the origin of life in the continent of Africa (Nafukho, Amutabi & Otunga, 2005; Youngman, 2001). Thus, the African traditions like many other traditions world over encouraged continued learning. Children learned from adults how to live and function in society. And adults likewise learned from children and fellow adults. Learning was part and parcel of life in Africa even before the arrival of the missionaries. As noted, "it is evident that the practice of people learning throughout their lives was characteristic of pre-colonial African societies" (Youngman, 2001, p. 7).

Omolewa (1981) observed that the Nigerian traditional society provided a variety of informal and non-formal adult learning situations within a lifelong learning context. In this chapter, it is noted that people in Africa continuously learned in non-formal and informal environments. Youngman (2001) and Nafukho, Amutabi and Otunga (2005) noted further that the elders in African societies, especially grandparents, parents, uncles and aunts played a major role of passing on to younger adults and children, essential knowledge, skills and values. This is quite in line with the concept of lifelong learning. Therefore, like many other societies in the world, the African societies valued and promoted lifelong learning from one generation to the other. With the advancement of technology and knowledge economy that is demand driven, there is an urgent need to revisit the concept of lifelong learning in Africa. In addition, with the cultural shift among African families where the roles of uncles, aunts and grandparents are diminishing, African policy makers and educators have to rethink the issue of lifelong learning.

METHOD

To successfully carry out this study, the literature review was conducted using academic literature databases, Ebsco, Proquest Research Library Plus, and Academic Search Premier. The search terms that were used are adult learners, adult learning, learning, lifelong learning, quality education, quality assurance, adult education, self-directed learning, experiential learning, curriculum development, human resources, teachers, and lifelong learning policies. The references from books and articles were used to identify additional material on the topic of quality education and lifelong learning with a focus on Africa. On the importance of literature review, as a method of research, it is noted, "Although the literature review is a widely recognized genre of scholarly writing, there is no clear understanding of what constitutes a body of literature. Each reviewer must decide which specific studies to include or exclude from a review and why" Kennedy (2007, p. 139). In the case of this chapter while a wide review of literature was conducted, only the studies relevant to adult learning, lifelong learning, quality education, quality assurance, adult education, lifelong learning practices were included in the final writing.

MEANING OF LIFELONG LEARNING

Lifelong learning is a "form of learning that occurs throughout life and that is crucially important for enriching personal lives, fostering economic growth, and maintaining social cohesion. The aim of this kind of learning, is to equip the individual with the necessary foundation and to improve the motivation for continued learning" (Paye, 1996, p. 1). It is a truism that human beings learn throughout life, from the cradle to the grave (Gustavsson, 1997). People, through learning, develop abilities and adapt to the environment into which they are born and raised. Most of what human beings learn occurs in their everyday life. This may be at home, in the street, in the church, mosque, synagogue, temple, shrine, market place, on the farm, at school or in the workplace. The notion of "lifelong learning implies a broad approach to knowledge and has some holistic view of education in which formal and informal types of learning can be integrated with one another and considered in one context" (Gustavsson, 1997, p. 239). Lifelong learning in Africa needs to be examined from multiple dimensions and contexts as noted, "horizontally in the home, local community, economic environment and the mass media, and vertically between different levels of learning such as elementary, secondary and college levels" (Larsson, 1997, p. 251). Thus, lifelong learning in Africa needs to be conceptualized as integrative and should be founded on the notion that people learn in different ways no matter where, when and why.

THE STATE OF LIFELONG LEARNING IN THE WORLD

To emphasize the importance of lifelong learning to the entire world, Faure (1972, p. 83) noted, "We propose lifelong education as the master concept for educational policies in the years to come for both developed and developing countries." Since Africa does not exist in a vacuum, it is pertinent that we first examine the policy, strategy, and practical issues related to lifelong learning at a global stage. In the case of the Asian societies, "… the idea of lifelong learning has a very long history and its origin could be located in ancient times" (Mok & Chan (2002, p. 3). In Europe, while the notion of lifelong learning has existed for centuries, however, its contemporary form and adoption in various education policies can be traced to the 1960s (Nafukho, Amutabi & Otunga, 2005). Mok and Chan (2002) noted that in the 1970s and 1980s, Intergovernmental organizations such as UNESCO played a very significant role in forming policy of lifelong learning. In addition, UNESCO, OECD and EC played a critical role in designing policies that enhanced lifelong education, recurrent education and continuing education on a global stage (Alanen, 1981). In the 1990s, the concept of lifelong learning gained renewed recognition in a number of Western and Asian countries. This renewed prominence of the concept has been attributed to "changes in the nature of work and global competition; rapid technological development; demographic shifts; the increase in human knowledge and expanded social demand; cultural and lifestyle changes; and political concerns of opportunity and social inclusion" (Youngman, 2001, p. 1). In North America, the G-7 Charter on Lifelong Learning pointed out that lifelong learning was necessary for the achievement of societal and economic goals (U.S. Government, 1999). In November 1994, UNESCO held its First Global Conference on Lifelong learning in Rome. Federico Mayor, the then director-General of UNESCO, advocated for the idea of lifelong learning. In Europe, the European Union chose the theme of lifelong learning for the year 1996. To show the importance of lifelong learning in the 21st century, it is noted "… a dominant theme in current education policy, especially in Europe and North America has been the creation of access to lifelong learning through the educational system…" (Mok & Chan, 2002, p. 4).

In the case of Africa, in 1996, the Africa Regional Consultation for UNESCO's Fifth International conference on Adult Education (CONFINTEA) pronounced the *Dakar Declaration on Adult Education and Lifelong Learning* (Youngman. 2001). Lifelong learning was considered as being a fundamental right and a prerequisite for individual development and social change. In 1998, the Seventh Conference of Ministers of Education of African Member States had its theme *Lifelong Education in Africa – Prospects for the Twenty First Century.* While policy rhetoric supports the need for lifelong education in Africa, in practice, African leaders and scholars face a major challenge of transforming this policy into practice. For instance, the idea of providing lifelong learning for all in Africa has been questioned. How practical can this important concept be integrated and provided through formal education, informal education, non-formal education and through horizontal integration between education and work? (Munene, 2016; Youngman 2001). Nafukho, Amutabi and Otunga (2005, p. 152) noted "… While the lifelong learning model that is currently being implemented in the West should not be copied wholesale, educators and policy makers in Africa have a major challenge of shaping the direction of lifelong learning based on the current needs of African societies." Thus, paying attention to individual context of African countries is critical in designing and promoting lifelong policies.

LEARNING SOCIETY

A learning society has been defined as "…one in which everyone participated in education and training throughout their life. It would support them as citizens in their employment and leisure. A learning society would also make provision to match these enhanced aspirations" (Ball, 1991, p. 6). A learning society has also been interpreted differently in various contexts and various countries of the world. While some focus on economic functions of a learning society, others attach significant weight to social, political and environmental dimensions. Edwards (1995, p. 187) observed that a learning society is one that has the following key characteristics:

- An educated society committed to active citizenship, liberal democracy and equal opportunities;
- A market in which educational institutions provide educational services to individuals for enabling them to compete in the economy;
- Networks, which enable learners to develop their interest and identities by drawing a wide range of resources.

On the importance of a learning society, Apps (1999, p. 19) noted, a learning society is one in which:

1. a practical idea for human beings living in a rapidly changing world where a lifetime of learning is a requirement for survival;
2. an attitude that learning need not only occur for practical reasons but can happen for its own sake;
3. a unifying attitude, and an approach for bringing together an ever more diverse society; and
4. a metaphor for a new age of defining the relation of education to learning, and a recognition that educational opportunities and thus learning potential go well beyond what is provided by those institutions we ordinarily associate with education.

Thus, a learning society as explained above is closely related to the concept of lifelong learning where members of a given society are engaged in life time learning. The four points above clearly explain how to create a learning society in Africa, in which lifelong learning has to be promoted for both investment and consumption motives (Nafukho, 1999). While the African society may not have embraced learning as defined above, there is evidence to show that the African societies have been learning societies even before the introduction of the Western type of education. As noted, "In fact it can be argued that pre-colonial African societies represent a particular form of the *learning society* and that it was the colonial intrusion, which disrupted this pattern through separating education from daily activities and locating it in the Western institution of the school. This does not mean that the African society has not been a learning society" (Youngman, 2001, p. 7). It is therefore important to question what form of lifelong learning should be promoted in Africa in the twenty first century and beyond. While some aspects of traditional African culture should be incorporated in the current concept of lifelong learning, new and emerging models of lifelong learning such mobile learning, instant learning, incidental learning, self-paced learning need to be considered.

LEARNING COMMUNITIES

Stein and Imel (2002) noted that learning communities have four common themes, namely:

- The place where learning takes place,
- The content learned,
- Production of knowledge, and
- The structure of learning societies.

Therefore, space, which relates to the time and place in which issues to be learned are situated, is important. Content relates to the community's daily life and allows learners to express personal challenges and possible solutions. Knowledge learned should be locally produced and all learners in the community should be encouraged to produce useful knowledge. Thus all learners should seek to produce knowledge and not merely being consumers of knowledge. Learning communities, if well supported and encouraged in Africa should establish a voice to reckon with in society and offer solutions currently facing the youths such as employability and inclusion of the youths in the talent development processes.

NEED FOR A LEARNING SOCIETY AND LIFELONG LEARNING IN AFRICA

In this knowledge society characterized with rapid social and economic transitions, education has become central not only to the survival but to the thriving of societies. "Only if learning is placed at the centre of our experience can individuals continue to develop their capacities, institutions enabled to respond openly and imaginatively to periods of change, and the difference between communities become a source of reflective understanding" (Ranson, 1994, p. ix). Encouraging and supporting learning societies and communities that combine the positive aspects of traditional African cultures with the positive aspects of the western type of education should be encouraged. To address challenges such as unemployment, radicalism, terrorism, rural urban migration, cyber insecurity, digital divide, low education quality and income inequalities, education is not only necessary but a must. A learning society and a functional learning community should create socially competent people who can question what is happening around them and seek positive solutions. Learning that takes place throughout an individual's life may not only equip the learners with knowledge, but should also address social, economic, environmental and ethical issues.

The need for a learning society and lifelong learning is also necessitated by change that is taking place as a result of the knowledge revolution. In the knowledge society, change is a key factor and hence the need for lifelong learning. Change may outdate present skills; create new demands on the individual and present new opportunities for individuals (Miller, 1985; Naisbbitt & Aburdene, 1990).

Technological advancements and the use of the Internet are now major forces that are driving change in Africa. Changes in technology create a continuous set of changes in the workplace, at home and on individuals in society. The world in which we live requires each individual to update knowledge and skills frequently. This necessitates lifelong learning. In the case of Western societies that are now living in post-industrial society, lifelong learning is not only a necessity but also a must. In the United States of America, for instance, the amount of new knowledge being generated is enormous, therefore, remaining on one job for a long time is not practical (Laudon, Traver & Laudon, 1996). Consequently, lifelong learning which may be non-formal, formal or informal has been encouraged (Merriam & Brockett, 1997). In the European Union countries, a lifelong learning policy has been put in place as the only strategic policy to make these countries competitive in the world economy driven by knowledge and ideas.

The dynamics and rate of technological change support the concept of lifelong learning. As technology upgrades the skills and knowledge requirements of jobs change hence the need for continued learning. African countries need to organize their educational systems in such a way that any individual may obtain additional skills as demanded by the life and work environments, hence the value of lifelong learning. In this century, lifelong learning has become essential in Africa for a number of reasons such as:

- the social changes taking place in African families and communities;
- disease such as Ebola, HIV/AIDS that threaten to wipe out the entire African population;
- demographic changes leading to younger children who are orphaned with no adult to take care of them;
- ethnic conflicts in newly independent African countries such as Eritrea and South Sudan;
- economic pressure from outside Africa with vested interest in rich minerals such as diamond, coltan, gold and oil;
- technological changes driven by advances in information and communication technologies;
- political instability; cybersecurity, terrorism, and increased demand for education at all levels (UNESCO, 2005; 2014; 2015).

These issues arise from within and without Africa. And the only way to address them is through continued learning, hence the need for lifelong learning, adult learning programs, and workplace formal and informal learning programs.

LEGISLATION AND POLICIES TO PROMOTE LIFELONG LEARNING

Regarding legislation and policies aimed at promoting lifelong learning, the first issue that needs to be addressed is where to house adult learning and continuing professional education programs. In several

African countries, adult learning programs are housed in the ministries of labour, Youth and Sports, Home Affairs, etc. We would like to argue here that adult learning and lifelong learning education programs should be housed in the ministries of education of the respective African countries. But since, lifelong learning transcends all ministries, there should be a multidisciplinary approach to lifelong learning and adult learning. Mok and Chan (2002) observed that, while it was difficult to reach a consensus on the notion of a *learning society,* the ideas of *lifelong learning, learning society* and *continuing education* have become increasingly important in shaping the direction of educational development in the West and in Asia. We believe that the same trend is being witnessed in Africa as highlighted by AUC (2015). The European countries came up with the European Commission White Paper entitled: *Teaching and Learning – Towards the Learning Society* in 1995. The White Paper pointed out that three factors of upheaval were being witnessed in the European countries, namely "the impact of the information society, the impact of internationalization, and the impact of the scientific and technical world" (European Commission, 1995, p. 5-6). The white paper proposed five policy actions necessary for establishing a learning society. The policies recommended included:

- Encouraging the acquisition of new knowledge through establishing an accreditation system covering technical and vocational skills;
- Increasing student mobility and the importance of social media
- Bringing school and the business sector closer together by developing apprenticeship/trainee schemes in order to provide vocational and technical training
- Combating exclusion by offering second chance schools and extending the scope of the European voluntary service
- Treating capital investment and investment in education and training on an equal basis (European Commission, 1995).

In the case of Asia, several countries have continued to review their education systems with a focus on creating learning societies. For example, in Hong Kong, the Hong Kong Education Commission stated that the overall aims of education for the country in the 21st century included:

- Enabling all learners to develop to their full potential in all areas covering ethics, intellect, physique, social skills and aesthetics;
- Preparing all learners to be ready for continuous self-learning, thinking, exploring, innovating and adapting to changes throughout life;
- Equipping learners with self-confidence and team spirit;
- Creating aspirations among all learners for the willingness to strive persistently incessantly for the prosperity, progress, freedom and democracy of the society,
- Preparing all learners to contribute to the future well-being of Hong Kong and the world at large (Education Commission, 1999, p. 15).

Every country and/or continent is faced with unique kinds of challenges that require unique solutions. For instance, in several East Asian countries, usually referred to as Asian Tigers, like Hong Kong and Taiwan, the economic crisis of the 1990s made these countries to re-examine the role of education in managing economic and social crises. In the case of Hong Kong, it is noted, "…young people must be outward-looking, imbued with a spirit of exploration, able to make use of IT, able to master different kinds of knowledge, and willing to strive to improve through continuous learning. To enhance our competitiveness, Hong Kong has to shift to high value-added and technology-based production and services. We need people who are creative, versatile, knowledgeable and multi-talented" (Education Commission, 1999, p. 9). While these sentiments may be relevant in Asia, African policy makers and educational leaders may find the words even more relevant to the situations facing several African nations.

In Taiwan, another successful Asian economy which faced economic challenges as those faced by African countries, the Ministry of Education (MOE) published an education report aimed at promoting lifelong learning and establishing a learning society. The report clearly articulated various implementation strategies for achieving lifelong learning, including; constructing a legal system for lifelong learning and nurturing people's notion of lifelong learning. (Mok & Chan, 2002). In the case of Africa, policy makers, educational planners and educational implementers should be pricked to reflect on the relevance of these innovative lifelong learning programs.

LIFELONG LEARNING PROGRAMS IN AFRICA

While this chapter has identified actionable plans undertaken by countries outside Africa to promote lifelong learning, it is important to specifically focus on lifelong leaning policy issues in Africa. First, it is critical to note that many countries in sub-Saharan Africa have different contexts and education systems and different social, cultural, economic, and political environments. The policies suggested here should however be implemented with great care and consideration of every country's specific context. They should serve as resource for educational policy makers. Given the important nature of the education industry, every government in Africa should give education a priority. Thus, the role of the state in the provision of quality education and lifelong learning should be direct and visible. Quality education and lifelong learning programs should not be left to international organizations and non-governmental organisations.

The governments, in various countries in Africa, should intentionally initiate policies of decentralisation in the education sector. This will give individual educational institutions' autonomy to develop actionable plans aimed at serving the communities where the institutions are situated. National and local governments should however play a proactive role in the reviewing and restructuring of the education systems as it has been done in Europe, North America, Hong Kong and Taiwan. Africa requires purposeful governments that recognise the important role of lifelong learning. While the traditional African societies promoted learning societies, the introduction of western type of education that requires monetary investments has denied access and opportunities to many people in Africa. Given the important nature of lifelong learning and quality education, we propose the need for education reform in Africa that will seek to make lifelong learning available to everyone in society. While this may sound impossible, we believe that it can be achieved if there is government will and support. Regarding the policy environment for quality education and lifelong learning in Africa, Youngman (2001) argued that a number of factors must be considered.

Firstly, the nature of the state must be analysed. Is the state 'developmental' in terms of public policy and planning to intervene in developmental processes, or is it 'minimalist' in terms of prioritising the role of market forces in economic and social development? Countries that implement Structural Adjustment Policies imposed by the World Bank and IMF reduce state intervention and the provision of social services, and hence are unlikely to regard lifelong education as an important area of state activity (p.8).

While the above observation is true of most African countries, it is logical to argue that lifelong learning should be considered a basic human right and every effort should be made to engage everyone in society in some form of learning. Using the Botswana example, the current education policy in Botswana as expressed in the *Revised National Policy on Education* endorsed both the philosophy of education as a lifelong process and the goal of creating a learning society. This should be the right channel for all governments in Africa. Nafukho, Amutabi and Otunga (2005, p. 159) recommended the need for a *White Paper* on educational reforms and restructuring in individual states in sub-Saharan Africa. Such a white paper could focus on the following pertinent issues:

- The need for stable partnerships between stakeholders;
- The need for stronger advocacy;
- Reforming the entire school education system to include aspects of lifelong learning
- Strengthening the administrative support of the educational institutions;
- Encouraging business enterprise to participate in lifelong learning;
- Launching of research and policy studies on lifelong learning
- Establishing a legal framework for lifelong learning;
- Increasing lifelong learning opportunities;
- Integrating lifelong learning into the family, community and workplace

QUALITY EDUCATION AND TRAINING FOR AFRICA'S SUSTAINABLE DEVELOPMENT

ADEA's Medium-Term Strategic Plan 2013-2017 vision for Africa states, "*High-quality education and training geared towards the promotion of critical knowledge and skills for accelerated sustainable development in Africa.*" (ADEA, 2012, p. 13). ADEA notes further that education and training reforms must be based on Africa's social and economic realities and conditions in order to develop a learning society with the required critical skills to address challenges that African countries face, especially unemployment and underemployment among the youths and women. Sawyerr (2002) pointed out the need to address challenges faced by educational institutions of higher learning in Africa in order to improve the quality of education. To develop a learning society, the ADEA network identified the following:

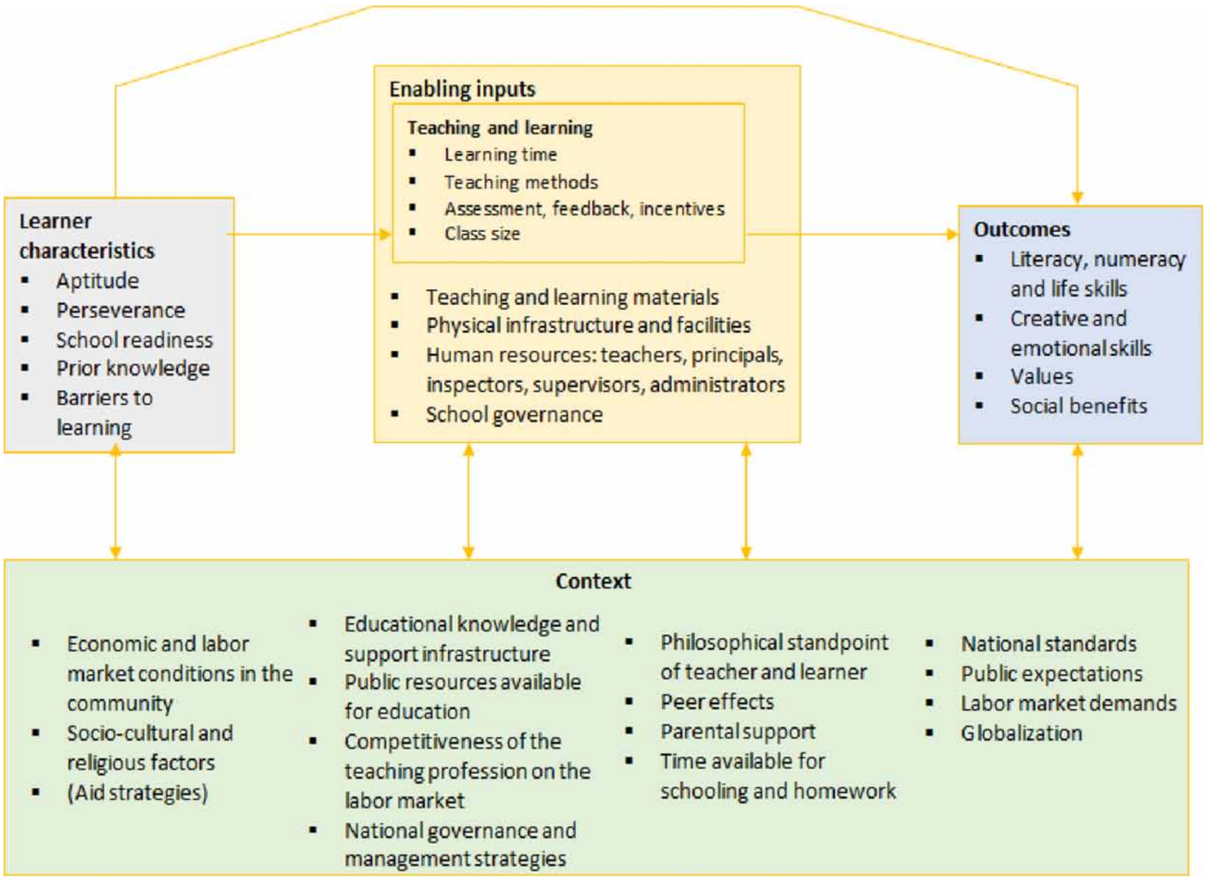
- Africa's critical skills as common core skills (CCS), these are foundational skills such as literacy, numeracy, communication, critical thinking, and other cognitive skills that provide the basis for lifelong learning,
- Technical and vocational skills;
- Scientific and technological skills especially STEM;
- Technical and vocational skills development (TVSD) that are more contemporary and different from the traditional concept of technical and vocational education.

In several African countries, access to basic education has been on the rise due to government coverage of associated costs of education and training. Unfortunately, this increased access has translated into lower quality learning resulting from overcrowded classes, limited number of employed qualified teachers and insufficient number of core textbooks and learning resources such as computers and high-speed internet services. Sifuna (2016, p. 28) observed that "Q*uality* is a term that has become increasingly popular in the discourse about education, especially in less industrialized countries, although there is little consensus on what quality means and on a universally valid way of measuring it." UNICEF (2000), in defining quality education, emphasized the importance of focusing on five important elements including: quality learners, quality learning environment, quality content, quality processes, and quality outcomes as shown in Figure 1. This framework simplifies the analysis of the education being offered and then makes inferences as to whether or not a particular African nation is providing quality education to its citizens. It also points out where more effort is required if the quality of education is to be improved. It should be noted that care must be taken while analyzing the quality of education so that important variables are not masked – gender, disability and other forms of marginalization should be taken into consideration when discussing educational quality, especially in Africa (Schilder, Young, Anastasopoulos, Kimura & Rivera, 2011).

Figure 1. Characteristics of Quality Education
Source: Adapted from UNICEF (2000). Defining Quality Education.

The elements of quality education can be summarized into inputs, processes and outcomes as shown in Figure 2. Educational inputs are explored under the following headings: curriculum and learning; safety, healthy indoor and outdoor environments; teacher quality and professional development; family and community engagement; leadership, management and administration of educational institutions; and financial and material resources.

Figure 2. A Framework for Understanding Education Quality
Source: UNESCO (2005) (https://unesdoc.unesco.org/images/0013/001373/137334e.pdf)



Curriculum and Learning

When examining quality education, there is an urgent need to ask what kind of curricular is being offered, how is it offered and why is it offered? (Shiundu & Omulando, 1992). A holistic curriculum includes the development and assessment of a developmentally appropriate curriculum, the "serve and return" interactions between teacher and learner, and attention to learners with special needs and varied language and cultures (Schilder, et al, 2011). Dello-lacovo (2008) noted that a relevant curriculum should reflect a more holistic approach to quality education and its goals in line with the goals of the society whose outcomes have lifelong consequences. Dello-lacovo further added that indicators of high quality education include daily and weekly lesson plans, ongoing professional development and feedback to ensure dependability on the curriculum model. Besides, it is important to note that the implementation of the curriculum depends on availability of resources such as textbooks, Internet infrastructure, well-trained and well supported teachers (UNESCO, 2015).

Further, the World Education Forum (1999) noted that only a small proportion of learners attain the minimum required competencies. To improve the quality and relevance of education, there is a need to:

- Review and redesign the curricula and teaching methods so that it is relevant to the cultural environment and to the educational, psychological and socio-economic needs of the children;
- Pay special attention to the life skills needed for coping with life problems
- Promote the use of the mother tongue in the early childhood education, early years of primary education
- Define minimum and basic competencies for the different levels of education;
- Link formal, informal, and non-formal education for mainstreaming the marginalized groups into a lifelong learning system;
- Integrate education into the family, community and the workplace;
- Introduce democratic values and practices into the conduct of teaching and learning

Quality Learning Environments

Program environments provide the framework for children's learning and development. They support the implementation of the curriculum through the use of space, materials and opportunities for children to experiment, practice their skills, analyze, socialize, and problem solve. Quality learning environments also provide support for the health, safety and nutrition of young learners (Schilder, et al, 2011). Indicators of quality include the designation of both indoor and outdoor spaces for play and learning that are used on a daily basis; variety of materials for nature and science, math and number activities, art, and fine motor activities. In the case of higher education, there is need for in class, out of class, study away and study abroad learning environments.

Teaching strategies are central to improving education quality. Moving away from talk- and chalk, teacher centered, lecture driven and rote learning pedagogy to student-centered pedagogy where students engage in guided practice, independent learning, and interactive construction of knowledge in a friendly environment and teachers become coaches and facilitators of learning (UNESCO, 2005; UNESCO, 2015). However, the contrast is happening in most developing countries especially with the increase in enrollment that has changed the pedagogy to manage teaching large classes instead of promoting learner engagement and learning experiences (Barrett et al, 2007; Chakraborty & Nafukho, 2014).

In addition to teaching strategies, learning facilities are essential to realizing quality education. Such facilities may include well accessing internet learning resources, ventilated classrooms, clean water, and sanitation, and access for disabled students (UNESCO, 2005).

Investment in Human Resources

UNESCO (2015) pointed out that teachers' play a vital role in providing quality education and governments must steadily invest their status, morale and profession and enable them to participate in actions affecting their professional lives and teaching environment. Further, UNESCO, (2014) argued that policy makers need to improve teacher education, deploy teachers fairly, remunerate teachers well and create attractive career paths to attract and retain good teachers. But to the surprise in most countries, teachers' salaries, relative to those of other professions, have declined over the past years to the point of not providing reasonable living (UNESCO, 2005). To ensure children's healthy development, the teaching workforce must have formalized training education and content knowledge, along with continuing professional development that is connected to improved classroom activities, increased understanding of children's social emotional development and its impact on development and learning (Schilder, et al, 2011). Educators need to keep abreast with the emerging technology to design and successfully deliver quality education programs (Ally, Grimus & Ebner, 2014).

Some countries tend to lower entry requirement for teaching profession, but, UNESCO (2005) cautioned that this approach should be applied with care, and besides formal training, talent development and teacher motivation should be considered too. Further, UNESCO (2005) noted that teacher trainers underestimate the period trainees require to master their subjects. It is therefore important that the teacher trainers keep a breast with the day-to day realities of schools. Also, teachers' unions and teachers should be involved in the development of the teaching profession (World Education Forum, 1999).

Darling-Hammond, Wei, Andree, Richardson, and Orphanos (2009) in a study on effective teacher development noted, "Intensive professional development …has a greater chance of influencing teaching practices … leading to gains in student learning" (p.9). Darling-Hammond et al. (2009) noted further, "effective professional development is intensive, ongoing, and connected to practice; focuses on the teaching and learning of specific academic content; is connected to other school initiatives; and builds strong working relationships among teachers" (p.5).

Family and Community Engagement

High-quality education programs recognize the interconnectedness between the child, the family, the community and the program itself. Relationships with families are built on mutual trust, respect and a willingness to involve them as full partners, while providing them with information, resources and support (Schilder, et al, 2011; Weber, 2014). Indicators of quality include the presence of an active school management committee (SMC) and parent teachers association (PTA); the capacity of the program to connect families to resources, including adult education and job training, and to assistance around children's development, literacy, math, and approaches to learning (Voorhis, Maier, Epstein, & Lloyd, 2013).

Iruka, Curenton and Eke (2014), in discussing the family engagement model, point out that there is need to expand the meaning of family engagement to include the parents who cannot engage in the traditional way. They also suggested that teachers and practitioners should explore diverse ways and strategies for building relationships with families, provide resources to help address challenges faced by parents, and understand the strength and resilience of diverse families. Further, UNESCO (2005) pointed out that establishing bodies that bring together policy makers, practitioners, teachers and sponsors can help bridge the gap between practice and theory for a better applications of learning solutions.

Leadership, Management and Administration

High quality education programs require effective leadership with management and administrative practices that ensure a stable work environment, financial accountability, evaluation of the program's practices and policies and the development of relationships within the community (Schilder, et al, 2011). Indicators of quality include a clear business plan. Other indicators include a system of technology that allows for data collection and tracking of children's health, services, absenteeism and educational information, staff qualifications and professional development and financial record keeping. In addition, the high quality programs ensure that staff have paid planning time, salary scales and benefits linked to educational levels, experience, along opportunities to reflect on teaching practices through coaching, mentoring, on-going supportive supervision and performance evaluations that will support education professionals through the use of a career ladder. UNESCO (2005; 2015) asserts that governments, both at central and decentral level, should provide greater freedom to schools and adequate resources necessary for quality education. In addition, the government should provide professional support to school, clearer accountability, and institute a monitoring structure to provide schools with performance-based information. Sound leadership is essential in mobilizing qquality educational inputs including financial and material resources and in unleashing human resources aimed at improving learning. If quality learning is developed from early childhood education through primary, secondary and tertiary levels of learning, then learning for a life time can be sustained among adult learners.

Learner Characteristics

UNICEF (2000) correctly pointed out that school systems work with the children who come into them. Thus, the quality of the children's lives before beginning formal education will partly determine their learning outcomes. Variables such as good health and nutrition, early childhood psychological development experiences, regular school attendance, family support for learning helps in determining learner quality. When considering effectiveness and productivity interpretations of education quality it is usually considered relevant to construct value-added outcome indicators, that is, indicators that show the effect of malleable conditions of schooling over and above the impact of background conditions (Munene, 2016). For equity interpretations of quality, student background characteristics function as categorization criteria, to contrast groups with one another, for example, boys and girls, schools with a relatively small and a large proportion of students from minority groups, or school endowed with resources versus those with limited resources, and urban versus rural schools. These characteristics determine the quality of education offered and finally determine continued learning among learners when they are adults.

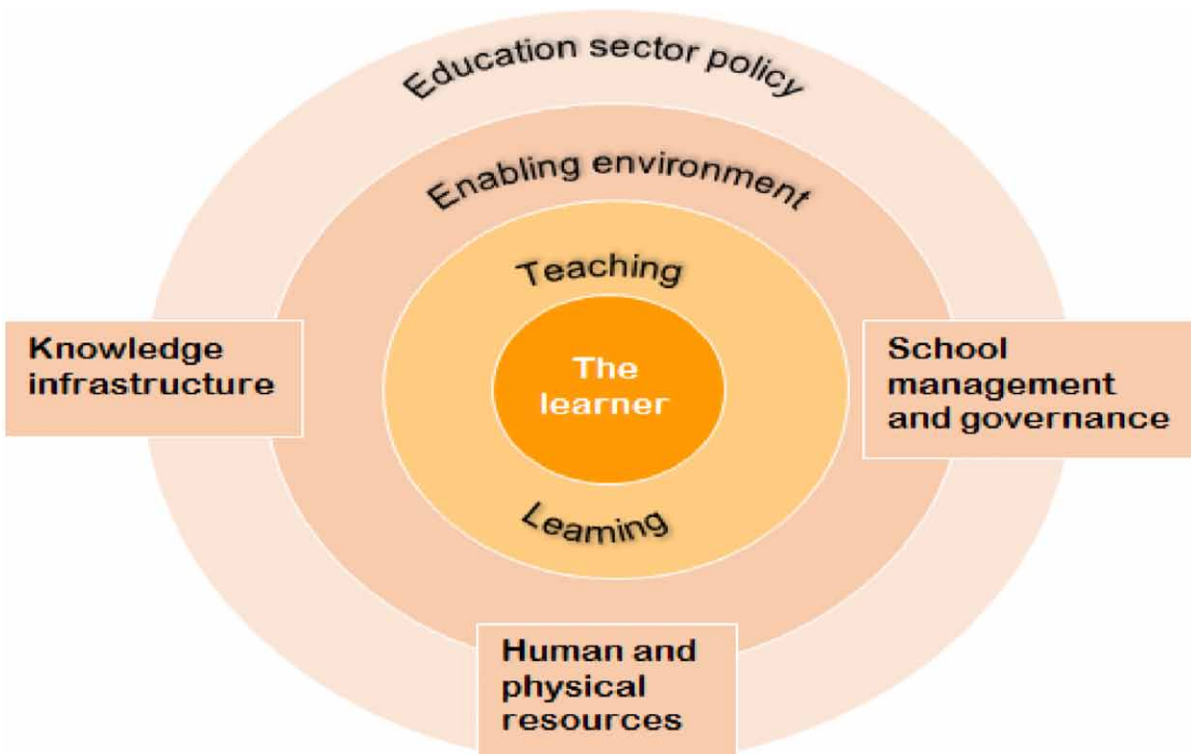
Policy Framework for Achieving Quality Education

Discussing how quality education can be achieved UNESCO (2005), proposed a policy framework that incorporates various levels of key actors in the education process as shown in the Figure 3. In the framework, inclusion of all learners is the first level of providing quality education. Learners should be at the heart of the teaching and learning process. Second, the school system should be inclusive and offer opportunities and emotional support to disadvantaged learners. Further, UNESCO (2005) highlights six policy areas that need attention for lively teaching and learning process which include:

- Policy dialogues must have appropriate aims describing what learners need to learn and why.
- There must be a balance in how subjects are defined, number of subjects taught and the time allocated for each subject and why.
- Good use of time: 1000 effective hours of schooling per year is the widely agreed as the bench mark.
- New and innovative pedagogical and andragogical approaches for better learning, which encourages learner-centred, active pedagogy, cooperative learning and development of critical thinking and problem-solving skills.
- Language policy that facilitates the use of local languages in learning and ensure access to global languages too.
- Learning from assessment: the policy should ensure regular, reliable, timely assessment to improve learning and teaching practices.

Enabling resources for better teaching and learning is third level for improving the quality of education. This level includes policies related to knowledge infrastructure such as national textbook policy, which ensure equitable textbook development, including promoting of local publication, and safe and welcoming learning environments. A national information technology policy, human and physical resources, which posits that teacher recruitment, training and conditions of service should be a priority policy issue for most countries, and policy for school management and governance which calls for collective and collaborative actions.

Figure 3. A Comprehensive Policy Framework for Improving Quality of Education.
Source: *UNESCO (2005) Retrieved from: https://unesdoc.unesco.org/images/0013/001373/137334e.pdf)*



The Funding of Quality Education and Lifelong Learning

While Africa is faced with several challenges just like other regions of the world, the only way to address these challenges is through learning and promotion of *learning communities*. This means that quality education and training and lifelong learning should receive special attention in funding. Both the individual and the government must be prepared to make a sacrifice by investing the limited financial resources available in education. There is no other alternative path to Africa's survival and thriving but through lifelong learning.

Gravenir (2014) argued that the socio-economic environment of the new millennium in which educational institutions are operating demands a paradigm shift on how the institutions are governed and managed, that they become more entrepreneurial and diversify their sources of revenue to enable them meet their strategic objectives. At institutional level, a challenge goes out to every learning institution in Africa to devise innovative ways of raising additional funds to supplement government resources (Khayesi, 2014; Nafukho, 2004). This action will ensure that the institutions are able to operate the learning programs that they have designed to promote learning in society. Individuals, who are able to invest in their learning by directly paying for their own education should be encouraged to do so. There is a need to encourage individuals who are able to invest in their learning by directly paying for their own education. African leaders and successful business people in Africa with enormous wealth should be encouraged to make direct contributions to education. Thus innovative and honest fundraising approaches should be promoted in Africa to reach such individuals.

Organizations like ADEA, FAWE, UNESCO, UNICEF, Institute for International Co-operation of the German Adult Education Association (IIZ/DVV), just to name but a few, have played a leading role in the funding of lifelong learning programs in (Nafukho, Amutabi & Otunga, 2005). Such organizations must be encouraged to continue with their investments efforts. The following funding strategies for quality education and lifelong learning in Africa have been advanced by Nafukho and Amutabi (2005):

- Reforms should be made in the tax system, with a focus on recognizing individuals who make contributions to educational institutions. African governments should offer tax rebates to organizations that make charitable contributions to individuals and to learning institutions.
- Establishing and sustaining strong partnerships with the African people in the Diaspora and engaging them in educational and development issues related to Africa.
- There must be involvement by the private sector in supporting lifelong learning through direct contribution and through the financial support of employees with regard to receiving further education and training.
- Encouragement must be given for the establishment of entrepreneurial activities in all learning institutions. The revenue generated should help fund various lifelong education programs. This is already proving successful in a number of learning institutions in Africa.
- Voluntary giving by private members of society who have been endowed with immense financial resources should be promoted.
- Learning institutions in Africa should form strong alumni associations with a focus on lifelong learning. Such associations should help in raising funds for investment in community learning.
- African governments should make a strong case to their debtors regarding the need for a percentage of all debt repayments to be channeled back into promoting and developing quality education and lifelong learning.
- The spirit of volunteerism in African countries should be encouraged. In most African countries, the retirement age is 55 years. This is a prime age especially when compared to countries in the west. Individuals retiring should be encouraged to offer voluntary services by teaching in community learning centers, in adult literacy classes and in other educational institutions. This is a major way of helping governments meet the learning needs of people in society.
- Community-based computer learning centers should be established by African governments as a strategy for reducing the digital divide between people living in urban areas and those living in rural areas

- The need for educational institutions in Africa to look critically first internally or within to assess the capabilities that they have and how well this capability has been used before looking for help from outside (Khayesi, 2014; Moyo, 2010).
- Creating a conducive environment for the nurturing of human and social capital within African countries. While the top leadership has a critical role to play in this issue, it must be remembered that creating a conducive environment is not the work of the leaders alone, but comes from the contribution of all that are within learning institutions as well as outside. Therefore, collective leadership and a sense of responsibility by educational leaders, administrators, staff and students is important in creating a work environment that will lead to promotion of quality education and lifelong learning. For resources to be optimally utilized, there is a need for a flourishing of the talent and relationships that are vital for resource assembly and utilization (Khayesi, 2014).

CONCLUSION

For quality education and lifelong learning to be a reality in Africa, the following seven important pillars espoused by the African Union Commission should be pursued: "1). Strong political will to reform and boost the education and training sector. 2). Peaceful and secure environment. 3). Gender equity, equality and sensitivity throughout the education and training systems. 4). Resource mobilization with emphasis on domestic resources 5). Strengthen institutional capacity building through good governance, transparency and accountability and a coalition of actors to enable a credible participatory and solid partnership between government, civil society and the private sector. 6). Orientation and support at different levels and types of training and 7). The creation and continuous development of a conducive learning environment" (African Union Commission, 2015b, p. 8).

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KEY TERMS AND DEFINITIONS

Development: Refers to a multidimensional process involving the reorganization and reorientation of entire economic and social systems in Africa with the aim of increasing the capacity of people to influence their future through lifelong learning.

Learning: A process that results into change in the learners' knowledge, skills, attitude, and behavior.

Learning Communities: These are communities that have four common themes, namely: The place where learning takes place, the content learned, production of knowledge, and the structure of learning societies.

Quality Education: Kind of education provided by an education system that emphasizes the importance of focusing on five important elements including: quality learners, quality learning environment, quality content, quality processes, and quality outcomes.

Sustainable Development: A multidimensional process involving the reorganization and reorientation of entire economic and social systems to meet people's development goals such as improved health, increased purchasing power and increased literacy rates while simultaneously sustaining the ability of natural systems to provide the natural resources and ecosystem services on which the economy, people, and society depends.

Chapter 3
Early Childhood Investment for Future Economic Growth and Industrial Development in Tanzania

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ABSTRACT

Early childhood investment in young children 0-8 years is important. It offers a good start in life involving caring, nurturing, and safe environment to children who are the future hope of any society and nation. This chapter seeks to clarify the significance of investing quality early childhood education services for future industrial development and economic growth in Tanzania underpinned by economic growth perspectives. This chapter reports findings from an interpretive phenomenological design in three Teacher education and preschool settings in Tanzania with 10 tutors, 8 preschool teachers, and 8 parent participants. Data was generated using semi-structured interviews, focus group discussions, and documentary reviews. Findings indicated that parents and community from the areas studied lack knowledge of benefits of early investment in education. The study recommends the need for effective future practice directed at improving human development in early years in Tanzania. To achieve these aims, government policy planners need to locate favorable teaching and learning environments.

INTRODUCTION

Education in every sense is one of the important factors of development. Education provides underpinning for development, the groundwork on which much of our economic and social wellbeing is built (Heckman & Masterov, 2007; Ozturk, 2001). Industrial development is the main force behind economic growth facilitated by investment in education (Dickens, Sawhill, & Tebbs, 2006; Ozturk, 2001). Early investment in young children aged 0-8 years is important. It provides a good start in life involving caring, a nurturing, loving and safe environment to children who are the future expectation of any society

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and nation (Barnett, 1995; Biersteker, Ngaruiya, Sebatane, & Gudyanga, 2008; Heckman & Masterov, 2007; Nsamenang, 2008). Early investment in children's learning builds good educational foundation for children from the early stage. Through such foundational education young children gain knowledge and skills which enable them to improve the economic well-being of the nation's future industrial development (Barnett & Ackerman, 2006). Early investment in education has the potential for promoting children's creativity, problem solving skills, critical thinking skills, learning dispositions as well as socio-emotional/ behavioural development skills (Hyson, 2003; Melhuish & Petrogiannis, 2006).

The EFA Global Monitoring Report also shows that public investment in early childhood education consist of less than 10 percent of total public spending on education in many countries, and in some, even can be less than 5 percent (Naudeau, Kataoka, Valerio, Neuman, & Elder, 2011). Also, the report shows that in developing countries with at least 10 percent of public education expenditure devoted to ECE such as Bulgaria, Mexico, Costa Rica, Croatia, Hungary, Mongolia, Moldova, Slovenia and the like. Furthermore, the report comments that countries in Sub-Saharan Africa had expenditure levels of less than 1 percent of the total public education budget. Gross enrollment rates in ECE settings follow regional public expenditure outlines; they are highest in the developed countries, on average 80 percent, and lowest in the developing world, on average 36 percent (Naudeau et al., 2011). Public and private investment in ECE need funds which can originate at different levels of government such as federal/ central, state/provinces, municipalities, district/localities, and are usually mobilized from taxes, lotteries, toll roads, licensing, admission fees. Private sectors funding may be generated from, private enterprises, foundations, groups/NGOs and community. So quality investment in ECE for future economic growth and industrial development could still be problematic in some African countries due to lack of sustainable sources of funds. The choice of funding sources or specific modalities to allocate funds depends on a number of factors specific to the country and social context. For example, ECE policies in some countries include a legal privilege to free services, a public financing instruction, and may even have an earmarked source of income. Other countries make decisions on sources and allocation mechanisms on the basis of established state practices on financing social policy programs.

BENEFITS OF EARLY EDUCATION INVESTMENT

Children's participation in good quality early childhood education (ECE) has benefits for the child's learning and development at the time of attendance and through later life (Smith, Grima, Gaffney, & Powell, 2000; Sylva, Sammons, & Siraj-Blatchford, 2003). There is a growing appreciation which indicates that involvement in ECE from the two or three years before starting school, is advantageous for all children and particularly for children from low-income and disadvantaged groups (Mitchell, Wylie, & Carr, 2008; Smith et al., 2000).

Success or failure at this early stage of education lays the foundation for achievement or breakdown in school, which in turn leads to attainments or failure in post-school learning (Mitchell et al., 2008; Nsamenang, 2008). A study by Young and Mustard (2008) states that the early years from 0-6 years of age are the time for brain development; hence quality ECE programmes are a vital societal as well as personal imperative. Further, Young and Mustard (2008) stressed that a child's environment and experiences start in *utero* and not only affect brain development, but also mental health, physical, learning and behaviour for a life time. McCain and Mustard (1999) also support the argument that development of the brain in the early years of life, particularly the 0-3 year-olds, builds the foundation of competence and coping skills for the future stages of life. Countries can't grow at the pace of their most able people because too many children and adults are left behind. Literature reports that globally, individuals who experienced poor early development suffer a loss of about a quarter of adult average income a year (Heckman, 2008; Ozturk, 2001) this makes their families poor too. This view is argued by Smith et al. (2000) who stated, "…there are links between early sensory stimulation and the activation of the arousal system, chaotic environments can produce abnormal reactions to later stress, while nurturing sensitive environments allow children to respond more adaptively" (p.28).

Nsamenang (2008) stressed that investment in children aged 0-8 years is imperative because it gives "a good start in life involving a nurturing, caring, and safe environment" (p.136) to young children who are the future anticipation of any society and nation. Literature suggests that providing quality ECE services can also improve the economic well-being of countries (Barnett & Frede, 2010; Mitchell et al., 2008; Sylva et al., 2003). It is theorised in the literature that children who benefit from early education, especially those from disadvantaged backgrounds are more likely to succeed in other levels of education such as primary schools (Sylva et al., 2004; Sylva et al., 2003). Furthermore, longitudinal studies have also noted that children who benefit from quality primary education are more likely to succeed in secondary schools and tertiary education (Sylva et al., 2004).Therefore, gains of quality education from early investment with available resources are considered as the main determinant for capital growth and industrial development (Heckman, 2008; Nafukho et al 2004; Oketch, 2006).

In support of early investment in young children, Young and Mustard (2008) reported that participation in quality early interventions leads to amplified gains in later life, and stimulates bright social relationships. A large number of researchers have noted that improving human development in the early stage is definitely a way to break out of poverty because early investment has a very high economic rate of benefits (Heckman & Masterov, 2007; Mitchell et al., 2008; Sylva et al., 2003; Young & Mustard, 2008).

ECE is an important part of the education system across the world (Mitchell et al., 2008; Heckman, 2008). Evidence from Literature asserts that learning starts from birth, and continues until formal education starts, and continues all the way through life (Barnett & Ackerman, 2006; Heckman & Masterov, 2007). Hence, investing in good quality ECE provision from early stage can be seen as an effective means of accomplishing developmental targets, such as earnings in later life, good life for children and families, and breaking cycles of disadvantage (Barnett & Ackerman, 2006; Sylva et al., 2004). Among others, the aim of ECE has been described as building a bridge from early year's education to compulsory schooling (Barnett & Frede, 2010; Mitchell et al., 2008). ECE is meant to support parents in the education of their children and also to address any apparent developmental delays.

A number of literature provide evidence that failure to invest in quality early childhood education delays in cognitive and overall social-emotional development before a child enters primary school and often have long-lasting and costly consequences for both families and societies (Barnett & Ackerman, 2006; Heckman & Masterov, 2007; Naudeau et al., 2011). This argument demonstrates that well-targeted ECE interventions are a cost effective strategy to help prevent or remedy these delays, hence allowing children living in poverty to be healthier, engage in less risky activities, perform better in school, and become more productive adults. The skills and knowledge developed in early years form the basis for future learning and labor market success. Early years development enhances a child's ability to learn, work with peers, be patient, and develop other skills that are the foundation for formal learning and social interaction in the school years and beyond. Failure to develop these foundational skills can lead to long-term, often irreversible effects on educational attainment, fertility, health, and economic earnings, which later result in significant costs for individuals, families and society at large (Heckman & Masterov, 2007). As they get older, young children living in poverty are likely to experience poor performance in schools, including high rates of repetition and dropout, as well as high fertility and morbidity rates (Garcia, Virata, & Dunkelberg, 2008; Sylva et al., 2003), which contribute to costly ineffectiveness in the education and health sectors. As a result they are more likely to have low productivity and income which may contribute less to the growth of economy and industrial development. Developmental delays at 0-6 years of age are difficult to compensate for later in life because early childhood is a mainly sensitive period for brain formation (Young & Mustard, 2008). Indeed, neurological studies have revealed that synapses (connections or pathways between neurons in the nervous system) develop rapidly before age 6 forming the basis of cognitive and emotional functioning for the rest of the child's life (Young & Mustard, 2008).

Statement of Problem and Purpose of the Study

Various studies of good quality ECE have revealed notable success in promoting children's learning and development and indicate that the early years are essential for early learning (Barnett & Ackerman, 2006; Hyson, 2003). Investing in good quality ECE can bring cost savings and remunerations to governments and economies (Barnett & Ackerman, 2006; Smith, 2012), as well as to children and families for industrial development in the achievement of the millennium development goals. However, at the area of this study investing in quality ECE for future economic growth and industrial development is still problematic. Human resource development recognizes the notion that organizations depend on people for the production of goods and services for economic growth and acknowledges that people represent the most valuable assets in organizations. Human capital as the most valuable assets in organizations, have unconstrained capability to learn, grow, and improve their performance (Nafuko & Muyia, 2014), hence the need to invest in them from the early stage through education is the matter of necessity. Therefore, it is imperative to note that, endogenous growth is truly concerned with government spending and education. A country with a well-educated workforce grows better, for example in Ireland, which is growing very rapidly; the government promotes the importance of education by providing some students with grants (Oketch 2006). An increase in quality investment in education tends to lead to an increase in economic growth.

This paper, therefore, specifically analyzes how investments in early childhood education benefit state and local economies for industrial development. The focus of this study is to gain knowledge and understanding about the importance of early investment for future economic growth and industrial development. The line of argument will focus on two priority areas: *Firstly, is about benefits of early education investment and secondly, is about economic impacts which might result from failure of early childhood education investment.*

Specifically, this study aims to: (1) Analyse benefits of early investment of education in young children for economic growth; and (2)identify economic impacts which might occur due to failure in early education investment. The research questions include: (a) What are the benefits of early investment of education in young children for economic growth? (ii) What is the economic impact of failing to invest in Early Childhood Education?

RESEARCH METHODS

By its nature of the study and consistent with the main research questions, the study employed qualitative methodology from data collection to data analysis. This approach is relevant to explore data from the participants and get the essence of the research problem.

Research Design

This study as an interpretive study employs a phenomenological design to explore the importance of investing in quality early childhood education services for future economic growth and industrial development in Tanzania. The study explores the nature and meaning of things a phenomenon's essence and necessities that define what it is (Willig, 2013).The interpretivism paradigm, such as phenomenology, advocates for the "need to consider human beings' subjective interpretations of meaning, their perceptions of the social world as our starting point in understanding social phenomena" (Dash, 2005, p. 25). Qualitative methodology is used because of its potential to generate rich data (Sarantakos, 2005) on how the participants viewed the benefits of investing in Early Childhood Education for economic growth and industrial development.

Participants

Sampling for this study was purposive: suitable participants were selected through non-probability sampling (Bernard, 2013; Neuman, 2011; Sarantakos, 2005). The current study elicited views based on three groups of participants: the tutors, preschool teachers, and parents in three Teacher Education and four preschool settings located in Mbeya, Ruvuma and Morogoro Regions in Tanzania. It had a total of 26 participants (10 were tutors, 08 were preschool teachers and 08 were parents). Tutors in the sample were selected by the College Principals of the particular college, and the criteria were; tutors teaching preschool teachers and willing to participate in the study. For preschool teachers the sample was selected by the College Principals because colleges have an attached demonstration school with a preschool class. For parents the criterion was any parent and/or guardian who, it was felt could work with the researcher in her study and they were selected by Head Teachers who sent out letters of invitation.

Data Collection

Data was generated using semi-structured interviews, and Focus group discussion guided by a series of open-ended questions, as well as documentary reviews. The use of multiple methods of data collection is meant to help triangulation of data from different sources. The interviews varied in duration from 40 to 60 minutes and were conducted during work hours. The individual and group interviews based on exploring *benefits of early education investment for economic growth and economic impacts which might occur due to failure of early education investment*. Parents were interviewed between 45 and 55 minutes, by appointment based on their availability. During the follow-up interviews data that were found largely to repeat previously generated data from various participants were not recorded because this provided no new or surprising information. All the study participants gave their consent for the interviews to be recorded with a voice recorder. To conceal the identity of the study participants, no names were recorded on the audio tapes.

Data Analyses

The data of the current study was qualitative in nature. After finishing the data generation, the exercise of transcription started. The voice recorder that contained interview data was carefully listened to and transcriptions were made. Thereafter this qualitative data was read verbatim and analysed thematically with the help of NVivo 10 software developed by QSR International, where themes related to the research questions were identified and coded. Two researchers coded the materials using coding framework developed by (Braun & Clarke, 2006). Thematic analysis is a form of qualitative analysis. To ensure inter-rater reliability of the coding, the qualitative information was coded by two researchers using NVivo 10 software, thereafter using a coding comparison query in NVivo, the Kappa Coefficient and inter-rater agreement were established. The Kappa Coefficient was 0.79 while percentage agreement was 96.15. This indicates that there was considerable agreement between the two coders (Viera & Garrett, 2005).

RESULTS

The results presented in this section are mainly based on analyses from the interviews with the tutors of Teacher education, preschool teachers and parents since their points of view are the main focus of this study. Government circular and policy documents were used to supplement and verify the interview data from the tutors, preschool teachers and parents. In order to underscore information obtained, representative quotes have been included to clarify the points under discussion.

Research Question 1: What are the benefits of early investment of education in young children for future economic growth?

The findings from study participants indicated various factors which hinder parents and community at large fail to recognise the benefits of early investment of education in young children for economic growth and industrial development. For instance, lack of awareness of parents and community at large about the benefits of early investment, teacher education and professional development. In addition, (lack of qualified preschool teachers to work with young children, poor learning environments for children, and policy issues were identified.

Lack of awareness of parents and community at large on benefits of early investment

Findings from the interviews with parents, preschool teachers and tutors indicated lack of awareness of benefits of early investment as major impediment to send their children to the settings. Study participants commented that many people have the perception that sending young children at the settings is the waste of money; that children go there for plays, singing songs and taking porridge then going home. For example, one parent reported:

………personally I send my kids to primary school and not to early class, I normally pass through a preschool area and see children moving around instead of being in a class for learning. To me sending children to preschool, I view as a waste of money because children are just making songs, plays, and taking porridge then going home. I think the government needs to provide education to its people so that we understand the importance of sending children to preschool class [Juma/ Parent/ Interview].

A related comment was shared by Doreen, a parent from G Preschool. She explained that some parents would like their children to attend the setting but financial status is a challenge to them. She reported:

Look here…..my parents did not send me to school apart from loving school, so to compensate what happened to me, I make sure that all my children go to school up to higher levels. I and my husband expect our children in future will help us if they succeed through education. We expect them to get better performance in grade school if there are qualified and committed preschool teachers. We believe that children who receive early childhood education with good guides can reduce a need for special instruction in primary school and beyond. Later on they might get job and help us to raise our income in family level and at national level [Doreen/ Parent/ Interview].

Preschool-Teachers also reported that some parents were not aware of the significance of sending children to preschools. In addition, teacher participants thought the government is not raising public awareness about the value of sending children to preschool. During focus group discussion one preschool teacher reported the benefits of investing in early childhood education for future economic growth:

Of course…..parents and community at large are not aware of the benefits of sending their children at the settings from the early stages. Some of the advantages of early childhood education include; gaining social skills with their fellow children … children learn to engage better with other children who are the future adults. Investing from early stage not only make a more highly skilled child more productive than a less skilled one but also in future enable a work place that employs more educated people to organize and manage issues differently. Having educated and knowledgeable people in turn will choose technologies and equipment differently, and adjust better to changes necessitated by competition, contribute high productivity and hence economic growth. [Aji/ Preschool Teacher/ Focus Group Interview].

The above quote indicates the benefits of early investment in early childhood education; however, it seems parents lack clarifications from the knowledgeable people. For example, when some parents complain about children using much of their time to sing songs and plays, this is the way of children's learning. Young children learn differently from older pupils, so it needs education for parents and community at large to address this. Heckman (2008)stressed that "skills beget more skills and new ways of doing business, workers learn from one another, and firms adapt their technology and their use of capital to the skills of the available workforce" (p.35). The benefits of having more educated personnel accrue to everyone, not just to the organization where these individuals happen to work. Beyond that, a more educated work force may produce less crime and healthier environment with better productivity and functioning state and all the benefits that flow to the business sector from that environment (Heckman, 2008; Nafuko, 2013; Oketch, 2006).

Teacher Education and Professional Development

Another sub-theme which emerged from tutors was Teacher education and professional development. Tutors gave out their concerns that their role is to prepare preschool teachers, however, frequent changes of early childhood education curriculum sometimes affects their trend. Again, they reported that they do not attend any professional development so that they would enrich and update their knowledge on preparation of preschool teachers. Among others one tutor commented:

Early childhood education area is the foundation of all levels of education. Unfortunately this area has been left behind; tutors are not getting seminars and workshop on how to prepare quality preschool teachers. Some tutors teach preschool teachers while it is not their area of specialisation. As a result preschool teachers might be poorly prepared and after their completion they will also fail to work with children.[Satu/Tutor/ Interview].

Quality preschool teachers with good early childhood education programs provide substantial benefits to state and local economies. Various studies have demonstrated that early childhood programs produce very high returns on investment. So it needs good qualifications of tutors who can provide good guides to preschool teachers for quality investment.

On the other hand preschool teacher participants during interviews raised various concerns which might hinder the quality early investment for economic growth and industrial development. For instance, one preschool teacher described that she had been taught few topics regarding ECE in the primary school teachers' programme during her teacher education. She described that, ECE courses are taught as a subject and not as a programme in the Grade III 'A' certificate (primary school teacher) and there no professional development after qualifying as a teacher. The following quotes illustrate this point:

I am a Grade III 'A' primary teacher; I have a certificate in teaching primary school education. I have been in a teaching post since 2008 when I completed my Grade III 'A' teacher education. I started teaching in primary schools but since 2010, I teach Primary school Grade one and preschool classes due to the shortage of teachers. In my Grade III 'A' course we had been taught few topics concerning ECE matters. However, although tutors guided us partially in ECE the concentration was on primary education courses. In addition, since my employment I have never attended any workshop, seminar or in-service teacher education [Adiya/ Preschool Teacher/ Interview].

She went on to report the imperative of specialised skills for ECE teachers:

Yeah…….I teaches using my primary school experiences and a little knowledge I got from early childhood topics in the college. During my teacher education I concentrated on primary school courses because tutors themselves concentrated on teaching primary school courses. I did not expect to teach this class. I know preschool children need special care compared to older children but in this school there are no specialised preschool teachers. I suggest the government to provide a great support in early years; this level is a foundation to other levels [Adiya/ Preschool Teacher/ Interview].

The qualification of preschool teachers and professional development was a critical issue. Teachers admitted that they lack adequate knowledge for teaching preschool due to the fact that they were not prepared to teach preschools but rather primary schools as a result they were not expert in early childhood education.

Furthermore, parents' participants were found anxious to share their views that when their children are at the settings they get enough time to do their business. The following quotes illustrate this point:

To me when stable, affordable, high quality early childhood education setting is available, I will be able to improve my productivity by putting in more work hours, experiencing less stress from child rearing, and finally improve economically. Ensuring that early childhood programs are of high quality is important *to fully realizing their benefits. Policy planners need to locate priority to early year's in turn the whole nation will be knowledgeable and creative [Adiya/Parent- Interview].*

Benefits come mainly from the effects on children participants, who are expected to be educated, trained, and employed as adults. Early childhood programs are a policy area in which it makes sense to have governments takes a strong responsibility. Many of the economic development benefits of early childhood programs are returned to the state. So it needs the government to support early childhood settings for quality investment. John a tutor from Teacher Education "B" reported that *"early investment can prevent the achievement gap. Gaps in knowledge and ability between disadvantaged children and their more advantaged peers open up long before playschool, tend to persist throughout life, and are difficult and costly to close" [John/ Tutor/ Interview].*Importantly, it is the governments to raise awareness to its citizens and locate reasonable budget for quality early investment.

Research Question 2: What are the Economic Impacts?

The analysis of the results indicated that there are economic impacts when the government fails to invest in early education programs. A country's economy becomes more productive as the proportion of educated personnel increases since educated people can more efficiently carry out tasks that require literacy and critical thinking to improve economic performance .However, results at the area studied indicated that the government provides funding for primary and secondary education and not to early childhood settings. Study participants reported that the amount even for primary education was not enough to meet primary students' needs and was not coming in on time. The preschools do not have their own budget. Preschool education is therefore supported through the parents and community donations organised by local committees. The following quotes illustrate these points:

Yeah….! Actually the preschool class has no budget and there is no surplus remaining from the primary school budget because even in primary school the amount is not enough. I understand that early years are the key foundation but the government does not allocate the priority to this stage. I would suggest the government to take measures on this, if early investment and support from government is taken into consideration we expect to build these children in various knowledge and skills from the early stage which will be useful for their future life and a nation at large [Mtagimale/Preschool Teacher/ Interview].

The above quote indicates that investment in early years is challenging, this implies that if a country is not paying attention to education from early stages of learning it means we expect to have illiterate adults. When citizens lack knowledge and skills this implies poor life which may lead to poor childhood conditions, such as exposure to poverty and stunting, which could be associated with long-term disadvantages to health, education, social adjustment and low earnings.

Furthermore in regard to economic impact due to failure of early investment, data indicated that when people do not get quality education from the early years they will contribute less to the nation when they are adults (Heckman, 2008; Nsemanang, 2008). Countries will miss creative people with open mind, problem solvers in various aspects of life and development because early years are the critical period for brain development and thinking disposition. Analysing the impact for economic growth one tutor during focus group discussion reported:

………Yeah of course failure to invest in quality education from the early year's people will not be aware with key issues in their life including better family health and nutrition, lower infant and child mortality, lack of knowledge and skills, being ignorant with changing technologies and production methods. Lack of experts and responsible persons, and finally low productivity and outputs. So it needs enhanced educational attainment of children from early years, government needs to locate clear policy on matters relating to early childhood education as well as initial teacher preparation [Roger/Tutor/ Focus group Interview].

Views from study participants indicated that education in every sense is one of the central factors of development. This implies that no country can achieve sustainable economic development without substantial investment in its people. Education enriches people's understanding of themselves and world at large. State governments need to ensure that all citizens are educated and numerate, that many possess a wide range of problem solving skills from the elementary level and beyond, and that some have world class professional skills will impose new curricula, improved initial teacher programs, and teaching and learning strategies that encourage critical thinking and problem solving skills. No country has achieved constant economic growth without considerable investment inhuman capital. If we believe, on the other hand, that investments in early education leads to self-sustaining increases in economic growth because in future they have effects that improve economy-wide efficiency, and the ability to invent or adopt new technologies, then we need to advice our state government to locate more support to early childhood education for future economic growth and industrial development.

DISCUSSION

This chapter aimed to investigate early childhood education investment for future economic growth and industrial development in Tanzania. The findings indicated that parents and community at large from the areas studied lacked knowledge of benefits of early investment, lacked qualified preschool teachers, had poor teaching and learning environments and limited resources. Education is a form of human resources investment and it should start from the early years. Various empirical studies confirm the returns to higher levels education (Barnett 2006; Heckman, 2008; Oketch 2006). The greatest return to education grows to countries with low average incomes as was reported by Oketch (2006 p.558), "the social and individual rates of return are consistently highest for primary in poor countries, followed by secondary and in turn by higher education, in that order".

Oketch (2006) reported that human and physical capital investments are crucial if Africa is to attain an industrial level development. Human resource development produced by formal schooling from early years is essential for economic growth of African countries, Tanzania in particular. Economists have long believed that investments in human and physical resources are important source of economic growth (Nafukho, 2013; Nafukho, et al, 2004). Economic growth and labor productivity are determined by human, physical resources and technological change (Oketch 2006). Most countries in Africa, Tanzania in particular have a long way to go in raising sufficient incomes to offer quality ECE services (Mligo & Said, 2019; Naudeau et al., 2011). Governments not only need to make a budgetary commitment to ECE services but also need to work with the range of ECE service providers and key stakeholders to find out innovative, stable, and sustainable sources of income.

It is important to point out that human resources is a necessary prerequisite, but cannot by itself alone lead to economic growth and industrial development (Oketch 2006). Investment in physical capital is equally as important for they supplement each other. The connection between human resource development and economic growth from the early stage therefore appears to run both ways. It is important for human resources to grow if industrial development is to proceed in the productive sectors. The productive sectors in turn have to grow and diversify in order to allow more opportunities for human resources to develop and to employ the enriched flow of skills and capacities that are produced (Barnett & Ackerman 2006; Heckman & Masterov, 2007). Thus, rich nations invest heavily in quality education from the early stages because they have the resources to do so and poorer countries also struggle to invest in human capital in order to catch up. However, these poor countries fail to invest in quality education due to lack of human and physical resources. Apart from that investment from the early stage is not their priority, Mligo (2016) noted that parents/guardians and community at large have negative attitude in regard to early investment, they perceive investing in ECE like a waste of money. While early childhood investment programs aim at developing competent individuals who can positively impact future economic growth and industrial development where they work and communities where they live (Naudeau et al., 2011), empirical evidence shows that, this is not happening especially in African countries due to lack of awareness of parents/guardians and community at large of the importance of quality education from the early stage (Nsamenang, 2008; Serpell & Nsamenang, 2014).

Internationally, a number of research shows that people who received quality education from the early stage continued to perfom well in other levels and found better decision-makers, foster better relationships and increase team efficiency, they become more productive and successful at what they do (Barnett & Ackerman, 2006; Mitchell et al., 2008; Naudeau et al., 2011; Smith, 2012). Furthermore, Smith (2012) reported that many people believe that investments from early education will become even more important in the future as we become a post-industrial and knowledge-based economy. Consequently, people give out their worries that countries are giving insufficient policy attention to the development of an educated work force. So why this chapter claims that more highly educated workforce increase economic growth? A more educated labour force is more mobile and adaptable, can learn new skills and new tasks more easily, and can use a wider range of technologies and sophisticated equipment as well as newly emerging ones (Nafukho, et al, 2004; Oketch, 2006)). Then an increase in early investment with quality learning causes an initial increase in knowledge and skills which contribute to the rate of economic growth as output increases in response to the increase in work performances (Heckman & Masterov, 2007). This increase in output will cause a further increase in the amount of physical and human resources that will cause yet another increase in output, hence economic growth for industrial development.

A number of literature demonstrate that low-cost interventions which facilitate and support nurturing care for children in their first years of life contributes to lifelong health, wellbeing and productivity (Heckman & Masterov, 2007; Mligo, 2018; Smith, 2012). The economic benefits of these interventions over shadow the investment costs. Economies grow when early childhood development is a priority; if early investment is not taken into priority children living in poverty and who are stunted are expected to go to school later (Heckman, 2008; Mligo & Said, 2019). As a result they will also learn less, pass fewer grades, leave school earlier and earn less as adults (Heckman, 2008). In turn, their children are more likely to grow up in poverty, lacking essential nutrients that might hamper the development of lean mass such as skeleton and brain which might affect learning experiences, trapping families and children in poverty for generations (Mligo, 2017), hence lead to poor economic growth and less industrial development.

CONCLUSION

As argued in this chapter, investment in education from early stage is important for economic growth and industrial development. Education provides a foundation for development, the groundwork on which much of our economic growth and social wellbeing is built (Oketch, 2006). It is the key to increasing economic efficiency and social consistency. By increasing the value and efficiency of their labour, it helps to raise the poor from poverty. Investments in high quality early childhood education and care, combined with education for economic growth and sustainable development, represent a necessary component in promoting children's creative thinking and problem solving within Tanzania's schools and worldwide (Mligo, 2016, 2018). Basically, a number of studies indicate that investment in human and physical resources are important determinants of economic growth and development in Africa and across the world (Nafukho, 2013; Oketch, 2006).

The study recommends the need for effective future practice directed at improving human development in the early years in Tanzania and worldwide. To achieve these aim government policy planners need to provide quality initial teacher education, professional development, and conducive teaching and learning environments with available resources for effective teaching and learning practice throughout the nation and worldwide. It is expected that investing in good quality early childhood education and delivery from an early age can be seen as an effective means of achieving developmental targets, such as better earnings in the future, economic growth, cost savings, good life for children and families, and breaking cycles of disadvantage. Education is essential to economic development. No economic development is possible without well-intentioned education. A balanced education system promotes not only economic development, but also high productivity, and generates individual per capita income. Its influence is noticeable from the individual family level. In addition, it needs sensitization to parents/guardians and community at large through media programs, workshops/seminars which could raise awareness of parents in regard to benefits of early investment for future economic growth and industrial development in Tanzania and across the world.

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KEY TERMS AND DEFINITIONS

Early Childhood Education: The term covers a variety of programmes for young children between birth and 8 years. It refers to education of children before primary school, including activities which take place in a formal setting, non-formal childcare settings or at home between parent and child.

Early Educational Investment: Refers to the provision of education from the early stages. The time and money one invests in education translates into a higher salary potential in future.

Economic Growth: Is defined as an increase in the production of economic goods and services, compared from one period of time to another.

Human Resources: Is used to describe both the people who work for a company or organization and the department responsible for managing resources related to employees.

Industrial Development: Is the building and growing of industries within an economy by using new technologies which make jobs easier, faster, and better and lead to an increase in a business' output and an increase in profits.

Physical Resources: Refers to tangible items that are used in the operation of the business. Some of the resources are used to operate the business or provide products and services. These are normally resources that are made by man and help to do the daily activities much quicker and easier.

Chapter 4

Talent and Africa Standing on Its Own Feet:
A Case Study of Alex Omwela Adala's Farming Enterprise

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ABSTRACT

The objective of this case study is to examine how a farmer, Mr. Alex Omwela Adala, has utilised his talent to create self-reinforcing agricultural enterprises to stand on his own feet. This study addresses a gap in past research on entrepreneurship which tended to focus on profiles of entrepreneurs as well as development and outcomes of investment in businesses. Starting literally from scratch, this farmer has currently nine self-reinforcing agricultural enterprises that have enabled him to cater for his family needs and provide technical support to other small-scale farmers. He has played a key role in founding and managing the Dairy Goat Association of Kenya, Western Kenya Branch. The contribution of this chapter is in using a case study method and a transformative story to learn about talent exploitation for individual and community development. The chapter does not only provide an approach of data collection but also experiential insights and wisdom of an entrepreneur who has travelled the path of investment for 30 years.

INTRODUCTION

When the Kakamega High School Class of 1981 group visited one of our former classmates, Mr Alex Adala's home, what we found was totally unexpected. We knew that he was an astute farmer but the diversity in both animals and crops on his farm left us all in awe. It was hard to imagine that so many different animals can be made to coexist effectively within such a small enclosure. Back in high school we had all taken Agriculture lessons and it was satisfying to note that at least one of us was putting that knowledge to profitable use. Our high school Agriculture teacher, Mr Aggrey Luta, would certainly have

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been as proud as we were about our former classmate's enterprising venture. (Henry Were, Secretary, Kakamega High School Class of 1981).

There are generally two contrasting views of Africa's development (Toulmin & Wisner, 2005). The first one is that of a continent that is locked in a never-ending cycle of crises and hopelessness, characterised by poverty, diseases and political instability (Meredith, 2003; Timberlake, 1988). It is within this view that the 1980s have been described as lost decades of development in Africa (Meredith, 2003). It is largely a pessimistic view of Africa and is challenged by those who argue that there are also positive and optimistic developments in Africa that the pessimistic view ignores. The second view is of an Africa that is taking steps to realize its development potential. Some authors have referred to this second view as Africa rising (Mahajan, 2011) or the emerging Africa (Radelet, 2010). Examples of positive micro and macro scale changes such as agricultural innovations, informal economy and democratic changes (Mahajan, 2011; Radelet, 2010) are provided to support the optimist view. These scholars identify the key assets of Africa to be its people and natural resources as well as the changing global geopolitical space, which if effectively managed, can lead to prosperity for the continent (Moyo, 2010). This author recognises that Africa has challenges but shows using the case study presented in this chapter that positive change is possible. Optimizing talent is one of the pathways that Africa can use to realise its development potential and partly contribute to turning around the pessimist narrative about the continent.

Past research on entrepreneurship tended to focus on profiles of entrepreneurs as well as development and outcomes of investment in businesses (Devine & Kiggundu, 2016), and not so much on the trajectory of how individuals exploit their talents to stand on their own feet. A few case studies on individual entrepreneurial journey are being developed and shared (Wilson & Wilson, 2012; Karume, 2010). Individual in-depth examples of transformation that can offer inspiration are also generally lacking in the development literature. What mainly exists are studies focusing on specific themes such as agriculture (Juma, 2011), manufacturing industry (Darkoh & Kinyanjui, 2015), growing influence of China in Africa (Kragelund, 2009; Mohan, 2008) and development policies and ideology (Mkandawire, 2001). A central development goal for African countries, communities and citizens is to be able to cater for their basic needs such as food, shelter, water, education, energy, health and accessibility (Wisner, 1989). This goal is essentially about self-reliance and enhanced capability to manage well-being and livelihood issues at both individual and societal levels (Sanga, 2016). Examples of how individuals or communities have pursued self-reliance through talent exploitation will bring insights and lessons to others. This gap in knowledge is addressed in this study. Generally, in-depth case studies of individuals and communities standing on their own feet need to be gathered and shared constantly for teaching, research and development programmes.

The objective of this study is to examine how a farmer, Mr. Alex Omwela Adala, has utilised his talent to create self-reinforcing and sustaining agricultural enterprises to stand on his own feet. This case study, that is presented in the form of a transformative story, is not necessarily about an individual farmer. It narrates the experience of using talent and networks to leverage opportunities in pursuit of self- and community- development in an effort to stand on one's own feet. It reflects the entrepreneurship idea of creating something out of nothing by identifying opportunities and utilising resources that are available to exploit these opportunities (Baker & Nelson, 2005; Shane, 2003). It provides an example of innovative thinking and approach that is needed for Africa to stand on its own feet in industrial and agricultural development. Such examples are necessary to provide not only inspiration to other individuals but also resource persons who can be contacted for guidance and contribution to decision-making.

THEORY

The theoretical idea underlying this study is that of standing on one's own feet. This idea consists of three aspects: relying on one's own judgement, chasing one's dreams but being real, and working together (Branson, 2007). This capability to stand on one's own feet is important if Africa is to reduce and eventually eliminate dependency and vulnerability to both human and natural forces. Does standing on its own feet mean that Africa or an individual does not need to interact and exchange ideas, goods and services with other people and societies? No! It is about being able to utilize internal and external resources such as knowledge and talents to effectively take care of key aspects of individual and societal welfare. The way this can be done is provided by the results and discussion of the case study in later sections.

In considering how to enhance the capability of Africa and individuals to stand on their own feet, this study advances the view that knowledge is an important asset in this process. Knowledge generation is not an end but a continuous process of production and utilization of knowledge as an economic asset for any society to pursue its pathway towards standing on its own feet. Both codified and tacit knowledge need to be exploited and managed by individuals and communities to develop themselves (Clegg et al., 2011). Codified knowledge exists in recorded or written form that is found in documents (Clegg et al., 2011; Nonaka, 1991). Tacit knowledge is personalized knowledge acquired through experience and practice and kept by individuals in their minds (Nonaka, 1991). It is not written down but exists with individuals. Every society has these two types of knowledge that can be tapped for use in its development.

Natural resources and other factors such as technology, capital and visionary leadership contribute to development. However, it is the capability to exploit these resources and opportunities that makes a difference in the socio-economic situation of a community. Utilisation of the diverse skills, talents, general and specialised knowledge that a society possesses plays a critical role in its development trajectory (United Nations Development Programme, 2010), of course considering other factors such as politics, technology, culture, institutions and execution of development strategies (Acemoglu & Robinson, 2013; de Soto, 2000). Standing on one's own feet involves continued learning over a lifetime and improvement. It is explorative, trying out, innovative, making errors and learning.

One of the talents an individual and society possesses is entrepreneurship. It involves identifying opportunities, mobilising resources and exploiting these opportunities (Neck et al., 2018; Shane, 2003). Entrepreneurship is applicable to several aspects of life such as politics, health, religion, development, leadership and environment. A growth mindset is considered key in entrepreneurial capability (Neck et al. 2018). This type of mindset sees possibilities in several situations and seeks out ways of realistically taking action. The opposite of a growth mindset is the fixed type that accepts the situation as it is and does very little to improve it (Neck et al., 2018).

The preceding discussion suggests that a combination of talents, skills, entrepreneurship, mindset and lifelong learning are how individuals and communities can make Africa stand on its own feet. Tracing the pathway that individuals or communities pursue to stand on their own feet helps to uncover the dynamic interaction among talent, identification and exploitation of opportunities, and the environment. This study adopts a life narrative approach to answer the key research question: How did Mr. Alex Omwela Adala deploy his talent to identify opportunities and mobilise resources to develop agricultural enterprises to stand on his own feet?

METHODS

The geographical setting for this study is Mr. Alexa Omwela Adala's farm. It is found in Ebubayi sub-location, Luanda sub-county, Vihiga county, Western Kenya. This enterprise is among the case studies or examples that the author has identified for illustrating entrepreneurship and how knowledge can be harvested. The author and his colleagues have briefly highlighted other entrepreneurial examples such as *Iko Toilet*, *Ushahidi*, *Harambee* and Green Belt Movement when examining matatu entrepreneurship (Khayesi et al. 2015).

Keeping in line with the principles of a case study approach (Waller et.al., 2018; Goodrick, 2014; Punch, 2014; Yin, 2009), data collection for this research involved several in-depth face-to-face, telephone and e-mail interviews and conversations that were conducted in January-June 2020. This researcher visited his farm on 8 January 2020 and made observations on the nine enterprises. Farm records which Alex has kept also provided information to complement interview sources. Interestingly, he remembers details and narrates his experience as if he is living the reality now. Watching him talk to a group that this researcher took to his farm without any written notes was revealing about his intimate relationship with his enterprise.

This researcher took detailed notes during the interviews which enabled me to identify key turning points in the development of this farm and the accompanying changes in income, activities and impact on society. This researcher took pictures of his enterprises. This farmer also provided photos from an extensive collection of photos and videos that he keeps. As is the practice with qualitative research, data collection, analysis and interpretation went together (Waller et al. 2016). Themes were identified from initial interviews and were refined as interviews proceeded and insights gained into the business trajectory of Alex. The process of data collection, analysis and interpretation came to resemble the act of peeling an onion with deeper understanding of the trajectory being realised from this iterative process.

A draft of this study was shared with a group of Alex's secondary school classmates as well as his sister and a workmate for comments and verification of the information. This effort led to this author conducting follow-up interviews with them in June 2020 and additional information being gathered and analysed. It was further shared with 20 other researchers and practitioners for validation of the approach and interpretation of the results. Thus, the reliability of information gathered from Alex Omwela Adala was achieved through verification by other people. The two anonymous reviewers also contributed to improving the validity of the information by raising questions related to details about data collection, additional details about workers and interpretation of the findings. For example, comments from one of the reviewers led the author to conduct follow-up interviews with Alex to understand better how he works with his employees. This iterative process helped not only to generate new information but also verify and qualify information that had already been gathered.

RESULTS

Alex Omwela Adala' s farming venture currently has nine enterprises or business lines consisting of 45 dairy goats, 10 dairy cows, 500 local and improved chicken, 50 grade rabbits, indigenous vegetables, agroforestry, fruit trees, a compost and a biogas plant on a five-acre land. Alex has participated in competitions of small-scale farms at provincial and national levels. In 2016, his farm emerged as the runner up at the national level in women in development category (Figure 1). Alex has also received the following awards:

- In 2005, his farm participated in farm judging competition organised by the Ministry of Agriculture and emerged third best small-scale farmer in Western Province of Kenya.
- In 2016, his farm participated in the National Farmers Award scheme and emerged runner up nationally in the category of women in development.

Figure 1.

How did this impressive farming enterprise come about? What is observed now in this enterprise is a story of 30 years of innovativeness and exploration towards a self-reliant vision. It draws on a combination of insights of technical experts and Alex's own innovativeness that has enabled him to develop an in-depth knowledge and practices of different types of livestock and crop systems. He has integrated his farming enterprises into local and national markets.

No Ancestral Land to Inherit

Alex found himself with no ancestral land to inherit and develop due to a complicated land transfer development in his family. In addition, both of his parents as well as all his brothers and sisters had died except his youngest sister, who is still alive. When asked about his approach to dealing with this challenging situation, he cheerfully responded:

I learned one thing and that was to make as many sustainable friends as possible and to network and collaborate with stakeholders with minds and visions similar to mine. (Interview, 8 January 2020).

Alex was born and raised in a rural area. He attended Ebubayi Primary School in village. On completion of primary school education, he proceeded to secondary education at Kakamega High School. He fondly talks about his secondary school headmaster, Mr. Epainitus Gaylord Avedi. He remembers him fondly for effective management, inspiration and discipline. He remembers and is grateful to Mr. Avedi who allowed Alex's parents to pay school fees for their son at their own pace. Alex's parents faced financial constraints and were not able to pay fees on schedule. To the relief of Alex, a teacher at the school, Mr. Peter Aura, who happened to come from the same village with Alex approached Mr. Avedi to request for this arrangement.

Alex passed his secondary school examination well and had a desire to proceed to high school, what was then known as advanced level, but he had no school fees. He did not even apply for Advanced Level because his parents could not afford the fees. When his secondary school examination results came out, Mr. Peter Aura urged him to go back for Advanced Level at Kakamega High School, but he declined because of the challenging financial reality of his parents:

In Alex's own words:

I proceeded to look for casual employment in Thika where life was so difficult. I then relocated to Nairobi briefly and realized I could not cope up with difficult life. My parents were jobless and at home. I decided to move to Nakuru to stay with my uncle for a while and though I was attending interviews for admission to Egerton College, it was not easy at the time to get admission. One day I was in Nakuru town and met an unknown person to me who had brought his farm records for auditing in one of the firms I had sat, reading a newspaper. The man asked: 'What is this young man doing here? And with my little courage I told him: 'I am jobless and looking for a job though I would like to be trained either in Agriculture or Medicine'. I didn't know I was talking to a senior government officer. He asked me: 'Can I have a look at your certificates?' I immediately photocopied my certificates and gave them to him. Then the next question was: 'Can you come to my office after seven days in Nairobi?' 'Yes', I replied. I went to Nairobi and accessing his office was not easy. Thanks to God that the secretary allowed me in. On entering his office, the man gave me an admission letter to join Egerton College. (Alex, Interview, 1 June 2020).

He graduated with a diploma in Dairy Technology in 1986 from Egerton Agricultural College. Alex recalls that while at Egerton College, whenever there would be a small management issue, several students who had been at Kakamega High School would remark: "Bring Avedi here to run this college". Generally, many former students of Kakamega High School who attended it when Mr. Avedi was the headmaster have a high regard for him and constantly compare him to other administrators. Overall, they feel he is the best headmaster they ever encountered in their lives.

After graduating from Egerton College, Alex had to deal with the challenging issue of lack of ancestral land in a society that greatly values sons inheriting land from their parents or fathers. After college, he was posted to work in Migori Sub district by then (in the larger Homa Bay District, currently Homa Bay County). While in Migori, he enjoyed a social network of colleagues from his home district of Vihiga and even took to drinking alcohol. He had a great desire to be transferred to work in his home district of Vihiga because he wanted to grow his farming enterprise and later he was transferred from Migori to Kisumu district.

His desire to be based in his home district was realized when an opportunity arose to swap posts with a colleague. With personal savings of Kshs. 20, 000, he immediately started rearing broiler chicken and bought one dairy cow in 1991. Earnings from the two enterprises enabled him to purchase a two-acre farm to continue pursuing his dream. He married his wife, Beatrice Omwela, in 1990. The two have worked together to develop their farming enterprise. He built a house on this new piece of land. After visiting his farm in January 2020, I thought about how to make this inspiring experience known to other people. While he calmly and humbly talked about his modest efforts, what I observed was not an ordinary farming activity as a pass-time activity but rigorous agricultural innovation and business development, reminding me of the lessons we learnt in Agriculture in secondary school as well the transformative power of talent when it is effectively deployed.

First Stab at a Farming Business Venture

His first venture was raising chicken or broilers which he started with an investment of Kshs 20,000 from his personal savings in 1991. He sold chicken and eggs locally and to hotels in Kisumu. It turned out to be a profitable venture. He moved on to invest in dairy goat farming in 1991 through an elaborate and time-consuming upgrading programme. With a supportive network of professional colleagues and an eye on his vision of personal development, he consolidated his initial ventures and at the same time explored new ones. He received encouragement from his former director or boss of livestock production in Western Province, who challenged him to invest in farming to create wealth. Alex reported that his former director would repeatedly tell him:

"Adala let us make our money through farming and in our old age, we shall just be sitting with our walking sticks but with money in our pockets without people realizing it" (Interview, 8 January 2020).

This persistent support and personal drive led him to venture in dairy farming in 1992. He constructed a dairy unit using a loan from a savings and cooperative society for Friesian breed of dairy cattle. The pens for chicken, goats and cattle are placed next to each other (Figure 2, Figure 3).

Further Exploration

Over a period of 30 years, Alex has pursued a strategy of strengthening his existing ventures and exploring new ones. This strategy saw him venture into agroforestry, rabbits, banana growing, vegetable farming, firewood, brick-making and transport/lorry. When I visited his farm on 8 January 2020, I observed and learnt that he innovates and tries several initiatives. For example, he is exploring the use of grass strips and fodder trees to stabilize soil to reduce soil erosion instead of the conventional approach of constructing terraces. In pursuit of his farming enterprise, he bought two additional acres of land in 1999. He continued to buy land for his ventures and presently has 8 acres of land.

Alex reported that he has been able to pay secondary school, college and university fees for his four children from his farming ventures. He has also been able to take care of other needs for his family and members of society from income generated from his farming ventures. He appeared to be more reliant on his farming business income than his official work as a livestock officer. He effectively straddles between official employment and self-employment.

Figure 2.

Reaching Out

In addition to his own farming enterprise, Alex has played a key role in managing a dairy goat association western Kenya branch with two hundred and fifty dairy goat groups and this association is promoting dairy goat farming instead of cattle for farmers who have small pieces of land. He has closely collaborated and networked with the following organisations in exchanging technical information, building technical and organisational capacities of the farmers: Action Aid in Bondo sub-county in Siaya county, Small holder Dairy commercialization project of International Fund for Agricultural Development, Africa Now, Sustainable Organic Farming Development Initiatives, World vision and Kenyan county governments.

A respondent noted:

Through Alex's coordination the Dairy Goat Association of Kenya western branch is now fully fledged with its officials and a bank account. The branch is now able to supply breeding stock to several counties in Western Kenya with several groups and individual farmers being involved. Adala has been able to organize and deliver goats to Kakamega, Bungoma, Siaya and Busia County Governments. He also helped to supply goats to Smallholder Dairy Commercialization Programme of Kakamega County. Some of the services offered through the Association are buck rotation to registered groups, technical packages on dairy goats and farmers tours. He has linked the branch to other organizations that are funding some activities. He has done a lot on resource mobilization for the branch which now operates independent of the Nyeri Branch, the head office of Dairy Goat Association of Kenya. (Respondent, Interview through text, 25 June 2020).

Figure 3.

Every year, he receives and hosts at least 30 small and large groups of people that are keen to learn from his innovative approach to farming entrepreneurship (Figure 4). Among groups that have recently visited Alex's farm are his former Kakamega High School classmates who held their annual reunion at his home on 29 December 2019 and were greatly impressed by his farming innovativeness (Figure 5). Alex has registered his farm on Google maps as Mr Alex Omwela Adala Farm, to facilitate easy access by groups that wish to visit his farm.

He regularly offers lessons to student pastors at Kima Theological College in Vihiga County once per month on how to integrate agriculture into their own livelihood efforts as well as that of the religious communities they lead. He is regularly invited to various meetings of youth organisations, including religious ones, to talk about youth entrepreneurship. He has also been invited ounce to give lectures to Baraton University students on farming business with specific focus on dairy goats. During the Annual Scientific Conference of the Animal Production Society of Kenya held in Nakuru, Kenya, in 2019, he was invited to share his experience in dairy goat promotion with the participants. The conference was attended by 600 participants from Kenya and other countries. The Animal Production Society of Kenya brings together all professionals involved in animal production and facilitates acquisition and utilisation of knowledge and technology by these professionals to ensure sustainable livestock, food and income security. Alex shared his long experience in dairy goat value chain, focusing on the current status of dairy goat production in Vihiga County and Western Kenya. He highlighted successes and challenges and provided suggestions on future action. His experience generated a lot of interest from the participants. Questions and discussion concentrated on availability and cost of breeding stock and nutrition. At the end of the workshop, several participants requested for the Kenya Goat Association, to which Alex belongs, to supply them with breeding material. The Small Holder Dairy Commercialization Project

Figure 4.

of International Fund for Agricultural Development paid for the travel and accommodation costs for Alex's participation.

He is an active member of his local Church known as the Church of God. The Church is a few metres away from his home. For example, he is the chair of the building committee of his Church and has been involved in raising funds toward development of various projects within his congregation. Rosebella, a sister to Alex, recall during an interview on 14 June 2020 that while in secondary school, Alex used to be his local church's choir conductor.

It was indicated at the beginning that his farm participated in the National Farmers Award scheme in 2016 and emerged runner up nationally in the category of women in development. A question may be asked: "How does he work with the community in general and women too that facilitated him to get this award?" He contributes to decision-making in his local community and providing advice on farming to his neighbours. He has an interest in growing indigenous vegetables for domestic consumption and commercial purposes. Both him and his wife freely give out seedlings for indigenous vegetables to their neighbours. They do not only give out seedlings but also train their neighbours on management practices to ensure self-reliance in vegetables production while making a saving from the cash they would have used to buy the items and the proceeds are used to meet their basic family needs. For example, since the beginning of 2020, Alex and his wife have given vegetable seedlings to 10 young and unemployed females. In addition, he grows seedlings for his own agroforestry venture and fruit trees. He is currently focusing on g*revillea* tree species, avocado and paw paws.

Figure 5.

Alex contributes his knowledge, expertise and leadership skills to community activities. He was the chairman of Ebubayi Primary School Board of Governors for 15 years. He recently handed over this responsibility to another parent. He also served as a board member for Ebubayi Secondary school for 10 years. He is also a member of the Board of Governors for Musitinyi Dispensary, located in his village. Currently, he is the chairman of Vihiga county Agrodelears Association.

The progress that Alex has achieved is not the work of one person. As indicated, Alex and his wife work together on the farming business. His children are also involved in offering labour and support to the enterprise. One of his children is currently undertaking a training course in Agriculture. Who knows? He may follow the footsteps of his parents and continue to develop their business venture. In addition to his family labour and inputs, Alex employs workers on his farm. Presently he has two permanent workers, a woman and a man. These two are complemented by part-time workers who are hired for specific tasks when additional hands are needed. He has assigned each of his permanent workers to specific farm activities. The woman is in charge of crops while the man is in charge of livestock activities. He has been working with these two permanent staff members for three years now. The woman, who is a widow, commutes while the man, who is a single parent, resides on the farm. Alex has also taken in the single parent's daughter to live in his main house and provides some care and coaching because she is in school. He has provided a separate free house for the man. Alex and his workers look like a family. For example, his workers share meals with him in his main house. Alex and his wife provide other support to the lady who works on the farm.

DISCUSSION

Alex Omwela Adala has tried to stand on his own feet through identifying and exploiting entrepreneurial opportunities in livestock and crop farming. Like most entrepreneurs, he has not only tried to change his personal world but also that of his local community and the dairy goat farming sector in Western Kenya. He reaches out to individuals and groups to share his knowledge and contribute to shaping their worlds. Drawing on his own technical expertise and several networks, he has created his own unique approach to farming entrepreneurship, which can be looked at as a home-grown solution (Easterly, 2006).

What can we learn from this case study about talent and standing on our own feet? I have identified four lessons. The first is that talent, which comprises of individual and collective competencies, skills, insights and experiences (Buckingham & Coffman, 1999), is an economic asset. Each person has one or two talents that they are excellent at (Buckingham & Coffman, 1999). While some people have great observational and spatial talents, others have a knack for details, compassion, persistence, drive, networking, persuasion and venturing (Buckingham & Coffman, 1999). Given the diversity of talents, we should invest in nurturing and cultivating them at home, school and in society. Lifelong learning is key in identifying and nurturing talents. Alex utilised his technical knowledge of livestock development as an important skill to develop his farming business. He has several skills and great experience, but he focused his effort on identifying and exploiting farming entrepreneurial opportunities, initially concentrating on livestock and later extending to crop farming. Apart from his farming enterprises, Alex is a key player in developing goat farming in Vihiga County. He has also opened an agrovet shop at Magada market centre. His entrepreneurial exploration does not always work out well. For example, he bought a lorry in 2017, anticipating a demand for its services but this has not yielded much, and the lorry is basically lying idle in his compound. As expected of a learning society, Alex has never stopped to look for information, strategies and technology that he needs. He seems to have heeded Toffler (1970) who pointed out: “The illiterate of the 21st century will not be those who cannot read and write but those who cannot learn, unlearn and relearn.” This statement is relevant to Alex and all of us today as we pursue our professional development and initiatives with a view to standing on our own feet in Africa. When listening to and observing Alex at work, I initially focused on his technical skills and knowledge in livestock farming. However, on further reflection and synthesis of his life experience, I see him as a networker. His key talent appears to be in networking and building relationships which he then partly uses to support his farming enterprises but also reach out to society to influence change. Alex’s sister, Rosebella, remembers her brother as a hardworking individual right from their childhood days. She talks about him doing most of the household and domestic chores and protecting her from other children who would have molested her in primary school.

Alex has attended several training courses to replenish and expand his knowledge and skill base. For example, he attended a four-week senior management course at the Kenya School of Government in February 2015. He calls it the most senior and very expensive course he has attended so far. He was sponsored by the World Bank to attend this course. He recalls other training courses on value chains, computer packages, HIV/AIDS, supervisory skill management, agribusiness and organizational development.

The second aspect is that talent plays an important role in identifying and exploiting entrepreneurial opportunities for development. Alex would have chosen to sit back and lament the death of his parents and siblings as well as the loss of ancestral land. However, like other creative people, he refused to accept the situation he found himself in as a given (Grant, 2016; Borstein, 2007). Instead, he used his talents to turn things around. This example shows that we too can be entrepreneurial or innovative in several aspects of national and sub-national development: politics, institutions, planning, business, administration, natural resource management, international relations and trade etc. Alex chose to apply his talent to farming business. While others in his local area pursue retail, restaurants and education as investment ventures, Alex identified opportunities in farming and as expected of an entrepreneurial, he has remained innovative, creative and solution-oriented. Listening to Alex reveals that he is continuously scanning and acting on his human and physical environment to improve his farming businesses to move towards standing on his own feet. He is a great networker. Examples of resource persons in his network are James Libaako, an animal nutritionist in the ministry of agriculture headquarters, training division; Wellingtone Mangoli, a retired animal scientist in the Department of Livestock Kakamega county; and Patrick Londi Magana, a dairy goats breeder based in Kisumu.

Alex is constantly dreaming, exploring and taking risks in his farming enterprises. I was amazed at his persistence and relentlessness at goat farming, constructing a shed for them, ensuring they are fed and treated, and ensuring that their shed is cleaned. He is very passionate about goat farming and has sound knowledge and skills about how to raise them. I was also impressed to observe and learn about how Alex ensures interconnection among his enterprises. For example, cow dung from the goat and cattle sheds is used as fertilizer on the farm and for biogas production that supplies energy to the farm (Figure 6). I also learnt that Alex has kept records of his farming enterprises. He has details of the initiatives, costs, revenues, profits and losses. He tells the story of his farming without reading a document though he has an extensive library on all these activities.

Alex has also had low moments. Though he has the relevant technical knowledge and a good network, he acknowledged that all does not work always as planned. When asked to identify a moment when his business was low, he pointed out:

Figure 6.

Overproduction of broilers specifically, without well-defined market for the product. The big market we relied on particularly in Kisumu changed mind and started getting supplies from senior and well to do businessmen and since we had not entered into legal agreements, we had no ready market for the product. This resulted in heavy losses as additional cost of maintaining the products ate into the profit. Being desperate, we contacted the company employee who had sold for us the chicken and we eventually sold through him but at a huge loss. (E-mail correspondence, 24 April 2020).

The third lesson is that we can use our talents, skills and achievements to give something back to society. Alex's involvement in his local community suggests that there is room for each one of us to give something back to society through productive and meaningful engagement with development issues. In addition to contributing ideas and strategies, Alex has found practical ways to give something back to society, for example, mobilizing community action to improve food security situation through goat farming (Figure 7).

Figure 7.

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(366, 9)
[[ 1.99498964e-01  6.49655136e-01 -9.04085761e-02 ... -3.05894733e-01
  -5.95096699e-01  1.00000000e+00]
 [-6.85108405e-01 -5.62395129e-01 -6.25249235e-01 ... -1.77941164e-01
  -4.39336753e-02  1.00000000e+00]
 [ 5.57665974e-01  8.31823665e-01  1.73795968e-02 ... -5.43925754e-01
  -7.86135659e-01  1.00000000e+00]
 ...
 [-9.18185606e-01  3.57324726e-01 -4.59328632e-01 ...  7.94970254e-04
   1.45634519e-02  1.00000000e+00]
 [-1.08492549e+00  1.15568114e-01  4.89564724e-01 ...  8.67530274e-02
   5.14637531e-02  1.00000000e+00]
 [ 1.40180720e+00  7.89322096e-01  4.12717456e-02 ...  7.40017142e-02
  -2.30034376e-01  0.00000000e+00]]
```

Alex's efforts resemble the determined efforts of several individuals described by Bornstein (2007) who have been innovative in addressing and providing solutions in education, healthcare, energy and employment in several countries around the world. While giving back to society is a noble goal, Alex is ensuring that he is empowering and transforming society to become self-reliant and not over dependent on him. He gave an example as follows:

I have collaborated and networked with the department of probation in Vihiga county to mobilize resources which we have used to train remandees, those jailed for minor offences, to start new life from when they leave prison. I initiated a goat programme whereby we bought each one of them a dairy goat and it became so successful. They have changed their lives. In Homa Bay county, we brought together people living with hearing disability and formed deaf ability initiative and they fundraised on their own and I was given the task to mentor them and initiate a poultry project in Oyugis. (E-mail correspondence, 24 April 2020)

While supporting individuals and communities to stand on their own feet, Alex has also gained insights into skills that are needed as revealed in the following statement:

I have been engaged in several youth training and mentorship programs and one area that is missing among our youths is creating linkages, networking and collaborating with other stakeholders. (E-mail correspondence, 24 April 2020)

Alex recommends that this gap needs to be addressed in programmes for the youth through such initiatives as information sharing through platforms, social platforms, media and or linking of youths to well-wishers, government institutions and financial service providers.

The fourth lesson is the need for Africa to harvest and invest existing tacit knowledge to nurture its industrial and overall development. As Nonaka (1991) has stated, tacit knowledge is highly personal, deeply rooted in action, context, experience, practice and values. It is acquired by the subject matter experts over a long career period. It consists of "…technical skills, mental models, beliefs, perspectives, and is so ingrained and that we take it for granted and cannot easily articulate it." This form of knowledge contrasts with explicit knowledge that is codified and found in databases and documents. As a researcher, I realised that Alex has in-depth experiential knowledge, insights, skills and networks that he utilises to pursue his farming businesses. He avails some of this knowledge to society through collaborative efforts and support to society. However, there is so much that he has in his mind that I wonder if it has been systematically harvested and utilized by political leaders, policy makers and practitioners both at the local and national levels. I might not even have harvested most of his tacit knowledge and wealth of wisdom for this chapter. Alex is a rich asset to Kenya and the rest of Africa (Figure 8).

To tap into knowledge for use by others, the author asked Alex to give tips to upcoming and practising farming entrepreneurs. He provided the following tips:

- Take time and learn through visits to farmers and institutions and participate in agricultural shows with similar enterprises to share and gain more knowledge, challenges and opportunities.
- Consult the technical experts to assist in carrying out a bankable business plan complete with financial and marketing plan in the value chain you want to engage in.
- Where producer groups, cooperatives and marketing platforms do exist, join them for collective marketing.
- Collaborate and network with other actors in the value chain.
- Be honest and transparent with your clients.

Figure 8.

FUTURE RESEARCH DIRECTION

Research topics for future direction are not easy to determine and specify with certainty because they depend on several factors such as research interests of scholars, new developments in society and availability of funding. Nevertheless, researchers are expected to identify possible research topics for the future at the end of a chapter or an article. This author has not closely followed the extent to which the proposed topics that are presented in several publications are taken up by future research. There are several other knowledge-bearing individuals like Alex in Africa. They have a wealth of knowledge, insights and wisdom borne out of real-life experiences in several sectors. They constitute what my late sister Mary Khayesi would call a moving library. Whenever a person with this type of knowledge would die, my sister Mary would remark that that was a whole library that had gone. In line with my sister's thoughts, this case study underscores the importance of harvesting and investing knowledge for Africa's industrial development. Thus, it is necessary to pay attention to two critical areas if knowledge is to be of substantial economic significance: the need to start recognizing the importance of harvesting this knowledge as a deliberate action, and to start training in techniques and how to avail tools to harvest knowledge.

This author suggests that African academic and policy institutions should devote financial and human resources to harvesting the valuable tacit knowledge that exists on the continent for its agricultural and industrial development. This knowledge resource can be harvested and invested by:

- gathering, storing and disseminating this knowledge through case studies, stories and videos;
- establishing programmes and departments devoted to knowledge economy;
- involving individuals with insightful tacit knowledge and wisdom in decision-making and planning of industries and other sectors of the economy;

- actively utilising firms and ventures created by these innovating individuals as centres for mentoring, attachment and training. Instead of beginning entirely new projects most of the time, such ventures and their hinterlands can be supported to continue with the development initiatives they are already pursuing.

LIMITATIONS OF THE STUDY

There are two main limitations of this study. The first is that this single case study has valuable lessons, but the reader needs to interpret them in context, remembering that it is a specific experience pertaining to the business and life trajectory of Alex. Readers who wish to apply any principles from this case study needs to work them out in their specific realities. Thus, this case study cannot be readily generalised to other settings.

The second limitation is that a comparative analysis of experiences similar and different from Alex's trajectory should have been conducted. This ideal is the desire of this author who is at the beginning of demonstrating how tacit knowledge can be gathered and disseminated. Alex's trajectory is the first in-depth case study in this effort. The author has identified other possible case studies and has presented an additional example of coping with COVID-19 that is presented in this book.

CONCLUSION

This case study provides an example of research methods and entrepreneurial experiential insights that can contribute to African citizens enhancing their personal and community development through utilizing their talents. The case study shows the importance of deeply nurturing individual and collective talents and skills and deploying them to transform ourselves and society to stand on our own feet. As it has been demonstrated in this case study, utilising talent may require one to take bold steps with courage to implement existing and new ideas towards self-reliant development at individual, community and national levels. After reading a draft of this chapter, a reader stated:

Thank you for sharing this case study. It is well written, insightful and inspirational. (A reader, 23 May 2020).

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Chapter 5
Blending Local Government Authorities and Grassroots for Industrial Economy Through Participatory Development Communication in Tanzania

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ABSTRACT

The chapter using participatory communication for development approach seeks to gauge the performance of LGAs in drawing the grassroots into taking a leading role in micro-manufacturing development. The study was conducted in Bahi district and it involved two wards, namely Mpamantwa and Bahi-sokoni. Focus group discussions, observation, and interviews were used as data collection methods. A total of 51 participants were used in the study. The results revealed the relationship between industrialization awareness and achievement of industrialization vision. People at the grassroots are still not aware of their role in industrialization process due to lack of education and capacity. At the same time, LGAs also still wait or depend on the central government on the process. The study recommends awareness creation through participatory communication strategies to both LGAs and the grassroots and improvement of the line of communication between the LGAs, grassroots, and other key players in the development of industrial economy.

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INTRODUCTION

Globally, industrialization plays a key role in the nation's economic development. This aspect, relies on the link between industrialization and economic growth (Szirmai, 2012). Industrialization allows for greater economies of scale, with countries that are able to produce larger varieties of goods also being far more likely to undergo rapid economic growth (Hausman et al., 2007). Leaving aside successful nations with strong industrial economy like China, Britain, Germany, Japan, United States etc., there are several countries that have been successful in industrialization especially developing ones like Indonesia, India, Thailand and Turkey. The reason behind their success is that, such countries underwent industrial structural change and stressed on the use of information on the domestic credits and private sector and inclusivity of people in the process (Martorano, Sanfilippo & Haraguchi, 2017). Inclusiveness involves the participation of people from the grassroots to the national level and have common understandings and actions on the industrialization process. Also, United Nations Industrial Development Organization (2018) encourages the governments sharing information and movement of the industrialization process to be inclusive especially to the poorer (lower) segment of the society. In fact, the inclusive aspects encouraged here relates to the sharing of knowledge, expertise, experiences, challenges and actions if a country is to attain industrialization prospects.

In Africa, the calls for industrialization has been stronger than they have been lately. Arguably, it is the most talked about subject among policymakers of many of the African countries. Yet the continent is less industrialized today than it was four decades ago. In fact, the contribution of Africa's manufacturing sector to the continent's gross domestic product actually declined from 12% in 1980 to 11% in 2013, where it has remained stagnant over the past few years (Tafirenyika, 2016). The question has been what, are the options for Africa to industrialize in the next few years to come. This was the question policymakers and economic experts wrestled with in Addis Ababa, at the launch of "Economic Report on Africa 2016: Greening Africa's Industrialization." The question African countries have not been able to answer adequately is on the best approach to boost the industrial economy (Economic Commission for Africa, 2016). During the discussion of experts, it was revealed that, one of the main reasons for Africa's slow industrialization is that, its leaders have failed to pursue bold economic policies. Many experts have called on Africa to practice so-called sophisticated or smart protectionism that is, to impose temporary tariffs to shield budding industries from the negative effects of cheap imports as part of its strategy to industrialize (Tafirenyika, 2016).

However, the challenge in Africa has been on the power of local factories to compete. This attracts discussions due to the fact that, the weaknesses rely mostly on the communication between the governments and people (grassroots) engaging in let say small scale industrial practices. This is an area that has not been focused by many in Africa. The grassroots are clearly found in the local governments' jurisdictions, there is where the improvement and perhaps encouragement need to focus due to the aspect that, people at this area are engaging in small scale manufacturing at high pace. Surprisingly, African countries have been focusing on protecting local products with little emphasis on building the foundation by strengthening communication between governments (perhaps the local government) and grassroots engaging in manufacturing sector to boost the process. The communication helps sharing knowledge, challenges, decisions and actions to be taken to improve the process of industrialization if they are to attain industrial economy agenda.

Tanzania in particular, industrial sector has evolved through various stages and policies since independence in 1961 with difficulties (Skarstein & Wangwe 1986). Msami and Wangwe (2016) further delineate three phases: early years of independence (1961-1966); during which the emphasis was placed on growth with little attention to structural change or ownership. The colonial pattern of import substitution was continued (largely processing and simple consumer goods). Socialist era (1967-1985); this era was marked by nationalization and establishment of new industries under state organizations. Structural adjustment and liberalization phase (1986-1995); here the state was unable to run the industries it started, most of them had stopped operating, as a strategy to rescues the situation, the government had to privatize them. However, the strategy did not work out well as most privatized factories did not come back to operation, instead some of them were turned into godowns (Msami and Wangwe, 2016)

Then came the Sustainable Industrial Development Policy SIDP1996-2020 which aims to enhance sustainable development of the industrial sector with a priority to employment creation, economic transformation, and equitable development and seeks to strike an appropriate balance between import substitution and export orientation. One of SIDP targets is to initiate affirmative-action measures to promote indigenous entrepreneurs. However, SIDP fails to recognize the role the LGAs can play in promoting and developing manufacturing sector (Ministry of Industries and Trade, 1996).

Let us train our focus to the most recent government move, The National Five Year Development Plan 2016/2017-2020/2021 (FYDP II) and Tanzania Development Vision (2025) which is all out to see Tanzania graduating to a middle-income country by walking its theme "Nurturing Industrialization for Economic Transformation and Human Development" (Ministry of Finance and Planning, 2016). The FYDP II deserves some credits for devoting a space unfolding the role of LGAs in achieving Local Economic Development (LED). The outlined supporting strategies for LED through LGAs include: Regions and LGAs tendering and procurement procedures are designed to favour small contractors and emerging businesses; Support businesses done by the disadvantaged communities; investing in physical (hard) infrastructure by improving roads, sewerage systems, airports, etc. for businesses; investing in soft infrastructure including human resource development, institutional support and regulatory issues; marketing of LGAs' investment opportunities to local and international businesses, including supporting service centers that provide assistance and information to businesses that want to start operations in their respective areas of jurisdiction (Ministry of Finance and Planning, 2016). More than any other policy, the FYDPII has gone miles by directly including the LGAs in realizing the LED.

Whereas the FYDPII is to be recommended for giving the LGAs their due impetus, its strategies in achieving the LED are mainly on giving material support like: improving roads, sewerage systems and institutional assistance, making LGAs tendering mechanism that favours small businesses. The awareness creation through participatory communication or 'soft infrastructure' has received a slight mention (Ministry of Finance and Planning, 2016). That is a conspicuous drawback as awareness creation is important in translating programs and plans into action.

One would expect in the implementation of all the mentioned programs since independence, the LGAs would have taken a critical role and position. LGAs are established under the constitution of the United Republic of Tanzania article 145. Its purpose is to transfer authority to the people. LGAs are vested the right and power to participate, and to involve the people in the planning and implementation of development programmes within their respective areas and generally throughout the country as stated in article 146 of the constitution (Rugeiyamu, Masanyiwa & Nziku, 2018). LGAs in Tanzania have outstanding history. It has passed through important epochs trending even before colonialism. Other epochs includes independence period (1961-1971), decentralization period (1972-1980s) where LGA were abolished and reform period (1980s to present) where they were re-established by The Local Government (District Authorities) Act, 1982, No. 7 of 1982; The Local Government (Urban Authorities) Act, 1982, No. 8 of 1982 for rural and urban authorities respectively (Mmari, 2005). Basing on all of its up and downs, LGAs are intentionally expected to involve people in planning, implementation and evaluation of the development programmes and agenda. Every development agenda that has to be implemented at the national level should be made while considering the involvement of LGAs due to its multi-sectoral status (REPOA, 2008). The agenda referred include that of industrialization which aims at making Tanzania a country of middle economy by 2025 as revealed in the Tanzania Development vision. In this sense, one would argue that, LGAs as the purpose of its establishment states, they are required to take a lead in nurturing industrial economy by sharing information, participating and involving people in the process. Moreover, among the strategies mentioned in realizing the 2025 vision is promoting LGAs and communities and broad based grassroots participation in mobilizing resources, knowledge and experience with a view of stimulating initiatives in all levels of society. Despite the mentioning of LGAs and grassroots, their success depends on the capacity and readiness of LGAs to act on the process. Nevertheless, this chorological and policy account is a clear indication that industrial programs do not give the LGAs their due impetus as a crucial factor in building inclusive, well performing and sustainable industrial sector in Tanzania.

The oversight of the LGAs role is also seen in studies on industrialization as well. For instance, Dihn and Monga (2013) and Ramis (2002) unravel the constraints to development of light manufacturing sector in Tanzania as inadequate power supply, inadequate transportation infrastructure, and lack of entrepreneurial skills, lack of access to financial assistance and the absence of venture capital. In the study by Oni (2012) on failure of small industrialization in Nigeria, mismanagement and misappropriation of fund allocated for the purpose of supporting the small scale industries is reported. The missing of LGAs in industrialization process is not mentioned as a factor for backwardness in studies that investigate on the failures of the manufacturing sector, despite the fact that LGAs are an important avenue to bring the grassroots into policy implementation. The less emphasis of the role LGAs in industrial economy is due to dominant top-down system in decision making.

The top-down decision making regime has been the most ineffective in terms of achieving sustainable development (Campbell & Shackleton, 2001). When a policy is dictated by those in power, the rural communities are relegated to the position of recipients and in turn they are alienated from resources they should rightfully control, manage and beneðt from (Songorwa, 1999; Ajayi & Otuya, 2006; Okon, 2017; Orapin, 1996). Alexander & McGregor (2000) conclude that, a programme that does not include the community in its implementation fails. It is undisputed fact that, top-down approach is less efficient in attaining sustainable development as these studies suggest, although they do not indicate how the LGAs can be used to ignite bottom-up methodology.

The LGAs are veritable agents of development through grassroots participation (Ezeani 2006; Ozor & Nwanko, 2008; Adams, 2008; Mwanga, 2011). The grassroots are ordinary members of the community who have to take full control of the process and outcomes of development (Gupta et al., 2003; Seyfang & Smith, 2007; Mwakisisya, 2020). The role and position of local government in development process cannot be overemphasized. Mwankupili (2018) and Riwsuwan (2003) maintain that, the aim to establish local government system was to encourage citizens' participation in public authority, development planning and implementation. It is the local government authority that creates an avenue for the grassroots to take part and be in control of development undertaking (Kheerajita & Florb, 2013; Chambers, 1983; Labaris & Yusuf, 2013). Adamolekun (1983) adds that, Local government means people's political instrument to participate in resource allocation, distribution and power acquisition and enabling the beneficiaries to desist being only passive receivers. Much as these studies acknowledge the importance of LGAs in development, their focus is not specifically on industrial economy. Additionally, they do not focus on how communities can be involved in development process through participatory communication.

This study, therefore, seeks to gauge the performance of LGAs in drawing the grassroots into taking a leading role in micro-manufacturing development in Tanzania through Participatory Development Communication approach.

PARTICIPATORY COMMUNICATION FOR DEVELOPMENT: EMPIRICAL STUDIES

The importance of communication in development cannot be overemphasized. Owusu (2014) in the study focusing on the role communication plays in sustaining development projects in Sekyedumase Municipality, Ghana, maintains that, in communities where communication was effectively used as a means for behaviour change there was active people's participation in development projects. According to the author, this in turn lead to more self-reliance and project sustainability than in communities in which participatory communication was not adapted. Zemenu (2012) observes that, communication is an important tool used by non-government organizations (NGOs) in raising awareness and providing training to communities in order to equip them with the right knowledge in managing their projects and responding to their failure. In the study done in Quarit Woreda village, Amhara Region, Ethiopia, Zemena (2012) further reports that communities were willing to take responsibility for handling operation and maintenance issues after an intense awareness creation was done.

The importance of communication in recent years has also been evident in health sector as well. Community based health communication interventions have been instrumental in the control of the recent Ebola crisis (Santibañez et al., 2015). It helped improve self-care and treatment satisfaction among low-income diabetes patients in Tennessee, United States (White et al., 2015) contributed to strengthening health systems in Zambia and Japan (Henning 2015 et al). Yitayal et al. (2014) report that Ethiopia has implemented a nationwide primary health program at grassroots level (known as the Health Extension Program) since 2003 to increase public access to basic health services. According to the study, The Health Extension Program has been implemented, and thanks to participatory communication, there is increase in utilization of contraceptives in the rural community which has in turn improved family planning.

Again, community-based communication has been so effective in awareness creation. This affirm the fact that, when lines of communication are open in a community and all voices are encouraged to express themselves, with the expectation their ideas will be acknowledged and considered, more solutions, and more creative ones, can emerge (Schiavo, 2016). In these studies (Zemenu, 2012; Santibañez et al., 2015; White et al., 2015; Henning et al., 2015; Yitayal et al., 2014) the focus is not on the role and position of LGAs in reaching out to people through participatory communication hence showing the gap between them and this study.

Moreover, in the view of Aruma (2018) communication in community development is important for conscientization of members of participating communities, provision of relevant information, provision of opportunities for dialogue and discussion, and provision of opportunities for sharing of information and ideas that will facilitate effective service delivery in community development. A collective action by the community to improve their lives is a result of a well-coordinated communication. As Onah (2006) observes, communication help to create an enabling environment for a development programme in the society.

THEORETICAL FRAMEWORK: PARTICIPATORY DEVELOPMENT COMMUNICATION APPROACH

Participatory development communication is the process by which people become leading actors in their own development and enables them to become generators of their own development as opposed to being mere recipients of external development interventions. At the heart of the concept of development communication is the need for an exchange of information in order both to contribute to the resolution of a development problem and to improve the quality of life of a specific community (Bessette, 2003).

Tufte & Mefalopulos (2009) define Participatory Development Communication as an approach based on dialogue, which allows the sharing of information, perceptions and opinions among the various stakeholders and thereby facilitates their empowerment, especially for those who are most vulnerable and marginalized. Singhal (2001) defines participatory communication as "a dynamic, interactional, and transformative process of dialog between people, groups, and institutions that enables people, both individually and collectively, to realize their full potential and be engaged in their own welfare." Therefore, participatory communication refers to two-way communication based on dialog between people, groups, and organizations, which empowers various stakeholders, especially the grassroots, to equitably share and exchange information, knowledge, and experience.

Thus, the major tenet of this approach is dialogue when it comes to development. Dialogue is a prerequisite for participation and, by implication, a prerequisite for authentic development. In the context of development communication, the dialogical process involves a two-way flow of communication. Scholars with significant contributions in this approach include Buber (1924) Rahim (1994) and Freire (1970). In this regard, this study was informed by Paulo Freire on the concept of dialogue. Paulo Freire, an educational theorist, modified the concept of education when he emphasised that education leads to awareness. It is insisted that, communication is not a 'one-way' persuasion process but is rather a dialogue in terms of which both the sender and the receiver of messages interact over a period of time in order to arrive at shared meanings. It is expected that, the environment for participatory development communication be supportive, creative, consensual and facilitative, thus leading to the sharing of ideas through dialogue

Freire (1970) as reflected in Cadiz (2005), suggests five characteristics of participatory development communication including communication between equals, problem-posing, praxis, conscientizing and five values. However, for the sake of this study, the focus is on the first four characteristics due to its significant relevance to the subject at hand. These characteristics of participatory communication approach will enhance our understanding on how it works for effective desired outcomes.

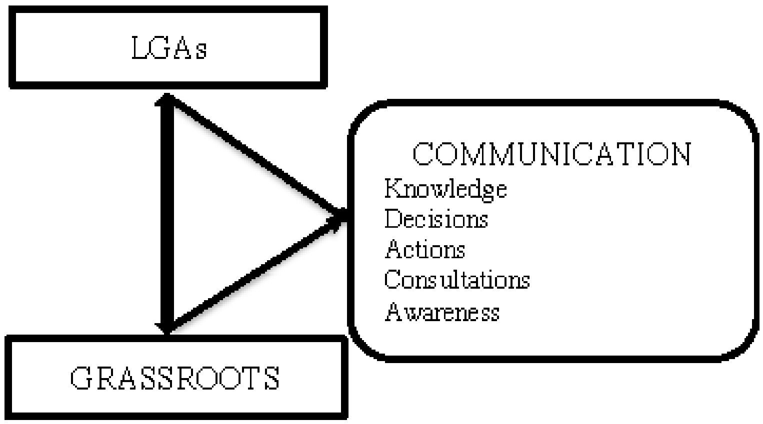
1. Communication between equals. This refers to the equality among all stakeholders. Freire's uses example of the equality of exchange of information between "extensionist" and "farmer", "expert" and "user", "communicator" and "audience", and "sender" and "receiver" interchange roles in a mutually beneficial two-way interaction. The redundancy in the preceding statement is intentional for purposes of emphasis. They can interchange the roles of the sender and receiver in two-way interaction. This means both the sender and receiver have been empowered. Centering on the aim of this chapter, there need to be equal communication between LGAs and citizens for ensuring that both sides are aware of industrialization agenda by the same weight for the aim of maintaining the reciprocal collaboration as Servaes (2003) observed that participatory communication stresses reciprocal collaboration throughout all its levels.

2. Problem-posing. This refers to the developer, expert, or facilitator acting as a mediator to facilitate the members to discuss together, not a solution provider. Freire insists problem-posing dialogue, contrasted to for example a banking-type of education where teachers, trainers and or development communicators merely deposit knowledge, expecting the development to be able to withdraw these when the need arises. On the other hand, a problem-posing dialogue or participatory communication draws from the learner's or people's stock knowledge, experiences, and insights, eliciting these by raising relevant thought-provoking questions rather than merely presenting prescriptive solutions to development problems. The approach shifts the role of development communicators from just serving as transmitters, conveyors, translators, and disseminators of relevant information, to that of facilitators of a process of social change capitalizing on human learning at the individual level and in community. The communicator can best perform his/her role in development as facilitator, consensus-builder, mediator and conflict negotiator (Quebral, 2001).
3. Praxis, a cycle of action and reflection. This refers to the translation of information into communication practice in development. Translated into communication practice in development, a change agent refrains from lecturing and recommending development solutions without first drawing out from users their needs, own analysis of the development problem and its possible solutions, and requests for technical information. Instead, he/she adopts the adult education approach of capitalizing on the people's experiences, an inductive approach to teaching that first analyses practice, then by reflection draws from such analysis theories and generalizations in the form of lessons learned. Development work thus involves engaging in action with partners, in the process learning with them in alternating activities and evaluations or reviews of actions taken.
4. Conscientizing. This refers to the growing of all stakeholders in understanding human, social, and development processes. Freire expounds on conscientization, a process of advancing critical consciousness. In a dialogue, development partners, as deliberate, construing, and goal-seeking participants, grow in understanding human, social and development processes. In this process, participants increase their willingness to take risks. They become a party to or stakeholders of social change, based on a conscious decision to engage in such change, uncomfortable as conditions brought about by change may be, and based on a deeper understanding of their realities. A good measure of whether participatory development communication proceeds fruitfully is when development partners' conscientization becomes evident. The proponent insists that, conscientization is not only for development partners in community. As active participants in a dialogue between equals, it should also be evident in the change agent and development sponsors, managers, and facilitators coming from international, government, and nongovernment agencies, and the academic (Srampickal, 2006).

Generally it can be said that, participatory communication for development emphasises the empowerment of people through dialogic communication. The process will be more effective if the change agents and community members were able to bring about changes within the structures of domination. It is through communication, involvement in decisions and actions that peoples' embedded knowledge is unleashed and people placed in a position to overcome the dominant forces that impede social change (Chitnis, 2005). The following diagram shows the process of communication to be put into consideration when implementing the approach.

Contribution to the Study

Figure 1. Communication framework between LGAs and Grassroots for industrialization process
Source: Authors (2019)



The major premise of participatory development communication is dialogue between parts in communication. Centering the discussion to the study, the dialogue is between grassroots and LGAs in understanding and implementing industrialization agenda. On one hand, LGAs have role of ensuring that the idea of industrialization is filled in the mind of grassroots (community members) including where the idea come from, how to implement it and significant aspects required during implementation. On the other hand, grassroots after being informed, they have to contribute their thoughts on how to go about process of industrialization. Revealing the challenges that might encounter them in the process and LGAs helping to find the solution.

In this regard, the approach aims to ensure that the process of industrialization is not owned by a certain group rather it is everyone's responsibility. Both LGAs and grassroots need to own the process of industrialization, share ideas, solve problems together and give necessary inputs towards its realization. However, LGAs need to function as experts of the process and therefore having a major role to play in the suggested dialogue. LGAs need to act as a centre of knowledge, consult, share ideas and receive thoughts of grassroots.

Basing on the whole idea of the approach, the study centered on finding out the following aspects; information gap on the implementation of industrialization agenda, consultations and interactions between local communities, village, ward and council management team (based on the system LGAs system of Tanzania), communication strategies to market ready-made products, LGAs meeting and discussing with community members about industrialization agenda, record keeping by lower LGAs on the community efforts on industrialization, community members awareness on the existence of business council and awareness creation to community members by LGAs. Again, the revealed characteristics of the approach by Freire (1970) are used to discuss the findings.

RESEARCH METHODS

Research Design

This study used case study design. Case study constitutes a qualitative and interpretive approach to understanding the experiences, features, behaviors, and processes of a specific or defined unit (Yin, 2014). Due to the fact that, the study aimed to find out in-depth thoughts, opinions and experiences of peoples' of Bahi on nurturing industrial economy, thus, the design said was fit.

Study Area

This study was carried out in Bahi district which is among the six districts of Dodoma region located in Central Tanzania. The district is located 50 km from Dodoma Region Headquarters, it is predominantly rural covering a total area of 544,842 ha (13% of total area of Dodoma Region) (Lwelamira & Safari, 2012). Being rural, Bahi district was purposively chosen since the study aimed at assessing the collaborative response of LGAs and the grassroots to the Industrialization call. Moreover, it was prudent to use the study area with the mentioned feature to see how deep the call for industrialization has trickled down. Two wards were selected for the study, namely Bahi-Sokoni and Mpamantwa.

Data Collection

The methods used for data collection were unstructured interview, Focus Group Discussion, observation and documentary review. Unstructured interview was administered to the three (3) officials at the council levels, namely the District Executive Director (DED), District Community Development Officer (DCDO) and the District Planning Officer (DPLO). The information expected from these three was on policy and planning towards the implementation of the industrialization policy. The unstructured interview was also administered to the Ward Executive Officers and the Community Development Officers from Bahi Sokoni and Mpamantwa wards respectively. Unlike structured interviews, unstructured interviews allow probing, enabling the researchers to elicit a lot of desired information. With unstructured interview, the researcher may ask more questions after observing something, or requesting more explanations about something (Magigi 2015). In both Bahi and Mpamantwa, Four (4) Village Executive Officers, two (2) from each Ward were also administered with unstructured interviews. From the ward and village level the researcher was interested in getting understanding on the implementation of the industrialization policy. These members of LGAs were purposefully chosen for interviews as they are key informants.

Again, researchers conducted an interview with 12 people, 6 from each ward, who run micro-manufacturing activities. These were carpenters, metal workers, as well as weavers and brick makers. The researchers used snowballing to get the respondents and participants for FGD. The WEO identified few respondents who in turn identified others.

Also, a total of four (4) Focus Group Discussions (FGD) were conducted (two FGD for each wards were organized). The FGD were named one (1) and two (2) for Mpamantwa ward and three (3) and four (4) for Bahi Sokoni for identification purpose. For each ward, the FGD were composed of 7 members from groups running small manufacturing enterprises, individuals with skills or run small manufacturing enterprises, namely; carpenters, metal workers, weaving and brick makers. Other participants in FGD were those whose activities have the potential to spur micro-manufacturing growth, these were gardeners, farmers, herders, making a total number of 28 participants for all the four FGDs. With FGD the researcher wanted to delve into the subject by aiming to know the awareness about micro-manufacturing sector among the respondents, and if there is any support or collaboration with the LGAs. This made a total of fifty-one (51) participants that were included in the study.

Moreover, Observation was also another method used in collecting data. Through observation the researchers were able to get information that respondents knowingly or unknowingly could not give. For instance, the relationship between the grassroots and their leaders, as well as the resources available in the area. The document reviewed was Bahi Profile from which the researchers found the information about population and available resources in the study area.

Data Analysis

Table 1. Category of Participants

Category	Number & Sex of Participants			Percentage (%)
	M	F	T	
DED	1	-	1	2
DPLO	1	-	1	2
DCDO	1	-	1	2
WEO	1	1	2	4
CDO	1	1	2	4
VEO	3	1	4	8
Carpenters	7	-	7	14
Metal workers	6	-	6	11
Weaving workers	3	3	6	11
Herders	3		3	6
Gardeners	1	2	3	6
Brick makers	5		5	10
Farmers	5	5	10	20
Total	**38**	**13**	**51**	**100**
Percentage (%)	**75**	**25**	**100**	**-**

Key: **M**= Male; **F**= Female; **T**= Total
Source: Study data (2019)

The study employed thematic approach in data analysis. This is a qualitative approach that emphasizes on identifying, analyzing and interpreting patterns of meanings (themes) within the collected data (Macqueen & Namey, 2012). Due to the qualitative nature of data collected, the approach was seen to fit the analysis. In implementing the approach several procedures were followed as elaborated below.

Data Analysis Procedures

Significant procedures that were used in analysis were; one, the data was transcribed verbatim two, examination and interpretation of the resultant codes into descriptive themes three, the interpretation of data into abstract analytical themes and four, data were examined by their relevance and categorized into themes in order to make sense of essential meanings of the study at hand and then they were written up in the report.

Ethical Consideration

In this study confidentiality, citing previous studies and bracketing as important tenets of research were maintained. First, confidentiality was maintained by ensuring that participants are assured that the data that they were revealing were treated confidential and that were used for the intended purpose. Second, previous studies used were acknowledged to ensure worth of the findings. Third, bracketing was upheld to avoid author's preferences to dominate study results, hence, the results were data driven.

RESULTS

This part presents the result of the study findings. It reveal the communication related stumbling blocks to industrial economy in Tanzania. It shows how poor communication paralyses the manufacturing sector in the study area. In that sense, the following results were revealed based on the ideas of theoretical framework guiding the study. However, the results are based on the following sub themes; information gap about the implementation of industrialization agenda, consultations and interactions between local communities and LGAs, communication strategies to market ready-made products, LGAs meeting and discussing with community members about industrialization agenda, record keeping by lower LGAs on the community efforts on industrialization, community members awareness on the existence of business council and awareness creation to community members by LGAs. Moreover, the discussion part of the findings is provided based on the characteristics of participatory communication approach suggested by Freire (1970) as reflected in Cadiz (2005).

Information Gap in Terms of Knowledge on the Implementation of Industrialization Agenda

The study revealed that, at the district council level industrialization is understood to emanate from the grassroots. During the interviews with the District Executive Director (DED), District Planning Officer (DPLO) and District Community Development Officer (DCDO) maintained that, people should organize themselves and use the available resources to start their own small industries. According to these officials, people, for instance, who do gardening can process products like fruits, vegetables or tomatoes to add their value for marketing. To cement the revealed answer, the District Executive Director (DED) when interviewed said:

In the process of implementing industrial economy, people should embark in starting small factories on their own. They should not sit and wait for the government or any other organization to do that for them.

The DPLO added that;

For those who are engaging in gardening, they can start small processing plants to add value to their products, which will see them getting more profit.

This proves that, at the level of District Council level, it is well understood that, industrialization process should begin at the grassroots level. The people should be at the center and thus, drivers of the process.

On the contrary, the grassroots believe the factories and industries will be built by the government. Majority are waiting for the government to build factories in their localities. During interviews, one of the participant from metal workers category said;

We are ready for industrialization, but first, let the government build factories for us to work in them.

Another participant from the carpenters' category added that;

After the launching of the industrialization campaign, we are eagerly waiting for the government and other investors to come and build factories in our village and create jobs for us.

The same was also revealed among the Ward Executive Officers (WEOs), Village Executive Officers (VEO). There is no shared understanding of implementation of the industrialization agenda at all levels. When the government launched the industrialization campaign, it gave directives to all the LGAs in the country to set aside lands for building factories and the related activities. During the study it was found that, WEOs and VEO from both Bahi Sokoni and Mpamantwa were unaware of their responsibilities especially those pertaining to industrialization. They hold that their duties end- up with ear-marking areas for industrial activities. They wondered why the government has not yet started building factories in those areas. Additionally, they want the government to form an organ that will be responsible for monitoring the industrialization process. If a lot is to be thus left on the shoulders of the central government, industrialization is on the bumpy road. During the interview one of the participant from WEO category said:

We are ready to set aside the land for industrialization, the government should come to invest.

Another participant from VEO category added:

I think my responsibility is ear -mark areas for factories, I leave others for the government. We have set the land but the government is yet to come, I wonder why?

Then, another participant from VEO category added:

I think the government should form organ to monitor the industrialization process.

The knowledge discrepancy is clearly seen when one looks at participants responses. While at the district council it clearly understood that, industrialization process should start at the grassroots, it is contrary to the lower level of LGAs like ward and villages and the grassroots where they know that it is the government that should be the champion of the industrialization process. Arguably, the information gap revealed, creates poor link between LGAs and grassroots in the process of industrialization. Every part is doing in its own way. It can be said that the LGAs at the district council while understanding the process to commence at the grassroots, they have not shared such knowledge to the intended settings, thus retarding industrialization efforts.

Lack of Consultations and Interactions Between Grassroots, Lower Level and Upper LGAs

Due to the knowledge gap revealed above, the study revealed lack of effective consultations and interactions between people at the grassroots, lower (village and ward) and upper LGAs (district council). This results into hardships to the grassroots to produce and market products, arguably, retarding industrial efforts. Consultation and interaction is supposed to provide a forum for all stakeholders from the District Council level to the grassroots in manufacturing sector to deliberate on various issues including challenges. The study found no forums for sharing pertinent issues about manufacturing sector. The following are some of the problems observed during the study hurting the industrialization process as a result of lacking a forum to deliberate them;

Pests and Diseases: Gardening produce serve as important raw materials for industries. One of the important economic activities in Mpamantwa village is gardening. The crops mainly produced are vegetables, tomatoes and onions. These gardens are attacked by pests and diseases. At least each farmer has a whole of the nursery being affected and so no transplanting can be done. The same can be said about mature plants. This has adversely impacted on the production. And since there is no concerted rolling back efforts by both the community and the LGAs, pests and diseases are becoming persistent and widely spreading. The problem is not known to the local authority. This has made some farmers to abandon gardening in despair, they find no need to invest a lot of effort, time and money on gardening while getting little or even nothing in return. To put it into perspective, when there is low pests and diseases prevalence, 1 acre produces up to 100 buckets of tomatoes or 1 ton of vegetables. This is contrary to paltry 20 to 30 buckets of tomatoes or 200 to 300 kilograms of vegetables during high prevalence of pests and diseases per the same 1 acre.

Shortage of Water*:* There are six points supplying water in Bahi-Sokoni village. The population has grown and the water supplying points that were built years back cannot suffice the current population that has risen to, according to the village chairman, more than 14,000 people. This problem is aggravated by unwillingness of the LGAs and the people to mobilize themselves to dig and build more wells. This village is part of catchment area of the extensive Sulungali dam which sprawls from Bahi to Manyoni district. Big as it is, the dam is not perennial, it exists only during years with good rain. In Mpamantwa village where gardening is a major activity, shortage of water poses a big challenge since gardens need regular watering for good harvest. During rainy season water is easily reached at around 10 meters or so underground and so each person makes sure has a well right within the plots he cultivates. This situation changes in dry season, most of the wells become dry, only few survives, with little water, nonetheless. Water insufficiency makes farmers leave some of their plots uncultivated, this in turn causes free fall in yields.

Insufficient Power: Not all the areas in both Bahi and Mpamantwa wards are connected to the national grid. For example, Mkakatika village in Bahi wards which has about 18 hamlets, 11 are connected while 7 are not connected. In Mpamantwa village 2 out 7 hamlets are not connected. Some vitongoji like Uhelela and Chimila in Mpamantwa ward are not connected to national grid and thus lack power.

Almost every village in these two wards has areas which have no power. The shortage of power hampers the metal works industry like welding which is impossible without electricity. Places where there is no power spot no metal work factory.

Lack of Effective Communication Strategies to Market Ready-Made Products

The market for both Mpamantwa and Bahi Sokoni villages to sell their products is during market days, which are thrice a month. Most of the customers in these market days are people from within the said villages and those from neighbouring villages and wards. The other place that serve as market for their commodities is Bahi railway station. This is indeed a small market that cannot absorb all the items made in these villages. More over there is need to add value to the products. For instance, Bahi-Sokoni village has good number of people who engage in rice production and most of the buyers come from outside Bahi, but low market price is a challenge. Paddy which is rice in husky is sold at a very low price, for example, at a time of interview, in 2018, the price had plummeted from 80,000/-(35.5$) to 40,000/- (17.7$) Tanzanian shillings. According to the interviewees, for them to sell their rice at a good price they need threshing machines to add value to their product.

Mpamantwa tomato producers face both small market and low price. The main buyers of their produces are small vendors, most of them, dwellers to Mpamantwa ward. This is a small market which is composed of people with small capital. A vendor may buy1 or 3, in rare cases 10 buckets of tomatoes. The price for 1 bucket of tomatoes varies from year to year depending on the amount of production. For instance, in 2017 there was good harvests because of low pests and diseases attack, thus 1 bucket of tomatoes was sold at 3,000/-(1.3$) In 2018, the high prevalence of pests and diseases has consequently led to low yield, the price of 1 bucket has shot to about 15,000/- (6.6$) and 16,000/- (7.1$) Tanzanian Shillings.

Absence of Extension Officers: Both Bahi-Sokoni and Mpamantwa villages lack the VEOs, agriculture extension officers and community development officers. For instance, in Mpamantwa, the pests and diseases attacking their gardens have become so persistent because there are no agriculture extension officers, this has consequently led to dwindling in productivity. In both places, the village chairpersons as well as the WEOs claimed that they are sometimes forced to use teachers to give technical advice and skills to the people engaging in different activities like gardening. The absence of extension officers has proved to be an impediment to many development undertakings in Mpamantwa and Bahi-Sokoni. The members of these communities have nowhere to run to when confronted with a challenge in their economic activities. As Anaeto et al (2012) put it, the importance of an extension officers cannot be overemphasized: they are advisers, a technicians and middlemen operating between the government and the grassroots, change agents, consultants and advocates helping the people to identify their problems and find their own solution. Extension officers translates government policies into actions, thus their importance cannot be overemphasized.

Therefore, some or all of these problems could be done away with or their impact lessened if there were consultation and close interactions among the stakeholders. Consultation is very important way a community can handle the challenges it is facing. Industrialization cannot grow in the prevalence of those challenges.

Failure of LGAs Officials to Meet the Grassroots

Problems faced by grassroots are not shared with the LGAs officials shy to meet the people to avoid being asked questions on various issues including industrialization. The grassroots do not see the LGAs as a partner in business. The District council knows very little about people's problems because of its laxity to convene meeting or visiting people engaging in small scale factories. When asked during interviews if they regularly visit people running small industries, the DCDO said:

We don't visit them regularly, if there were any problem we could have been informed. In very rare cases a ward executive may invite me to attend a meeting and give some clarification on certain issues.

In cementing this theme, the study revealed that, community members (grassroots) think that leaders at the District Council are avoiding them. One of the participant during FGD number two (2) said;

They don't want to meet us, they are avoiding us, and they think if they meet us we will tell them a lot of problems which they can't help us solving.

The same was seen to be revealed by with VEO and WEO. During interviews, one of the participants from VEO category said:

It is difficult to visit all the people running small industries, we think the meetings we convene quarterly are enough for understanding their problems.

This avoidance of leaders to meet the people strips them of the status of being partner in business. In this regard, the gap continues to exist between grassroots and LGAs. It can be demonstrated that, people at grassroots are ready for dialogue but the reluctance of LGAs officials retards their readiness to participate. Hence, people at the grassroots are seen to be left alone in the process waiting for the government to build industries for them.

No Record by VEO and WEOs of People Engaging or with Knowledge of Small Scale Industries

Community members (grassroots) as well as the LGAs admit that there are good of number of youth with knowledge in carpentry, mechanics, masonry and welding. The authors met some of them and were able to observe some of their works. The VEO and WEOs as well as the district council do not have them in their records. Having them in records helps to know their number and kind of support they may need. It is difficult to deal with the problems of people whose presence and activities are not known. VEO and WEO from both Bahi-sokoni and Mpamantwa admitted not to have record of any person engaging in micro-manufacturing. On having a record both VEO and WEO leaders shared this comment:

We don't have a culture of putting in records people who engage in industrial related activities.

Having no record of people engaging in small scale industries is a challenge towards industrialization because it is difficult to know the kind of help they need, what are challenges facing them and how to improve their business. The proved continued lack of dialogue between grassroots and LGAs minimize the likeliness of attain the agenda on time.

Grassroots and Lower LGAs Ignorance of the Existence of District Business Council

The grassroots who are supposed to be the major beneficiaries were found to be completely ignorant of the existence of the District Business Council. This casts doubt on the way the representatives from the business community from each ward are chosen. It is hard to imagine how those representatives are chosen without involving the WEOs or VEOs. One would argue that, the whole process of getting the representatives is not participatory as it is encouraged and supposed to be. Debatably, most of the representatives chosen are friends and those known to the district council officials as revealed by the District Planning Officer (DPLO) during interviews said:

I know some of them (business people) personally.

The business council is little known at the ward and village level. During the interviews, the Bahi Sokoni and Mapamantwa ward executive officers (WEOs) shared the following comment about the District Business Council:

We know very little about the council; we only hear some people talking about it.

No feedback goes to the grassroots after the business council meetings if probably little is known about it. The council meetings are done four times a year but there is no trickle down effects of this council. The issues discussed in the council are not shared with the ward, village leaders and grassroots. The process of appointing the representatives to the council is not participatory. This makes the business council less effective in as far as the development of small scale industries is concerned.

Lack of Transfer of Knowledge and Skills in Micro-Manufacturing Sector

During FGD with groups from Mpamantwa ward, it was revealed that people had weaving skills though the challenge was transferring them to other generations. One of the participant during FGD one (1) said;

We have skills learned from our parents. Our parents were good in weaving in their youth age

However, that knowledge and skills is not being communicated to the younger generation, as a result the number of weavers is decreasing alarmingly. During the same FGD, one of the participant said;

Having skills is one thing but transferring to the young, is a challenge

Several reasons were jotted out with regard to failures of knowledge transfers. The following were the reasons revealed for older generation not transferring the weaving skills to the young generation:

Formal education: it was found that most of the time the children are fully engaged in formal education. With many schools built in each Ward the number of school going children has increased tremendously, and upon arrival home, they have to do the assignment the teachers gave them at school. This has reduced the contact time between parents and children, during which sharing skills like weaving could take place. One of the participant during FGD four (4) had this to say;

There is no enough time for a parent to train a child how to weave, most of the time our children are in schools. No parent would like to disturb the school going child with weaving skills training, we don't want to overwork our children, let them go to school first.

Negative attitude towards traditionally made baskets: The traditionally made baskets face competition from the plastic baskets, people associate the plastic baskets with modernity. This attitude is contributed by readily availability of plastic baskets, found in almost each shop. On the contrary the traditional baskets are scarce which is caused by not only the long time it takes to make them but also the small number of weavers. One of the participant during FGD three (3) said;

We have traditional baskets, but hard to compete in the market due to modern plastic baskets"

Lack of Awareness Creation Subsequently Dependence Syndrome of Both the LGAs and the Grassroots

The study revealed a close relationship between lack of awareness and dependence syndrome. From the LGA rankings to the grassroots, industrialization is perceived as a process to be carried out by the central government or any outside organ.

At the District level: This study found a close relationship between lack of awareness and dependence syndrome. The former causes the latter. Dependence syndrome is seen right from the district council down to the grassroots. Officials at the district council including the District Executive Director (DED) understand very well that people lack awareness on how industrialization should take place and who is responsible to bring industries. Nevertheless, they do not think awareness creation is one of their duties. For instance, the District Planning Officer (DPLO) said;

"The biggest constrain we face in as far as industrialization is concerned is lack of awareness among our people. We need people or an organization which can work zealously on creating awareness among the communities, make them understand that they are the ones to build factories and not the government."

The same was echoed by the DED. Thus, the top brass of the LGAs does not own the process of industrialization, they depend on outsiders.

At the grassroots: Few youths are known to be running their small scale industries despite a good number of them having knowledge of the same. During this study it was found that there are youths with knowledge in masonry, metal works, gardening, carpentry, pottery and weaving who are idle and jobless. They are untapped resources. This is a clear indication of lack of awareness among the youth. They feel are incapable to run any factory, however small, this reveals dependence syndrome which is weighing down their commitment and creativity to start small scale industries. Some of the youths were quoted as saying: because communities are incapable to start and handle the process. This is an outcome of lack of awareness that has, consequently, led to dependence syndrome and lack of the sense of ownership among the communities

DISCUSSION OF THE RESULTS

This part discusses the collaboration between LGAs and the grassroots in development of micro-manufacturing sector in the light of characteristics of Participatory Development Communication framework as explained by Freire as in Cadiz (2005). Participatory Development Communication is an approach that brings together all the actors through dialogue and interaction in accomplishment of any development project. The discussion is centered on the characteristics of the framework as below.

Communication Between Equals: This refers to the equality among all stakeholders. They can interchange the roles of the sender and receiver in two-way interaction. This means both the sender and receiver need to be empowered. In Mpamantwa and Bahi-sokoni wards there exists a communication gap between the LGAs and the grassroots. When asked about the existence of District Business Council (DBC), which is an important tool for development of industries, all the 28 FGD participants said they did not know anything about its existence.

The problems faced by the citizens are not mutually discussed by the key stakeholders, namely the LGAs and the grassroots. The participants, during the FGD were able explain a number of problems they face like market for their products, pests and diseases in their crops, water shortage. However, DED, DPLO and DCDO failed to specifically identify them. Moreover, the study found lack of close interaction between leaders and their people. The people are not free to approach the district council for any inquiry or support.

Problem-Posing: This refers to the developer, expert, or facilitator acting as a mediator to facilitate the members to discuss together, not a solution provider. Both Bahi-sokoni and Mpamantwa wards lack a facilitator to pose a problem and let the LGA and the grassroots who are the key stakeholders come up with a solution. According to Adamolekun (1983), through problem-posing, local government becomes people's political instrument to participate in resource allocation, distribution and power acquisition and enabling the beneficiaries to desist being only passive receivers. Consequently, both the LGAs and the people wait for the government and non-government organization to come and provide solutions for their problem. Without problem-posing creativity cannot be ignited among the community. For example, the DED and the DPLO were of the idea that awareness creation among the people should be done by an NGO.

We will be able to industrialize only if the NGOs and other volunteers come and conduct awareness creation to our people.

Also the participants in the FGD said they are waiting for the government to bring industries for them so that they can get employed.

We are eagerly waiting and ready to release our lands for the government to build factories on them.

This is a clear indication of dependence syndrome, thus there is a need for an expert or a facilitator who will enable them to feel responsible for the solutions to the problems they face.

Praxis: Tufte and Mefalopulos (2009) hold that for sustainable development, each project being implemented by community has to constitute a cycle of action and reflection. This refers to the translation of information into communication practice in development. The study did not find this important practice in both wards. There is no culture of the LGAs and their citizens sitting together to decide on the actions to be done towards industrialization and their implementation. Actions and their implementation are followed by the reflection in as far as industrialization is concerned, reflection aims at assessing what has been done, how far have the plans been achieved and setting the future course of action. Both the LGAs and the grassroots admitted not to have that arrangement.

Conscientizing: This refers to the growing of all stakeholders in understanding human, social, and development processes. In this study it was found that the understanding on who is supposed to own the process of industrialization is very minimal among both the LGAs and the citizens. The following responses indicate misconception of industrialization revealed by one of the VEOs:

We have persuaded the people to release some of their lands on which the government should construct the factories.

The WEO was quoted as saying.

We are eagerly waiting for the government to bring us the factories for us to work in them

This idea was shared by all the participants during FGD from all of the four (4) groups involved in the study.

Both the LGAs and the citizens do not own the process of industrialization, their understanding is that it is the government which is responsible for the process. They wait for the outsiders to do everything for them. Singhal (2001) and Cadiz (2005) posit that participatory development can readily be attained if preceded by conscientization of the primary stakeholders. Conscientization raises the understanding of the community members' as being the key implementers of industrialization process.

With well effected Participatory Development Communication, the primary stakeholders namely; LGAs and grassroots, are capable and willing to become involved in the process and take part in decision-making. Outsiders are equal partners, but the community, who are the primary stakeholders, make the final decisions as ownership and control of the process rests in their hands. This means that the outsider may come to Mpamantwa and Bahi-sokoni as the problem-poser not a solution provider. The outsider who may be a facilitator or an expert is to enable them to own the process of industrialization and start its implementation.

CONCLUSION

There is a relationship between industrialization awareness and achievement of industrialization vision. People at the grassroots are still not aware of their role in industrialization process due to lack of education and capacity. They still think that it is the government that has to run the industrialization process. At the same time, despite the fact that LGAs are somehow aware of the industrialization, they also still wait or depend on the central government on the process. Awareness on industrialization is as needed as possible for both LGAs and grassroots to fasten the process and realize the industrialization vision.

WAY FORWARD

Awareness Creation Through Participatory Communication Approach

Creation of awareness among the stakeholders is highly needed among the district level, which is the highest level of LGA to the grassroots. Awareness boosts participation and self-confidence among the key players. It makes everyone feel responsible and capable to undertake a business however big it may appear to them. With awareness creation dependence syndrome will be reduced if not eliminated. The people in Mpamantwa and Bahi-sokoni wards will stop looking up to the government to build factories for them, they are the key players themselves.

Moreover, active participation among the people leads to effective utilization of the available resources like land, water and the people themselves. There is abundance of resources that are lying unutilized and underutilized in Mpamantwa and Bahi-sokoni wards. These resources when fully utilized will help in solving some of the predicaments standing on the way to industrialization.

Improvement of Cooperation Between the LGA and the Grassroots

There is also a need to improve the lines of communication and cooperation between the LGA and the grassroots. The community will be able to face their problems successfully, if leaders and the people are closely cooperating. Council Management Team (CMT), Ward Executive Officers, Village Executive Officers, *Kitongoji* officials should work closely with the people, with the intention of understanding their problems. The District Business Council should be representative enough and the methodology to get members should also be inclusive. Problems felt at the grassroots should also be familiar to the local administrators. The administrators should not be posing as problem solvers, but partners in business.

It is imperative to make the use of an interactional and transformative dialog involving experts in equipping LGAs and the grassroots; to create a sense of ownership, commitment and enable them to realize their full potential; to create collaboration between the LGAs and the people engaging in small scale industries.

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KEY TERMS AND DEFINITIONS

Bahi: Is one of the seven districts of Dodoma region of Tanzania. The district is bordered to the north by Chemba district, to the east by Dodoma district and Chamwino district and to the west by Singida region.

Council Management Team: Composed of District Executive Director, Heads of Departments and Heads of Units. It is responsible for making council administrative decisions.

District Community Development Officer: Is the head of department of community development of the district council

District Executive Director: Is the director to the district council and also act as a secretary to the District Council meetings.

District Planning Officer: Is the head of department of planning of the district council.

Dodoma: Is one of the administrative regions of Tanzania. The regional capital is the city of Dodoma. The region is bordered by Manyara region to the north, Tanga region to the north east, Singida region to the west, Iringa region to the south and Morogoro region to the east.

Kitongoji: Is the lowest local government organ in rural areas consisting of a part of registered village. The area consists of such number of households or such of geographical areas as may be determined by the village council and approved by the District Council.

Village Executive Officer: Is the administrative official of the village and a secretary to the village council.

Ward Executive Officer (WEO): Is the administrative official to the ward and a secretary to the Ward Development Committee (WDC).

Chapter 6
Commercialization of Innovations in Tanzania:
An Empirical Investigation

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ABSTRACT

The study investigates types, sources of innovation, and corresponding challenges to commercialization among small and medium-sized industries (SMIs) in Tanzania. It employed a qualitative research design with semi-structured interview method. Findings indicate that incremental, product, and process are common types of innovations introduced. The major sources of innovations are employees, consumers, user-manufacturer lifestyles, consequential needs, and best practices by manufacturing firms. Also, it was revealed that SMIs do not follow all steps of the innovation commercialization process. Major challenges facing SMIs in the commercialization process include lack of commercialization knowledge; lack of development infrastructure and fast logistics; lack of strong university, industry, and public institutions linkage; and regulatory authorities' bureaucracy, among others. The study recommends that SMIs establish strong research and development units and collaborations with key stakeholders in order to improve identification and commercialization of innovations in Tanzania.

INTRODUCTION

The society cannot develop without innovations, as innovations create new products, devise new uses for existing products, and improve enterprise's efficiency and profit (Olefirenko & Shevliuga, 2017). In other words, innovations provide the foundation for new businesses, new jobs and productivity growth, and are thus important drivers of economic growth, industrial change, and competitive advantage. Boyne et al. (2006) maintain that, in the contemporary "knowledge-based economy", characterized by both

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accelerating pace of change and increasing complexity and uncertainty, the ability of firms to adapt in their external environment and to remain competitive is closely related to their capacity to innovate and continuously upgrade and renew their knowledge bases, products and structures. Thus, the current world economy requires rapid and dynamic development of innovations across countries (Olefirenko & Shevliuga, 2017). Innovations can help address pressing social and global challenges, including demographic shifts, resource scarcity, and the changing climate (Boyne et al., 2006). It is impossible to ensure effective development of industrial enterprises without innovations (Olefirenko & Shevliuga, 2017). Over the past decade, the importance of innovation has become increasingly apparent for national economy, competitiveness, and the well-being of Tanzanian citizens (URT, 2016).

When an individual innovator or organization commits part of its inherently limited resources to innovative endeavors, it expects appropriate economic benefits or returns. Returns from investments in new product development (NPD) are achieved by either selling the new offering to customers or by licensing out the technology (Maine & Garnsey, 2006). The process of selling the new offering to customers or licensing out the technology is generally referred to as commercialization (Maine & Garnsey, 2006). This means that innovations reach the market through commercialization process. The commercialization of innovations guarantees for the return of investment in new products or technologies by leveling risk and increasing the probability of success of innovative projects (Olefirenko & Shevliuga, 2017). Establishing and ensuring the efficiency of innovations commercialization process is an objective precondition that creates material values and new demand in the market, shifting the emphasis from the production of enterprises to various management fields, creates new ways of capital substitution and enhances the level of innovation activity profitability (Olefirenko & Shevliuga, 2017). Since the ultimate purpose of new product development is the commercialization of the new offerings, the innovation process is incomplete without commercialization (Jensen, 2016).

Despite a good number of innovative researches conducted and innovations introduced in Tanzania, few innovations are commercialized (Osoro et al., 2014). In fact, only a very low proportion of raw ideas culminate into successful commercial products (Stevens & Burley, 1997). This implies that, research knowledge and innovations have not been successfully exploited and transformed into products and services. If these innovations were successfully commercialized, they could bring impact on the growth of small and medium sized industries and contribute to the realization of Tanzania's industrialization goal. Low success rates of commercialization of innovations may be due to not only technical issues but also flaws in the commercialization process (Osoro et al., 2014).

Further, most of studies on the types and sources of innovations have been conducted in the developed countries (e.g., Gunday et al., 2011; Varis & Littunen, 2010). These studies identified four different innovation types: product innovation, process innovation; marketing innovation and organizational innovation. These studies also found out that innovations originate from two forces, market and technology. Market based innovations concentrate on existing customers, and acquisition of new customers in well defined target markets, while innovations in technology involve changes to a firm's current product, targeting existing customers (Gunday et al., 2011).

In the developing countries especially in Africa, very limited studies on the types and sources of innovations could be found. Menor et al. (2002) contend that although there is agreement in the literature that different types of innovations exist, there is still little agreement on what these different types are. Thus, the objective of this study is to identify the different types and sources of innovation and their corresponding challenges to commercialization among Small and medium-sized industries in Tanzania.

LITERATURE REVIEW

Theoretical Background

Adoption of Innovation

Innovation, at the firm level, has generally been defined as the development and/or use of new ideas or behaviours (Walker, 2006). A new idea can pertain to a newproduct, service, market, operational and administrative structures, processes and systems (Damanpour et al., 2009). In other words, an innovation can be considered new to the individual adopter, to an organizational subunit, to the organization as a whole, or to the entire sector, industry, ororganizational population (Walker, 2006). Pressure from the external environment, such as competition, deregulation, isomorphism, resource scarcity, and customer demands, or aninternal organizational choice, such as gaining distinctive competencies, reaching a higher level of aspiration, and increasing the extent and quality of services force organizations to innovate (Damanpour et al., 2009). The adoption of innovation is intended to ensure adaptive behaviour, changing the organization to maintain or improve its performance.

In the perspective of organizations as open systems, organizations are viewed as adaptive systems that introduce change in order to function effectively. Many theories of organizations are grounded on the open system perspective (Damanpour et al., 2009). For example, the resource dependence theory (Pfeffer & Salancik, 2003) emphasizes ‘managerial choice’ in the organization–environment interactions in responding to the key environmental constraints such as scarcity of resources, and demands of clients, suppliers and creditors (Damanpour et al., 2009). To manage environmental dependencies and gain critical resources, organizational leaders would be motivated to change internal processes and offer new products or services to establish and maintain linkages with customers or the government that provide these resources. The resource-based view (RBV) of organizations, on the other hand, focuses on the heterogeneity of resources and capabilities across the organization and points out the importance of rare, valuable, non-substitutable and inimitable organizational resources in developing distinctive competencies for organizational effectiveness (Bryson et al., 2007). It suggests that complementary resources and capabilities would help an organization capitalize on innovation (Christmann, 2000), increasing the positive influence of innovation on organizational conduct and outcome (Damanpour et al., 2009).

Types of Innovation

Innovation researchers have often referred innovations types in many ways. For instance, Zaltman et al. (1973) identified approximately 20 innovation types grouped in terms of the state of the organization, and the focus and outcome of innovation. The variety of innovation types notwithstanding, the best known and most widely studied typology of innovation is the distinction between product and process innovations. Another widely recognized but less researched typology is the distinction between technological (also called ‘technical’) and administrative (also called ‘organizational’ and ‘management’) innovations (Birkinshaw et al., 2008). Meeus and Edquist (2006) offered a taxonomy that distinguishes between two types of product innovations (‘in goods’ and ‘in services’) and two types of process innovations (‘technological’ and ‘organizational’).

Barras (1986) defines a product as a good or service offered to the customer or client. Innovation research has not generally distinguished between product and service innovations; that is, services offered by organizations in the service sector are conceptualized to be similar to products introduced by organizations in the manufacturing sector (Miles, 2001). This view has been prevalent because product and service innovations have external focus, are primarily market driven, and their introduction results in differentiation of the organization's output for its customers or clients (Damanpour & Gopalakrishnan, 2001). Hence, like product innovations, the drivers of service innovations are mainly clients' demand for new services and executives' desire to create new services for existing markets or find new market niches for exiting services (Matthews & Shulman, 2005).

Contrary to product or service innovations, process innovations have an internal focus and aim to increase efficiency and effectiveness of the internal organizational processes to facilitate the production and delivery of goods or services to the customers (Boer & During, 2001). The new processes can be associated with the 'technological core' or the 'technical system' of the organization (technological process innovations) or to the 'administrative core' or the 'social system' of the organization (administrative process innovations) (Meeus & Edquist, 2006).

Technological process innovationsare new elements introduced into an organization's production system or service operation for producing its products or rendering its services to the clients (Damanpour & Gopalakrishnan, 2001). The drivers of these innovations are primarily reduction in delivery time, increase in operational flexibility, and lowering of production costs (Boer & During, 2001). Technological process innovations, therefore, modify the organization's operating processes and systems (Meeus & Edquist, 2006).

Administrative process innovations are new approaches and practices to motivate and reward organizational members, devise strategy and structure of tasks and units, and modify the organization's management processes (Birkinshaw et al., 2008). Whereas technological innovations are directly related to the primary work activity of the organization and mainly produce changes in its operating systems, administrative innovations are indirectly related to the organization's basic work activity and mainly affect its management systems (Damanpour & Evan, 1984). Administrative process innovations pertain to changes in the organization's structure and processes, administrative systems, knowledge used in performing the work of management, and managerial skills that enable an organization to function and succeed by using its resources effectively.

In the OECD Oslo Manual (2005), four different innovation types namely product innovation, process innovation, marketing innovation and organizational innovation were introduced; in which product and process innovations are closely related to the concept of technological developments (Ulusoy et al., 2011) while incremental and radical innovations are often related to market aspect. Small and medium-sized manufacturing enterprises tend to focus more on incremental than radical innovations because this focus is related to growth in sales turnover (Oke, 2007). Propris (2002) broke down innovations in four distinct types: product, process, incremental and radical. Gatignon et al. (2002) present radical and architectural innovations as types of innovations, including product, process and incremental innovations. Further, Trott (2008) maintains that innovation can come in different forms, including: product innovation, organizational innovation, production/process innovation, management innovation and commercial/ marketing innovation. Femi et al. (2014) added that innovation can also be clarified as incremental, radical or architectural. This study explores the types of innovations introduced by Small and medium-sized industries in Tanzania.

Sources of Innovation

According to Pavitt (2005) innovation processes can be divided into three overlapping sub-processes at the level of the firm: cognitive, organizational, and economic. The cognitive sub-process is concerned with how firms generate and maintain the know-how to conduct their tasks; the organizational sub-process focuses on how firms operate internally or in collaboration with other firms and organizations; while the economic sub-process is about how firms establish internal incentives to ensure innovation proceeds quickly and in the desired direction. Innovation processes exhibit notable differences according to sector, field of knowledge, size of firm, corporate strategy and prior experience, type of innovation, historical period and country (Pavitt, 2005). The importance of factors internal to a firm, particularly the firm's unique and inimitable resources and competences have been emphasized as fundamental starting points and sources of sustainable competitive advantage by the resource-based view of the firm (Penrose, 1959) and the evolutionary theory of the firm (Nelson & Winter, 1982).

Firms may organize their innovation procedure on many variables such as firm size (large, small to medium-sized), model of governance (entrepreneurial/owner-managed), and industry or technology intensity of the firm (Varis & Littunen, 2010). What distinguishes SMEs in comparison with large companies is not their lower turnover or a smaller size but the fact that they are usually managed by their owners (Bougrain & Haudeville, 2002). In owner-managed SMEs power and decision-making are concentrated in the entrepreneur (Varis & Littunen, 2010). The owner-managers tend to be less amenable to others' advice and are reluctant to delegate decision-making to others, which easily leads to reduced innovativeness (Varis & Littunen, 2010). In addition, strategic decisions are often framed within the constraints of family and individual goals, rather than maximization of firm potential, which might encourage entrepreneurs to reject changes due to their concomitant conflict (Dobbs & Hamilton, 2007). Varis and Littunen (2010) maintain that, in small entrepreneurial firms, the entrepreneur may be the only gatekeeper between the firm and potential innovation sources that matters. As such, innovativeness may translate into the innovativeness of the entrepreneur rather than the innovativeness of the firm (Varis & Littunen, 2010).

Varis and Littunen (2010) maintain that, when assessing the innovation potential of a firm, one may fall victim to the bias of overestimating the importance of firm's internal research and development intensity. Although carrying out in-house research and development is important in order to strengthen the firm's innovation performance (Cohen & Levinthal, 1990), research and development is by no means the guarantee or the imperative of success. In fact, Varis and Littunen (2010) posits that research and development intensity is not an absolute measure (if a measure at all) of a firm's prospects for innovation and enhanced performance. The existence of skilled and technically qualified workforce and also its continuous training may be more important for a firm's innovativeness than conducting a pure research and development (Varis & Littunen, 2010). As such, firm-level technological advancement (i.e. innovation) must be viewed in terms of the acquisition of, and not simply the presence of, competences (Freel, 2005).

Innovation is driven by several concomitant determinants, and scholars have described three principal approaches of technological change: induced innovations, evolutionary theory of technological change, and path-dependent development of innovations (Dixon, 1997). The first approach of induced innovations shows that the demand-pull is an important factor for supporting innovations (Coccia, 2016). The second approach is the evolutionary theory of technological change, which abandons the distinction between factor substitutions and shifts in the production function (Nelson & Winter, 1982). This theoretical framework is based on (1) local search for technical innovations, organizational routines and learning processes, (2) imitation of the practices of firms, and (3) satisficing behaviour of firms. Third approach is the path-dependence development of innovation that considers a specific sequence of micro-level historical events for the evolution of innovations: i.e. current choices of techniques may influence the future characteristics of technology and knowledge over the long run (Arthur 1989).

Several studies in management, to explain how firms achieve and sustain innovation, focus on the concept of ambidexterity: firms simultaneously engage in exploratory and exploitative activities that support both incremental and radical innovations (Danneels, 2006; Durisin & Todorova 2012; Lin & McDonough III, 2014). Other approaches argue that a stage-gate model can rationalise and structure the technological development of new products (Conforto & Amaral 2016). According to Cooper (2008), the basic idea of the stage gate model is to divide a process in different phases and create a quality gate at critical points in order to secure that the targeted goals are reached before proceeding to the next process phase. The quality gates represent decision points, which determine on the basis of the current status of the process if the project is continued, adapted/revised or terminated. The development process cannot pass a gate when it does not meet all set criteria (Cooper, 2008).

The phases of a new product development process are difficult to plan, especially when goals are not clearly defined (Cavallo et al., 2015). Current theoretical frameworks analyze different characteristics of patterns of technological innovation, however, current approaches in economics and management of technology have trouble explaining some determinants that foster incremental and radical innovations in markets (Coccia, 2016). In fact, the general driving force of innovations at micro- and macro-level is hardly known (Dixon, 1997). This study, among other things, explores sources of innovation among Small and medium-sized industries in Tanzania.

Commercialization of Innovation

Innovation commercialization mainly refers to the process of turning scientific discoveries and inventions into marketable products and services generally through licensing patents to companies or by creating "startup" companies (Mohannak & Samtani, 2014). Commercialization ensures innovations meet performance, reliability and economic requirements. This implies that successful innovation manifests itself in commercialized products that add value to consumers and firms (Balachandra et al., 2010). Thus, commercialization involves converting innovations produced in research conditions into a product or process that will gain market acceptance and adoption, building from industrialization process that has been undertaken (Osoro et al., 2014). Market acceptance and adaption of innovative products is the core of commercialization, which is the final piece of the innovation puzzle (Osoro et al., 2014).

Innovations commercialization, firstly, is associated with the real development and innovations implementation, and, secondly, with financial and organizational support of this process (Olefirenko & Shevliuga, 2017). The majority of research papers disclose separate aspects of the innovations commercialization, associated with the choice of forms and key participants of this process, the identification of marketing opportunities of innovation products for entity and search for optimal sources of funding the innovation commercialization (Olefirenko & Shevliuga, 2017). The process of innovations commercialization is characterized by a high degree of risk, as the reaction of potential consumers to developed innovative product is unpredictable (Pavlenko, 2015). According to Jamil et al. (2015), the property development, networking with local and international markets, research and development, firm's clustering, provision of advanced equipment, as well as managerial support are the most important elements to promote commercialization. Analysis of statistical, expert and empirical data suggests that the problem for domestic industry is the commercialization of high-tech products, and not its creation (Shpaket al., 2014). Chukhray and Stegnytskyi (2015) posits that universities have wide possibilities in developing innovative products, as well as in the process of commercialization of scientific researches. The role of university incubators and technology parks to excel commercialization has been evidenced by Olefirenko and Shevliuga (2017), suggesting that universities should offer entrepreneurship as a compulsory module for all university programs.

Since commercialization entails converting ideas and inventions into viable products demanded by the market, its success positively impacts firm output, sales and growth (Osoro et al., 2014). Successful commercialization enables firms to enhance market penetration, dominance and exploitation of new markets, which enhances economic performance and leads to growth (Osoro et al., 2014).In other words, well developed and properly commercialized innovations lead to a powerful industrial economy. Commercialization has gained significant importance due to its active participation in knowledge transfer, economic growth, job creation and entrepreneurship (Olefirenko & Shevliuga, 2017). Many firms choose to acquire new technologies and capabilities from academic institutions and other firms in different industries to maintain and enhance their competitiveness (Ranft & Lord, 2002).

Olefirenko and Shevliuga (2017) identify three key contradictions in the research of theoretical basis of innovations commercialization process. The first contradiction is associated with the views of researchers on the investigated category, particularly on the sales market of innovations without development of modern innovations. The second contradiction involves the interpretation of commercialization as a tool that ensures the implementation of innovations in the micro level, and the third contradiction discloses commercialization of innovations as a static process, whereas, in practice, it is the dynamic market mechanism that reflects changes in current markets.

Pavlenko (2015) divides all participants of the innovations commercialization process into three groups: developers, buyers (investors), and intermediaries. These participantsshould be considered in the appropriate unityor the systemic principle, providing for obligatory orientations of each of the representatives to profit from innovation development. Thus, the development team is represented quite widely and involves enterprises, research institutes, groups of researchers and individual inventors. The second group of participants in the innovationscommercialization process is represented by the state (government programs, orders and funds), nongovernmental foundations and grant makers, venture funds, "business angels", large and medium enterprises. The group of intermediaries includes consulting companies, centers of intellectual property commercialization and innovations transfer, innovations exchanges, technology promotion centers. The existence and importance of the last group of participants is caused by different approaches of innovation developers to organization of the commercialization process.

Various scholars (Balachandra et al., 2010; Corkindale, 2010; Datta et al., 2012; McCoy et al., 2009; Nerker & Shane, 2007) describe commercialization as consisting of stages preceding and following market adaption of innovative products such as investigation, development and commercial phases. Määttänen (2012) defines different phases of technology commercialization as idea generation, technology development, seeking market opportunities, market promotion, and sustaining commercialization. These involve planning, basic and applied research, design, engineering and manufacturing, market strategy and business planning, pre-launch and test-marketing, and value assessment.

Commercialization is a function of technical, market and business factors (Osoro et al., 2014). The technical side of commercialization involves innovation and factors affecting it. Once a product is developed it has to be diffused and adopted by consumers in the market. This entails marketing the product to convince people of its usefulness. According to Osoro et al. (2014), marketing involves disseminating information in a targeted manner about a new product to demystify with regards to function, cost, and advantages over existing products in order to make it more acceptable to consumers. Since products are useless until they are commercialized; it is necessary to carry out business models for commercializing of new innovations (Osoro et al., 2014). A business model links technical decisions and economic outcomes with alignment of choice of an innovation and its commercialization strategy with a firm's business model leading to profit (Chesbrough, 2006).

Apart from describing commercialization from the technical, market, and business perspectives, other scholars have described commercialization strategy with regards to cooperating or competing with incumbents firms in the market (Gans et al., 2002; Gans & Stern, 2003; Hsu, 2006; Marx et al., 2014; McCoy et al., 2009). These scholars have documented that commercialization strategy is determined by market environment, uncertainty about an innovation's future value, incumbent's integration costs, friction, and access to complementary assets. Otherscholars have grouped factors influencing the decision of firms to commercialize into environmental-level, firm-level and innovation-level factors (Arora et al., 2001; Bogers, 2014; Herzog & Leker, 2010; West et al., 2011). Environmental-level factors are strength of mechanisms that make commercialization profitable, availability of markets for technology, institutional framework facilitating knowledge accumulation, and industry structure. Firm-level factors are the availability of complementary assets (manufacturing, distribution, marketing, sales, and support capabilities), internal knowledge base, knowledge acquisition, and corporate culture. Innovation-level factors pertain to the alignment of an innovation to a firm's business model, the nature of a firm's product, communication costs, and absorptive capacity.

Many innovations are developed to the prototypestage or are produced in small volumes, but are not fully commercialized because of several reasons, both internal and external to the firm. This study, among other things, aims to identify challenges facing Tanzanian Small and medium-sized industries in their innovation commercialization effort.

Empirical Studies

Okbapio et al. (2018) studied the effects of innovation on performance of manufacturing small and medium-sized manufacturing enterprises (Small and medium-sized enterprises). It was found out that innovations had a substantial impact on performance of manufacturing Small and medium-sized enterprises and industrial economy as they result into start of new products and services, new markets, new businesses, and subsequent employment creation. Innovations competency and commercialization process were found to be necessary for the innovations to be translated into new products and services through industrial manufacturing.

A study by Damanpour et al. (2009) focused on consequences of adoption of three types of innovation (service, technological process, and administrative process) in service organizations. It examined the proposition that the impact of innovation on organizational performance depends on compositions of innovation types over time. Innovative activity in a panel of 428 public service organizations in the UK was analyzed over four years. Findings suggest that focus on adopting a specific type of innovation every year is detrimental, consistency in adopting the same composition of innovation types over the years has no effect, and divergence from the industry norm in adopting innovation types could possibly be beneficial to organizational performance.

Coccia (2016) studied the sources of technological innovation in the pharmaceutical industry (focusing on ground-breaking drugs for lung cancer treatment). Findings indicate that the coevolution of consequential problems and their solutions induce the emergence and development of radical innovations. The study developed a conceptual framework of problem-driven innovation which suggests that firms have a strong incentive to find innovative solutions to unsolved problems in order to achieve the prospect of a (temporary) profit monopoly and competitive advantage in markets characterized by technological dynamisms. In general, problem-solving competence was found to be an important factor to develop in research and development laboratories to sustain innovation and competitive advantage of firms. The theoretical framework of this study can be generalized to explain one of the sources of innovation that supports technological and industrial change in a Schumpeterian world of innovation-based competition.

Osoro et al. (2014) analyzed the commercialization of innovations in Tanzania, using firm level data. Specifically, it assessed the relative importance of firm, innovation and environmental level factors in commercialization, and how innovation is linked with commercialization. Findings revealed that firm investment in internal research and development significantly impact both product innovation and commercialization of innovations in Tanzania, implying internal knowledge base is the main link between innovation and commercialization of innovations. It was also found out that commercialization of innovations in Tanzania is influenced by cooperation with domestic and foreign firms, investment in research and development, and purchase of intangible technology with cooperation with domestic firms having the largest impact on commercialization, followed by investment in research and development. Further, findings revealed that knowledge acquisition and firm cooperation with other firms have greater impact on commercialization when undertaken by firms with histories of doing so in the past than when undertaken by firms for the first time. The study did not cover types and sources of innovations as well as challenges of commercialization of innovations in Tanzania.

Varis and Littunen (2010) examined the information sourcing practices of small- to medium-sized enterprises associated with the development of different types of innovation (product/process/market/organizational). The relationship between different types of innovation and firms' performance was also examined. The study was based on a quantitative study of a sample of Small and medium-sized enterprises located in the Northern Savo region in Finland. The entrepreneurs completed a questionnaire pertaining to, for example, whether their firms had introduced novel innovations and what were the sources of information behind these innovations. It was found out that the introduction of novel product and market innovations appears to be associated with the use of more or less freely accessible information sources. The findings also indicate that the introduction of novel product, process and market innovations is positively associated with firms' growth. None of the types of innovation studied was found to have a positive relationship with firms' profitability. However, the analysis was based on self-reported data provided by the entrepreneurs of Small and medium-sized enterprises, thus the authors had to rely on their judgment regarding the novelty of the innovations they had introduced. Moreover, as the study was conducted in a single region with its idiosyncratic features, the generalizability of the findings to other regional contexts remains somewhat ambiguous.

A study by Olefirenko and Shevliuga (2017) investigated the management process of innovations commercialization and its essence. The aim was to analyze indicators and characteristics of implemented instruments of sales policy at innovation active enterprises in order to estimate the influence of sales policy parameters to innovation level. Findings revealed that there is a need to develop new technologies that ensure the profitability growth and activities optimization through capital mobility into areas with higher productivity and profitability. Sales policy was found to be a necessary precondition for operation performance and further development of enterprises. Sales policy parameters significantly affect the level of innovation activity of industrial enterprises. Each of sales policy tools has an individual impact on the enterprise activity dynamics and can have positive or negative effect.It was also found out that, despite the small size of the companyand staff, the costs of advanced training of personnel are too burdensome and lead to a decrease in profitability of innovation products sales.

Oke (2007) investigated the different types of innovation that are predominant in companies in the UK services sector, the degree of innovativeness, the practices associated with the pursuit of innovation and their relationship with company performance. The empirical phase of the study was conducted using a two-stage process initiated by interviews and completed with mail surveys. Interviews were held with six senior executives of leading service companies in the UK. 214 senior managers of UK service companies were surveyed. Relevant statistical analytical techniques including regressions were used to analyze the data. Findings show that product innovations are emphasized more in telecommunications and financial sectors than in transport and retail sectors while service innovations are emphasized more in retail and transport sectors. Radical and incremental innovations were found to be related to innovation performance. Radical innovations were also found to be related to innovation management practices. The study recommends that service companies need to pursue radical, me-too and incremental innovations. Formal practices and processes must not be limited to the pursuit of radical innovations. Service companies must also recognize the pursuit of incremental innovations formally in their innovation strategies and define formal process for implementing these types of innovation.

Datta et al. (2013), through extensive review of literature which was comprised of 194 articles across 62 journals in the fields of management, strategy, entrepreneurship, economics, and marketing, identified six key themes of entrepreneurial activity leading to the commercialization of innovations: sources of innovations, types of innovation, market entry (capabilities and feasibility), protection, development, and deployment. Most of the research papers that were reviewed were concentrated on single theme.

Mahemba and De Bruijn (2003) explored innovation activities by Small and medium sized manufacturing enterprises in Tanzania and ascertained the relationships between these activities and growth performance of Small and medium-sized enterprises in the Tanzanian manufacturing sector. A survey of Small and medium-sized enterprises combined with in-depth case studies was made to study innovation practices of Small and medium-sized enterprises in the Tanzanian manufacturing sector. It was found out that an increased level of applied change is associated with innovating Small and medium-sized enterprises, and a positive relationship between innovativeness in the Small and medium-sized enterprises with growth performance was established. It was further reported that heterogeneous nature of Small and medium-sized manufacturing enterprises, their behavioral advantages and innovation adoption activities enable Small and medium-sized manufacturing enterprises to be innovative. Also, the study found out that the know-how, know-why, as well as know-where are necessary to enable innovation activities to diffuse in Small and medium-sized manufacturing enterprises. The linkage between innovativeness and characteristics of the business (Pitt & Clarke, 1999) could not be established for the Small and medium-sized enterprises in Tanzania. The relation between innovative practices of Small and medium-sized enterprises and research institutes and technology centres (Keizer et al., 2002) was not found in this study, although these institutes and centres are available in significant numbers in Tanzania. No relation was found that membership of business organizations had influence of innovative behaviour. The study did not cover the types and sources of innovations nor their corresponding challenges to commercialization.

METHODOLOGY

This study employed a qualitative research design approach to generate richer and more elaborate information about the types and sources of innovation and their corresponding challenges to commercialization among small and medium-sized industries in Tanzania. Semi-structured interviews were held with all30 small and medium-sized industries owners who attended the industrial products exhibitions at Saba Saba grounds in Dar es Salaam city from 5th to 9th of December, 2018. These owners, who are also managers of their Small and medium-sized industries, were contacted during the exhibitions and the objectives of the study were explained to them. Owners/managers were involved in this study because the type of innovation and the innovativeness of an innovation being developed relate to the approach or practice that a manager employs to develop or implement the project (Ali, 1994). North and Smallbone (2000) report that for 85 percent of the firms in their study, the owner-managers of the firms played a central role in the initiation and development of innovations and in many cases they were the only persons involved in the innovation process.

Interview questions were based on the innovation management literature review. Interviews lasted between one and two hours and were audio taped. The interview covered topics related to the types of innovations introduced by manufacturing firms in Tanzania, sources of innovations introduced in Tanzania, innovation commercialization process in Tanzania, and challenges facing Small and medium-sized industries in the process of commercializing innovations in Tanzania. Content analysis was conducted manually for each interview from verbatim transcripts to clarify the concepts relating to the research questions. The results of each interview were confirmed and tested in subsequent interviews. The emerging themes and concepts from the interview analyses were then compared (Miles & Huberman, 1994). Thematic analysis technique and descriptive statistics were employed for data analysis.

FINDINGS AND DISCUSSION

Demographic Characteristics

Table 1 presents demographic characteristics of respondents. The majority of small and medium-sized industries owners are males (76.7 percent), at the age of 41 years and above (50 percent), with college education (60 percent) and married (70 percent). This implies that majority of Tanzanian innovators are well educated people with responsibilities in the society. Family responsibilities shouldered by these people as fathers or mothers together with their education level might explain their innovative and entrepreneurial drive.

Types of Innovations Introduced by Manufacturing Firms in Tanzania

Table 2 presents three types of innovations introduced by small and medium-sized industries in Tanzania. These include Incremental innovation, product innovation and process innovation. Findings indicate that incremental innovation is the major type of innovation in Tanzania (introduced by 86.7 percent of small and medium-sized industries) as evidenced by Table 2. This is probably due to the fact that, incremental innovations often take a form of smaller enhancements around other forms of innovations through improvements due to use or experience (Gatignon et al., 2002). This happens in the form of designs

Table 1. Demographic Characteristics of Respondents (N=30)

Characteristics		Frequency	Percent
Gender	Female	7	23.3
	Male	23	76.7
Age	21-30 years	6	20.0
	31-40 years	9	30.0
	41-50 years	10	33.3
	Above 50 years	5	16.7
Education	Primary	1	3.3
	Secondary/high school	10	33.3
	College/University	18	60.0
	Others	1	3.3
Marital Status	Single	6	20.0
	Married	21	70.0
	Divorced	3	10.0

improvements, learning by doing and learning by using (Rosenberg, 1982). Incremental innovations involve making improvements in the products, process of production or market approach.

Product and process innovations have been introduced by 76.7 percent and 63.3 percent of small and medium-sized industries respectively in Tanzania (Table 2). This indicates that Tanzanian small and medium-sized industries introduce new products to the market and improve their method of production.

Table 2. Types of Innovations (N=30)

Types of Innovations	Frequency	Percent
Incremental Innovation	26	86.7
Product Innovation	23	76.7
Process Innovation	19	63.3

Various studies on innovations have often referred innovations types in many ways. In the OECD Oslo Manual (2005), four different innovations types namely product innovation, process innovation, marketing innovation and organizational innovation were introduced; in which product and process innovations are closely related to the concept of technological developments (Ulusoy et al., 2011) and incremental and radical innovations are often related to market aspect. Findings by Oke(2007) suggest that small and medium-sized enterprises tend to focus more on incremental than radical innovations because this focus is related to growth in sales turnover. A study by Propris (2002) broke down innovations in four distinct types: product, process, incremental and radical. Likewise, Gatignon et al. (2002) present radical and architectural innovations as types of innovations including product, process and incremental innovations. Innovations can come in different forms, including: product innovation, organizational innovation, production/process innovation, management innovation and commercial/

marketing innovation (Trott, 2008).According to Femi et al. (2014) innovations can also be clarified as incremental, radical or architectural.Based on these studies by different scholars, five main types of innovations which are product, process, incremental, radical and architectural can be identified as also described by Gunday et al. (2011). In this study five types of innovations, namely: product innovation, process innovation, incremental innovation, radical innovation and architectural innovation were investigated. Findings in table 2, reveals that two types of innovations (radical and architectural) have not been introduced by Tanzanian small and medium-sized industries.This is probably because small and medium-sized industries in Tanzania do not have deliberate research and development units responsible for initiating activities which could lead to new technology or combination of technologies thatcould result into radical innovations. Moreover, the lack of architectural innovations among Tanzanian small and medium-sized industriescould be explained by the use of simple technological way of assessing structural approach, which leads to poor execution of organizational competence changes to challenge the organizational capabilities (Gatignon et al., 2002).

Generally, most of the innovations in Small and medium-sized industries in Tanzania are innovations that seek to exploit the potentiality of the existing customers, products and targeted markets. Market forces were the major factor that contributed to these innovations.

Sources of Innovations Introduced in Tanzania

Findings indicate that the major sources of innovations among Tanzanian small and medium-sized industries areemployees (70 percent), followed byconsumers (66.7 percent), users-manufacturers lifestyles (66.7 percent), consequential problems/needs (63.3 percent), and best practices by other manufacturing firms (60 percent) as presented in Table 3.

Table 3. Sources of Innovations (N=30)

Sources of Innovations	Frequency	Percent
Employees	21	70.0
Users-manufacturers' lifestyle	20	66.7
Consumers	20	66.7
Consequential problems/needs	19	63.3
Best practices by other manufacturing firms	18	60.0
Consultants and professional organizations	16	53.3
Manufacturer's management	15	50.0
Supplier	9	30.0
Researches	5	16.7

Employees are often engaged in designing products, systems and works. They get to learn new experience by constantly running the system, doing the same repetitive works and using products, making them the major source of innovative ideas in manufacturing small and medium-sized industries in Tanzania. Consumers, users-manufacturers' lifestyle, and consequential problems were also ranked at the high as the sources of innovation due to changes in lifestyles, consumer behaviors, demand, customer tastes and preferences in the society that resulted into market opportunities. Experience through using and consuming the products; learning by doing and learning by using lead to the creative ideas and valuable information that ignites innovations in the Small and medium-sized industries (Gatignon et al., 2002).

The inductive study conducted by Coccia (2016) supported and confirmed that relevant consequential problems/needs and problem-solving activities are sources of incremental and radical innovations in several industries, ceteris paribus. Consequential problems/needs and problem-solving activities generate a main impetus for the development of innovations in markets (Coccia, 2016).

Competition from rival innovations also seemed to be forcing the organization to be creative. The best practices of other manufacturing firms that produce the same or similar products made organizational management team to act upon looking on best ways of building their competitive advantage to produce differentiated products. Consultants and professional organizations contributed a significant role in providing ideas for innovations, as shown in Table 3.

To achieve innovation, firms are required to nurture and strengthen their internal innovation capability. Research and development is thought to be the other side of the coin through which internal innovation capability of firms is enhanced to play an essential role in achieving innovation (Tsuji et al., 2018). In Tanzania, research and development (16.7 percent) was the least contributorof innovations. This is probably due to low commitment to researchamong manufacturingsmall and medium-sized industries.Almost all small and medium-sized industries had no research and development collaborations for searching on new ideas and knowledge that could impact big to their innovations.

Market factorslike users-manufacturers' lifestyle, consumers and consequential problems/needs have been found to be major sources of innovations among Tanzanian small and medium-sized industries. This is due to current changes in consumer behaviors, changes in purchasing power, new laws or policies, globalization trends and changes in technological aspects which have leadinto rapid changes in social lifestyles. To increase the number and quality of innovations among Tanzanian small and medium-sized industries, there is a need to also focus on technology innovation capabilities. This will not only increase the number of innovations introduced but also the quality and competitiveness of Tanzanian innovations. For example, through investment in technology, Tanzanian small and medium-sized industries will be able to introduce radical and architectural types of innovations which are currently not introduced. Thus, strong linkages should be established between the Government, universities and small and medium-sized industries owners to supporttechnology related research and development.

Innovation Commercialization Process in Tanzania

Findings in Table 4 indicate that Tanzanian small and medium-sized industries do not follow all steps of the innovation commercialization process which comprised idea generation; researchanddevelopment; disclosure and assessment; legal protection; licensing innovation; manufacturing, production and marketing, and sales and revenue (Datta et al., 2012); specifically, among the steps of commercialization process, all manufacturing small and medium-sized industries in the country deployedstep six (manufacturing, production and marketing) and step seven (sales and revenue), while majority of small and medium-sized industries pass through step one which involves idea generation stage (96.7 percent). Few small and medium-sized industries (17.2 percent) go through the second step (research and development) and the third step which is concerned with disclosure and assessment (16.6 percent). Only 3.3 percent of small and medium-sized industries engage into step four (legal protection) and step five (licensing of innovations).

The failure to follow all steps of the innovation commercialization process may account for the low commercialization of innovations among small and medium-sized industries in the country. In turn, this may lead to market failure and poor growth among Tanzania manufacturing small and medium-sized industries. However, according to Maine and Garnsey (2006), the process of commercialization can be complex because of high technology and market uncertainties when entering into established industries, with high barriers to entry due to market saturation.

Table 4. Innovations Commercialization Process (N=30)

Steps of Commercialization Process	Frequency	Percent
Idea generation	29	96.7
Research	6	17.2
Disclosure and assessment	5	16.6
Legal protection	1	3.3
Licensing innovation	1	3.3
Manufacturing, production and marketing	30	100.0
Sales and Revenue	30	100.0

Factors such as ignorance, lack of business education or commercialization knowledge, lack of clear procedures and process of innovation assessment, low commitment to research and development activities, and financial constraints among small and medium-sized industries owners might be responsible for the failure of small and medium-sized industries to follow the innovation commercialization process properly. Other factors outside small and medium-sized industries that contribute to failure to go through all stages of the innovation commercialization process might include long process and bureaucratic procedures, high charges of registration, and lack of a national unit responsible for innovation systems and commercialization of innovations.

To improve adherence of small and medium-sized industries to all stages of the innovation commercialization process, capacity building training on business and commercialization process should be provided to small and medium-sized industries owners, and an innovation commercialization one stop centre responsible for promoting innovations and commercialization be established by the Government. Moreover, regulatory bodies such a Tanzania Bureau of Standards (TBS), Small Industries Development Organization (SIDO), Tanzania Food and Drugs Authority (TFDA), and others, local councils and Business Development Services (BDS) centres should provide professional assistance to young small and medium-sized industries owners at no cost and in a friendly manner, and university-industry linkages should be strengthened to facilitate a good and quick flow of knowledge.

Challenges of Commercialization of Innovations in Tanzania

Table 5 presents challenges faced by Tanzanian small and medium-sized industries in the process of commercializing their innovations. All small and medium-sized industries owners (100 percent) mentioned the lack of business or commercialization knowledge, lack of development of infrastructure and fast logistics, lack of strong university, industry and public sector institutions linkage, bureaucratic disturbances during compliances, economic risks, ownership rights, patent filing processes, and protecting of intellectual property, insufficient test of the market opportunities, lack of ICT usage, low investment in research and development, and high taxes, as major challenges of innovation commercialization process facing small and medium-sized industries in Tanzania.

Table 5. Challenges of Commercialization of Innovations in Tanzania (N=30)

Challenges	Frequency	Percent
Lack ofbusiness or commercialization knowledge	30	100.0
Lack of developed infrastructure and fast logistics	30	100.0
Lack of strong university, industry and public sector linkages	30	100.0
Regulatory authorities bureaucratic disturbance	30	100.0
Economic risks	30	100.0
Intellectual Property Rights (IPR)	30	100.0
Lack of ICT usage	30	100.0
Inadequate or no investment in research and development	30	100.0
High taxes	30	100.0
Unavailability of raw materials and quality packaging materials	29	96.7
Financial problems/access to funds	28	93.3
Lack of skilled manpower& quality engineers	28	93.3
Lack of transfer of new research of esteemed colleges to the manufacturing industries	28	93.3
Inability to value the new technology and obsolescence of technology	25	83.3
Fears of market failure	25	83.3

Other challenges facing small and medium-sized industries in the commercialization process were lack of packaging materials (96.7 percent), lack of adequate raw materials (96.7 percent), financial problems/access to funds (93.3 percent), lack of skilled manpower (93.3 percent), inadequate availability of quality engineers (93.3 percent), lack of transfer of new researches of esteemed colleges to the manufacturing industries (93.3 percent), and other challenges as indicated in Table 5. Comparing with studies in other countries about problems and challenges facing manufacturing small and medium-sized industries, Tanzanian small and medium-sized industries face similar challenges. Khan and Turowski (2016), described challenges affecting commercialization of innovations in German to include but not limited to lack of transfer of new researches of esteemed colleges to the manufacturing industries, poor access to funds, low availability of quality engineers and skilled manpower.

Although decisions to commercialize new technology are made by individual firms, these decisions are closely linked to characteristics of the innovation system in which the firm operates. Small and medium-sized industries must assess the likelihood of securing funding from internal and external sources, their ability to develop or gain access to manufacturing equipment and supplies, and the size of potential markets. Without the proper infrastructure to support their efforts, small and medium-sized industries cannot be assured of winning returns from their investment.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of this study, it can be concluded that incremental, product, and process innovations are the common types of innovations introduced by small and medium-sized industries in Tanzania. The major source of innovations among Tanzanian small and medium-sized industries are employees, followed by enterprises as clients, consequential problems and lifestyles, consumers/users, and best practices by other manufacturing firms. Innovations which are based on research and development are few, probably due to low commitment to research and development among Tanzanian small and medium-sized industries. Findings have also revealed that Tanzanian small and medium-sized industries do not follow all steps of the innovation commercialization process, leading to low commercialization of Tanzanian innovations, and thus market failure and poor growth among Tanzania small and medium-sized industries. Major challenges facing Tanzanian small and medium-sized industries in their commercialization process include: the lack of commercialization knowledge, lack of development of infrastructure and fast logistics, lack of strong university, industry and public sector institutions linkage,regulatory authorities bureaucratic disturbances, economic risks, ownership rights, patent filing processes, and protection of intellectual property, fear for market failure, lack of ICT usage, low investment in research and development, and high taxes.

To improve identification and commercialization of innovations in Tanzania, the study recommends that small and medium-sized industries establish strong research and development units, and strong collaborations with universities, Government, research institutions, and other manufacturing stakeholders for identifying new ideas and capacity building on commercialization of innovations. Universities, as knowledge providers and intermediaries, have key roles that assist in building the ties and linkages necessary to move the innovation system to a higher state. The Government is advised to provide subsidies to support small and medium-sized industries, provide Small and medium-sized industries with grace period for paying tax, particularly in the first 3 to 5 years of their establishment,guaranteesmall and medium-sized industries credit scheme funds up to 75 percent for all loans granted by commercial banks for agricultural-intensive raw material production and processing industries, and establish a one stop centre to promote innovations and commercialization.

FUTURE RESEARCH DIRECTIONS

This study has identified different types and sources of innovation and their corresponding challenges to commercialization among small and medium-sized industries in Tanzania. However, this study has several limitations. For example, the study population and sample was limited to all30 small and medium-sized industries owners who attended the industrial products exhibitions at Saba Saba grounds in Dar es Salaam city from 5th to 9th of December 2018, making it impossible to generalize the findings.In addition, the study did not consider innovations by specific characteristics such as sectors and managerial characteristics (Osoro et al., 2014). Given the limitations of this study, similar studies on the types and sources of innovation and their corresponding challenges to commercialization among small and medium-sized industries in Tanzania should be conducted using a larger sample of small and medium-sized industries in order to generalize the findings. An analysis of commercialization of innovations by specific characteristics such as sectors and managerial characteristics is another area for future research.

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KEY TERMS AND DEFINITIONS

Commercialization: The process of selling the new offering to customers or licensing out the technology to ensure innovations meet performance, reliability and economic requirements (Maine & Garnsey, 2006). Commercialization entails converting ideas and inventions into viable products demanded by the market. Its success positively impacts firm output, sales and growth (Osoro et al., 2014).

Commercialization of Innovation: The process of turning scientific discoveries and inventions into marketable products and services generally through licensing patents to companies or by creating "startup" companies (Mohannak & Samtani, 2014).

Innovation: The development and/or use of new ideas or behaviours (Walker, 2006).

Small and Medium Industries: Manufacturing firms with fewer employees, whereas a small industry is a firm with 5 to 49 employees, while a medium industry is a firm with 50 to 99 employees (URT, 2002).

Chapter 7

Management of Sources of Stress:

Effects and Coping Strategies by Teachers to Improve Human Resources for the Industrialization Process in Tanzania

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ABSTRACT

Proper treatment of teachers as necessary human resources in the development of knowledge, novel skills, innovativeness, and creativity to young generation is a critical component in the fourth industrial development in Africa. This chapter sets to localize the position of teachers in the time of fourth industrial rejuvenation in the context of Tanzania. A phenomenological research design was employed to study the sources of stress, effect of job-related stress, and workable strategies adopted to cope with job stress to improve work performance. Purposive sampling was used to select 13 informants for in-depth interviews and 50 participants for Focus Group Discussion. Work-related stresses were reported to intensify absenteeism, turnover, and poor work performance among teachers while socialization and religious congregation were reported as positive coping strategies to counterbalance job-related stress. The study recommends designing of sustainable socialization program to lessen stress among teachers to improve their work performance.

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INTRODUCTION

Commitment of teachers as necessary human resource to the teaching profession is an important ingredient to the creation of requisite human capital envisioned for industrial development. On the contrary, stressed teachers are likely to endanger the quality of teaching and learning and consequently may undermine the future of industrial endeavour (Brewer & Brewer, 2010; Campbell, 1999; Kaufman, 2001). Equally, the discourses of human resource management have been in the forefront of scholarly debate and have taken precedence in the management since the advent of the first industrialization process in the developed world. In the first industrial revolution, management of human resources has been an essential component for increased productivity (Brewer & Brewer, 2010; Mahmood et al., 2012). Nonetheless, the advent of classical school of thought in management by Taylor and colleagues during industrial revolution has been criticized for its inclination to economic rationality to manage human resources, where monetary incentives were used to maximize employees' effort to productivity (Campbell, 1999; Sridhar, 2008) but overlooked psychological gratification to improve work performance.

Apparently, the classical school of thought in management was criticized for ignoring emotional and psychological side of individuals in workplace (Brewer & Brewer, 2010). On the other hand, human relation approach by Elton Mayo and associates has been critically denounced for responding to organized powerful group of actors on behalf of others (Bruce & Nyland, 2011). Therefore, the disregard of psychological element of human resources, including teachers has been the cause of stress and weakened commitment to productivity in workplace (Eres & Atanasoska, 2011; Ganster, 2004; Kaufman, 2001; Koech, 2014; Mattila et al., 2003; Yazon & Ang-Manaig, 2019). Therefore, in order to clearly understand the place of human resources, especially teachers in the industrialization process, the effect of job related stress among teachers should not be omitted in connection to the development of other industrial sectors.

For teachers, stress has been influenced by many related factors, either from the families or organizational factors. In Africa, the most frequently reported sources of stress include delay or denial of promotion, denial of fringe benefits, delay in being paid agreed salary, poor communication between superiors and subordinates, shortage of staff, lack of recognition and duplication of functions (Manabete et al., 2016). Research findings have proved the stress to have 'made living unpalatable for teachers and worsened teaching itself as a profession' (Adeniyi et al., 2010; Ali et al., 2014). Sources of stress have been reported to include laughable salary, handling overcrowded classrooms; heavy workload and home-work interference (Alhija, 2015; Koech, 2014; Okeke & Dlamini, 2013; Steyn & Kamper, 2006). Arguably, insufficient salary has intensified teachers' stress at workplace, and as a result, they often start looking for other sources of income to counterbalance the undesirable teaching conditions (Anangisye & Barrett, 2005).

Tanzania, like other African countries, has been experiencing the challenge of job stress to teachers, which are likely to negatively impact on the quality of teaching and learning (Mkumbo, 2013). These have deleterious consequences on the creation of human capital attuned with industrialization motives of the nation. For example, teachers have been reported to demonstrate pervasive claim and grievances on issues such as salary arrears, leave and medical allowances, delay in promotion and transfer allowances (Gregson, 2000; Mkumbo, 2013; Pargman, 2006). Impliedly, if teachers' claims and grievances will not be addressed timely, creation of innovative and creative human capital for industrial development will also be jeopardized. In Tanzania, teaching seems to be the most challenged profession with regard to work-related stress (Anangisye & Barrett, 2005; Mkumbo, 2013; Mkumbo, 2012) and is more likely to account for wastages of resources than any other profession. As education system stands in a pivotal position and precursor of other sectors, any wastages occurring in the system will have undesirable spill-overs to other industrial development.

Statement of the Problem

Human resources constitute the most significant component in other resource mobilization and transformation for industrial development. Contrary to other resources, human resources, including teachers have oftentimes encountered psychological challenges that affect productivity in workplace. Despite government effort to improve working conditions, payment of teachers' claims and incentives to school heads, psychologically, teachers have been expressing teaching related stress, which in return is likely to be translated into low productivity in the workplace and thus may affect their work performance. It should be noted that, increased productivity due to improved innovation in other industrial sectors of national development is dependent on well cultivated individuals from proper education system, cultivated by stress-free and committed teachers. However, despite the substantial contribution of teachers towards industrialization in Tanzania, commitment to teaching has had progressively dwindled over a decade due to job related stress (Anangisye & Barrett, 2005; Maboko, 2013; Mkumbo, 2012).

It appears that, job related stress has a direct link with existing poor incentives, heavy workload, unmet demand, poor working conditions among teachers. Consequently, teachers tend to exhibit poor work performance and poor productivity as they grapple with elevated stress levels and intensified workload (Webb et al., 2004). Factors such as teachers' outstanding arrears have been pointed out as issues that intensify teachers' poor work performance. In 2015 for example, about 300 Primary and Secondary school teachers in Tanzania were reported to support Tanzania Teachers Union (TTU) to stage a demonstration and push the government to pay their outstanding arrears (Kimani, 2015). One of the most important determinants of industrial development is deployment of well-educated human capital with innovative and creative knowledge and skills, which are imbued with proper values. To have well-educated human resources, one needs to have an education system that demonstrates proper quality of teaching and learning process, which in turn depends much upon teachers' commitment (Anangisye & Barrett, 2005; Mosha, 1997; URT, 2018). However, regrettably, teachers' stress tend to plummet their commitment and consequently may cause poor teaching and learning, which as a result, have direct negative effect on productivity in other sectors of the national development.

Despite the sizable number of studies on job related stress among teachers, studies on the effect of job related stress on teachers' work performance in public secondary schools in Tanzania have not been addressed effectively. Notwithstanding, the government effort to increase enrolment to secondary schools due to fee-free education, it has had a cumulative effect on job-related stress work performance among secondary school teachers. Failure to effectively address effect of job-related stress among secondary school teachers is likely to spoil the government's effort to the increased enrolment as geared towards industrialization and competitive workforce in other industries (Johnson, 2014; Mwang'onda, 2018). In addition, the dearth on knowledge about workable coping strategy to minimize teachers' work-related stress may have negative consequences on the new pathway to the fourth industrialization process in Tanzania.

Although earlier research findings have revealed diverse sources, symptoms and coping strategies to mitigate human stress in workplace (Alhija, 2015; Koech, 2014; Okeke & Dlamini, 2013; Steyn & Kamper, 2006), other studies have shown that coping strategies are contextual in nature, because of 'intra-individual differences in behavioural responses to workplace stressors that can be attributed to task differences (Ganster, 2004). Therefore, in order to contribute to the existing body of knowledge in human resource management in the fourth industrialization era in Tanzania, the current study focused on identifying workable coping strategy to evade the effect of stress among secondary school teachers therefore ensuring improved work performance across sectors. Specifically, the intent of the study was to: i) explore the sources of stress, ii) assess the effects of job related stress on teachers' work performance and iii) identify workable coping strategies in the perspective of secondary school teachers and mitigate work-related stress to improve work performance.

The Discourse of Stress and Work-Related Stress in Workplace

Work-related stress synonymously known as occupational stress, is a topic that has widely attracted attention of scholars around the world over the past two decades (Ali et al., 2014; Boltan, 2015; Dar et al., 2011; Edwards, 1986; Kain & Jex, 2010; Kiziloglu, 2017; Middleton, 2009; Sargent & Terry, 2000; Van Yperen & Hagedoorn, 2003). Although the word stress emerged from the field of physics, which is reflected as strain response to tension (Endler, 1997); overtime, the concept has transcended physical limitations and now it is habitually understood through biological and psychological lenses. Biologically, stress is considered as a result of individual overproduction of chemicals and hormones due to unusual external stimuli which causes high blood pressure and individual's inability to overcome the external stimuli (Fink, 2009).

The above articulation of stress implies that, human stress is the result of undesirable external conditions, which might be provoked by unexpected relationship between an individual and adjacent environment. The adjacent environments are possibly induced by organizational tendencies or one's acquaintances. So, one's unusual relationship with organizational affiliations and acquaintances may induce stress from the biological point of view. Nevertheless, in psychological discourse, stress has been pointed out as something real or just a perceived threat due to psychological integrity of an individual. Whether it is real or imaginary, stress has actual consequences on behavioural responses, which is likely to be triggered by competition, environmental harshness, and mediated by epinephrine and norepinephrine (Mogilski et al., 2019). Similar to the biologically induced stress, psychological stress, which can be real or imaginary interpretation of the environment or one's acquaintances may have negative consequences to an individual's productivity at workplace.

In workplace, stress is a situation that is perceived to threaten workers and produce a physiological arousal, which is likely to disrupt individual relationships with organizational goals or other workers. In other parts of the world, workers have been reported to have experienced substantial challenges in work organization and labour relations, which tend to induce great psychological stress to meet the demands of modern working life. For example, one study in US shows that, one third of workers have been reported to have "often" or "always" job related stress (Richards, 2012). In Canada, Brackenreed (2011) has identified responsibilities such as workload, shift work, role conflict, promotional issues, job insecurity, management style and communication patterns as factors that influence the workplace stressors. Likewise, in the Tanzanian context, where an employee has to shoulder increased familial responsibilities as well as organizational roles, workers, including teachers, have found themselves in psychologically related dilemma.

Arguably, workplace or organizational stress has a detrimental effect not only on the health and well-being of individuals but also on productivity and profits of organization itself. Studies show that workers who experience stress tend to be unhealthy, poorly motivated, less productive and less safe at work thus causing illnesses which account for increased wastage of working days per year (Blaug, Kenyon &Lekhi, 2007; Blaug, 2007). Contrary to other professions, teaching has been reported to constitute the workload with the highest levels of occupational stress (Bernard, 2016). Teachers in Africa, for example, like other parts of the world, have been reported to experience work-related stress and it has become a common experience in Nigeria, Botswana, South Africa, Swaziland and Kenya (Okeke & Dlamini, 2013). Teaching seems to be the most challenged profession with regard to work-related stress and is more likely to account for wastages of resources than any other profession. Therefore, as education system stands to be a precursor of other sectors, any wastages occurring in the system will have undesirable spill-overs to industrial development.

Work stress is therefore a harmful physical and emotional response that occurs when job requirements do not match with the worker's capabilities, resources and needs (Fink, 2009; NIOSH, 1999; Shahsavarani et al., 2015). One would arguably assert that, stress occurs when there is a mismatch between the demands of the job and the resources and capabilities of individual worker to meet those demands (Blaug, Kenyon & Lekhi, 2007). Various studies have been conducted to examine the major sources and symptoms of job stress, coping strategies and the effect of job stress on the teachers' work performance. According to International Labour Organization (ILO) (2016), the term stress has changed overtime, from stressors, stress factors to psychological factors, psychosocial hazards (psychosocial risks), which are sometimes used interchangeably to mean job stress (NIOSH, 1999). Consequently, psychosocial hazards are related to design and management of work and its social as well as organizational contexts with potentiality of influencing psychological or physical conditions, which have negative effect to a job holder. The result of the previous studies on job related stress has therefore set the foundation for the current study, which has a focus on exploring teachers' coping strategies to counter teaching related stress for improved work performance.

The Sources of Job Stress

Sources of stress have been viewed from various perspectives by several scholars (Khan et al., 2012; Kondalkar, 2007; Marwat et al., 2012; Sitabkhan et al., 2018). Kondalkar (2007) categorized the sources of stress into environmental, organizational, groups and individual while (Manabete et al., 2016; Omar, 2015) classified job stress into internal or individual stressors and external stressors. Family demands, personal interest conflicting with organizational demand and other inner conflict are considered as Internal stressors while role ambiguity, career development, work relationships and organizational structure and climate are considered as external sources stressors (Manabete et al., 2016; Marwat et al., 2012; Omar, 2015).

However, Boyd et al. (2009) considered the sources of stress among individuals as coming from within the institution and from outside the institution. Chan et al. (2010) pointed to rewards, work overload, overcrowded classrooms, tight institutional policies, poor relationship between the boss and the colleagues and poor opportunity for career progression as internal sources. On the other hand, pressure from students' parents, tight governmental rules regarding the education sector, changing educational policies and downsizing were regarded as external sources (Koech, 2014; Hunnur, 2013). Research findings in Hong Kong and Sweden revealed that heavy workload, low salary, time pressure, education reforms, external school review, pursuing further education, managing students' behaviour, overcrowded classrooms and learning, bullying, shift work and sex or racial harassment were among the reported sources of work stress for teachers (Chan et al., 2010; Ozturk, 2011).

Effects of Job Related Stress

Job stress may not only affect the individual worker by reducing one's ability to perform all the required tasks but also the organization at large by reducing its performance compared with other organizations in the market, which may result into its collapsing (Koech, 2014). In teaching, teachers' health can be seriously affected by any job related stress. Moreover, apart from teachers' health being affected, work stress suffered by them can also affect their students and the learning environment. Stress problems of teachers might also intensify the costs for teaching (Chan et al., 2010). These effects may undermine productivity in education and other industrial sectors in any nation, including Tanzania.

Studies conducted in Europe, Turkey and Sweden show that the experience of stress at work is associated with changes in behaviour and physiological function, both of which may be detrimental to employees' health (Cox et al., 2000). Psychological and emotional effects, which involve mental exhaustion, need silence, burnout, feeling disappointed and tense were identified as symptoms of job stress in Turkey and Sweden. The findings by Bauer & Erdogan (n.d.) indicated that more than one in five respondents had consulted a health professional for physical or mental health problem caused by job stress (Kepalaitė, 2013).

Furthermore, employees who reported job stress 'often' or 'always' were significantly more likely to be absent from work compared to other co-workers with less frequent job stress (Koech, 2014; Olaitan et al., 2010). The findings show that, stressful situation among teachers in Nigeria were the causes of physical ill-health such as headache, stomach upset, aches and pains (Adeniyi et al., 2010). Unfortunately, fatal conditions such as high blood pressure, diabetes, stroke and heart disease are likely to emanate due to severe and unchecked stress (Cranwell-ward & Abbey, 2005). As human beings are psychologically related, these effects of work-related stress are also likely to be unspoken experiences among teachers in Tanzania, and are therefore pushing factors for further investigation.

Coping Strategies of Job Related Stress by Teachers

Coping is a complex phenomenon which is given different meanings by different scholars. Some scholars focus on behavioural observations while others give attention to thoughts and cognitive structure (Bernard, 2016). According to Cooper & Palmer(2001), coping strategies are represented by sub-categories including cognitive, physical, behavioural, emotional, professional and social strategies. Debatably, Manabete et al.(2016) argued that there are negative coping strategies which include ignoring stressful situation, crying and getting cranky with students. For Manabete et al. (2016) the positive coping strategies occur when an individual restores emotional balance by engaging on religion, gardening, exercise and hobbies. In addition, neutral coping strategies which neither solve a problem nor make it worse, include behaviour such as staying to one self, living a lonely life over time, complete silence and venting to friends, family and colleagues.

Arguably, Cox et al. (2000) described coping strategies based on individual situation, proposing that experience of stress is partly dependent on individual's ability to cope with the demands of workload assigned to an individual as reflected by control and support given to an individual. It thus appears that, coping strategies differ from one individual to another individual and country to country and so they are contextually oriented. In Israel, for example, cognitive, behavioural and emotional strategies were the major coping strategies to overcome job related stress (Alhija, 2015). In Lithuania, playful problem solving and accepting responsibility were used most often by teachers to cope with stress issues (Kepalaitė, 2013).

Nevertheless, some scholars have given generalized recommendations in dealing with contextualized psychosocial stress (Cox et al. 2000). For example, Chan et al. (2010) and Olaitan et al. (2010) recommended improvement of teachers' working environment through provision of social facilities such as satellite TV, computers connected with internet as coping strategies, taking improvement of the school curriculum into cognizance of these facilities. In addition, teachers are advised to give priorities to sporting activities, as part of health education to enable them understand themselves and generate more coping techniques for job related stress (Chan et al., 2010; Olaitan et al., 2010).

Theoretical Framework of the Study

The current study was guided by the Person-Environment Fit (P-E fit) Theory(van Vianen, 2018). The two theories are known as Interactional theories of stress. The Interactional theories of stress focus on the structural characteristics of the people's interaction within their work environment (Edwards, 1986; Ekehammar, 1974; Gatchel & Schultz, 2012; P. Smith et al., 2007; Stress, 2000). Person-Environment Fit theory is rooted from the early work and theorizing by Lewin in 1935 and Murray in 1938(Edwards, 1986; Ekehammar, 1974; Gross, 2017; Stress, 2000; Swann & Seyle, 2005). In 1935, Lewin perceived interaction between a person and environment as the key to understanding people cognitive, affective and behavioural reactions(Edwards, 1986; Ekehammar, 1974; Gross, 2017; van Vianen, 2018). This notion implies that optimal fit between the person and the environment is needed for effective human functioning in work related environment. For school managers (Head Masters/Mistresses), the need to understand the interaction between personality traits (material) and situational impact (stress) for conformity and locus of control of individual teachers in a school environment is imperative for improved work performance (Ekehammar, 1974; NIOSH, 1999; Swann & Seyle, 2005), which concurs with observations made by French and colleagues while formulating a theory of work stress based on the concept of Person-Environment Fit (Gatchel & Schultz, 2012).

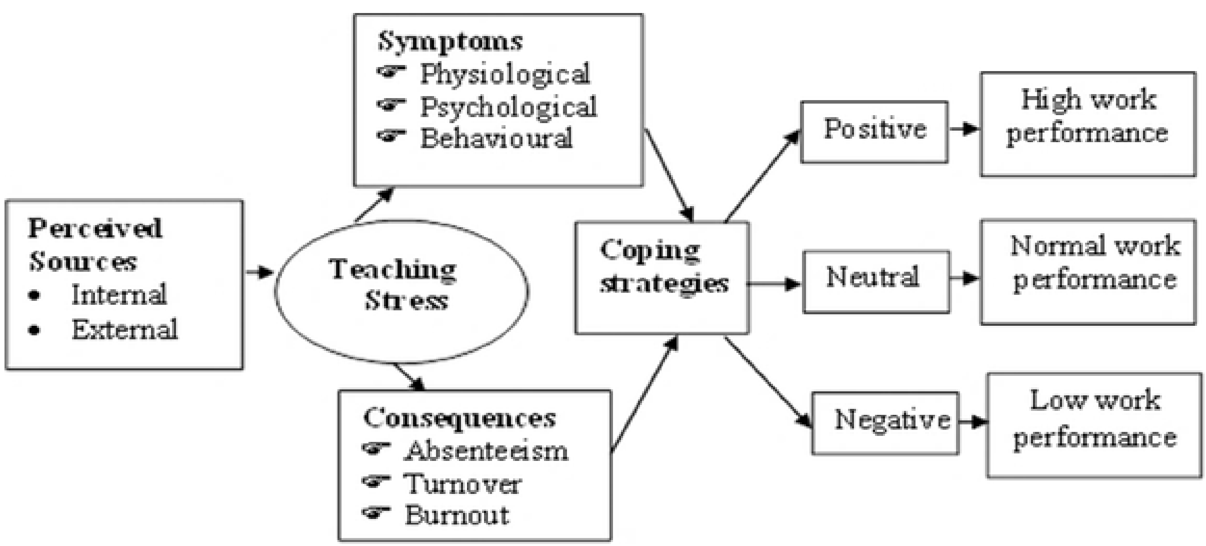
The basic notions underlying P-E fit theory are the degree to which an employee's attitudes and abilities meet the demands of the job referred to as demands-ability fit and the extent to which job environment meets the workers' needs (van Vianen, 2018). The theory describes the extent to which the individual is permitted and encouraged to use their job skills and knowledge at work place referred to as needs-supplies fit (Cox, Griffiths & Rial-Gonzalez, 2000; Gatchel & Schultz, 2012).This theory assumes that a lack of fit between needs and resources will have an impact on stress levels and overall well-being. The theory hinges on the amount of stimulus that a person wishes to have referred to as "preferred" and the actual level of various stimuli referred to as "received".

P-E Fit theory is guided by three underlying principles, which are interrelated to each other (van Vianen, 2018). The first principle explains that, a fit is a more powerful predictor of individual outcomes such as job satisfaction than either of the person or the environment standing in isolation (Boon & Biron, 2016). The second principle explains that, outcomes are most optimal when personal attributes of self needs; abilities and values to environmental are linked to demands and values regardless of the level of these attributes (Boon & Biron, 2016). Alongside, the third principle explains that, the mismatch between personal and environmental attributes reduces positive outcomes irrespective of the direction of the misfits (Caplan, 1987; Gregson, 2000; van Vianen, 2018). The P-E fit theory explains essential variables that describe the interaction between a person and the environment. Employee environments comprise of the workplace (organization) and other acquaintances (family members and co-workers), through which teachers like other employees have porous interaction. Lack of fit between the teacher's attitudes and abilities to meet the demands of the organization may result to job stress at workplace. On the other hand, lack of fit between teachers' attitudes and family demands are also likely to enhance job stress in the workplace. To cancel the effect of job stress, teachers should develop adaptive coping strategies. Therefore, teachers have to inculcate soft-skills while interacting with organizational environment as well as colleagues at home and workplace.

Conceptual Framework of the Study

A conceptual framework was adopted, modified and developed as was considered fit to suit the purpose of this particular study. The idea in this framework is that, there are variations among secondary school teachers. The thrust and pull for this variability is dependent upon teachers' context and teachers' interaction with the environment and acquaintances, which eventually causes different levels of stress and ultimately influences teachers' working performance. It can be postulated that, in a particular teaching context, there might be four interlocking processes or aspects, which influence teachers' work performance. The major four aspects have unidirectional interplay between the effect of stress and strategies used by teachers to deal with stress and termination of consequences of coping strategies. The consequences of coping strategies can manifest themselves as positive, neutral or negative in outlook, which are reflected as higher work performance; normal work performance and low work performance respectively (see Figure 1).

Figure 1. Teaching Stress as conceptualized from Person-Environment Fit Model



As shown in Figure 1, it is conceptualized that, the causes of job stress among teachers could be either internal or external oriented. Internal sources of stress may arise from teachers' psychological feeling of mental despair and tension as a result of the mismatch between expectations and working environment as well as job demand (Fink, 2009). Because of individual differences in perseverance (as a result of psychological and physiological differences on the effect of job related stress among teachers, each individual teacher can apply various coping strategies, which may lead to negative, neutral or positive coping strategies. Each coping strategy conceptualized here has its implication in terms of one's work performance. The assumptions are that, positive coping strategy may result into elevated work performance; neutral coping strategy may result into normal work performance while negative coping strategy may have consequences on diminished teacher's work performance.

RESEARCH METHODOLOGY

This study adopted qualitative research approach with understanding that the issue of stress is phenomenological and the meaning of its effect to teachers is dependent on multiple experiences of people. The qualitative study approach was used for the purpose of getting participants' inner feelings and opinions on the effect of job related stress on teachers' work performance and coping strategies used by these teachers to counterbalance the effect of stress to improve work performance. The study was conducted in Chamwino district in Dodoma region, which is among the central administrative regions in Tanzania. Chamwino district has had had poor students' learning achievements as measured by standardized national examinations results. In addition, Chamwino district inspectorate reports of 2015 and 2016, disclosed a relative average in teachers' preparation of schemes of work, with an increase of only 7%, from 37% to 44% while lesson plan preparation was of marginal increase by 10% from 17% to 27% respectively.

In a pilot study, a sizable number of teachers were reported to have irregular planning for lessons in this district, as they have been reported to use working hours on non-teaching activities, including excessive drinking of local liquor (Inspectorate Reports, 2016). In addition to the rationales above, and given its proximity to Dodoma city, which is located in the central zone of the country, Chamwino district was selected for the study as representative of other districts in Tanzania. Ten secondary schools out of twenty-seven were selected based on the reported poor preparation of schemes of work and lesson plans by teachers. Purposive sampling was used to select ten School Heads, one District Secondary Education Officer, one officer representing Teacher's Service Commission (TSC) and one officer representing Tanzania Teachers' Union (TTU) for in-depth interviews. Simple random sampling was used to select five secondary school teachers from each of the ten secondary schools, thus making a total of 63 subjects. Five teachers from each school were assembled in one classroom for Focus Group Discussion (FGD). Audio recording of teachers' narratives and expressions about the sources of job related stress, effect of work related stress and coping strategies adopted by teachers to improve work performance was conducted.

Initially, document reviews were conducted to better understand the effects of stress and contextual coping strategies used to counter the effect of job-related stress among teachers as understood by other scholars from the literature. During analysis of data, the audio recorded information from interviews and focus group discussions were organized, summarized and interpreted in the form of related patterns of themes in the coded quotations. The intent of the analyses was to comprehend teachers' experiences on stress as narrated by participants during the FGD. Two themes were derived and patterns of related explanations were organized and summarized into: causes of job related stress, effect of job related stress and teachers' coping strategies to counter the effect of stress on work performance. Finally, the effect of job stress among secondary school teachers were examined thematically in order to realize the coping strategies, which were more likely to manifest themselves as positive, neutral or negative in outlook. To maintain research ethics, letters of approval were sought from Dodoma Regional Administrative Secretary and Chamwino District Administrative Secretary and copies were submitted to each surveyed school.

Informants and participants were selected on voluntary consent and were informed on the purpose of the study while confidentiality of the information for data collected was given priority.

STUDY FINDINGS

The study findings emanating from the current study have been organized around three themes covering sources of stress, effect of stress and coping strategies to offset the effect of stress. In this section, each of the above themes has been presented as separate subsection. All the narration obtained for themes were derived from teachers' self-experiences, which were explicitly or implicitly expressed during FGD.

Sources of Job Stress

The first objective in this study was intended to explore the sources of stress from teachers' lived experiences. During the Focus Group Discussion, teachers were asked to give account of the way they were seeing, observing and feeling about the sources of stress in the workplace. Most of the participants in the FGD expressed a feeling of despair and revealed their experiences, which demarcated mismatch between school environment and prior expectations of these teachers on their working stations. While expressing the major sources of teaching stress, participants were oftentimes; showing approval of having experienced job stress at workplace and remarkably one participant pointed that:

*As a degree holder teacher, I expected that soon after employment; I would get good salary, good office, possess a car and build a house within a short time. However, my expectations vanished when I found myself being posted to the remote areas with shortage of important facilities which resulted to job stress (***Male Participant "S" from school "D", 3rd April 2017).**

From the remark above, it can be asserted that sources of stress among teachers are likely to emanate as a result of psychological discrepancy between prior expectations of teachers to possess valuable resources as a compensation for teaching and other assigned tasks. These discrepancies were expressed at workplaces as psychological feeling of despair stemming from mismatch between individual prior expectations and school environments well as material possession. This was mostly revealed by newly recruited teachers who demonstrated very high expectations but later they had poor appreciations of exiting school conditions. During the FGD, one Mathematics teacher concluded that:

*My expectations vanished when I found myself being posted to the remote areas with shortage of important facilities, I was totally frustrated (***Male Participant "S2"from school "D", 3rd April, 2017).**

In addition to the above, the same teacher mentioned curtailed salary, persisting claims, unfriendly working environments, heavy workload and delayed promotion for Science and Mathematics teachers as specific sources of stress. In another FGD, one participant expressed the feeling of embarrassment as failures of students were linked to negligence on teaching:

It is not true that we are not teaching. According to my experience in teaching, there are many factors which may contribute to students' failure. Instead of the finding out the factors which contribute to stu-

*dents' failure, our leaders have been always blaming us for not teaching the students. In fact, this act embarrasses us very much and reduces our morale to work(***Male Participant "A1" from school "D", 3rd April, 2017).**

From the above explanation, it could be asserted that teachers were being demoralized by wrong blames allotted to them by educational officers because of students' failure. The major reasons pointed out by teachers were emanating from poor salary they receive. For example, one participant in FGD compared what teachers earn with other government employees of the same education level. Comparing teachers' salary with medical doctors, lawyers and engineers, one teacher (a degree holder) revealed that:

*A degree level teacher earns a meagre salary compared to another employee of the same education level, which greatly discourages teachers' efforts to work (***Female Participant "F" from school "B", 7th April 2017).**

Emphatically, another teacher added:

*Although teaching is a core profession, it has been undermined for a long time. We are deprived and undervalued. We are getting low salary compared to others. I joined teaching college just because I missed a chance to join engineering. Otherwise I would not opt to become a teacher (***Male Participant "X1 from school "J", 11th April 2017***).*

Teacher's lamentation above is based on the perception that most teachers were opting for teaching profession as a last resort after missing other opportunities. Frustration and stress for some teachers appear to emanate as matter of wrong attribution of teaching as an alternative profession. Others were expressing obvious self-conceived negative perceptions as if teaching was less valued compared to other professions on the bases of salary scale. Some teachers were stressed after finding that their salary claims that was mistakenly deducted, as one participant from school reiterated:

*I have not taken any loan from Higher Education Students' Loans Board. Mistakenly, my salary has been deducted as if I was sponsored by Higher Education Students' Loan Board (HESLB). Then I decided to make a follow up to stop the deduction which took almost seven months to be effected. Thereafter, I wrote a letter to ask for being refunded the amount of money which has been wrongly deducted. Till now nothing has been done. I feel more stressed because I am being penalized for someone else's mistake. (***Male Participant "X" from school "E", 5th April 2017***).*

Erroneous deductions of monthly salary from teachers who never received HESLB were mentioned as one of the sources of teachers' stress. The stress was expressed to manifest more tensely, particularly when follow-up for refunding the deducted amount of money took so long till reimbursements were completed. Although this might have affected comparably very little number of secondary school teachers, it has implications of greater severity of the personal situation on the part of teachers' earning. The same teacher explained that:

*A slight increase in the percentage of HESLB deduction had big disruption on my life and feeling about monthly expenses, because I only remain with little amount which could not support me for a living. (***Male Participant "X" from school "E", 5th April 2017).**

For teachers who participated in the FGD, such earning was not making any sense. Rather, it irritated them to the extent of making some of them think of "*getting employment somewhere else*". This was a brief account of one school head from school "D" during the interview conducted on 3rd April, 2017. This implies that after monthly loans' deductions, many teachers were ending up with very little amount of money, which could not make them meet their upkeep for the whole month.

The Effect of Job Related Stress on Work Performance

The second objective of this study was intended to uncover the effect of work related stress on work performance among secondary school teachers. Participants in the planned FGD were asked to reflect their feeling and observation and narrate on their own experiences about the effects job related stress to work performance.

In the course of discussion, it was demonstrated that, with great family responsibilities to handle, some of the participant teachers were even planning to run away from their families, which is the expression of job related stress. Unfriendly working environments, inadequate working facilities, long distance to and from work place, shortage of offices to accommodate a number of teachers were factors mentioned by participants as one of issues that were contributing to reduced work performance. In a FGD, one newly recruited teachers narrated:

*I live in the town centre due to shortage of teachers' houses at the school. I spend more than Tshs.5, 000/ per day for transport and meal expenses. These expenses are too much compared to my earning. Sometimes, when I do not have money, I resort to walking a long distance from home to school, so I arrive late at school which puts me in trouble with the school head and I feel reluctant to work on schedules. Real not interested in attending to assigned tasks (***Male Participant "I" from school "B", 7th April 2017).**

Failure to work on schedules as per school timetables and other assigned tasks was expressed by participants as obvious behaviour demonstrated by most teachers. These expressions of teachers suggest the extant effect of stress in connection to work performance. Another common effect of stress that was experienced by participant teachers was failure to manage one's own life and failure to achieve school stated goals within the framework of Big Results Now (BRN). In an FGD with teachers, it was revealed that promotions for some teachers were not implemented from their first employment as lamented by one participant:

*I expected that if I was promoted on time my salary would increase and at least I could manage my life expenses. Instead of teaching I have been visiting the Ministry of Education's Headquarters tirelessly to present my demands, but all my efforts have been in vain. …. I have decided to find other business to subsidize my living. Frankly speaking, this situation has greatly affected my morale to work. How do you expect me to work while my rights are being violated?" (***Female Participant "C" from school "B***", ***4th April 2017***) After this remarks, she furiously disappeared from the room where FGD was convened (Emphasis from the researchers).*

The above expressions indicate that, the effect of stress can translate into expression of resentments, desperation and teachers' loss of situational control. The attitude expressed by a participant who left the FGD angrily, expound the extent of stress among teachers because of delayed promotion and mired salary increment over years with not palpable details from the government. In the FDG, participants demonstrated a surge of heated discourse as some teachers expressed discontent, which they linked to poor concentration on work effort while spending much of the employer time in dealing with self-employment in inconsequential business rather than attending to teaching. Experience shows that, when teachers opt to do other income earning activities for their living, the time that could be used at school is utilized elsewhere, which denies students of ample time to learn from teachers.

In the FGD generally, participants expressed feelings of discontent with teaching and were more likely to exhibit them through: hostility, whipping students, loneliness, and early departure from school, loss of interest to assist students, forgetfulness and irregular teaching schedule. It was realized that the most common effect of job stress was teachers' aggressiveness to both colleagues and the students. Aggressive behaviour was expressed by one participant who exclaimed:

When I feel angry I can even whip a student without a justifiable reason (Male Participant "X" from school "E", 5th April 2017)".

Another teacher who participated in the FGD had a vivid example of antisocial behaviour as he said:

*When stressed, I feel like I should not be disturbed and I wanted to be alone and not even involved in anything (***Male Participant "X" from school "E", 5th April 2017).**

A similar experience was shared by another participant who was quick to comment by saying:

*I feel so much disturbed that I feel like leaving the teaching profession or need transfer to another school soon"……"When I am stressed, I do not want to be consulted by anyone, even my colleagues (***Male Participant "I" from school "B", 7th April 2017).**

Another negative effect of stress was attributed to poor concentration in carrying out the assigned tasks. One participant who had a weird statement, said:

*Aah! I forget awfully a lot, I have experiences of forgetfulness and inconsistency in attending classrooms. (***Female Participant "F" from school "B", 7th April 2017).**

Generally, in addition to the above expression of teachers' sentiments, other effects of job stress expressed and implicitly demonstrated by participants were uncouth dressing, frequent lamentation and complaints, drunkenness, headache, exhaustion and frequently seeking for permission from school authorities.

Workable Coping Strategies to Offset Job Related Stress by Teachers

The third objective of the study was focused on understanding various strategies adopted by teachers to grapple with diverse effects of job related stress for improved work performance. Coping strategies were expressed as positive, neutral and negative according to one's orientation in organizational and social engagement.

Positive Coping Strategies

In the FGD, the participants expressed numerous and useful strategies through which they were able to ensure a balanced and a life of contentment in the teaching. During the FDG, it was realized that, teachers adopted flexibility for them to cope with job related stress which included: socialization, sports and games, listening to music and watching television. One participant narrated how flexibility was adopted by teachers to cope with job related stress and pointed out that:

*Fortunately, there is no one who has decided to vent stress with alcohol; otherwise the situation would be worse. Many teachers at this school opt to engage themselves in sports, listening to music and socializing and next day they report to school very fine and continue to work normally (***Male Participant "H3" from school "C", 5th April 2017)**

Equally, when some teachers were greatly stressed by delayed promotion and deferment of salary increment; the best way to counterbalance the effect of these stresses was to resort to religious congregations and prayers for stress-free conditioning. On this, one participant narrated that:

*"When I feel stressed, I attend religious fellowship, read religious texts and do some prayers. Somehow, I feel released from exhaustion and depression. With faith on God, I believe that one day my problems will be solved" (***Participant "O1" from school "H***", ***11th April 2017***).*

In addition to adopting religious congregation as workable coping strategies, other participants reported to have been resorting to other sources of income to counterbalance the effect of stress emanating from financial discontent as this was thought to subsidize their living expenses. In one school, participants reported to have had established a financial association where each member had an obligation to contribute on monthly bases. One school head from school explained that:

*In our school, we have established a financial association for the purpose of providing assistance to teachers in time of need. In this association, every teacher is supposed to contribute 5,000 Tanzanian shillings on monthly bases. Contributions are also used to provide reduced and short time loans to teachers. So, teachers are at peace because through this revolving fund, they can solve their financial problems (***Female Participant "HS7" from school "G", 6th April 2017).**

The above statement shows the significance of school heads in the management of teachers' affair and offsetting the effect of stress among teachers. By implications, it appears that school heads' understanding of the sources, effects and coping strategies in counterbalancing job related stress is an essential component of managerial skills among heads of schools. Equally, it could be argued that, establishment of the school revolving funds are likely alleviate social hardships that teachers are experiencing overtime due to inadequacy of salary and delayed promotion.

In another FGD, participants expressed the likelihood of using positive and neutral coping strategies rather than negative coping strategies to manage job related stress. One of those shared strategies expressed by school heads and teachers involved socialization, sports and games, listening to music, watching television, attending religious congregations and soliciting bank loans. Regarding this, one participant revealed:

*I decided to apply for loan from the National Microfinance Bank (NMB). Then, I decided to buy a Boda-boda which was used by my young brother. I used to get Tshs.30, 000/= every day. After saving, I bought another Bodaboda. This means that my daily earning has increased. From the savings, I have managed to buy a plot and have built my own house (***Male Participant "G" from school "B", 7th April 2017).**

Despite teachers' expression of teaching stress at diverse levels, there has been quite fruitful options such as attending to religious congregation, fine-tuning with society around as well as sports and games rather than reverting to alcoholic behaviours that are more disastrous to school and community. These fine-tunings can be explained as positive strategies in coping with teaching stress among teachers. Therefore, opting to vent work stress through game and sports, listening to music and socializing with other people represents positive strategies since by doing so; there is likelihood to elevate teachers' working performance. Self-adjustment to the situation that creates depression, tension and despair are commendable for improved productivity in teaching and other sectors of national development.

It seems that for secondary school teachers, the revolving funds were very useful in unravelling personal and family problems. Accordingly, participants suggested having in place efforts similar to these so would help to bring hope close to stress-free and tranquillity in their working environment, taking away unnecessary frictions with school administration. This showed that financial associations commonly known as "SACCOS" might play a great role in disentangling the teachers' financial discrepancy particularly for newly recruited teachers. In so doing, it would likely benefit teachers by offsetting the effect of job related stress resulting from financial hardships. These coping strategies were likely to offer better workable solution to elevate work performance among teachers to improve productivity.

Neutral Coping Strategies

Despite the prevalence of these commendable strategies to elevate teachers' interest to work, some participants expressed emphatically that they are unlikely to make durable change to improved work performance unless the government decides to improve their conditions by curbing delayed promotion and deferment of salary increment. One participant clearly pointed:

*The government knows everything concerning challenges we are facing at school. These are common challenges….delayed promotion and suspension of salary increment. What else can we do? What I need is only my salary; other things will work out with the time (***Female Participant "L1" from school "H", 11th April 2017***).*

The above expression is a testimonial disclosure that some teachers had inconspicuous decision-making in school managerial hierarchical order towards promotion and endorsement of salary increment. Critical speculations from the above statement suggest that, some secondary school teachers had accepted the situation and conditioned themselves to live with the prevailing school context, leaving everything to predetermination. It can be opined that, some teachers resorted to neutral coping strategy as workable solution that would counterbalance the effect of job related stress. Despite being neutral, this coping strategy may result into normal work performance.

Negative Coping Strategies Adopted by Teachers

Contrary to those teachers who adopted positive or neutral coping strategies to counter the effect of stress, others decided to put less effort to fulfilling school goals and used ample time to engage on self-sustaining activities such as petty trading, farming and animal rearing. As evidence on this, one participant in FGD pointed that:

*If my effort is not reflected in what I earn, why should I use all the time teaching at school? Normally, I come to school in the morning, sign in the attendance logbook, I would do what I am supposed to do and then leave early to do other activities which can support my living expenses (***Male Participant "V1" from school "J", 11th April 2017***).*

In FDG, teachers expressed shared experiences as most of these teachers were simply coming to school to accomplish only what was necessary (sign in the logbook).It seems that if there was little or no supervision, most teachers would attend to only diminutive school activities and then resort to personal prerequisites while using school facilities.

Due to income hardship as a result of perceived meagre salary, some teachers were reported to take loans from banks and other financial institutions. Instead of opting to positive or neutral coping strategies to counter the effect of job related stress, some teachers opted to use negative coping strategies, particularly for teachers who could not manage to even schedule their time between teaching and other personal economic activities. Nevertheless, most of the coping strategies, which were reported, appeared to provide temporal solutions to job related stress, as one participant recalled: During the FGD, participants shared a story of one teacher by narrating that:

*Our colleague applied for a loan from National Microfinance Bank to resolve financial challenges. Later, he encountered perpetual debts with huge interests. After consequential deduction for three years he experienced very meagre salary, which could not suffice his family life. He then borrowed more money from colleagues and was a pitiful thing whenever he met people he owed. He eventually defaulted and ran away to unknown place (***A shared group story, from school "C", 5th April 2017***).*

Implicitly, the story shared by participants during the FGD, suggests the negative effect of job related stress, through which, uncouth teachers opted to use negative strategies by defaulting all the money borrowed from bank and other colleagues. The demonstrated negative coping strategy may have consequences on diminished work performance among teachers. One would adjudge that, job related stress to some teachers was beyond individual capacity because of frustration. With unresolved frustration of teachers due to job related stress, quality of teaching and learning could also be jeopardized. Frustrated teachers could not perform their duty with expected commitment due to job related stress and hence poor learning for some students. Flabbergasted quality of learning among students is likely to have negative consequences in creative and innovations among graduates, which would possibly undermine industrialization process. Generally, the study findings reveal three types of employees in workplace in dealing with job related stress. Some employees are likely to improve productivity by opting to positive coping strategies, some are likely to remain neutral with no other option and others are likely to opt for uncouth and uncivilized coping strategies.

DISCUSSION OF THE FINDINGS

The intent of this study was of three folds: i) exploring the sources of stress, ii) assessing the effects of job related stress on teachers' work performance and iii) identifying workable coping strategies in the perspective of secondary school teachers to mitigate work-related stress to improve work performance. Findings revealed sources of job related stress to emanate from psychological discrepancy between prior expectations of teachers to possess valuable resources and prevailing situation in the education sector. These psychological discrepancies were aggravated by shortage of teaching facilities, embarrassments because of students' failure in standardized examinations, comparable meagre salaries, prolonged outstanding claims, and erroneous deductions of monthly salary from teachers who never received loans from Higher Education student Loans Board.

In connection to the sources of job related stress, findings revealed negative effect of these stresses on teachers' working performance. The job related stresses were found to exert negative effect on teachers work performance through psychologically feeling reluctant to work on school schedules, working on other business to subsidize everyday living expenses, expression of intent to leave teaching profession, forgetfulness and inconsistence in attending classroom teaching and whipping students for unjustifiable reasons. Despite the expression of negative effect of job related stresses, teachers demonstrated three diverse coping strategies to counterbalance these effects. The strategies were divided into positive coping strategies, neutral coping strategies and negative coping strategies.

The positive coping strategies were designated as workable solution because they had apparent influence in elevating teachers' work performance. Teachers who adopted positive coping strategies were able to fulfil both teaching and familial responsibilities. The neutral coping strategies, however, could neither elevate nor diminish normal working performance, as teachers were able to perform their duties within normal threshold. Contrary to teaching profession, negative coping strategies were demonstrated by teachers through uncouth and *uncivilized working behaviour and consequently* lead to diminished teacher's work performance.

Therefore, it can be argued that, positive coping strategies by teachers to counter the effect of stress are likely to improve teachers' working performance while negative coping strategies are likely to diminish teachers' working performance. Probably, adopting positive strategies to counter effect of job related stress may improve quality of teaching and learning, which in turn would produce innovative, creative and skilful individual envisioned for industrial development(Hope, 2013; Johnson, 2014; Rubaish, 2010; Mwang'onda, 2018). On the other hand, adopting negative strategies to counter the effect of job related stress will automatically diminish the quality of teaching and learning and consequently will deter innovativeness, creativity and skilful among school graduate envisioned for the fourth industrial revolution and Tanzania Development Vision 2025 (Johnson, 2014; Mwang'onda, 2018).

It is a considered opinion that, productivity in all sectors including service industries and manufacturing industry, all are determined by quality, innovative, creative and skilful workforce from education industry. Consequently, productivity in education industry depends on committed and stress-free human resources (teachers). It should be noted that, in the first industrialization revolution, which was culminated by classical management school of thought, improving working performance from the perspectives of human resources was based on monetary incentives only, which lead to its criticisms because of its mechanization modelling of human resources (Galabawa, 2001; Mahmood et al., 2012; Olum, 2004; Sridhar, 2008). Although human relation approach was introduced to improve productivity through improvement of working conditions in manufacturing industry (Bruce & Nyland, 2011; Hyde et al., 2009; Kaufman, 2001; O'Connor, 1999; Pryor et al., 2008), it has been accused for being undemocratic by responding to the demand of organized powerful group of actors on behalf of others (Bruce & Nyland, 2011).

Plausibly, the use of monetary incentives and improvement of working conditions alone without proper management of psychologically related demand of individuals to maximize productivity is disputable. Therefore, one is compelled to rethink on the use of different coping strategies to counter the effect of psychologically related stress to maximize teaching and learning. Improved teaching and learning are likely to translate into innovative, creative, skilful and productive workforce anticipated to work in different sectors in the current era of industrialization in Tanzania.

Conversely, inability by scholars and other stakeholders to counter the effect of job related stress among teachers has detrimental impact to learning and this would deter government efforts towards provision of fee-free secondary education and on-going industrialization process. Any attempt to disrupt the quality of teaching among teachers and improved learning among students as a result of job related stress, would undermine fee free education policy and would ultimately curtail prosperity of the industrial economy in Africa and Tanzania in particular. Narratives of whipping and caning of students as reported by participants during FDG have become common and concur with numerous reports from newspapers (Mumbere, 2018; Reporter, 2019; Wabwire, 2019).

Logically, an employee or a graduate who had experienced whipping by psychologically stressed teachers cannot be expected to be innovative, creative, skilful and productive in the world of work. It would be right to suggest that, early management of teachers' stress before they manifest and influence the work of teachers is a necessary understanding for school heads and other educational stakeholders, including ministry officials. Previous research have stipulated and argued on the effect of stress to workers, which requires proper management of necessary prerequisite conditions for improved productivity in work place (Boyd et al., 2009; Cox, T., Griffiths, A. and Rial-Gonzalez, 2000; Cranwell-ward & Abbey, 2005; Kepalaitė, 2013). Therefore, to improve future productivity in both education sector and other sectors of national development, there is need to properly manage educational human resources, So, Ministry of Education, Science and Technology, Non-Governmental organizations, Teachers' Service Commission, Tanzania Teachers' Union (TTU) as well as Tanzania Heads of Secondary Schools Association (TAHOSA); should work harmoniously to improve the welfare of teachers and teaching profession in general.

In order to achieve the envisioned Tanzania Development Vision 2025 through the fourth industrial revolution, all sectors should work together to improve the unfavourable rural working environment, by harmonizing teachers' salary with other professional having the same level of education, providing teachers' houses to mitigate the cost of living in rural and urban areas and timely payment of teachers' claims. Since major psychological and psychosocial conditions, were found to enhance teachers' narratives on job related stress. In addition, engagement of career guidance and counselling should be instituted to dismiss rural-urban divide between teachers recruited in remotely perceived localities and those placed in town centres (Adeniyi et al., 2010; Kimani, 2015; Okeke & Dlamini, 2013). Institution of career guidance and counselling would minimize misguided higher expectations for good life by young graduates (Kimani, 2015) and shun the prevailing behaviour of whipping and caning students unnecessarily (Mumbere, 2018; Reporter, 2019; Wabwire, 2019).

To restore teachers working commitments, adoption of Sector-Wide Approach Process (SWAP) in educational projects and other sectors should be instituted accordingly (Hope, 2013; Simon Mwang'onda, 2018). All sectors, from energy, water, infrastructural, health and Information and Communication Technology should be harmonized to improve the newly established secondary school at ward level, across the country. It is a spirit of working together, which will help teachers improve their working capability and commitment to their chosen professional. Although attending religious fellowship, borrowing from existing SACCOS, engagement in games/sports, entertainment and other socialization activities were narratively pointed as existing coping strategies from teachers perspectives, more sophisticated workable solution should be sought from others apart from teachers.

CONCLUSION

The major focus of the study was to understand the sources and effect of job related and how teachers are optimally coping with the prevailing stress to improve working capability in relation to perceived future productivity in other industrial sectors. Specifically, the study intended to: i) explore the sources of stress, ii) assess the effects of job related stress on teachers' work performance and iii) identify workable coping strategies in the perspective of secondary school teachers and mitigate work-related stress to improve work performance.

Findings from narratives excerpt based on teachers' perspective have indicated that, teachers displayed three coping strategies to deal with effect of job related stress in the teaching profession. The three coping strategies were thematically attributed to positive aspects, neutral aspects and negative aspects, Positive coping strategies were found to explain elevated work performance while negative coping strategies reflected diminished work performance among teachers. Likewise, positive coping strategies are linked with improved teaching and learning, which would in the future, improve productivity in other industries. On the contrary, negative coping strategies are linked to the diminished teaching and learning, which would in the future, lead to unproductive behaviour of graduate in the labour market.

Consequently, management of teachers' affairs is a necessary component for improved teaching and learning, which in turn will possibly improve industrial productivity. The two school of management are rendered disputable with regard to productivity human resources, especially teachers. For example, classical management school of thought have been silent on taking human affairs to dashboard for interrogation and have been criticized for too much focus on monetary incentives and mechanically oriented. Human relation approach on the other hand, has been alleged of being too undemocratic, because the interest of the workers was developed in response to the demand of organized labour in which powerful actors voiced on behalf of others. It is the argument from the current findings that, workable strategies to solve job related stress among teachers should be sought from the perspectives of teachers themselves rather than being represented by powerful group of actors on their behalf.

As Tanzania has had embarked in the fourth industrialization process, to achieve Tanzania National Vision 2025, it was necessary to seek answers from teachers' own voices, as to how job related stress can be counterbalanced to improve teaching and consequently improve industrial productivity in the near future as stipulated in the national vision. Therefore, findings has revealed that, positive coping strategies adopted by teachers to offset the effect of job related stress are likely to improve productivity both in the education sector as well as in other industrial sectors of national development.. Thus, the digitalized or fourth industrialization will need much more innovations, creativity and advanced technology compared to the first industrial economy, such that much is needed to improve current school management, especially management of teachers' well-being. And it is high time for all educational stakeholders to ensure reduced persistence of unsolved teachers' challenges that are likely to exacerbate job related stress and teachers' poor commitment to teaching.

It is thus important for government to improve teachers working conditions that match with their personal and environmental demands. All sectors should pull resources and exert concerted effort in order to help teachers to eliminate unnecessary pressure and overcome modern ways of life, which are likely to push them out of professional conduct. Minimizing individual, social and economic pressure would likely lead to reduced absenteeism, employees' turnover, poor performance and health deterioration. These measures are presumed to decrease government running costs by avoiding incurring unplanned costs for new recruitment, avoiding spending on health costs in the treatment of psychologically disturbed teachers and loss of workforce through teachers' attrition as a result of discontent with working environment.

RECOMMENDATIONS FOR ADMINISTRATIVE ACTIONS

Three administrative recommendations are proposed in order to alleviate job related stress among teachers and improve work performance. First, the Local Government Authorities (LGA) should take advocacy roles to push forward the essential demands of teachers brought to them individually or through official representative of teachers. Concerted effort is recommended across all sectors through harmonization of their development projects as many of these projects are linked to Education Sector Development Programme (ESDP) and others are closely connected to Secondary Education Development Plan (SEDP). Establishment of district teachers' counselling committee is recommended to help teachers develop positive attitudes towards teaching profession. Otherwise, establishment of career guidance and counsel can be instituted at the school level to guide and counsel teachers to cope with psychological stress or social hardship.

Another recommendation is that, school heads should collect first-hand information about teachers' specific demands in their respective schools. With this information, school heads will be able to derive initial workable solution and effective measures to manage and lessen job related stress among teachers. In addition, school heads are advised to institute recreation centres, which should be used as socializing agent for teachers to lessen their work related tensions. In addition, teachers should be informed and advised accordingly about factors that are likely to worsen their affairs, which could affect their work performance and seek necessary support from school heads or other colleagues. Teachers should develop possible measures which could be utilized in reducing job related stress and improve their performance. Daily teachers' involvement and participation into religious congregations, sports and games as well as other socialization activities are necessary before seeking second hand support. Therefore this study recommends to the ministry officials to find sustainable strategies that would minimize stress among teachers and augment their commitments to teaching under fee free basic education towards government envisioned industrialization agenda.

RECOMMENDATIONS FOR FURTHER STUDIES

This study is limited to public secondary schools teachers in Chamwino district. Upcoming research should cover public secondary schools in other regions to substantiate or debatably criticize the findings of the current study. The future research in this area could reveal coherent picture of what is happening in other secondary schools in Tanzania with respect to stress in relation to teachers and future productive work force in other sectors. For comparative reasons, this study is purely qualitative approach and only undertaken through phenomenological design. Therefore, a comprehensive study can be conducted through pragmatic approach to get the reality of the existing situation. Also, the comparative study between the public and private secondary schools on the influence of job stress on teachers' work performance should be conducted. The findings of such study would provide the real picture of what is taking place and enable these schools to learn from each other for the purpose of improving working environment of teachers and hence improvement of work performance.

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KEY TERMS AND DEFINITIONS

Coping: Coping as implied in this study, should be understood as a framework of thoughts and actions teachers use to combat a threatening situation in relations to individual abilities to handle different teaching responsibilities. Coping mediates between antecedent stressful events and distressing consequences or a manner of confronting a stressful situation and dealing with it (Endler, 1997).Coping is the ability to generate and maintain psychological well-being despite living with a serious condition (Folkman, 1997)and is linked to better psychological adjustment outcomes (Smith & Carlson, 1997).

Coping Strategies: Coping strategies in the current study can be described as psychological patterns that individuals use to manage thoughts, feelings, and actions encountered during various stages of ill-like conditions called stress. Coping strategies reflect the repertoire of responses to the stress that the individual has available and can use successfully (Hamdy, 2004).

Industrialization: Generally, industrialization is understood as any productive activities related to new innovation, creativity, skillfulness of workers and increased profit by maximization of machines and human effort. In Tanzanian context, industrialization has been understood to mean any manufacturing industry that contribute to innovation and growth of production technology, creation of massive employment in small and medium scale manufacturing industries such as textile, food and beverage, and iron and steel industries (Simon Mwang'onda, 2018).

Job/Occupational Stress: Job stress reflects the individuals' reactions to the characteristics of work environment, which is considered as a threat by an individual, demonstrating a mismatch between individuals' capabilities and the work environment (Jamal, 2007). It is a condition, which represents the harmful physical and emotional responses that occur when job requirements do not match the worker's capabilities and resources available.

Stress: Stress is a state of psychological or biological tension, which is experienced by individuals facing extraordinary demands, constraints or opportunities, coupled with perceived pressures of one's life, that lead to emotional imbalances. Psychologically, stress is a feeling of mental imbalance and tension. Biologically, stress is a reactions due to physiological process which takes place within an individual as a result of overproduction of chemicals and hormones due to unusual external stimuli which causes high blood pressure and individual's inability to overcome the external stimuli (for details see Fink, 2009).Stress can be real or perceived threat to the physiological or psychological integrity of an individual with consequences in physiological and/or behavioural responses, which occurs in reaction to somatic challenges such as competition, environmental harshness, and mediated by epinephrine and norepinephrine (Mogilski et al., 2019). Therefore, Stress represents a challenge to the homeostasis of the human body, which range from genetically regulated processes of human development to varying degree of social and environmental conditions.

Teachers' Work Performance: These are activities which an individual teacher is able to undertake productively as measured by goals assigned by superiors and resources utilized to perform those activities. It can be conceptualized as a measure of successful accomplishment of teaching responsibilities, including other related school activities.

Chapter 8
Reaching Consumers Through Video Marketing in Africa by Enhancing Industrial Growth and the Realization of SDGs and African Agenda 2063

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ABSTRACT

This study sought to find out the effect of video marketing as a strategy to create awareness on industrial goods and services in order to promote trade in Africa and alleviate poverty in line with the SDGs and the African Agenda 2063. Video marketing involves the use of product content in the form of videos so as to promote a brand, product, or service. An online survey used Google Forms to collect primary data. The respondents answered the questions from web browsers of their choice. Descriptive statistics were used to analyze the data. The study found that most internet users preferred to access the internet via their smartphones and that they usually downloaded entire videos and other advertisements. In addition, a majority preferred You Tube and Instagram. The study recommends the use of you tube and Instagram to advertise goods within the East African market.

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INTRODUCTION

Watching videos, unlike reading text, offers quite a rich, engaging and exhilarating experience. The world has experienced an increase in the availability of bandwidth and great strides in the use of technology. This has led to more people watching and sharing videos.

BACKGROUND OF THE STUDY

Trade in the East African Region

Most of cross-EAC border trade is executed informally. This trade involves the importation and exportation of legally and accepted produced commodities (goods and services). In some cases, the trade process is not captured by governmental procedures, for example tax remittances, some are incorrectly recorded or others go unrecorded into official national statistics of the trading countries (Ogalo, 2010).

The emergence of the EAC Customs Union in 2005 has seen several measures taken to increase formal trade links among member countries (Mkuna, 2014). Although there have been policies put in place to enhance trade integration among EAC member states, there are still challenges with formal trade links. For example, additional transport costs resulting from non-tariff barriers, and the balance of trade between member states. There is need for, member states to Increase the pace of harmonizing the trading procedures and policies in the EAC region to assist in simplifying activities. (Mkuna, 2014). These make some traders to continue engaging in informal trade since there are advantages inherent in the informality. For example, they can easily evade taxation; engage in substandard goods and services without being noticed among others (Titeca & Kimanuka, 2012).

Most of the goods traded in the East African region include agricultural produce, locally made and imported consumer goods such as shoes, clothes, textile and vehicle and bicycle parts which mostly originate from the country whose import tax is less (Ogalo, 2010). The trade has a positive impact on the inhabitants of the region. Small-scale traders are able to overcome poverty which is common in the region, and to meet health, education, housing and other basic needs. This trade also enhances employability among those engaging in the trade in one way or another.

However, despite the availability of goods and services, and a sufficient market to consume these products, the East African Community member states continue to rely more on imported goods and services from overseas markets (Shinyekwa & Othieno, 2013). The leading Import and Export market for Kenya is China and the US respectively, Tanzania (India and China), Uganda (China and UAE) Burundi (UAE and Tanzania) Rwanda (China and DRC) and Southern Sudan (China and Uganda). It is this evident that the leading trade partners are foreign countries rather than member states. This can be attributed to, among other things, the lack of knowledge about the availability of these products within the region. Lack of proper marketing makes the consumers not to seek a product since they are not aware it exists.

Although there has been an increase in digital advertisements on a daily basis than any other form of advertisement in the region, most are initiatives of multinational companies. The number of internet users and their daily usage continues to surge as audiences shift away from TV, radio and print media. There is an increasing dependency on technology and a mobile first approach by youth consumers in Africa. This trend is being driven by African millennials with Africa having the highest youth population in the world. African millennials are increasingly using social media sites as tools for communication and as their first source for news and information (Geopoll 2017). However, the East African market has not effectively taken advantage of this.

Marketing

Marketing is as old as human civilisation itself (Moore & Reid, 2008) and has undergone several transformations in its definitions. In the early 1930s, marketing was defined as the performance of business activities that direct the flow of goods and services from producers to consumers. In the 1980s, it was defined as the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods and services to create exchanges that satisfy individual and organisational objectives. Currently marketing is referred to as an organizational function and set of processes for creating, communicating and delivering value to customers and for managing customer relationships in ways that benefit the organisation and stakeholders, (Wilkie & Moore, 2006).

In order to create and retain profitable customers, the marketing concept has become the way of thinking with the customer located at the centre of the business. Over the years the concept of market has evolved from one concept to the other (Keelson, 2012). The marketing concept is one of the business concepts developed over the years. The other concepts include the production concept, the product concept, the selling concept, the societal marketing concept and the holistic marketing concept. (Kotler, 2017). The societal marketing and the holistic marketing concepts have taught businesses great lessons of where marketing was, where it has gotten to and where it is heading as customers become more complex and the business environment becomes more turbulent (Keelson, 2012).

The evolution of the marketing concept has helped organisations and businesses appreciate that changes in customer characteristics and preferences, over time, is inevitable, and that companies must be aware and operate their businesses in harmony with the changing needs of the market. Although any given business can operate under any of the concepts, the underlying precept of the development of the marketing concept is that these concepts form a hierarchy, with later concepts being considered superior to those of earlier ones as the formation of the market change (Kotler & Keller, 2006). Therefore, organisations have to evolve from earlier concepts to the latter ones in their business practices to meet the market needs of a particular time period with specific type of customers.

Keelson (2012), however, points out that The development of a new concept may not necessarily mean abolition of old concepts. New concepts may build on old ones to make a business more successful in serving the interests of its stakeholders. Some older concepts may work well for some businesses and industries today, better than even new concepts, depending on the market environment as well as product and customer types.

Digital Marketing

The political, socio-demographic, economic, environmental but mainly technological developments around Information and Communication (ICT) have drastically transformed the marketing practice, the businesses and the consumers. According to Chaffey, Smith & Smith (2013), the growth of ICT has led to consumer shift to digital media. Digital marketing is all about promoting a business using digital channels like Internet, website, blogs, social media platforms, video marketing, mobile marketing, email marketing among others. Currently, the digital economy contributes decisively to an increase in competitiveness, especially as a digital transformation involves migrating to new technological models where digital marketing is a key part of growth and user loyalty strategies. Internet and Digital Marketing have become important factors in campaigns, which attract and retain Internet users, (López García, Lizcano, Ramos, & Matos (2019). Consumers can easily obtain a lot of information online before making purchase decisions. They have access to suppliers everywhere in the world and also have up-to-date market prices in real time (O'Reilly, 2018).

Social Media

In today's technology driven world, social networking sites have become an avenue where retailers can extend their marketing campaigns to a wider range of consumers. Chi and Lieberman, (2011) defines social media marketing as a "connection between brands and consumers offering a personal channel and currency for user centered networking and social interaction." The tools and approaches for communicating with customers have changed greatly with the emergence of social media; therefore, businesses must learn how to use social media in a way that is consistent with their business plan (Mangold & Faulds 2009). Social media is a new way in which end users use the World Wide Web where content is continuously altered by all operators in a sharing and collaborative way (Kaplan & Haenlein, 2010).

Social media has advanced from simply providing a platform for individuals to stay in touch with their family and friends. Now it is a place where consumers can learn more about their favorite companies and the products they sell. Marketers and retailers are utilizing these sites as another way to reach consumers and provide a new way to shop. "Technology related developments such as the rise of powerful search engines, advanced mobile devices and interfaces, peer-to-peer communication vehicles, and online social networks have extended marketers' ability to reach shoppers through new touch points" (Shankar, Inman, Mantrala, Kelley, & Rizley, 2011)

Video Marketing

The watching of online videos by consumers has become a popular trend over the past years (Bullock, 2016). Video marketing as a promotion strategy continues to gain popularity among consumers leading to more marketers using it than ever before. The significance of video content is increasingly being appreciated by marketers all over the world today. It is worth noting that as more businesses make use of video marketing, the level of competition increases at the same rate. There is a lot of pressure for businesses to make themselves known 'amidst the noise.' This trend is expected to increase in 2019 and business that shall not adapt to the current technological trends shall have no space in the current business environment.

The idea of video marketing is not new. From past experience, it is notable that a point has come where brands need a video marketing strategy. What is new is the increased use of video on most platforms and channels. Video has increasingly with time dominated social media. A study carried out by HubSpot (HubSpot content trends survey, 2017) on consumers in the United States of America, Germany and Latin America shows that out of every six, four channels are social channels that consumers watch video. YouTube and Facebook were found to be leading the pack.

A study by Statcounter, (2017) in September 2017, found that the Google search engine had the largest desktop use in the world with a 91% global market share. YouTube came second and also, the third most visited website on the World Wide Web. According to YouTube (2017) YouTube has over 1 billion unique users. This is indicative that its users are turning to YouTube with a specific intention rather than browse haphazardly, or even hoping to have a link land in their inbox for them to follow. Interestingly, close to 1 billion hours of video are watched on YouTube on a daily basis, where more than half are watched from mobile devices. In addition, in every minute, 400 hours of video content is uploaded onto the YouTube platform (Expanded Ramblings, 2017). It is notable that other social media platforms are strongly engaging on videos. By the end of 2016, there were more than 3.8 billion video views on Facebook daily.

There is a lack of clarity on what could be considered as a video view. It has been found that videos uploaded onto Facebook have a higher consumer reach rate, in fact, ten times more than those shared on YouTube (Mediakix, 2017; Adelie Studios, 2016). Another game changer in video marketing has been the introduction of live videos such as Facebook Live and Periscope. It has been found that watching Live video has user spending more times longer watching than they do on pre-recorded video (Hootsuite, 2017).

Video marketing tends to provide a level playing field unlike the other forms of online marketing. Due to the low costs involved in production and transmission, the marketing budget of an organization does not necessarily influence the reach of the videos. Of importance is the creativity and ability to engage the viewers. Such a video is sure to get more views and convert more customers into buyers than a high budget video lacking in those qualities. At least 81% of higher level marketing managers tend to use online video information in their marketing programs according to HubSpot content trends survey, Q3, (2017). Social media has largely taken up sharing of videos as people connect with one other. Friends will like or share videos than they will tell others of an organization's products or services. Sharing of videos is the new way of reaching an extensive customer base. Brands are now making use of video-sharing platforms to reach their customers, who in return are engaging the brands by creating opinion videos, parodies and responses.

Wordstream, (2018) asserts that the use of social media videos have more shares than text and images combined by more than 1200%. In addition, Brightcove, (2016) purports that organizations the make use of video marketing have as much as 41% more searches and video downloads. This can in return result in a 157% increase in web traffic that arise from information searched. Videos can increase conversions to sales by 64% or more. Organisations using videos increase their revenue by 49% each year more than organisations not using videos (WordStream, 2018). According to Forbes, (2017), up to 59% of company executives watch videos rather than read articles about a product in order to make an informed decision.

There is an assumption that videos for online use are costly and hard to produce. While most popular videos are professionally produced, videos for web can be filmed using readily available home video equipment, webcams and even some phones, making them to be much cheaper and with reasonable quality. In addition, affordable high-quality cameras have made it practicable for most people to be able to produce video content.

The East African Region comprises of six countries namely Burundi, Kenya, Rwanda, South Sudan, Tanzania, and Uganda. The East African Community (EAC) was established under a treaty that was signed on 30th November 1999. It started operating on 7th July 2000 after an agreement by Kenya, the United Republic of Tanzania, and Uganda who are the three original partner states. On 18th June 2007, Rwanda and Burundi requested to be enjoined to the EAC Treaty. They formally became full members of the community on 1st July 2007. On the other hand, South Sudan, the newest member, acceded to the treaty on 15th April 2016. She was accepted as a full member on 15th August 2016 (EAC, 2016).

The EAC Common Market conforms to the provisions of the EAC Treaty it has been operational since 2010. The Common Market gives the EAC member states freedoms on movement for all the factors of production and products (EAC, 2017). This implies that goods, persons, labour/workers, services, capital as well as rights of establishment and of residence are allowed to move and interact freely. The region has a population of about 170,000,000 inhabitants. Out of these, only about 50 million have access to and use the internet. About 40 million of these access it on or through the phone (Eshetu & Kinuthia, 2011). This is a strong population that can easily access video content.

SDG's and African Agenda 2063

The Sustainable Development Goals (SDGs), also referred to as the Global Goals, are goals expected to be achieved were adopted by all United Nations Member States in 2015 as a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030. The 17 SDGs are integrated in that, they recognize that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability. Through the pledge to Leave No One Behind, countries have committed to fast-track progress for those furthest behind first. That is why the SDGs are designed to bring the world to several life-changing 'zeros', including zero poverty, hunger, AIDS and discrimination against women and girls (World Health Organization, 2016).

Agenda 2063 on the other hand is Africa's blueprint and master plan for transforming Africa into the global powerhouse of the future. It is the continent's strategic framework that aims to deliver on its goal for inclusive and sustainable development and is a concrete manifestation of the pan-African drive for unity, self-determination, freedom, progress and collective prosperity. Agenda 2063 encapsulates not only Africa's aspirations for the future but also identifies key flagship programmes which can boost Africa's economic growth and development and lead to the rapid transformation of the continent (Africa Union Commission, 2017).

It is worth noting that the attainment of both SDGs and the agenda 2063 has been a challenge to most African countries due to political, economic and social reasons. This study therefore seeks to propagate the use of video marketing as an avenue of enhancing economic growth.

RESEARCH PROBLEM

Despite the huge market and therefore business potential in East Africa's combined member states population of over 170 million, the region continues trading huge volumes with the west rather than within themselves even in commodities they produce (McIntyre, 2005). So as to boost trade within the region, therefore, it is prudent to take advantage of technological innovations which will enhance trade across the region. Video marketing has been in use in the west and the developed world for quite some time and it is now widespread such that the video is on *every* platform and channel. It has dominated social media. (HubSpot content trends survey, 2017). However, such is not the case in Africa, and more so the East African market. High cost of internet data, slow internet and the cost of acquiring smart phones are some of the factors affecting the low use of the video.

It is notable that the number using social media is large enough - over 40 million spread across the East African market (Pew research Centre, 2018). However, East Africa continues to register higher volumes of trade from out of the region. This study thus seeks to assess the extent of reaching consumers through video marketing in the East African market so as to enhance industrial growth and realize SDG's and African Agenda 2063.

RESEARCH OBJECTIVE

The objective of this study is to establish the effect of Video marketing as a marketing strategy to create awareness and promote trade in the East African Community.

EMPIRICAL LITERATURE

Video Marketing

Video marketing has been described as the use of content in video form to enhance the visibility and awareness of a brand, product or service (Vaynerchuk, 2015). The concept of video marketing is rather strong since a powerful marketing campaign incorporates video into the mix. According to Bullock (2016) the use of videos on online platforms as a way of marketing has been gaining immense popularity. This has been realized courtesy of camera and video enabled mobile phones and high speed internet connectivity. People thus record videos and make the content available on the internet in various platforms. The social media is the leading medium through which these videos are watched. In addition, live customer testimonials, guides on how to use products etcetera can be well achieved in video. Video marketing is a concept currently gaining a lot of popularity. This can be highly attributed to the fact that increased sales are being realized through video marketing. For example, face book's massive daily 8 billion views has attracted many businesses that have gone the video marketing way through the social media, and especially so, small scale businesses (Jarboe, 2015).

According to (Sheldon, 2013), video advertising on online platforms is currently the most effective, widely used, and inherent marketing option for businesses. This effectiveness can be largely attributed to the huge numbers of people reached compared to television. A technology generation has arisen that is charmed to the visual allure video marketing offers on internet platforms. In addition, the fact that video clips can be easily integrated online enhances the effectiveness. The simplicity and low cost of video marketing cannot be over emphasized. It is worth noting that video marketing through social media is not guided by strict advertising regulations like on television and other traditional methods. Largely, they will shoot almost anything that will bring out the strength of a product.

Wyzowl conducted a survey on a sample of 613 that included both marketing professionals and online consumers in December 2018. The survey was conducted using an online questionnaire. The two groups of respondents were separated such that they answered the questions relevant to them. The results of the survey showed that **87%** of businesses used video marketing to popularize the products. This was a steep rise from **63%** that used the same in 2017, and **81%** early 2018. It was also found that **91%** of marketers used videos as a crucial tool for their marketing strategy. This was an increase 2017 which had registered **82%** 2018 which had and **85%**. Furthermore, **83%** (up from **78%** in 2018) of marketers confirmed that videos gave better return on investment. Although **90%** of video marketers felt that competition from other organizations and noise had increased in the previous year, 99% felt that they would keep on using videos in 2019, with **88%** admitting that they'll spend more than they did in previous years. (https://www.wyzowl.com/video-marketing-statistics-2019/) The 2018 survey further showed that **96%** of people say they've come across and watched an explainer video so that they get more information about a product or service. In relation to this, **79%** of people surveyed said that a brand's video has influenced them to a product or service while **68%** of people said they preferred learning about products or services by watching a short videos. From the results it can be noted that videos are more popular as marketing tools than the traditional print media which had **15%** usage, infographics (**4%**) presentations and pitches (**4%**), eBooks and manuals (**3%**).

According to *Frozen Fire*, a recent study by revealed that 57% of customers on online platforms highly considering purchasing a product after watching a video demonstration of the product. In addition, there exist very many platforms for video marketing. For example, broadcast television, YouTube, Facebook, Instagram, video boards and even street marketing, among others. The possibilities are endless. With the advent of the Smartphone, consumers come into contact with online videos anytime, and anywhere. This is unlike the traditional, paper marketing. The video has the aspect of cost-effectiveness in addition to wide reach. The video marketing form has truly created a paradigm shift from the traditional marketing platforms. This is so especially with the televised media. This has been achieved by effectively merging culture, remix and mash (Treske, 2015).

A quantitative survey on on-line video as a marketing tool by Boman (2017) used a telephone survey on 450 contacts to find out the online video marketing habits and attitudes characteristic of small and medium-sized enterprises in Jyväskylä for Recon Productions Oy. The study found that a majority of local businesses make use, or are keen on using video as a medium for marketing their products and services. The study also found that Video marketing experienced the challenge of time as it was time-consuming to generate content. In addition, it is also a challenge to create engaging content since it required requisite skills. Nevertheless, businesses in Jyväskylä perceive their video marketing efforts as useful in reaching their goals.

A study by Sheldon (2013) on 650 internet users found that online users prefer catchy, exciting, and educative video content that captures their interest and gives them solutions to their problems. The online user is characterized by the desire to look for eye-catching videos. In addition, the content ought to be engaging. This implies meeting the consumer where they are, rather than making them look for the brand. To effectively engage the audience via video entails using the medium with which they interact. This can be achieved best via the internet due to their easy access to tablets, smartphones, and other devices.

A study carried out by HubSpot (HubSpot content trends survey, Q3, 2017) on 3,010 consumers in the United States of America, Germany and Latin America has it that most of the channels (four out of the leading six) where consumers watch video worldwide are social channels with YouTube and Facebook leading the pack. YouTube is now the second largest search following Google closely. It was established that 60% of the market rather watch a video than read texts when they want get important information on a product or service. Marketers need to take advantage of the unlimited potential of YouTube, by engaging in video marketing. Video marketing is a cost-effective and persuasive. It is worth noting that consumers will spend on average 350 seconds on a site with a video content unlike 42 seconds on a site without a video.

Cross Border Trade

Regional trade initiatives in the East African region are massive and largely untapped. In addition, most remain unofficial and undocumented (Little, Sarris, & Morrison, 2010). Despite the trade having existed for long, there is still a failure of exploring new ways of traders connecting with sellers, to a point of understanding existing shortages and how to fill them regionally. This failure has kept the region relying on overseas producers to meet the local demand, when it can easily be met from within.

McIntyre (2005) found quite a number of challenges have been attributed to inter border trade in the East African region. Such include weak economies and external debt servicing. The huge, huge debts faced by most of the countries force them to diverting the export earnings from development programs. This also includes those that are aimed at integration-related issues to service the debts. In addition, unilateral barriers of trade among member countries which pose as impediments to trade across a number of countries in the block. For example, the common 'wars' between Tanzania and Kenya on tour vans. Excessive dependence of East African countries on the west is also another challenge faced by the grouping. This happens even when products and services of equal quality are to be found in member states; most countries tend to prefer those available in the west (Muluvi, Kamau, Githuku, & Ikiara, 2012). As much as Information and Communication Technology (ICT) is also a challenge, it is also the future of the region's economic development.

ICT is felt across diverse aspects of regional integration and that it has the impetus to increase the integration of the region's markets and enhance the region's international and global competitiveness. It is worth noting that the East African is currently facing challenges in ICT. For example, inadequate funding, poor ICT infrastructure, weak policies and laws governing ICT and lack of well trained staff (Khandelwal, 2004). According to TradeMark East Africa (January 2018) East Africa has enhanced efforts to promote cross-border trade by going on-line (Poda, Murry & Miller, 2006). The Internet enables enterprises to sell their products via cross-border business-to-business e-commerce portals. The rapid, convenient, and wide market access offered by these platforms may allow early-mover exporters to enjoy advantages over late movers in terms of learning effects and switching costs (Antweiler, 2016).

RESEARCH METHODOLOGY

Research Design

The study employed the survey design, by use of on line google forms to collect data. Google Forms are a simple and fast way to create an online survey, whereby the responses are generated on online spreadsheet.

Population and Sample

The study targeted the 30 million inhabitants of the East African Community (residents of Burundi, Kenya, Tanzania, Rwanda, Southern Sudan and Uganda) who own Smart phones. The survey was sent through Facebook, Whatsapp, and Twitter social media randomly to 2,000 prospective respondents in the region.

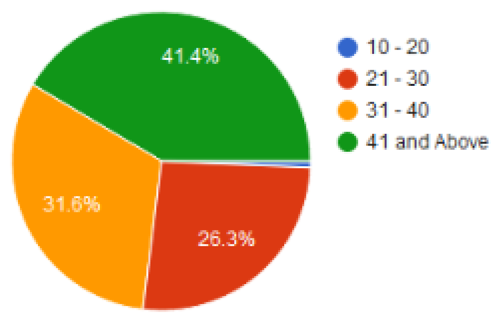
Instrument

The researcher used google forms since they support unlimited surveys, unlimited respondents and seamless data collaboration with Google Spreadsheet. Google Forms are easily shared on Google+ to the respondents in public or any Google+ circles. Google Forms provide a fast way to create an online survey, with responses collected in an online spreadsheet. In addition, since the study was on on-line videos mainly accessed through social media, an online survey was deemed suitable since the respondents were to answer the questions from any internet browser- including smartphones and tablet browsers. The responses were viewed in a single row of a spreadsheet, with each question shown in a column. Data was then analyzed using descriptive statistics.

FINDINGS

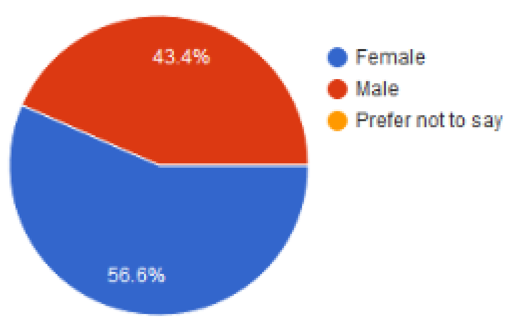
The respondents of the survey carried out via the questionnaire sent out via the google forms on various social media platforms as well as emails totaled to 1530 people from various countries in East Africa. The demography of the respondents ranged from 10 years to 50 years of age as shown in figure 1, with the majority aged 41 and above. This could be largely attributed to the ability to afford internet browsing bundles.

Figure 1. Demographic representation via age-range



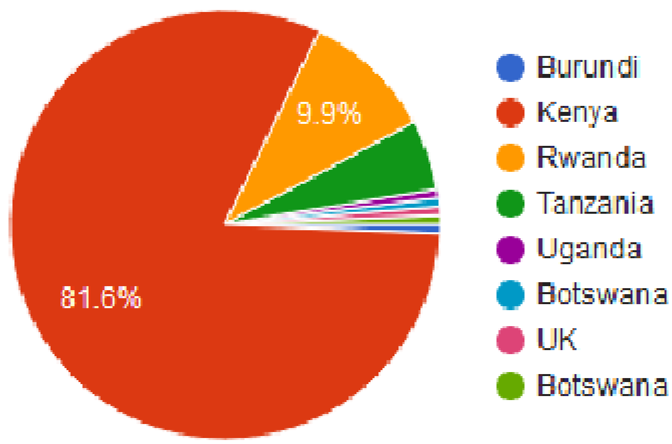
It is notable that 43% (658 respondents) were male compared to the 57% (872 respondents) females who seem comparatively dominant in the social media field as shown in figure 2.

Figure 2. Percentage gender representation



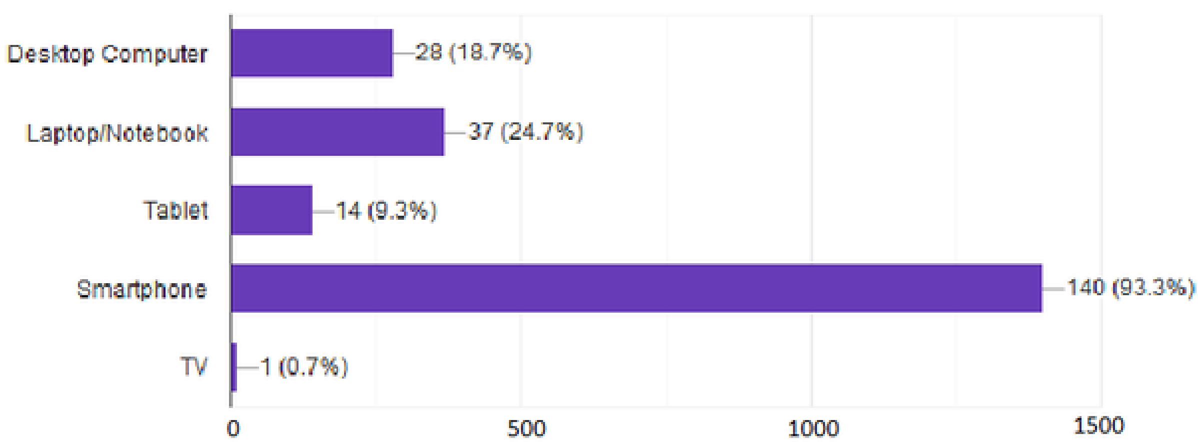
The majority of the respondents were from the country Kenya with 81% translating to 1239 respondents as shown in figure 3. This had an implication that most active users of the internet in the East African region are based in Kenya, Rwanda, Tanzania and the other states contributing a lesser online presence in comparatively.

Figure 3. Country representation of online presence



Most of the users preferred to access the internet via their smartphones, which made up over 90% of the sample. This means that portability is the determining factor in terms of convenience and in essence this can only be restricted by the data charges applied by the internet service provider. This was closely followed by laptop users at 37%.

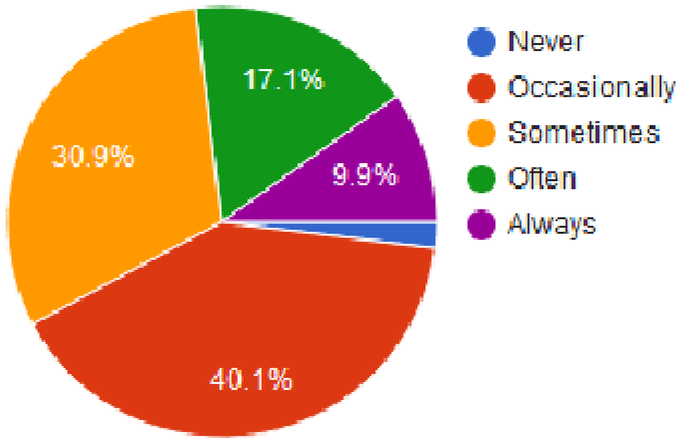
Figure 4. Preferred media device for internet access



The distribution of the respondents that were inclined to download videos and other advertisements was 58% and the other 40% would occasionally consider the same. Only 2% never downloaded any of the advertisement content as shown in figure 5. This implies that most people are stimulated more by visual graphics and further by motion content.

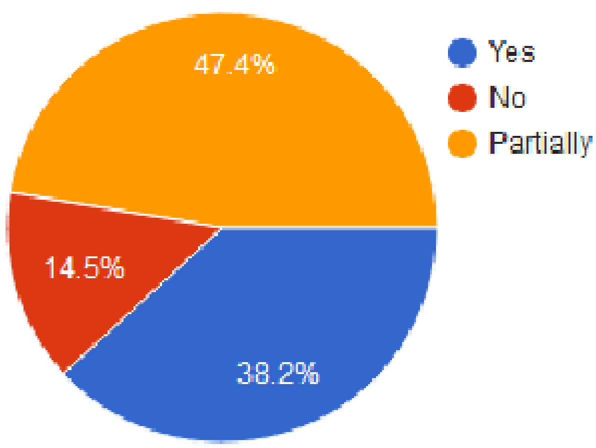
Furthermore, 86% of the respondents claimed to watch the videos they downloaded from beginning to end. The high conversion rate is further correlated to the duration and source of the video. The other

Figure 5. Video advertisement download rate



14% would occasionally fail to complete but this is relatively low and other extraneous factors contributed to the interruptions as shown in figure 6.

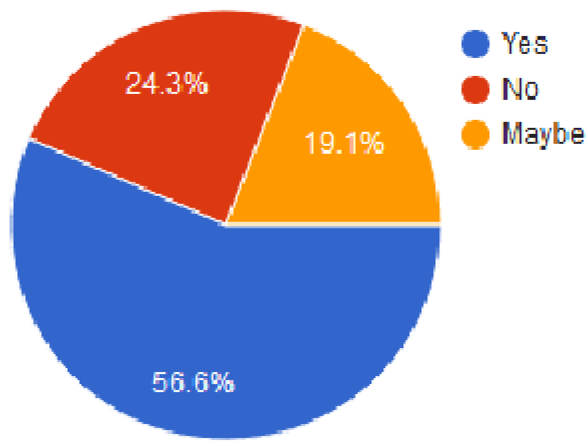
Figure 6. Full Video playback rate



The video content that the people were prone to watching seemed to originate from all over the world with only 16.4% representing the African continent. Moreover, the survey shows that only 5% of the content was actually generated in the East African region meaning that much as the utilities and resources are available the East African region lacks in video content authoring. However, this also shows availability of potential that should be harnessed through awareness and training. This can be supported by the fact that most respondents, given a choice would consume home-made products which would basically boost their local economies and further enhance local trade.

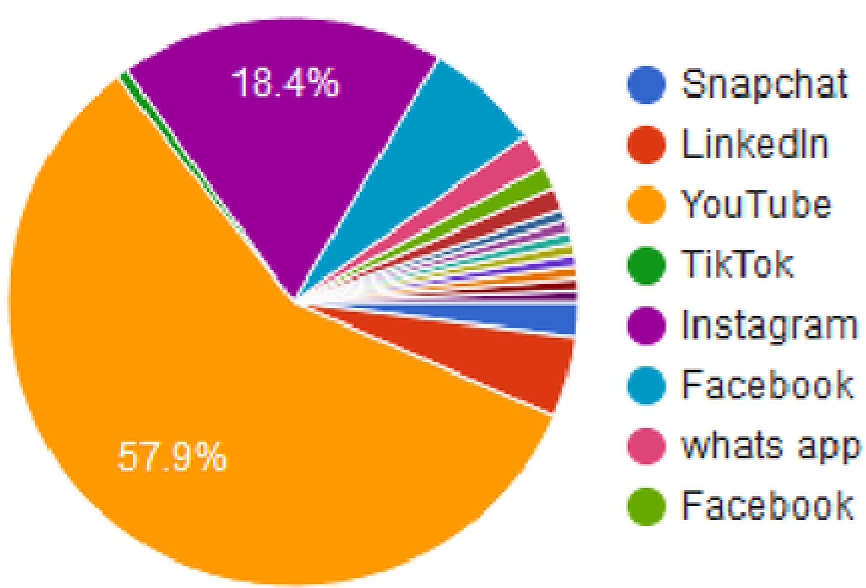
Finally, most respondents in the East African region preferred You Tube (58%) and Instagram (19%) in terms of video content marketing. The other platforms aggregated to form the remaining 24%. This

Figure 7. Local Product Consumption rate



is indicative that the best platform to relay the video advertisement would be You tube, Instagram and then face book as shown in figure 8.

Figure 8. Media platform preference for Video Marketing



CONCLUSION

From the study, it was concluded that the use of social media was determined by the ability of the user to afford the internet charges. This can be attributed to the fact that the majority of the respondents were aged 41 and above, and working. In addition, more women were using the social media than men.

Kenya has the most active smart phone ownership and internet use, followed by Rwanda, Tanzania and Burundi in that order. This would help the video marketer determine the distribution of content. This conforms to TradeMark East Africa (January 2018) that the *East* Africa has enhanced efforts to promote cross-border trade by going on-line (Poda, Murry & Miller, 2006). Most of the internet users prefer to access the internet via their smartphones as opposed to the use of laptops and desktops. This can be attributed to portability as a convenience factor. This is in agreement with a study by Eshetu and Kinuthia (2011) who found a majority in the region access the social media through the phone.

Most of the respondents downloaded entire videos. This implies that most people are stimulated more by visual graphics and further by motion content. This agrees with Sheldon (2013) who found that online users prefer catchy, exciting, and educative video content. In addition, they claimed to watch the videos they downloaded from beginning to end, which was largely determined by the duration and source of the video from all over the world. Not much was generated in Africa and specifically the East African region despite the strong desire indicated to consume home-made products. You Tube was the most preferred media of watching videos, followed by Instagram. This concurs with a study carried out by HubSpot (HubSpot content trends survey, Q3, 2017) in the United States of America, Germany and Latin America that found most consumers watch video worldwide on YouTube and Facebook leading the pack.

RECOMMENDATIONS

1. The video content should target those who can comfortably afford internet data and more so target products that are mostly consumed by women, since the majority of users were found to be the working class and also women.
2. The marketers should be guided by the internet usage of each country as they determine the distribution of content. They should also focus on content readily used on Smart phones.
3. Video content is appropriate for advertisements, and it should be of a reasonable length for it to be mostly watched, and that local content would be readily watched.
4. The best media to upload the video content would be You Tube followed by Instagram. These will ensure as much reach as possible will be achieved.
5. The researcher recommends a similar study in others regional blocks in the continent to determine if similar results will be realized.

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KEY TERMS AND DEFINITIONS

Industrial Growth: This is the realization of economic gains in a particular field or sector of the total sector or economy.

Marketing Strategy: This is a business's overall game plan for reaching prospective consumers and turning them into customers of the products or services the business provides.

Product Awareness: This is the degree of knowledge that customers have about a product, brand or a service.

Social Media: These constitute of websites and applications that enable users to create and share

Social Video Marketing: This is the use of social media in order to increase audience engagement or awareness of a product through social activity around a given video.

Technology: This is the application and use of scientific knowledge to create awareness and promote an organization's goods and services.

Video Marketing: The use of videos to build customer rapport promotes an organisation's brand, products, or service.

Chapter 9
Using Data Mining Techniques to Predict Obstetric Fistula in Tanzania:
A Case of CCBRT

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ABSTRACT

DM practices in medical sciences have brought about improved performance in analysis of large and complex datasets. DM facilitates evidence-based medical hypotheses. Nowadays, health diseases, especially obstetric fistula, are increasing. CCBRT reports, approximately 3,000 women suffer from obstetric fistula annually. Since efforts to eradicate obstetric fistula have been inadequate, the researcher was motivated to employ MLA in BIO informatics to detect obstetric fistula. The purpose of this chapter was to use DM techniques to predict obstetric fistula. The datasets involving 367 patient records from January 2015 to February 2019 were collected from CCBRT. The environment was used to describe the accurate of predictive model was CV, ROC, and CM. The research was performed using six different MLA. The accuracy performance between algorithms shows that LR has better accuracies of 87.678%, precision measures of 91%, recall measures of 82%, f1-score measures of 86%, and support measures of 74%. Thus, the researcher chose to use LR as the proposed obstetric fistula prediction model.

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INTRODUCTION

Data mining is the process of discovering hidden information from existing huge dataset. An important inspiration in data mining is whether the huge datasets should be handled statically or dynamically. In general, statically data is easy to handle as it is compared to other format of data storage and stored more easily. On the other hand, dynamically data refers to high volume and data that continues changing to refined information, which are not stored easily for analysis and processing like statical data. It is often difficult to maintain dynamically data because it changes with timeline (Durairaj & Ranjani, 2013).

Data Mining algorithms is one of the several crucial steps in Knowledge Discovery in Databases (KDD), that is known as the non-trivial process of verifying a validity patterns in crude datasets, and including the use of explorative algorithms to identify meaningful patterns in data with acceptable computational efficiency (Zadeh, Rezapour, Sepehri, & Cart, 2014). Most of DM algorithms are used to analyze the data of interests. Data can be in form of sequential, video signals, audio signals, and time series (Gera & Goel, 2015).

In health sector, DM provides several benefits such as detection of frauds in health insurance, availability of low cost medical solutions for patients, detection of the causes of diseases, and the identification of medical treatment methods. Many studies have been conducted to find solutions for patient diseases using DM techniques such as the study conducted by Idowu, Williams, & Balogun, (2015) which focused on breast cancer prediction by using DM classification techniques; Kamaraj & Priyaa, (2018), which focused on heart disease prediction using DM, and Gharibdousti, Azimi, Hathikal, & Won (2018) which focused on prediction of the chronic kidney diseases by using DM techniques. In addition, most studies show that the existing approaches are related to data-mining prediction for specific diseases like kidney failure, heart disease, and breast cancer. However, to the best of our knowledge, there are few works done to predict the occurrence of obstetric fistula, the disease that severe impact to pregnant women but have received little campaign and attention like malaria and HIV/AIDS. This study aims to apply DM techniques to predict the occurrence of obstetric fistula.

Obstetric fistula is childbirth injury caused by unrelieved, or prolonged labor. This obstructed labor can be developed during the second stage of labor when the fetus cannot fit through the birth canal due to the small size of the pelvis, the baby head is too big, or because there is a mal-presentation. If the woman cannot die, the pressure of the baby head to the mother's pelvis can cause the death of the tissue in the birth canal, meanwhile it creates a hole called obstetric fistula. Then from these hole, the urine or feces can constantly leak without any control (Ryan, 2017). Despite measures taken by the government, non-governmental organizations, and United Nations Agencies, obstetric fistula is not a problem in developed and industrialized countries but remains a health problem in developing countries, which face challenges due to lack of health access facilities, including Tanzania. Obstetric fistula can be prevented and treated, although untreated conditions remain prevalent in developing countries, including Tanzania (Narions, 2017). To the best of our knowledge, there are a few findings that have been conducted to solve the problem of obstetric fistula using DM techniques. This include the study conducted by Tefera, Mola, Jemaneh, & Doyore, (2014) that is concerned with the application of DM techniques on prediction of urinary fistula surgical repair outcome: the study was done in Addis Ababa Fistula Hospital, Ethiopia. Despite of the efforts that have been taken, the problem of obstetric fistula is still increasing in Africa and Tanzania. Over 3,000 Tanzanian women per year develop obstetric fistula after childbirth as a result of obstructed labor and the unavailability of emergency care and treatments (Sitan, 2015). Therefore, based on the aforementioned shortcomings, there is justification for conducting this study. Obstetric fistula prediction model will predict the possibility of pregnant women to develop obstetric fistula by recording early symptoms of the likelihood of the disease in pregnant women.

Finally, data sets will be used by machine learning algorithms in prediction of obstetric fistula before delivery of a baby. A predictive model for obstetric fistula will help the physician in decision-making on obstetric fistula case and to suggest a possible treatment strategy in a much reduced time for detection of the disease before delivery. The main contributions of this paper are:

1. To design a framework for predicting obstetric fistula based on the obstetric fistula datasets collected.
2. To test a designed framework using different data mining techniques and select the best technique.
3. To propose a DM model for the prediction of obstetric fistula on the framework in (1) and the selected data mining technique in (2).

The paper is organized as follows: section II gives the detailed the related works. Section III explains a methodology of the study used to reach the solution. In section IV, classifier building and performance evaluation are described. Section V explains the details of the model building in which the prediction model for obstetric fistula is described.

Literature Review

The purpose of this study is to develop a DM prediction model to prevent obstetric fistula. To the best of our knowledge, there are no other publications on this topic. However, several authors have written on many related aspects of obstetric fistula.

A study done by Du & Stephanus (2016) focused on the novel of classification technique of arteriovenous fistula stenosis evaluation by using bilateral photoplethysmography (PPG) analysis. Du & Stephanus research focused on the common treatment for end-stage renal disease (ESRD), and patient's hemodialysis (HD). Furthermore, study conducted by Tefera, Mola, Jemaneh, & Doyore, (2014) includes the application of DM techniques on prediction of urinary fistula surgical repair outcome. The study focused on the outcome of surgical repair for urinary fistula. In addition, many of the global studies conducted in relation to reproductive health issues have focused primarily on maternal mortality, eclampsia, and anemia, with less attention given to obstetric fistula (Narions, 2017). One situational analysis report on obstetric fistula was conducted in 2009 (Kupona & Newborn, 2017) and a retrospective study was implemented to describe and compare the demographic characteristics of women with obstetric fistula (Harms, 2018). The study show that there is an increasing surgical failure rate with repeated attempts and consequences of obstetric fistula are multiple, with both physical and psychological problems.

In addition, there are several research projects that have been done to reduce the problem of obstetric fistula by using different measures. However, these studies concentrated on awareness of proper information and conducting surgery on patients after they have already acquired obstetric fistula. The victims of obstetric fistula are increasing each year as reported by Comprehensive Community Based Rehabilitation in Tanzania (CCBRT). More than 3,000 women develop obstetric fistula each year (Zachariah, 2016). This motivated the need to conduct a study on DM prediction model by applying machine-learning algorithms, which will predict obstetric fistula on women in Tanzania. This will help to mitigate the problem of obstetric fistula by recording information of the pregnant woman and finally the datasets (attributes) will be used by machine learning in the prediction of obstetric fistula before delivery of a baby.

METHODOLOGY FOR THE PROPOSED OBSTETRIC FISTULA PREDICTION MODEL

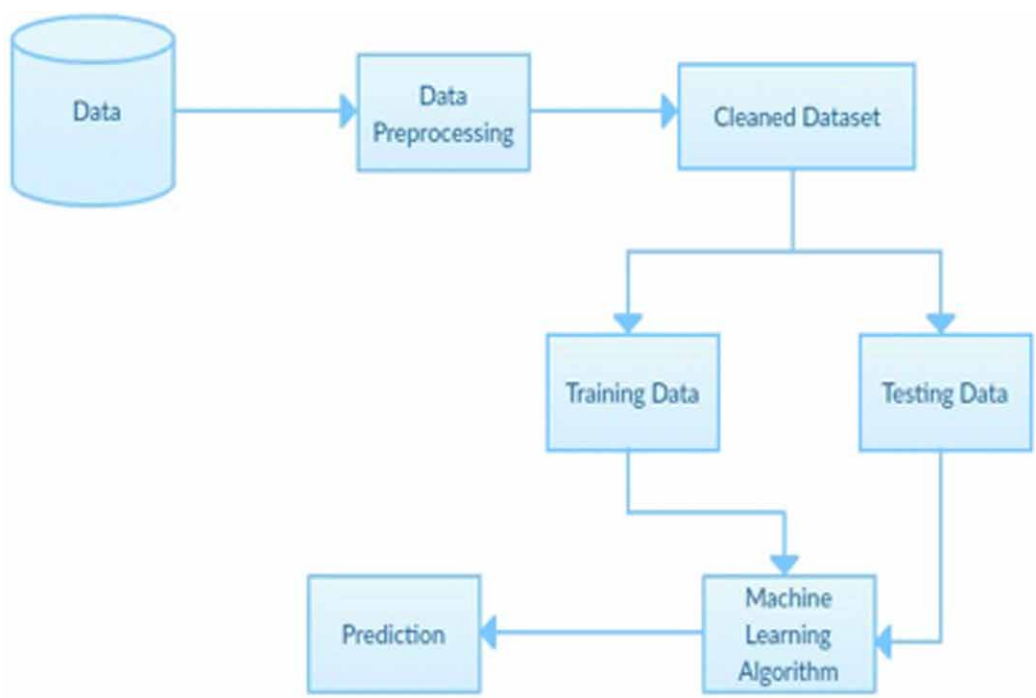
For valid results to be attained, the condition under which the experiment was conducted is of paramount. The current study is aims at developing a data prediction model for predicting and consequently preventing obstetric fistula suffered by women in Tanzania.

Research Method

In this paper, secondary data was collected from CCBRT, Dar es Salaam and the datasets of obstetric fistula were used to fulfill the study objectives by responding to the study questions.

The study employed a quantitative method of research to analyze the data collected, to test and evaluate the proposed data-mining model. The choice has been made due to the influence of the data techniques methods, analysis, and interpretation. Figure 1 show the complete proposed research method.

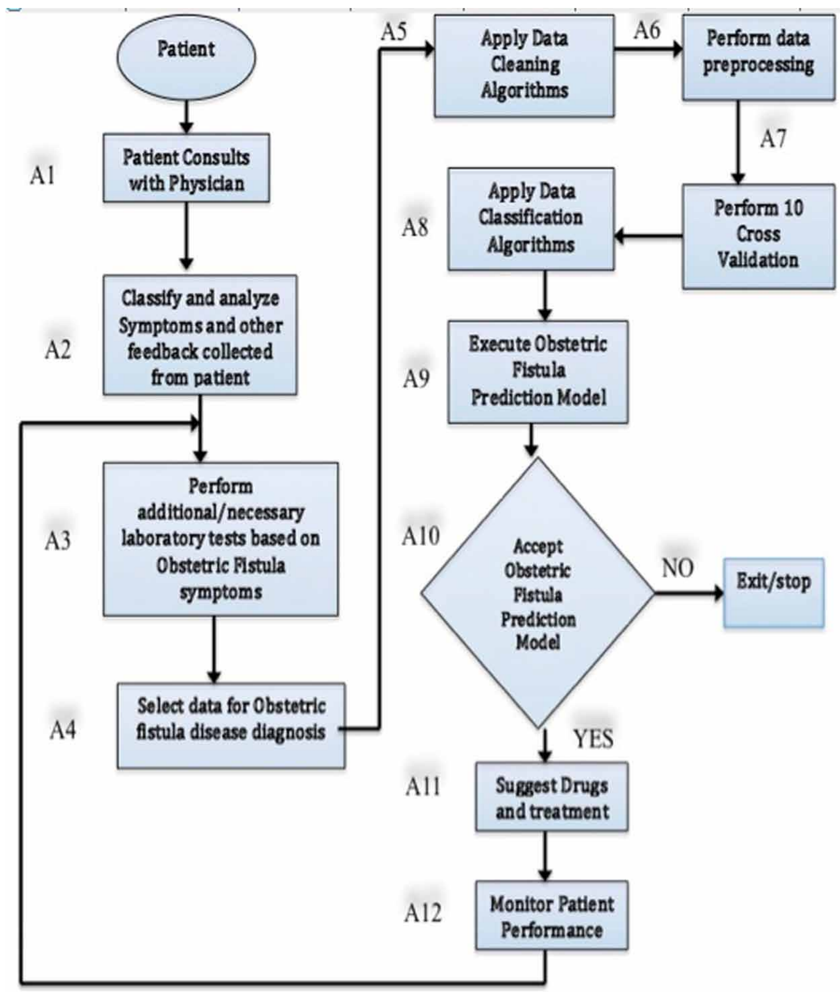
Figure 1.



The Conceptual Framework of the Study

To understand the study, the conceptual framework has been designed to show how to go through the problem by following the procedures from stage A1 up to A12 as shown in Figure 2. In summary, pregnant women are reported to the hospital and the doctor/physician collects attributes with the responsive collaboration of tools, which lead to developing obstetric fistula from a pregnant woman. More details of the process can be seen from Figure 2.

Figure 2.



Data Mining Algorithms Employed in Obstetric Fistula Prediction

The authors of this work have employed different DM techniques that can be used by specialists and physicians to diagnose obstetric fistula. Most techniques are common such as linear discriminant analysis, K- nearest neighbor and decision tree. Moreover, there are other DM classification techniques such as Vector Machines, Gaussian Naive Bayes classifiers, and Logistic regression analysis. The next section explains the techniques that have been analyzed to select the DM technique for the best fit.

Decision Trees (J48)

The decision tree algorithms is a categorized and is a conquer algorithm, which is ere the top-down approaches. The top-down approaches by recursively breaking down the complexity problems into the sub-problems and then the findings are the solutions of sub-problems by combining solutions to form a solution.

Logistic Regression

LR extends techniques of multiple regression analysis to research situations in which the outcome variable is categorical. In practice, the situations, which involve the categorical outcomes, are common. Similarly, in a medical diagnosis, an outcome can be the presence or absence of disease (Dayton, 2015).

Linear Discriminant Analysis

LDA is used in a feature extraction before the classification. It finds the projections in direction for the projected of data, between class variance and maximizing a relative data within class variance. The discriminant variables of obstetric fistula can be used as inputs to any classification method, such as KNN, and SVM.

K Nearest Neighbors Algorithm

KNN is a technique based on similarity to other cases. The close case to others is known as "neighbor ". If a case is new, the distance from each case in the model can be calculated. The application of this classification can be specified in the case of nearest neighbor, that is the most similar. Therefore, the obstetric fistula attributes can apply the KNN algorithm Abdar et al, 2015 as represented in figure 3.

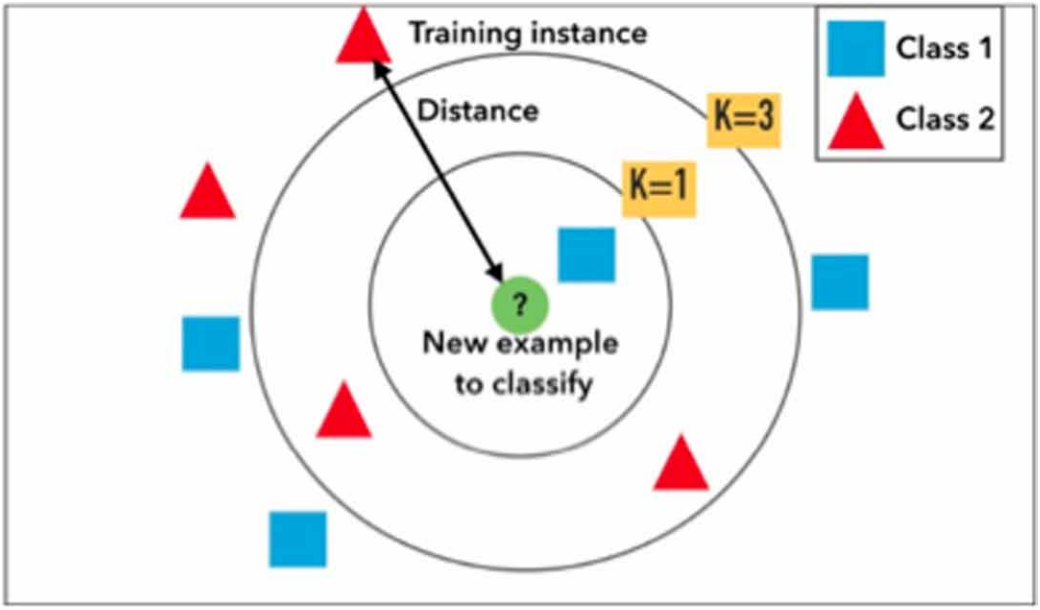
Support Vector Machines

Support Vector Machine is the algorithm witch describes the best data classes and separation. In SVM, only the data, which is inside the SVM, are used as the base data for building a model. This algorithm may not be sensitive to other data. The aim is to find the best data class with the farthest possible distance from all their support vectors. SVM transfers data to a new space concerning the predetermined classes so that data can be classified and separated by using hyperplanes.

Gaussian Naive Bayes Classifier

GNBC is easily used to build a model and used for very large DM data sets. Bayes classifier used on calculation of posterior probability $P(c/x)$ from $P(c)$, $P(x)$ and $P(x/c)$ as referred to the equation below:

Figure 3.



Likelihood

Class Prior Probability

$$P(c \mid x) = \frac{P(x \mid c)P(c)}{P(x)}$$

Posterior Probability

Predictor Prior Probability

$$P(c \mid X) = P(x_1 \mid c) \times P(x_2 \mid c) \times \cdots \times P(x_n \mid c) \times P(c)$$

Where:

$P(c/x)$ is a posterior of the probability of a class (c, target) of a given predictor (x, attributes).
$P(c)$ is a prior probability of each class.
$P(x/c)$ is a likelihood of a probability of predictor in a given class.
$P(x)$ is the prior probability of a given predictor.

The probability of a given sample for the variable value, which is based on obstetric fistula attributes, is derived from relation between instances of obstetric fistula.

Benchmark and Baseline Classifiers

Baseline classifier gives benchmark baseline accuracy on the dataset that must always be checked before choosing sophisticated classifiers. The resulting metrics are compared with other results for better accuracy based on two classifiers, namely: oneR classifier and ZeroR classifier.

OneR Classifier

Figure 4 depicts the accuracy measures, which presented by the OneR classifier with results of 0.33 (33%) based on obstetric fistula datasets. This understands the OneR's as a given discretization methods in each dataset and a minimum of a parameter is sized by bucket. Finally, the authors ignore this rule due to the lower performance of the accuracy baseline benchmark.

Figure 4.

```
In [36]: # one rule algorithm for classification
         def one_rule_algorithm_classification(train, test):
             output_values = [row[-1] for row in train]
             prediction = max(set(output_values), key=output_values.count)
             predicted = [prediction for i in range(len(test))]
             return predicted
         split = 0.6
         scores = evaluate_algorithm(dataset, one_rule_algorithm_classification, n_fold)
         print(scores)
         m = sum(scores)/lenlen(scores)
         print((m))

Out[36]: 0.3333333333333333
```

ZeroR Classifier

Figure 5 depicts the simplest rule-based classifiers that ignores all predictors and predicts the majority classes; and it is based on constructing a frequency table of the result accuracy with 1.0 (100%). This study focuses on various six DM classification techniques which are used in comparison of the performance and interpretation level of confidence which are applied on obstetric fistula datasets to determine which one among the tested algorithms is more suitable for DM prediction model for obstetric fistula prediction.

From the result performance, researcher use zero rule classifier as the best benchmark baseline due to highly accuracy performance compared of one rule classifier. This is based on correctly classified

Figure 5.

```
# Test the zero rule algorithm on the fistula dataset
seed(7)
# load and prepare data
filename = '../DATA/Ofistula.csv'
dataset = load_csv(filename)
for i in range(len=len(dataset[0])):
    str_column_to_float(dataset, i)
#evaluate algorithm
split = 0.6
scores = evaluate_algorithm(dataset, zero_rule_algorithm_classification, n_fold)
print(scores)
m = sum(scores)/lenlen(scores)
print((m))
```

```
1.0
```

instances and prediction accuracy. Hence, it is concluded that the Logistic Regression algorithm has performed better on obstetric fistula datasets for prediction model.

Model Evaluation

The model evaluation comprises the accuracy for the validity of the dataset, which is used in machine learning algorithms for predictions of obstetric fistula disease using evaluation metrics. The performances of a classifier on the obstetric fistula show that, the tuple of each tested class is compared with classifiers class of the predictions of the tuple against actual class and predicted class. The accuracy of the obstetric fistula model is evaluated using CV, Receiver Operating Characteristics (ROC) curve, and CM.

Data Preprocessing

Data obtained from CCBRT, does not contain the names of the attribute, so first they must be assigned names. Missing values in the datasets like NA's or blank values are removed by using python3 functionality by use of Pandas that generates the "fillna() function" for replacing of missing objects with a specific value. "Panda replacing values" can replace NA's with the mean values of that attribute. Figure 6 reflects replacing the missing value in python.

Out of 25 attributes present in the datasets, only eight are selected as important attributes required in building a data mining predictive model for data reduction. These attributes contain missing values

Figure 6.

```
# mark zero values as missing or NaN
dataset[[1,2,3,4,5]] = dataset[[1,2,3,4,5]].replace(0, numpy.NaN)
# fill missing values with mean column values
dataset.fillna(dataset.mean(), inplace=True)
# count the number of NaN values in each column
print(dataset.isnull().sum())
```

coded such as “999”, “99” or “9” can be represented as “unknown” information. Table 1 does not contain fields with “unknown” values.

Training and Testing Datasets

The datasets are divided into two sub-datasets both containing eight attributes. Training datasets are derived from the main datasets and contain 267 out of 367 records in main datasets of obstetric fistula. Testing datasets include 100 out of 367 records from main obstetric fistula datasets. Python 3 was used

Table 1.

VARIABLE	CATEGORIES OF VALUES
Size of cervix	[56]
Fetus head is bigger	[69]
Position of fetus	[48]
Weight of fetus	[33]
Weight of the patient	[36]
Height of the patient	[64]
Size of the birth canal	[24]
Early pregnancy	[37]

Patient repeated cases of obstetric fistula reported in CCBRT to configure the train and test the DM model. Some test statistics are done through the data- cleaning algorithms is chi square tests, Info Gain test, Gain Ratio test and Average Rank.

Data-Analysis

Since this study used quantitative methods, data analysis is used to describe the collected datasets for a conclusion. There are various open-source data analysis tools like WEKA, Python, and Orange. In this study, the Researcher preferred to use python 3 as the experimental environment of data analysis tool to other data analysis tools like WEKA and Orange. Also, Python 3 versions have better performance in terms of functionality compared to older versions of Python 1, and python 2. This is used to produce secondary quantitative data to be used for plotting tables and graphs for result interpretation. The performance comparison t- test also is used on 10-fold CV model evaluation. The findings used to repeat the experiment 16 times, which makes a total of 160 computations. After the experiments, the average result was recorded. Python 3 was used for data analysis and data visualization. In addition, data analysis helps to make an inference of models against performance metrics.

RESULTS AND DISCUSSION

This part presents the results and discussion for data mining prediction model. The study was conducted from December 2018 to November 2020. The financial cost used during this study-included stationary, Laptop computers, transport and accommodations with a grand total of 1,580,000 TSH.

The data sets were collected from CCBRT, Dar es Salaam include the following: size of cervix, Fetus head is bigger, Position of fetus, Weight of fetus, Weight of the woman, Height of the woman, Size of birth canal, and early pregnancy. Each attribute was tested through different algorithms. Figure 7 represents the example of data set of machine learning algorithms for obstetric fistula predictions.

Description of Obstetric Fistula Datasets

There are eight attributes used in the prediction of obstetric fistula, most of the symptoms of obstetric fistula are clinical as highlighted in figures 8, and 9. As part of data pre-processing, missing values and outliers are imputed with mean value; count value, standard deviation value, and min value, of features for continuous data are used in calculating the prediction of ach attributes for the best accuracy during MLA prediction. Nominal data are converted to numerical values for figure 8. The figure shows the types of datasets description for obstetric fistula data mining prediction model.

Features Selection

In this stage of data processing based on the obstetric fistula data set, the data is passed through different metrics like calculation of Chi squire, Info gain, Gain ratio, and Average Rank. Furthermore, the demonstration and the application of the DM prediction model which are compared with the results based on the machine learning algorithms using the obstetric fistula datasets.

The analysis and evaluation of machine learning model used different metrics as shown in figure 9 of feature selection and figure 10 of a combination of x and y for feature selection.

Figure 7.

```
dataset = pandas.read_csv("../DATA/Ofistula.csv")
```

	size of cervix	Fetus head is bigger	Position of fetus	Weight of fetus
0	1	1	0	1
1	1	0	1	1
2	1	1	0	1
3	1	0	1	0
4	0	0	0	0
5	1	1	1	1
6	1	1	1	1
7	1	1	1	1
8	1	0	1	1
9	1	1	1	1
10	1	1	1	1
11	0	1	0	0
12	1	1	1	1
13	0	0	1	0

Confusion Matrix

Confusion matrixes display the combination of the predicted class and actual class. Every row of the given matrixes represents the instances in a predicting class, and each column of instances representing the actual classes. It good to measure whether a data-mining model of prediction obstetric fistula can account for the overlap in class properties and understand which classes are most easily confused. This is represented in Figure 11, along with the x-axis which are the true classes labels and along y-axis are predicted class. Along the first diagonal lines are the correct classifications, where other entries show misclassifications along the attributes. The bottom right cell predicts the overall accuracy. These experiments are presented in the confusion matrix attribute and described in Figure 11.

A Simplified Illustration of Classifiers of the Input Data Based on Obstetric Fistula Datasets

Figure 12 show the various reasons for pregnant women being affected by obstetric fistula as reported from CCBRT, Dar es Salaam. Large numbers of pregnant women suffer from obstetric fistula due to different factors, The most high-risk factors are: Fetus head is bigger, Size of cervix, Height of the woman, Position of fetus, and Weight of the woman. This is due to the high frequency of histogram graph as represented in the Figure 12. The other factors that have lower risks include early pregnancy, Size of birth canal, and Weight of fetus. Therefore, data provided show the factors with high risks and lower risks of women to suffer from obstetric fistula as described in Figure 12 of the histogram graph and Table 2 using obstetric fistula attributes.

Figure 8.

```
describe = data.describe()
print(describe)

       size of cervix  Fetus head is bigger  Position of fetus  \
count      366.000000            366.000000         366.000000
mean         0.543716              0.524590           0.633880
std          0.498767              0.500079           0.482402
min          0.000000              0.000000           0.000000
25%          0.000000              0.000000           0.000000
50%          1.000000              1.000000           1.000000
75%          1.000000              1.000000           1.000000
max          1.000000              1.000000           1.000000

       Weight of fetus  Weight of the woman  Height of the woman
count       366.000000           366.000000           366.000000
mean          0.702186             0.677596             0.571038
std           0.457923             0.468037             0.495605
min           0.000000             0.000000             0.000000
25%           0.000000             0.000000             0.000000
50%           1.000000             1.000000             1.000000
75%           1.000000             1.000000             1.000000
max           1.000000             1.000000             1.000000
```

Learning Experiment Using Obstetric Fistula Datasets

This part shows the experimental results and analysis, which is obtained on this study. Six classifiers including LR, LDA, NBC, SVM, KNN, and DT are conducted. Based on 10-fold CV as a test option, LR performs better than others classification with accuracy of 87.678%, followed by Linear LDA and SVM classifiers with accuracies of 85.621% and 84.95%, respectively. The results of the performance experiment are shown in Table 3.

Estimate Accuracy on Validation Set

To address the choice of machine, learning algorithms where both data classes are equally important was applied to concentrate on a comparison of measures of the algorithm's performance before selecting the best data mining algorithms to be used in building a DM model prediction of obstetric fistula. Also, another aspect of evaluating accuracy involves the assessment of how to present the results that is done throughout *t*-test, which provides the actual difference between two means of variation of data expression of a standard deviation between the means values.

Figure 9.

```
(366, 9)
[[ 1.99498964e-01  6.49655136e-01 -9.04085761e-02 ... -3.05894733e-01
  -5.95096699e-01  1.00000000e+00]
 [-6.85108405e-01 -5.62395129e-01 -6.25249235e-01 ... -1.77941164e-01
  -4.39336753e-02  1.00000000e+00]
 [ 5.57665974e-01  8.31823665e-01  1.73795968e-02 ... -5.43925754e-01
  -7.86135659e-01  1.00000000e+00]
 ...
 [-9.18185606e-01  3.57324726e-01 -4.59328632e-01 ...  7.94970254e-04
   1.45634519e-02  1.00000000e+00]
 [-1.08492549e+00  1.15568114e-01  4.89564724e-01 ...  8.67530274e-02
   5.14637531e-02  1.00000000e+00]
 [ 1.40180720e+00  7.89322096e-01  4.12717456e-02 ...  7.40017142e-02
  -2.30034376e-01  0.00000000e+00]]
```

Figure 9. Feature Selection

The results is obtained through the calculation measures such as fl-score, precision, recall and support which are often calculated via the t-test measures for an overview of the accuracy measures where the total average results of precision is 0.91, recall is 0.82, fl-score is 0.86, and support is 74 as represented in Figure 13 of the results of the experiment.

Figure 10.

```
[[ 0.19949896  0.64965514 -0.09040858  0.67475561 -0.59550479 -0.47119727
  -0.30589473 -0.5950967 ]
 [-0.6851084  -0.56239513 -0.62524923 -0.08738644 -0.09363796  0.08509924
  -0.17794116 -0.04393368]]
```

Figure 11.

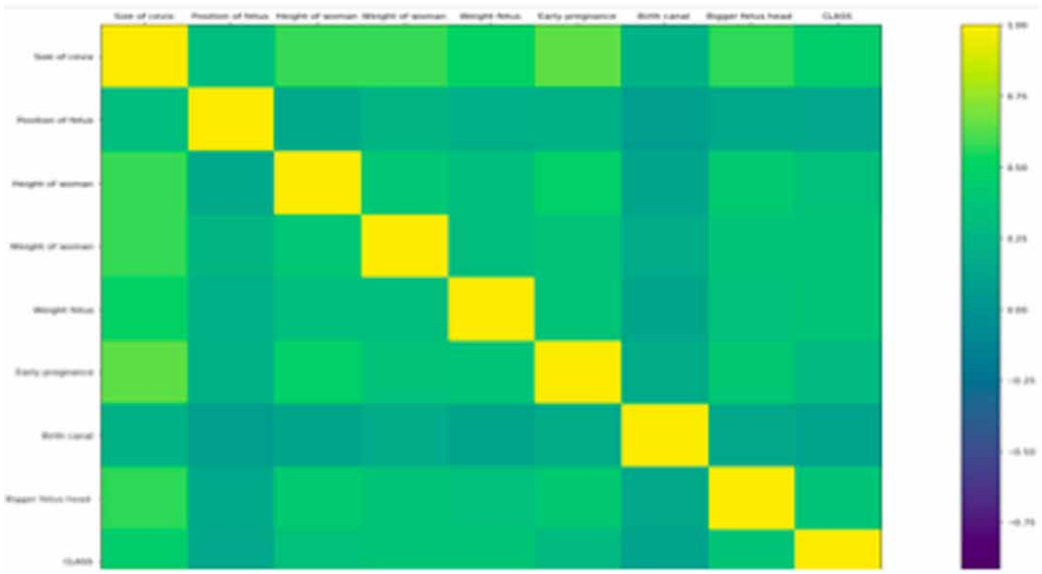


Figure 12.

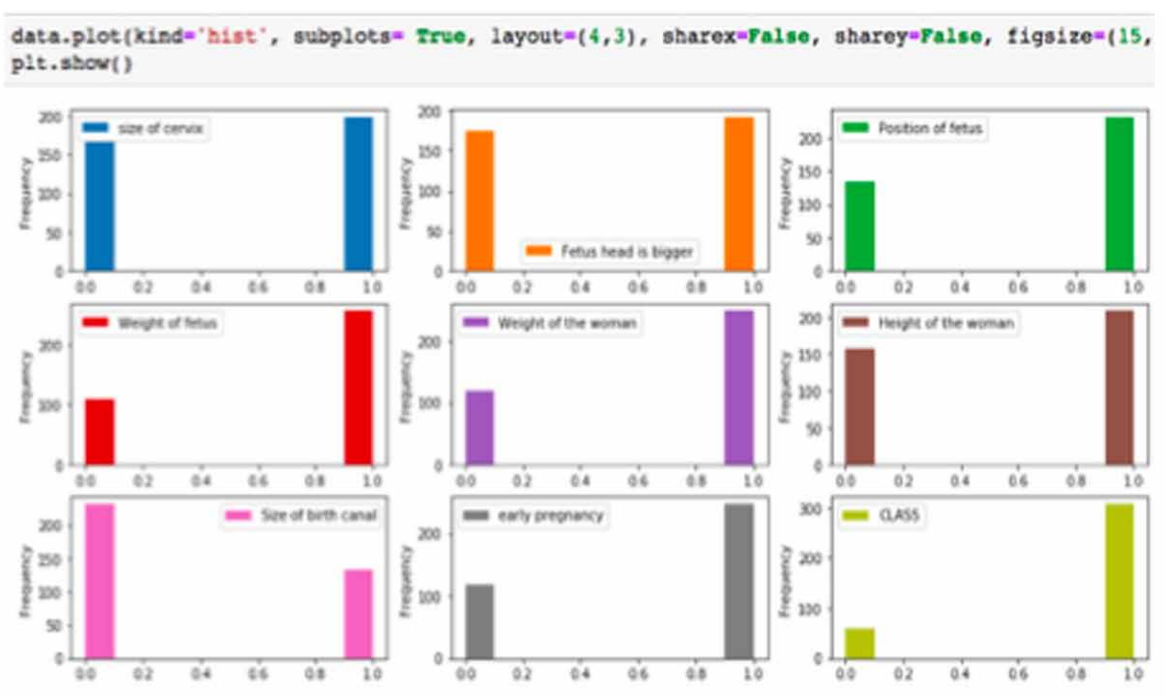


Table 2.

Attributes	Frequency	
	Actual class	Predicted class
Fetus header is bigger	154	199
Size of cervix	153	199
Height of the woman	151	210
Position of fetus	148	220
Weight of the woman	110	230
Weight of fetus	110	240
Size of birth canal	240	150
Early pregnancy	110	240

Model Building

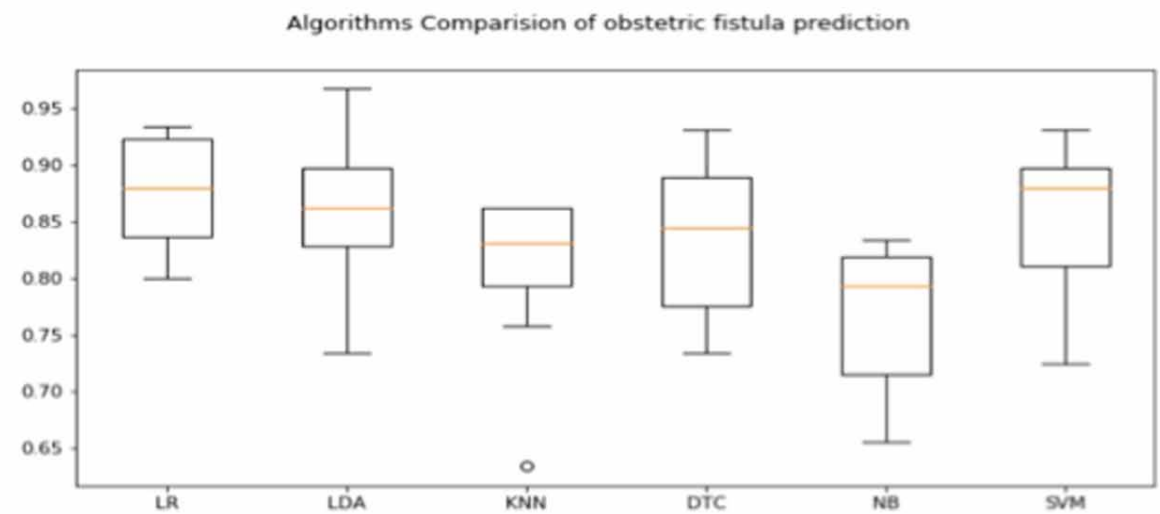
Due to evaluation and performance between algorithms, the Logistic Regression has a better performance of 87.678%, precision measures of 0.91 (91%), recall measures of 0.82 (82%), f1- score measures of 0.86 (86%) and support measures of 74% followed by other algorithms that have a lower accuracy performance based on obstetric fistula datasets. Hence, the data mining prediction model is prepared with LR due to its higher accuracy performance of 87.678% as shown on figure 13.

Also, the ROC is the simple graphical plot that represents the accuracy of each classifier. The ROC curve allows the performance of the DM model across to all possible classifiers. In this study, the ROC value is 0.60 and ROC curve is shown in Figure 15, which lies to the ROC baseline.

Figure 14 shows the Metric that compares an observed accuracy with an expected accuracy in a data mining prediction model as shown in Figure 15 of ROC curve of Obstetric Fistula.

Table 3.

```
LR: 87.678% (4.586%)
LDA: 85.621% (6.884%)
KNN: 80.874% (6.790%)
DTC: 83.586% (6.375%)
NB: 76.368% (6.576%)
SVM: 84.954% (6.968%)
```



Data-Mining Model

The data mining model algorithm includes of 3 sub-stages process. In the first stage there is design, therefore the performance of dimensionality reduction that is already processed datasets. Then, there is the cluster of selected principal components by using python3 as a data analysis tool to describe outliers, remove any incorrectly classified datasets, and graphical visualization of datasets. Finally, the correct classifiers and the classified datasets are used as input for the supervised classification using LR algorithms.

Figure 13.

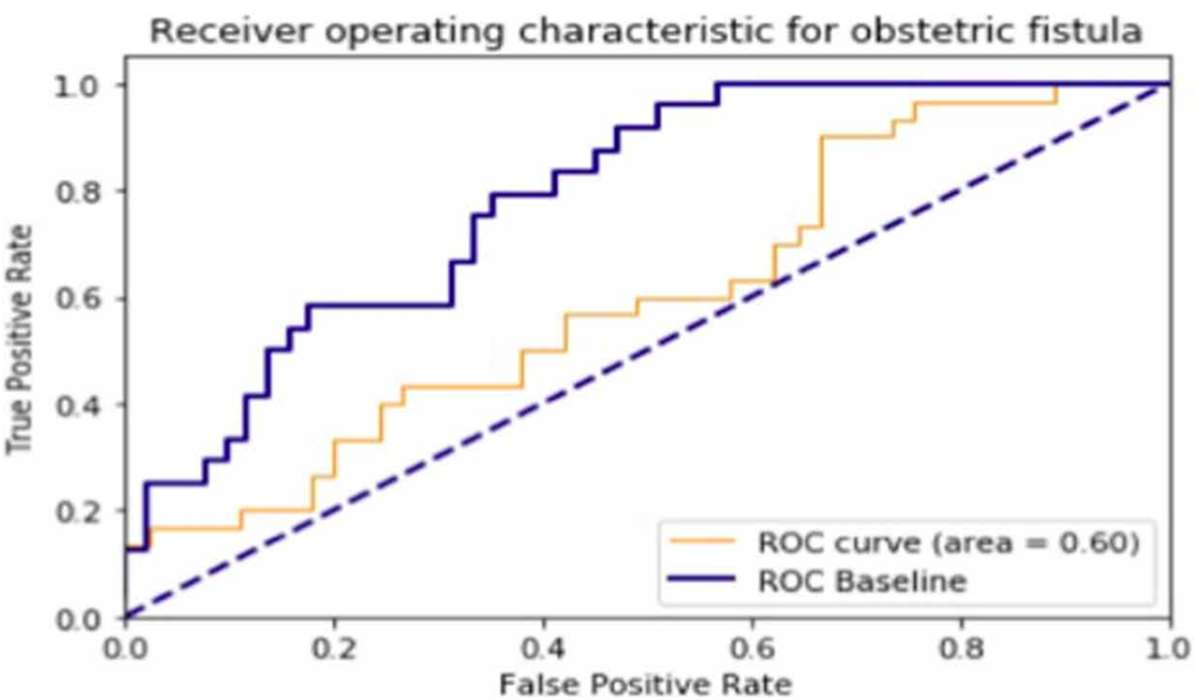
	precision	recall	f1-score	support
0	0.27	0.67	0.38	6
1	0.97	0.84	0.90	68
avg / total	0.91	0.82	0.86	74

Figure 14.

```
In [18]: # PREPARE MODEL
         scaler = StandardScaler().fit(X_train)
         rescaledX = scaler.transform(X_train)
         finalModel = LogisticRegression()
         finalModel.fit(rescaledX, Y_train)

Out[18]: LogisticRegression(C=1.0, class_weight=None, dual=False, fit_intercept=True,
                   intercept_scaling=1, max_iter=100, multi_class='ovr', n_jobs=1,
                   penalty='l2', random_state=None, solver='liblinear', tol=0.0001,
                   verbose=0, warm_start=False)
```

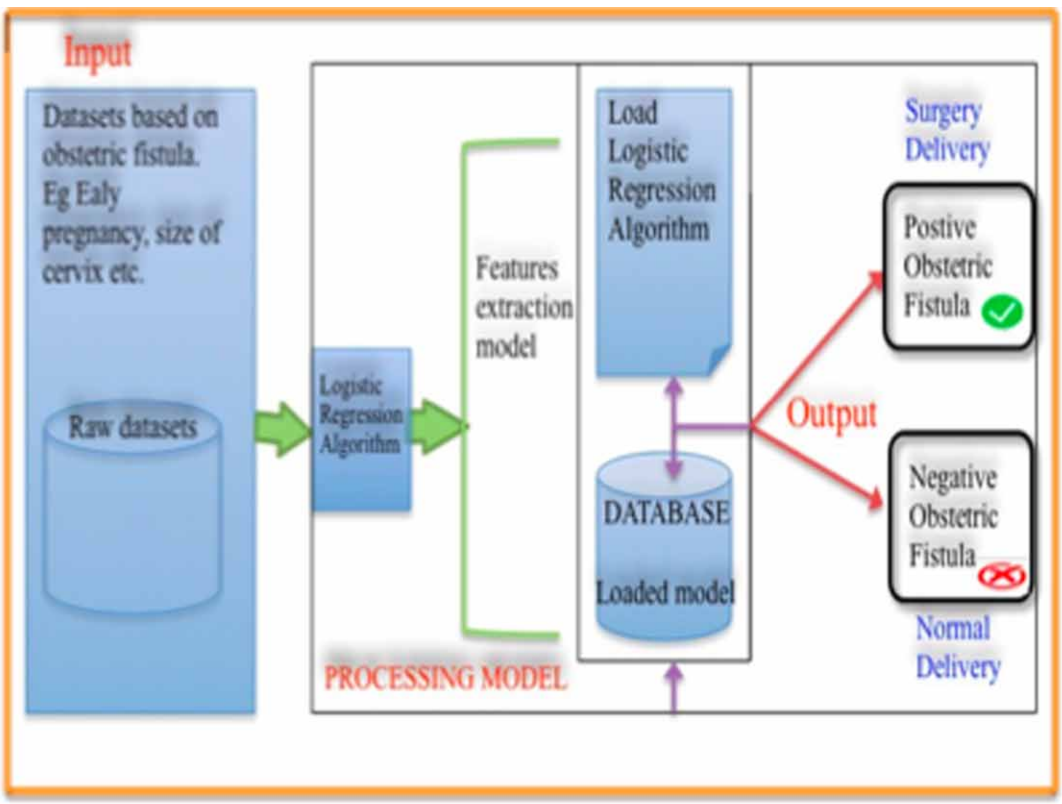
Figure 15.



The Proposed DM Model for Prediction of Obstetric Fistula

LR algorithms import the attributes of obstetric fistula and posses through classified valid datasets for the obstetric fistula prediction. The classified data of the proposed data-mining model are structured into different stages of validation metrics include confusion matrix, cross-validation, and area under ROC through out the conceptual framework of the study as shown in figure 2. These stages are described in details from the proposed data-mining model in Figure 16, this means the model will be installed to hospital to help the physician in decision making of obstetric fistula patient.

Figure 16.



CONCLUSION

The proposed DM model can assist medical doctors to diagnose obstetric fistula at the initial stages of a pregnancy. The main fact is to save time, reduce health costs, quality healthcare, and reduce women's uncertainty over their pregnancies and the safety of their babies. Moreover, obstetric fistula is not only life threatening for pregnant women but also puts the lives of unborn babies at risk thus the need to detect the problem as early as possible

Therefore, the above-developed DM model can help doctors to make a more accurate diagnosis as well as to find out answers, which they often they want to know, from pregnant women. When the diseases are diagnosed, the predictive DM model helps the physician to make the decisions on detected obstetric fistula and they will suggest the possible treatment strategies in a much-reduced time.

FUTURE WORK

More work could be done on this implementation of prediction of obstetric fistula using DM techniques, but due to time and financial constraints limitation, only creating and proposed of data mining model for prediction of obstetric fistula were performed. The training of data set, testing of data set and validation of the DM model was c successively and provided the interesting results on a prediction of obstetric fistula, but much more work can be done for further study.

Other researchers can continue with this implementation of the real system for prediction of obstetric fistula by using proposed DM model.

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KEY TERMS AND DEFINITIONS

Comprehensive Community-Based Rehabilitation in Tanzania (CCBRT): Is a Tanzanian healthcare organization which works to prevent disability, provide affordable medical and rehabilitative services, and aid empowerment of people with disabilities and their families.

Data Cleaning: Is the process of detecting and correcting the corrupt or inaccurate records from a record set, table, or database and refers to identifying incomplete, incorrect, inaccurate or irrelevant parts of the data and then replacing, modifying, or deleting the dirty data.

Data Mining: Is the process of discovering hidden information from existing huge dataset.

Data Preprocessing: Is a data mining technique that involves transforming raw data into an understandable format. Real-world data is often incomplete, inconsistent, and/or lacking in certain behaviors or trends, and is likely to contain many errors.

Knowledge Discovery in Databases: The term Knowledge Discovery in Databases, or KDD, refers to the broad process of finding knowledge in data, and emphasizes the high-level application of particular data mining methods. The unifying goal of the KDD process is to extract knowledge from data in the context of large databases.

Machine Learning Algorithms: Is a process or sets of procedures that helps a model adaptation to the data given for an object. An ML algorithm normally specifies the way of data that transform from input to output and how the model learns the appropriate mapping from input to output.

APPENDIX

Acronyms and Abbreviations

AIDS: Acquired Immunodeficiency Syndrome
ANN: Artificial Neural Network
BIO: Biology
CIVE: College of Informatics and Virtual Education
CCBRT: Comprehensive Community Based Rehabilitation in Tanzania
CM: Confusion Matrix
CV: Cross Validation
DM: Data Mining
ESRD: End-Stage Renal Disease
GNBC: Gaussian Naive Bayes Classifier
HD: Hemodialysis
HIV: Human Immunodeficiency Virus
J48: Decision Trees
KDD: Knowledge Discovery in Databases
KNN: K Nearest Neighbors Algorithm
LDA: Linear Discriminant Analysis
LR: Logistic Regression
MLA: Machine Learning Algorithms
PPG: Photoplethysmography
ROC: Receiver Operating Characteristics
RUCU: Ruaha Catholic University
SVM: Support Vector Machines
WEKA: Waikato Environment for Knowledge Analysis

Chapter 10
Nurturing the Industrial Economy Through Enterprise Education:
The Case of Kenyan Universities

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ABSTRACT

In recognition of the importance of ensuring adequate supply of highly educated workers, many countries have expanded and reformed their educational programmes. Despite this, many manufacturing companies are struggling to recruit. Employers have to recruit and organize for trainings to bridge skill gaps. This raises questions on the preparedness of human resource with regard to supporting economic development in countries. It is also a wakeup call for universities to reexamine the kind of education propagated through systems in their countries. The chapter presents ideas on concept of enterprise education, role of university education in nurturing industrial economy, theoretical base for enterprise education, designing curriculum for enterprise education, strategies for incorporating enterprise education in university curriculum, available opportunities for universities to embrace enterprise education, and the likely challenges. The final part of the chapter presents progress by universities in embedding enterprise education and implications for educational theory and practice.

INTRODUCTION

Education is humanity's best hope and most effective means in the quest to achieve sustainable development. To achieve this, quality education in terms of producing functional graduates is of paramount importance. At all levels of education, most systems of education fall short of what is required in developing skills,

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knowledge and values needed to address issues that arise from social and economic changes nationally and internationally. In recent decades countries have witnessed the emergence and consolidation of the so called knowledge economy (the use of knowledge to create goods and services) in which economic success does not critically depend on natural resources, physical capital and low-skill labour but rather on the effective utilization of intangible assets such as knowledge, skills, and innovative potential (Stehr and Mast, 2012). World economies are moving towards a more advanced knowledge – driven economy where knowledge is a strategic resource. It is only through knowledge that the world can be transformed. Education and training system should create a sustainable pool of highly trained human resource capital that underpins ambitions of building a knowledge-based economy.

Economic performance is viewed as being closely related to the education and skills of the labour force, underpinned by effective research and development (R&D) capacity. In this new economic paradigm, there is consensus that degree holders have a strategic role to play in the success of nations (European University association, 2010). In recognition of the importance of ensuring an adequate supply of highly educated workers, and self-sustaining graduates, many countries have expanded and reformed their educational programmes. In quantitative terms, the number of degrees awarded in universities has increased dramatically and in qualitative terms, extensive reforms have been implemented in various degree programmes. There are debates on whether university programmes are sufficiently well designed to equip graduates with the skills they need to rapidly adjust to the productive environment of work places and also to sustain the economy. The usual claim is that graduate lack employability skills and they also seem not to be functional in society. Governments across the world are working to close the gap between education and the workplace, enabling their citizens to progress from one to the other, support economic growth, navigate changes in working practices and live fulfilling lives. Significantly, both enterprise and entrepreneurship education are experiencing a period of major change within a context of austerity, high unemployment and low economic growth rate.

Materu (2013) notes that, globally university education in many countries has not been able to tailor its content and pedagogy to the social economic and cultural realities of its people and has not been capable of developing solutions to local problems. Instead universities continue to uphold an education system that is centered on schooling rather than learning. Consequently, universities are producing people who consistently look to the west for models of development and are hence incapable of producing knowledge that match their own social and physical environment (UNESCO, 2017).

Despite mainstreaming of Science, Technology and Innovation (STI) at the national development policy level in many African countries, and despite the growing emphasis on the instrumentality of universities in promoting economic competitiveness and sustainable development, higher education institutions in many countries remain poorly integrated in the emerging knowledge-based development paradigm and discourse (Carrillo, 2006). Higher education institutions still lack the required vision, resources, capacity and leadership to embrace science, technology and innovation. The disjoint between national-level policies and institutional realities represents a major challenge to the realization of knowledge-based economies in African countries. Senior leadership within universities therefore require skills and capacity strengthening to be able to embed knowledge, enterprise, and innovation into their strategic plans and research programmes in order to achieve their mandate as catalysts of development. The purpose of this paper is to contribute ideas on enterprise education as a way of making graduates more functional and productive in terms of enhancing industrial economy in countries.

Concept of Industrial Economy

Industrial economy concerns those activities combining factors of production (facilities, supplies, work, and knowledge) to produce material goods intended for the market. Today industrial economies have moved away from heavy manufacturing to services and thence to the digital economy. Industrial economies also deal with study of competitive and monopoly conditions as they may affect market outcomes and how businesses in different industries operate and compete against each other and why they succeed or fail. Characteristics of industrialization include economic growth, more efficient division of labor, and the use of technological innovation to solve problems as opposed to dependency on conditions outside human control. Industrialization is usually associated with increases in total income and living standards in a society. Countries can achieve the following through promotion of an industrial economy: a) net materials savings, b) mitigated supply risks, c) innovation potential, and d) Job creation. The globalization of markets is accelerating the diffusion of technology and the pace of innovation. New occupations are emerging and replacing others. Within each occupation, required skills and competencies are evolving, as the knowledge content of production processes and services is rising (ILO, 2011). Universities should enhance the responsiveness of education and training systems to these changes in skill requirements and also improve access to training and skills development.

Concept of Enterprise Education

Enterprise Education is defined here as the process of developing students in a manner that provides them with an enhanced capacity to generate ideas, and the behaviours, attributes, and competencies to make them functional. It extends beyond knowledge acquisition to a wide range of emotional, intellectual, social, cultural and practical behaviours, attributes and competencies. The aim of Enterprise Education is to produce graduates with an awareness, mindset and capability to generate original ideas in response to identified needs, opportunities and shortfalls, and the ability to act on them, even if circumstances are changing and ambiguous; in short, having an idea and making it happen. To operate effectively, enterprise educational programmes, policy makers and educators need a thorough understanding of the diverse and alternative aims and objectives of enterprise education intervention and the need to train the trainers.

Faoite et al. (2003) view enterprise education as key agent for social and economic change. Growing youth populations, coupled with rising youth unemployment in many countries, is putting greater emphasis on job creation and enterprising behaviour within employment. Technological developments are reshaping our workplaces and changing how businesses are operated, while the global nature of business means more young people will have jobs crossing different continents and sectors. It is therefore important that universities equip future generations with the skills and mindsets they need to navigate a world of work we cannot yet envisage. Learners will need to be innovative, adaptive, resilient and flexible to navigate an ever evolving labour market. Enterprise education focuses on helping students develop entrepreneurial, life and employment skills to prepare them for life beyond school, with particular emphasis on financial capability, enterprise capability, and economic and business understanding. Learning focuses on skills deemed essential for the future workforce, as well as those needed to start a business. Enterprise education provides students with the knowledge and skills needed to start a business, while promoting this as an acceptable and alternative career option. In addition to entrepreneurial skills, the aim is to ensure that those who choose to enter the workforce through more traditional paths are equipped with the soft skills employers are seeking, among them; creativity, problem-solving, taking initiative, communication, determination, flexibility, teamwork, time management, adaptability, innovation, collaboration, adaptability, resilience and practical action.

Enterprise Education is an excellent tool to prepare students for changing environments. It provides enhanced impact through placements and activities that build links between academic institutions and external organizations. Education therefore becomes a process of developing students in a manner that provides them with an enhanced capacity to generate ideas, and the behaviours, attributes, and competencies to make them functional. It extends beyond knowledge acquisition to a wide range of emotional, intellectual, social, cultural and practical behaviours, attributes and competences. Entrepreneurship education includes all activities aiming to foster entrepreneurial mindsets, attitudes and skills and covering a range of aspects such as idea generation, start-up, growth and innovation (Fayolle, 2009). The overall objective of enterprise education is to make students ready for work and business, and also to improve the quality of teaching, and engagement in learning, through enterprising pedagogy (Hytti & Gorma, 2014). Enterprise education focuses on applied learning and functional skills which teach learners how to apply core skills to real life. Enterprise Education is not a standalone subject. It is linked to Citizenship and work learning. Enterprise education programs may be integrated into the curriculum, provided as extracurricular activities, run through external companies or offered as intensive 'projects' over a set amount of time.

According to CEDEFOP (2007), investment in good-quality education and skills attracts a number of benefits:

1. Skills development which enhance both people's capacities to work and their opportunities at work; offering more scope for creativity and satisfaction at work;
2. Increase in productivity of both workers and of enterprises;
3. The future prosperity of any country depends ultimately on the number of persons in employment and how productive they are at work;
4. Empowers people to develop their full capacities and to seize employment and social opportunities;
5. Encourages both domestic and foreign investment, and thus job growth, lowering unemployment and underemployment;
6. Contributes to boosting future innovation and development;
7. When broadly accessible, it expands labour market opportunities and reduces social inequalities;
8. Leads to higher wages

Objectives of Enterprise Education

1. Learning to become entrepreneurial which deals with the need for individual's to take responsibility for their own learning, career and life
2. To develop a broad understanding of entrepreneurship, and specifically the role entrepreneurs and entrepreneurship play in modern societies and economies.
3. Learn how to be an entrepreneur by learning how to start a business.
4. Awareness Creation on available opportunities

Attributes and Competencies of Enterprise Education

The attributes include: open mindedness, proactivity, curiosity, self-efficacy, flexibility, adaptability, taking initiative, communication, determination, innovation, problem-solving and resilience. Employers tell us that they need these skills and aptitudes in those they recruit. And our economy and society will benefit from a workforce that is self-starting, confident and able to apply what they have learnt in the classroom to their lives of work, family and community.

The competencies include: intuitive decision making, identifying opportunities, creative problem solving, innovating, strategic thinking, design thinking, negotiation, communicating, influencing, leadership and financial, business and digital literacy. Enterprise skills are becoming more important as young people need to learn enterprise skills now to prepare them for the economy of the future, so they can become job creators, not just job seekers, and navigate more complex careers. Enterprise skills are generic skills that are transferrable across different jobs. They have been found to be as powerful a predictor of long-term job success as technical knowledge and will be increasingly important into the future (OECD 2012; Kahn et al 2012; Casner-Lotto & Barrington 2006).

An analysis of 4.2 million online job postings from 2012 to 2015 in Australia from more than 6000 sources to definitively uncover what employers want revealed that demand for enterprises skills has been raising over time: Over the past three years, employers have listed more enterprise skills in their job advertisements. For example, demand for critical thinking has increased by 170%, creativity by 62%, presentation skills by 24% and team work by 20% (FYA 2016).

A growing body of evidence shows that enterprise education has an impact, as it

1. Increases students' confidence and makes them see the purpose of their education.
2. Improves school outcomes: motivation for school, attendance, retention, connectedness (including for students at-risk of disengagement).
3. Improves the skills that make young people enterprising.
4. Improves employment and earning outcomes later in life.
5. Increases desirability of, and aspiration for, entrepreneurship as a career.
6. Increases business success later in life including: likelihood of later starting a new business or running a business successfully (employ more people, turn over more money and be more innovative, high-tech, and resilient). Starting early and repeating enterprise and career management education is proving important.

Teaching and learning approaches adopted in enterprise education programmes

1. Study visits to organizations and companies to build stronger work relations and to familiarize learners with the world of work.
2. Tasks that require students to come up with a creative solution to a problem or put together a proposal for a new product.
3. Setting up businesses within programmes and managing them, for example student-run businesses, stalls and events
4. Practical training where learners work for a period of time in a real company as part of the programme.
5. Games and competitions to increase interest towards small businesses.
6. Workshops

7. Excursions
8. Community service initiatives to allow for real-world applications for skills
9. Business simulation for example through computer assisted programmes including use of case method in teaching.

Theoretical Base for Enterprise Education

Many theories justify the ideas of enterprise education and application to real life.

Opportunity-Based Theory- Drucker (1985)

Drucker contends that entrepreneurs excel at seeing and taking advantage of possibilities created from external environmental factors such as social, technological and cultural changes. An opportunity-based approach provides a wide-ranging conceptual framework for entrepreneurship research (Fiet, 2002; Shane 2000). Entrepreneurs exploit the opportunities that come with change in technology, consumer preferences among others (Drucker, 1985). The entrepreneur always searches for change, responds to it, and exploits it as an opportunity". Accordingly, entrepreneurs have an eye more for possibilities created by change than the problems. Drucker's opportunity theory was modified by Stevenson (1990) to include resourcefulness. He concludes that the hub of entrepreneurial management is the "pursuit of opportunity without regard to resources currently controlled". Still enriching the opportunity theory, Abioye (1996) posit that greatness or success is a product of opportunity. To succeed, opportunities involve:

1. **Some form of Luck** (Others call destiny): obviously, luck or any destiny without appropriate drive will lie dormant and impotent.
2. **Motivations of the Entrepreneurs:** The desire to undertake and sustain.
3. **Discipline to Exploit Opportunity**: This relates to having a sense of denial and control. By discipline, one responds to issues of life not as he or she wants or likes it to be, but as they are required or needed to be done. One refuses to respond to emotions in order to face the realities of life (Abioye, 1996). All this requires disciplines in man, money and material management.
4. **Risk Taking;** The deliberate departure from the known to the unknown. The individual forsakes what he/she has in the hope of getting a better one that awaits him or her.
5. **Facing opposition:** The failure to utilize available opportunities. Why some persons perform better than others is their attitude to opportunities that come their way.

Innovation theory or dynamic theory/ Joseph Alois Schumpeter Theory- According to Joseph Schumpeter, the effective function of an entrepreneur is to start innovation in venture. According to this theory, the entrepreneur (is a person who has creative nature) emerges because of individuals having certain psychological elements, that is, will power, self-intuitions, and tolerance capacity. The entrepreneur is viewed as catalyst who checks the static conditions of the economy, there by initiates and thrusts a process of economic development, that is, innovation and carries economy to new height of development. This innovation includes: introduction of new goods; introduction of new methods of production; opening of a new market; carrying out a new source of an organization, and discovering a new source of raw materials. . The assumptions are:

1. The entrepreneur is born with the desire to establish his/her own industry.
2. The entrepreneur desires to do something new.
3. The entrepreneur takes pleasure of creativity and earning experiences of skills for doing various tasks.

Kolb's experiential learning Theory- A theory of learning developed by David Kolb (1984) depicts learning as a four step process:

1. **Direct experience**: learners take in "an experience directly, that is, they actually do something. The phase conveys the notion of direct contact, not an abstract experience.
2. **Reflections on experience**: learners reflect upon the experience, to internalize and also perceive other ways to look at the experience.
3. **Authoritative knowledge**: learners develop larger principles or generalizations, which help them to explain and understand their experiences and their reflections. This is also a phase which leads to theory building.
4. **Application:** learners try out what they have learned in the previous steps of the experiential learning.

A strong experiential component is a valuable ground for skills development, professional behaviours, and establishing competency and confidence in work-related activities. This helps students identify their own strengths, weaknesses and preferences and to develop and enhance competencies useful far beyond business start-up (Communication, teamwork, negotiation, decision-making, resource acquisition, and opportunity evaluation) skills with day-to-day applications in all walks of life and work.

Constructivism and situated learning theories- today, there are two related challenges to the information processing perspective; constructivism and situated learning. Grounded in the work of Piaget, Vygotsky, Bruner, Bartleff, and Dewey, the constructivist's orientation emphasizes the individual's active construction of meaning. The focus is on meaning-making and knowledge construction, not memory for information. Situated learning emphasizes the importance of physical and social contexts in learning. What is learned is tied to the situation in which learning occurs. A constructivist learning environment is defined by a number of practices:

1. **Providing multiple representations of reality and learning styles**- Learning of concepts must be approached via a wide range of learning contexts to promote transfer of knowledge in a broader range of domains (Kafai and Resnik, 1996). The concept of multiple representations is typical of the post-modern approaches to instruction.
2. **Presenting authentic tasks-** Learners are more likely to view a problem from an own perspective when the situations represent context. Authentic learning occurs when instruction is designed to facilitate, stimulate and recreate real life complexities and occurrences (Cey, 2001). This is to say that the learner should be placed in situations in which they are not artificially constrained. The constructive instructional designer should therefore situate cognition in real-word contexts to facilitate the application and transfer of knowledge.
3. **Providing real, world, case - based learning environments,** rather than pre-determined instructional sequences.

4. **Fostering of reflective practices** to allow the learners the opportunity to develop, assess and organize their thoughts. What did students learn? Where can they transfer it? You as teacher should answer these questions after every teaching experience. Your students should do it also. This will help you understand if what students learned was what you planned, or something else.
5. **Supporting collaborative construction of knowledge through social negotiation**, **not competition among learners.** Collaborative learning allows learners to develop, compare and understand multiple perspectives on the issue, thus promoting insight into alternative perspectives. Learner should be able to explain and justify their thinking and openly negotiate their interpretations of the solutions to instructional tasks (Cobb and Yackel, 1995).
6. **Personal constructions of reality Knowledge does** not come from someone else, but rather from experience. Constructivist teaching practices help learners to internalize and reshape, or transform new information (Brooks & Brooks, 2001).
7. **Seeking and valuing students' points of view.** This helps to promote creativity.
8. **Enhancing content- context dependent knowledge construction.** This requires the application of community/service which is based on the principle of taking books to life and life to books. Meaningful learning takes place when learners develop effective ways to solve problematic situations. Inquiry learning can turn information into useful knowledge. It stresses skill development and nurtures the development of good habits of mind. Information that lacks a useful context, often has limited application beyond passing a test. Learning plans and teaching materials need to include a relevant context for new information to lead to broader understanding. Accordingly, learning is a personal interpretation of the world.
9. **Focusing on inquiry-based learning.** This is a useful method that educators should embrace, as it helps to enhance the learning experience of students. The method gives learners the opportunity to take a hands-on approach in their education while obtaining several important skills that can be used at all levels of their learning, and even into their future careers. It also helps to engage learners and foster excitement in the subjects they are learning about.
10. **Adapting Curriculum to address students' suppositions**- Learning is enhanced when the curriculum takes into consideration the cognitive, social, emotional, technological demands of students.
11. Evaluation that is integrated with the task and not a separate activity.

Role of Universities in Advancing Industrial Economy

Universities have a key influence on society in a two-fold manner: they train and educate people and they participate in governance at the national and regional level. The role of Universities in nurturing industrial economy includes:

Expanding human capital with industrial economy perspective: Universities will need to educate their students on the social, economic and environmental implications of their future careers and professional work. Universities will also be part of new training programmes for non-university students through massive open online courses to contribute to continuous and lifelong learning modalities (Capelo& Pedrosa (2014). The University Education Policy of 2012 in Kenya spells clearly that, "Kenya's future as a prosperous and internationally competitive nation will depend on her university education system. As a nation Kenya will rely on this system to create a pool of highly trained human resource capital that underpins our national ambitions of being a knowledge-based economy".

Conducting Research- As a universal agenda, researchers should help advance industrial economy at the global as well as the local level.

Implementing the Education for Sustainable Development (ESD) agenda- Universities are actors in multi-stakeholder partnerships for the SDGs. University researchers and students are participating hands-on in projects with their expertise, time and financial resources. They can contribute to knowledge transfer and build the tools that the industrial economy will require. Universities do indeed invest in development, a trend that is becoming more frequent in the academic world. This "clinical" approach, as it could be defined, facilitates first-hand intervention in the field. However, it is important that university development projects are not isolated and are integrated in larger efforts that include government, civil society and the private sector (Nolet, 2013).

To adapt and innovate- Contemporary universities have a responsibility to transcend traditional disciplinary limitations in pursuit of intellectual fusion, and develop a culture of academic enterprise and knowledge of entrepreneurship.

To embrace their cultural, socioeconomic and physical setting- It is imperative that universities be socially embedded, thereby fostering development through direct engagement and be willing to take risks to become even greater forces of societal transformation.

To promote development of an individual- Universities need to foster student success by becoming student-centric – rather than faculty-centric. They must provide unique environments that able to grasp a wide array of skills and comprise the most adaptable workforce the world has ever known.

To be partners for global development- Universities should generate valuable ideas with vast influence and the potential to that can change lives the world over.

Initiatives by Universities to Embrace Enterprise Education

With the need to transform learners as well as the society, universities have put in some initiatives to embrace enterprise education as part of their operations:

University linkages and partnerships- Collaboration between universities and industries is often driven by the need for technology transfer from universities to industry. For example, the UK has knowledge transfer partnerships that enable researchers in universities to work in strategic industries for one to three years. South Korean universities are setting up university-industry clusters to support collaboration with industries. For example, Hanyang University in South Korea has created an Education and Research Industry Cluster at Ansan (ERICA) campus which facilitates the collaboration between government, industry, national research institutes, and the science and engineering departments of the university. South African universities have established university-industry linkages and partnerships at two main levels:

Direct university- industry links. For example Telkom South Africa has established Centres of Excellence in selected departments of engineering in South African universities. These Centres of Excellence conduct joint research. The mining companies have also established links with mining engineering departments; and

National research partnerships which is established through the National Research Foundation of South Africa which allow South African universities and other international universities to collaborate in research in various areas.

In Germany, the university-industry links are sustained by joint research projects and technology transfer centres. In Sweden on the other hand, the linkages are through technology parks. Systematic reforms in University – Industry Partnerships in OECD countries have made universities in those countries centres of innovation. Thus, linkages and partnerships are widely used all over the world to increase the research output of universities as well as quality research in these nations. Kenyan universities have begun to establish both technology and science parks. They have also enhanced collaboration in research projects.

University-Industry Linkages- A study commissioned by Commission for University Education (CHE) confirmed that there is some collaboration between industry and universities in Kenya. Internship and industrial attachments are a requirement in professional degree programmes such as business, law, engineering and ICT in Kenyan universities. Some private universities such as Strathmore and USIU have an attachment requirement for all their degree programmes. These attachments result in some level of collaboration between the universities and industry. Universities also involve local industry during the curriculum development process. Most of the universities also keep in touch with local industry through their respective alumni associations and placement/career offices. Universities can promote creation of knowledge-based start-ups jointly with industry. The outcome would lead to an increase in the number of joint start-up companies/ businesses. University of Nairobi for example has collaborations with local institutions like Kenyatta National Hospital (KNH) for training health professionals and with Kenya Agricultural Research Institute (KARI) for training Agricultural professionals. A study commissioned by CHE (Gichaga, 2005) found that there was limited collaboration between Kenyan universities and industry. This is partly due to lack of awareness of local industry of the potential for research contributions from Kenyan universities or lack of awareness of university researchers of industry needs.

Collaboration among Universities- Kenyan universities also collaborate with Eastern African universities through the Inter-University Council of East Africa (IUCEA). These linkages support student and faculty exchanges as well as joint student competitions. In addition, they support joint research projects, like the Lake Victoria research project that involves faculty from universities in the three East African countries working in multidisciplinary programmes. Some faculty members have created research networks in various areas of regional and global concern. All the Kenyan universities are also members of the Association of African Universities (AAU) which supports faculty exchanges. Both IUCEA and AAU organize annual meetings for Vice Chancellors to share experiences.

University- Community linkages- Some of the private universities in Kenya require each student to undertake a community service attachment with not-for-profit organizations. These include schools, hospitals, and community-based organizations working in the informal settlements. The objective is to develop a community service culture among students. Public universities have community outreach programmes through co-curricular activities, although community service is not integrated in the curricula of most degree programmes. For example, the Student in Free Enterprise (SIFE) programme at all the universities in Kenya encourages students to develop social entrepreneurship projects to solve community problems. Experience from Rhodes University in South Africa showed that community outreach programmes underpinned by a specific policy on student volunteerism can enhance the university brand and increase students' skills in community mobilization. University linkages and partnerships will therefore lead to progressive innovative institutions whose mandates are informed and enriched by the experiences, expertise and resources of these partners. The partners on the other hand gain by tapping the intellectual and creative energy of the universities. Community based interaction/ service learning is inherently historically and ideologically connected to participatory community development discourse and practice (Laura, 2012).The overall achievement of these partnerships is the production of more relevant knowledge and skills for economic development.

University-professional bodies' linkages- Professional bodies like the Kenya Medical and Dentistry Association, the Kenya Engineering Association, the Kenya National Academy of Sciences, and other discipline professional bodies serve useful mandates whose formal linkages with the universities would improve the services they provide. The professional associations' membership is composed of individual academics, civil servants and private sector experts. Holding of joint activities between the universities and professional bodies will improve learning and induct students into professional ethics. Furthermore, supervision of interns is an area that stands to improve once the professional associations take it as their responsibility. The Institute of Electrical and Electronics Engineers (IEEE) a professional engineering body, works closely with departments of electrical engineering in universities to organize project exhibitions and competitions. University-based student associations and clubs also work closely with professional bodies like those for Accounting or Marketing to develop work ethics.

Work-based learning programmes- these programmes fall into two categories:

Student internship programmes/- industrial attachments- A short-term opportunity for students to work (paid or unpaid) for an employer where ideally their academic learning can be applied to real-world tasks. Evidence indicates that internships improve students' employability, academic outcomes, and career crystallization. Internships allow students and graduates to experience a real workplace. Apart from the vocational skills that interns gain, they also get lots of soft skills which are crucial to not only finding a job but succeeding at one as well. Provides interns with real world experience which helps them to better understand their value and what they can bring to the table. Sometimes the biggest benefit of an internship is that it helps learners realize their abilities.

Practicum- A component of some educational programs where students are placed in a job site (for example, classroom, and hospital) and observe the work of professionals while also spending some time performing tasks themselves. Typically, students are also enrolled in a course connected to the practicum for deeper understanding and meaningful facilitation of what is being learned during the experience. Two challenges have arisen in this connection; universities lack adequate staff and funding for close supervision of interns and sometimes employers lack meaningful work for interns.

Running of student exchange programmes- these are programmes in which students from a university study abroad at one of their partner institutions. Foreign exchange programs provide students with an opportunity to study in a different country and environment experiencing the history and culture of another country, as well as meeting new friends to enrich their personal development. International exchange programs are also effective to challenge students to develop a global perspective.

University based business incubators strategy- which involves setting up of business incubation centers/ incubation units/ accelerators and Venture Creation Programmes by universities. National Business Incubator Association (2013) defines business incubation as a business support process that accelerates the successful development of start-up and fledgling companies by providing entrepreneurs with an array of targeted resources and services. Overall, business incubators provide local, on-the-spot diagnosis and treatment of business problems, dramatically lowering the early-stage failure rate of startups. The incubator seeks to develop venture creation talents by providing complementary services that support and promote the skills and expertise of the entrepreneur when the firm/business is most vulnerable to market uncertainty (Jorgensen, 2011). Universities have their own business incubators thus encouraging enterprise development by using research leading to start-ups and technology transfer, which is easily facilitated by university based incubators (Bathula et al., 2011). Such universities and their incubator facilities include Strathmore University, Kenyatta University (Chandaria Business Innovation and Incubation Centre), University of Nairobi (C4D Lab), JKUAT (Kuza Incubation Centre, Nairobi Industrial and Technology Park), Mount Kenya University (Business Incubation Centre), Technical University of Kenya (Business/Technology Incubation Unit) and Kenya College of Accountancy University (KCA

Business Incubator). This strategy aims at empowering students to be self-employed upon graduation, thereby reducing pressure on the ever thinning employment space and the chronic unemployment in Kenya (Marwanga, 2009).

Entrepreneurial education- this encompasses pedagogical courses, programs and processes offered to students to develop or strengthen their entrepreneurial traits, attitudes and skills (Bae et al. 2014. This has been adopted by educational institutions and is stimulated by policy makers in response to the widespread belief that entrepreneurship acts as an engine for economic prosperity. Entrepreneurship education is not limited to start-ups, innovative ventures and new jobs' but rather to 'an individual's ability to turn ideas into action and it is therefore a key competence for all, helping young people to be more creative and self-confident in whatever they undertake. According to Paul (2005), entrepreneurial education is structured to achieve the following objectives:

1. To offer functional education for the youth that will enable them to be self-employed and self-reliant.
2. Provide the youth graduates with adequate training that will enable them to be creative and innovative in identifying novel business opportunities.
3. To serve as a catalyst for economic growth and development.
4. To offer tertiary institution graduates with adequate training in risk management.
5. To reduce intensity of poverty in the communities, societies and country.
6. To create employment generation.
7. Provide the young graduates with enough training and support that will enable them to establish a career in small and medium sized businesses.
8. To inculcate the spirit of perseverance in the youths and adults which will enable them to persist in any business venture they embark on.
9. Create smooth transition from traditional to a modern industrial economy

Competitiveness, innovation and economic growth depend on being able to produce future leaders with the skills, attitudes and behaviour to be entrepreneurial and to act at the same time in a socially responsible way. Entrepreneurship is not only about creating business plans and starting new ventures. It is also about creativity, innovation and growth, a way of thinking and acting relevant to all parts of the economy and society as well as the whole surrounding ecosystem. Universities, especially technical universities, can be seen as engines of scientific invention and technological development. Invention and technological development can be transformed into innovation. Entrepreneurship is important as a diffusion mechanism to transform scientific inventions into new product and service innovations. Universities play a major role in promoting talents of students, graduates and researchers (Hoffman, 2011). What distinguishes institutions of higher education from other institutions in society is their role in creating knowledge and producing high-potential graduates and researchers. For entrepreneurship education, focusing on institutions of higher education offers the chance to develop knowledge intensive enterprises from all academic disciplines, not just technical ones.

Universities can teach students how to start and grow enterprises in ways that benefit society. Kostoulas-Makrakis (2011) asserts that there is need to develop and apply a critical and transformative model to address education for industrial development in training programmes. Technical universities in particular provide potential breeding grounds for high technology and high-growth companies; therefore universities play a pivotal role in the development of entrepreneurship as resource hubs, connecting researchers, students, entrepreneurs, companies and other stakeholders. Research carried out in

Germany has shown that enterprises started by individuals with university degrees tend to grow faster than enterprises founded by non-academics.

DELIVERY METHODS IN ENTERPRISE EDUCATION

Educator can select delivery methods based on the behaviours, attributes and competencies they wish to enhance and develop. These methods will ideally align to students' prior learning and context along with any subject specialization; hence the following points should be taken into consideration.

1. Take a contextualized approach that enables students to enhance their entrepreneurial capabilities within their subject or discipline.
2. Delivery should be designed to allow students to 'do' their subject in a way that enables them to identify and solve problems, with an overall aim to conceptualize and develop a value proposition for others.
3. Offer action-based practical activities and challenges, which may be set by the community, businesses and enterprises or other appropriate partners, for example, provide consultancy services to clients, SMEs or a social endeavour.
4. Encourage cross-disciplinary approaches in both learning strategies and assessment, for example business students and computing students in a team with those from the creative art.
5. Develop realistic and relevant high engagement, high impact activities, such as simulations and venture creation Programmes.
6. Enable students to start and run a business as an integral part of their programme.
7. Employ alumni, entrepreneurs and other relevant specialists as visiting lecturers and guest speakers, ensuring that reflective processes support the learning.
8. Use experiential learning strategies where theory follows practice, and provide theory support and encourage discussion on the merits and demerits of the theories under consideration.
9. Encourage use of reflection to consolidate learning points, critically explore emotional responses, and plan for future action.
10. Make distinctions between 'learning about' (e.g. theory and cases/observation) 'learning for' (preparing for action) and learning through (in action), to distinguish between the theoretical and practical components that are developed within Enterprise Education.

LIMITATIONS TO ENTERPRISE EDUCATION IN UNIVERSITIES

1. Funding for research remains a serious constraint.
2. Large classes which limit individual performance of experiments/ use of experiential methods.
3. Limited research projects for learners to present their findings to others.
4. Training today is still strongly influenced by the so-called technocratic model, which can be roughly summarized as follows: Knowledge is considered by both the teacher and the learner as unproblematic; emphasis is on technical expertise and mastering of domain knowledge; curriculum is built around a set of practices which result in measurable learning effects; the competences and skills are not connected to the ethical and social context.

5. Researches carried out by the European Commission (2011) shows that the core skills and values linked to enterprise education and creativity are not fully embedded into most programs.

A study by Mugambi and Ochieng (2018) on perceptions of Bachelor of Education trainees on education for sustainable development in Kenya found out that some of perceived greatest weaknesses of the university in relation to enterprise education included: limited hands on activities in learning; inadequate learning support materials both in the academic activities and research; limited research work to allow for application of learnt theories and principles; limited dialogue in the teaching –learning process due to much emphasis on lecture method; limited technology to allow research and exploration; limited link with community to make learning more practical; and limited allowance for student initiated projects.

THEMES THAT SHAPE PLANNING OF ENTERPRISE EDUCATION CURRICULUM

Ornstein, Pajack and Ornstein (2011); Hawes (1972) suggests various themes that should guide curriculum planners to come up with a comprehensive curriculum:

Learning to think- For human beings, thinking is inmate and spontaneous however, skillful thinking must be cultivated; one of key ways of enhancing this is to get students intrigued by relevant generative conceptual knowledge. Conceptual understanding requires cognitive skills such as comparing, analyzing, applying, translating and evaluating. Costa and Kallick, (2001) assert that it is not enough for students to learn thinking and problem-solving skills in teacher- constructed classroom situations. They must also develop the inclination to use productive habits of mind and remain open to continuous learning of their own

Thinking to Learn- Knowledge is a constructive process; learners must create a model from their personal world. Contentment learning should not be viewed as the only aim of instruction. Curriculum designers should select content that will lead to enjoyment of learning. The content should be a vehicle for; posing challenges that will stimulate inquiry, and help learners to assess their own learning.

Thinking Together- Learning is a reciprocal process where individuals influence group thinking and the group influences the individuals thinking. It is not a personal operation. Collegial interaction is a crucial factor in the intellectual ecology of leaning institutions and the classrooms. Collaboratively individuals can elicit thinking that surpasses individual effort.

Thinking about our own thinking- Learning to think begins with recognizing how we are thinking- by listening to ourselves and our own reactions and realizing how our thoughts may encapsulate us. The aspect of metacognition becomes a critical consideration.

Thinking big- Learners should achieve an inter dependent learning community where people continually search for ways to care for each other, learn together and grow toward greater intelligence. This will generate more thoughtful, peaceful approaches to solving problems rather than resorting to violence to solve differences. It will also help to achieve a world community that values the diversity of other cultures, races, religious, and language systems, political and economic views.

Functional learning- The purpose of curriculum should be to produce graduates, who not only know something, but also can do something. The curriculum must provide learners with knowledge, skills, values and attitude which enable them to function as members of a society. Applied science has long been recognized as important functional learning by many countries. Entrepreneurship education is also emerging as functional leaning to enable learners to become creative thinkers and set up their own businesses.

Education of affect- Education of effect or affective education refers to feelings and emotions both of which belong to the learning process. The feelings and emotions learners attach to the learning of particular subject matter will; affect the degree to which the subject matter is learned and also the application by learners' .Appreciation of what is learnt depends on the subjective experience of the learner. The self- esteem of the learner is significant in responding to the provided content. To meet the challenge of affect, the curriculum designer must take into account self -concept, sense of challenge, a sense of belonging and values of learners.

Regard for futurism- The speed at which science, technology and communication are changing suggests changes in curriculum for the future. The futurists in mathematics for example believe that more comprehensive problem solving will form the focus of mathematics, that basic mathematics skills will be supplemented and extended, that calculators and computers will be used more extensively to aid teaching and that more options will be increased to accommodate the ability ranges of learners.

The Kenya Vision 2030, the long-term development blueprint that seeks to transform Kenya into a newly industrializing, high middle-income country, acknowledges the central role of knowledge in boosting wealth creation, social welfare and international competitiveness. It envisages a knowledge driven economy where the creation, adaptation and the use of knowledge will be one of the critical factors for rapid economic growth. The subject matter in curriculum should aim at achieving vision 2030. Enterprise education and training is fundamental to the social transformation envisaged under the social pillar of the Vision 2030. Universities must therefore ensure adaptability of education and training that meets the evolving needs and times of the society. What is offered in the education systems should therefore not be similar decade to decade. World economies are moving towards a more advanced knowledge – driven economy where knowledge is a strategic resource. It is only through knowledge that the world can be transformed. Julius Nyerere on education for self -reliance states that "we must take our traditional system, correct its shortcomings, and adapt to its service the things we learn from the technologically developed societies of other continents (Nyerere, 1967).

CONCLUSION

Enterprise education is a major instrument in nurturing industrial economy and an effective means in the quest to achieve sustainable development by producing functional graduates. Enterprise education creates a sustainable pool of highly trained human resource capital that underpins ambitions of being a knowledge-based economy. It extends beyond knowledge acquisition to a wide range of emotional, intellectual, social, cultural and practical behaviours, attributes and competences. Education therefore becomes a process of developing students in a manner that provides them with an enhanced capacity to generate ideas, and the behaviours, attributes, and competencies to make them functional. The overall purpose of enterprise Education is to produce graduates with an awareness, mindset and capability to generate original ideas in response to identified needs, opportunities and shortfalls, and the ability to act on them, even if circumstances are changing and ambiguous; in short, having an idea and making it happen thus it is key in boosting wealth creation, social welfare and international competitiveness. Quality education for all is an essential prerequisite for further skills development. Effective partnerships between governments, employers' and workers' organizations, and training institutions and providers are critical to anchor the world of learning in the world of work. Education and skills policies are more effective when well-coordinated with employment, social protection, and industrial investment and trade policies. By using up-to-date information, those working in education and training can assess the match between the skills they are teaching and those in demand in the workplace.

RECOMMENDATIONS

1. Higher education institutions should create an environment that fosters entrepreneurial mind-sets, skills and behaviours across their organizations.
2. It is important to involve stakeholders inside and outside of higher education institutions. For example, entrepreneurs and entrepreneurial leaders acting as role models for students should be an essential part of entrepreneurship modules and programmes. If the young people and students are to enter the business world and entrepreneurship it is necessary to involve business people and entrepreneurs in the academic education process. Academic start-ups have the potential to grow faster than others, universities can obviously offer support in entrepreneurship education for high growth.
3. There is need to integrate community service into university degree programmes .This strategy will require universities to review curricula in order to incorporate community service in all programmes. The outcome of this strategy is expected to produce graduates who are sensitive to community needs and who understand how their degree programmes could support social development.
4. It is important to offer students techniques that can be applied in the real world. Therefore, a shift from classical models of teaching to experiential learning approaches is essential.
5. Sensitize students that creating a new venture can be an alternative to employment. It is important to raise awareness and generate motivation for the discipline of entrepreneurship.
6. In all undertakings, education and training should be made more practical and problem based.
7. Critical thinking and reasoning should be encouraged among trainees.
8. Universities need improved research strategies with boarder academic research.
9. More emphasis on project-based learning to promote deeper knowledge of the subjects.
10. Education and training for sustainable development should adopt a comprehensive approach to educational implementation which extends beyond boundaries of individual subjects.
11. There is need to adopt the whole institution approach which focuses on: governance policy and capacity building; curriculum, teaching and learning; facilities and institutional operations, and community partnerships and collaborations.
12. Provision of quality job-site supervision. Supervision of the student through the duration of their internship, by both an academic advisor and a work-site supervisor is critical to a successful internship experience.
13. Regular review of curriculum in the various programmes to align with market needs, growing economy, emerging trends, academia needs and international best practice standards based on an objective needs analysis.
14. Universities should shift from objectives based curriculum to competency based curriculum.
15. Departments of business studies in the universities should initiate small scale programmes such as the enterprise network and enterprise champions as the primary means of nurturing more enterprising future labour force.

16. More emphasis should be put on integrating enterprise education into all the subjects in the curriculum.
17. Universities should embark on active learning methods that place the learner at the center of educational process and enable them to take responsibility for their own learning to experiment and learn about themselves.
18. There is need for universities to develop science and technology parks infrastructures to foster a culture of innovation and knowledge sharing between businesses and academic institutions and promote sustainable research.

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Chapter 11
Enhancing Employability Skills Among University Students Through Career Guidance and Counseling

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ABSTRACT

This chapter explored the role of career guidance and counseling in promoting graduates' employability skills in Tanzania higher learning institutions. A total of 123 respondents were involved. Data were collected through questionnaires, interviews, and focused group discussion. The study revealed that HLIs do not have professionals in career guidance and counseling who are solely employed to offer such services; the task is left to lecturers and wardens. Career guidance and counseling services were also found to be inadequate and not formalized thereby threatening students' acquisition of employability skills. The study recommends that higher learning institutions (HLIs) in Tanzania should see the possibilities of preparing students in various competence areas such as academic excellence, career aspects, personal and social skills. This can only be achieved by establishing comprehensive career guidance and counseling units within the institutions.

INTRODUCTION

The increasing changes in the global economy and labor market today, organizations and institutions call for employees who can work effectively and efficiently to meet the emerging workplace demands (Elder, 2014). Employers are currently motivated to recruit competent employees to flexibly take responsibilities with appropriate productivity in careers such as marketing, nursing, engineering to mention few. Most

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of the jobseekers in the world at present face unemployment challenges due to many factors including lack of employability skills (Akkermans, Schaufeli, Brenninkmeijer, & Blonk, 2013). However, even those who managed to secure jobs still experience poor work socialization, unsatisfactory employment, unfavorable working conditions and high labour burnout rates (Teichler, 2000). Steven (2007) argued that, it is not sufficient for a graduate to have knowledge of an academic subject without skills which will enhance their employment prospects. The employment skills vary across sectors; as they consistently demand for competency in communication and presentation skills; problem solving skills; critical thinking skills, social development and interaction skills; as well awareness of the external environment and its impact on the operation (Yorke, 2011). Therefore, the Tanzania's vision 2025 to become a middle income economy through industrialization will be attained through guiding the graduates to acquire and develop appropriate knowledge, skills and abilities (KSA) demanded in the labor market.

Despite the movements for development of employability skills to have a long history with its roots in less uncertain economic times, a number of countries in the world still proceed handling the matter (Rovio-Johansson & Tengblad, 2007). For example in the United Kingdom (UK), Higher Learning Institutions through Students Employability Coordinating Teams (HISECT) practices help to develop employability skills and prepare students for the world of work (Elder, 2014). Within the UK institutions, the range of practices aimed to develop employability among the higher learning students are diverse and include: reflection on learning through Personal Development Planning (PDP); coaching and mentoring schemes that are available to all and to specific target groups to include international students (Yorke, 2011). In addition, universities are encouraged to partner with business and community organizations to develop programmes which would better prepare students for their professional and working lives (Rovio-Johansson & Tengblad, 2007). Fortunately some employers in UK are becoming actively engaged in providing support to institutions to ensure that students are well equipped with necessary skills that are required in the contemporary labour market.

Similar practice can also be seen in China where universities have designed programmes that enhance students' employability skills such as Graduate Gate-way Programme (GGP) that looks at teamwork, communication, career planning skills as well as interviewing and speed networking which all boost graduate confidence (O'Regan, 2010). There is also Career Information Team (CIT) that organizes 'Careers on Campus' events where students get opportunity to share what they know and acquire new information on career related matters. Additionally, the universities have joined-up working teams with key academicians who are 'Employability Champions' from within and outside the country targeting in disseminating and promoting career information and opportunities (Yorke, 2011).

In sub-Saharan Africa countries, the problem of employability skills among higher learning students is also not well addressed. There is mismatch between higher education and the job market demands outside academia (Nico, Tracy, Pillay, Bunting, & Maasen, 2011). African universities have been traditionally preparing students for public sector jobs while neglecting the needs of the private sector (Odeke, 2012). Although university degrees have been the entry requirement for various government jobs, still the skills needed for such jobs seem a problem to most graduates. It is reported that, most of them enter the job market without crucial employability skills required and lack ability to best fit into the available jobs (Waheeda, Nsa-Kaisi, & Alana, 2009).

In East Africa Region, the situation is also not well tackled. Most of the graduates lack important employability skills that lead to unemployment problem (Mbilinyi, 2012). Although universities are trying to make efforts to offer students with career information through the established career guidance and counseling programmes, still the problem exists. Taking an example of Kenya, Uganda and Rwanda, most universities in these countries have tried to develop career guidance and counseling programs to help students in various matters including social, personal and career issues. However, the students are reported not to be well equipped with employability skills (Odeke, 2012).

Besides the initiatives taken by universities in East Africa, the problem of employability skills among university graduates still exists. This is evidenced in the study findings by the Inter-University Council for East Africa (IUCEA) which regulates higher education in the East African Community's five countries; Burundi, Kenya, Rwanda, Tanzania and Uganda. IUCEA confirms long-held concerns among employers that most graduates are not fully prepared for the job market. The study shows that Uganda has the worst record; as almost 63% of the graduates were found to lack job market skills. It is followed closely by Tanzania, where 61% of the graduates are ill prepared. In Burundi and Rwanda, 55% and 52% of graduates respectively perceived to be competent. In Kenya, 51% of the graduates were believed to be unfit for jobs (Mghweno, Mghweno, & Baguma, 2014). These data indicate the necessity for HLIs in East Africa to have deliberate efforts to offer career information to students that enhances their employability skills to make them compete confidently in the international and local labour markets.

In Tanzania particularly, graduates' employability skills is also a problem. Most of the graduates lack employability skills due to various factors including lack of career information and proper career preparations (Amani & Sima, 2015). However, there are some initiatives to address the problem, albeit still more efforts need to be done. In realizing the importance of equipping graduates with necessary skills needed in the labour market, the government of Tanzania through the Ministry of Education and Vocational Training advised schools and HLIs to institutionalize career counseling services as an integral part of country's education system (Chireshe, 2011). Some of the institutions especially, private institutions have been trying to offer guidance and counseling services to students however, the focus does not directly respond to students' career competence development (Amani & Sima, 2015). Effective career guidance and counseling services are needed to advice curriculum implementations in HLIs to equip students with knowledge and skills demanded in the competitive industrial economy. It should also link the students with the potential employers to ensure that labour supply and demand are equitably met to contribute on economic development in the country.

OBJECTIVES OF THE STUDY

The main objective of the study was to assess the adequacy of career guidance and counseling in promoting university students' employability competence. Exploring the availability of Trained Career Counselors in HLIs; Assessing the adequacy of career guidance and counseling in HLIs and investigating the role of career guidance and counseling in promoting students employability skills were the specific objectives.

METHODS

The study was conducted in two selected universities, the University of Dodoma – College of Education (UDOM - CoED) and St. John's University of Tanzania (SJUT). The selection of these two institutions was based on the great number of graduates produced each year that represent the picture of other graduates in Tanzania. The study employed mixed approach through descriptive design that incorporates elements from both qualitative and quantitative approaches. However, qualitative approach was dominant since the study itself is mostly qualitative in nature. The targeted population included undergraduate students, lecturers and wardens from UDOM and SJUT. Similarly, this study employed purposive sampling and simple random sampling to obtain a sample of one hundred and twenty three (123) respondents whereby, 19 were lecturers (11 from UDOM-CoED and 8 from SJUT); 5 wardens(3 from UDOM-CoED and 2 from SJUT); 99 students (70 from UDOM-CoED and 29 from SJUT).

Data Collection

Data were collected through Questionnaires, Focus Group Discussion, Semi-structured interviews and Documentary Analysis. Questionnaires were used to collect information from students, lecturers and wardens. Focus group discussion was employed particularly to collect data from students, while the interviews were conducted to lecturers and wardens. Similarly, Documentary analysis was employed to appraise documents obtained from UDOM and SJUT such as course outlines, academic prospectus, academic advisors' guidelines, teaching practice guidelines, students' progress reports and other related documents.

FINDINGS AND DISCUSSION

Availability of Trained Career Counselors in HLIs

This objective sought to investigate the availability of trained/professional counselors who are solely employed to provide services in career guidance and counseling in HLIs. Data were collected through interviews with lecturers and wardens while focused group discussion was used to students. The following Table 1 presents the analyzed data from lecturers and wardens.

Table 1. Availability of Trained Career Counsellors in HLIs

S/N	Items	Lecturers				Wardens			
		UDOM-CoED		SJUT		UDOM-CoED		SJUT	
		F	%	F	%	F	%	F	%
1	Professional counselors	0	0%	0	0%	0	0%	0	0%
2	Lecturers	5	45.45%	4	50%	1	33.33%	1	50%
3	Wardens	6	54.55%	3	37.5%	2	66.67%	1	50%
4	Social worker	1	9.09%	1	12.5%	0	0%	0	0%
Total		**11**	**100%**	**8**	**100%**	**3**	**100%**	**2**	**100%**

Source: Field Data (2017)
KEY: F = Frequency, %=Percentage

From Table 3.1 above the data shows that, career guidance and counseling to students is mostly provided by lecturers and wardens. It was however revealed that, there were no professional career counselors solely employed to offer such services. For example, out of 11 lecturers from UDOM-CoED no one pointed that there was professional counselors existing in their institution. Similar findings were observed from SJUT whereby, both lecturers and wardens reported not to have professional counselors in the institution. This might compromise the possibility of HLIs' students from acquiring adequate employability skills needed in the world of work. The implication is that, absence of trained career counselors compromises the opportunity for students to have an access to career information that would foster their employability competence. This situation ultimately makes it difficult for students to have full support and confidence in important areas such as career, social and personal skills.

In most cases wardens were reported to be among the available and referred counselors within the university. However, some of them revealed not to have received formal trainings in professional guidance and counseling. This was also true for the lecturers whereby, very few pursued guidance and counseling courses in their bachelor and master degree compared to those who did not have such training. Therefore, apart from providing academic support to students, lecturers were trying at their level best to deal with students' career, social and personal issues although they are not doing it in a professional way.

Aroko (2014) supports the above findings by revealing that, in most of higher learning institutions in Tanzania, there were no professional counselors to help students in their career, personal and social needs. Teachers or sometimes some of the administrative staffs took the responsibility. However, these counselors were found to have received partial knowledge and skills in guidance and counseling. Similarly, the study findings by Odeke (2012) on guidance and counseling in secondary schools and teacher colleges in Kampala also concurs with the current study findings by arguing that, in most of the secondary and teacher colleges, there were no professional counselors to deliver the services, few people from within the institutions were chosen by the institution's management to offer the services to students. In addition, these selected counselors were seen to have little knowledge and skills in professional career guidance and counseling. They were mostly delivering the services in informal ways depending on the counselor and client's wishes. This implies that, the lack of competent career counselors was not a problem for HLIs only but also for secondary schools where students starts to make up their mind in relation to career choice and development. Therefore, this study proposes that, more efforts has to be taken to ensure that, students' self-awareness on employability issues are well addressed in lower and upper levels of education.

Similarly during the discussion, students revealed to have been consulting lecturers quite often when they were facing academic problems while personal and social problems were presented to wardens. For example, during the focused group discussion with students at UDOM-CoED, some of them were quoted saying that:

*We normally visit wardens' offices whenever we face challenges in our relationships or when we face family problems that affect our career development. Sometimes it is difficult to talk these matters to our lecturers because they are somehow far from us. Their availability in the college is difficult compared to wardens who are always available (***UDOM-CoED, 14th March 2017)**

The findings above show that, dual relationship that exists between students and their lecturers. This restricts the students from seeking help from them. But this might also be the same with the wardens where by some of the students shy away to air out their inner career problems as wardens are perceived to be responsible for disciplinary cases. Therefore, this study revealed that, lack of professional career counselors is a bottleneck for students' career information accessibility and hence limits their employability competence.

On the same opinion, FGD at SJUT revealed that:

We do not have professional counselors employed to give guidance and counseling to us. We usually go to lecturers who are somehow close to us when we face challenges or to seek for academic and career information. Sometimes we share our problems with wardens in our hostels or even share our problems to fellow students in the college. But if we could have someone who would be merely dealing with career guidance and counseling issues, it could be easier for us to consult him/her **(SJUT, 17th March 2017)**

The above quotation reveals that, career information access depends much on the availability of professional counselors. The multiple roles played by lecturers and wardens were hindrances for them to satisfactorily help students in need of guidance and counseling services. However, apart from being responsible for providing career guidance and counseling; lecturers and wardens were found to lack important professional qualifications in career guidance and counseling. They were usually helping students in ways they found more effective to them rather than following principles of the profession. Therefore, the task to offer comprehensive career guidance and counseling such as organizing career weeks, career visit to potential employers, linkage to local and overseas career development programmes (institutions) and the like were almost not practiced by lecturers and wardens because of their multiple roles in the institutions. Universities need to have professionals who are competent and solely employed to offer career guidance and counseling services.

By combining the findings of the study under discussion and literatures, it can be argued that; promoting graduate employability skills through career guidance and counseling services cannot be achieved unless universities have deliberate action to formalize the services. Employing competent and trained career counselors is very important for students to access relevant and adequate career related information. Concentrating on academics alone is not enough; students need to be supported in their journey to career development and employability competence as well.

The Adequacy of Career Guidance and Counseling Services in HLIs

This objective aimed at providing data on the extent to which career guidance and counseling services is adequate in HLIs in promoting students' employability competence. Data collected from lecturers and students through questionnaires is as presented in Table 2 below:

Table 2.The Adequacy of Career Guidance and Counselling Services in HLIs

S/N	Statements'	Lecturers				Students			
		UDOM-CoED		SJUT		UDOM-CoED		SJUT	
		F	%	F	%	F	%	F	%
1	Very high	0	0%	0	0%	0	0%	1	3.45%
2	High	1	9.09%	0	0%	05	7.14%	1	3.45%
3	Very low	3	27.27%	2	25%	30	42.8%	12	41.38%
4	Low	7	63.64%	6	75%	32	45.7%	15	51.72%
5	No response	0	0%	0	0%	03	4.29%	0	0%
Total		**11**	**100%**	**8**	**100%**	**70**	**100%**	**29**	**100%**

Source: Field Data (2017)
KEY: F = Frequency, %=Percentage

Based on the data in Table 3.2 above, it appears that, career guidance and counseling service is not adequately provided to students. The majority of the respondents from the two categories above had an opinion that, career guidance and counseling in HLIs was moderately accessed by students. This indicates that, promoting students' awareness on career related issues was difficult since career guidance and counseling play a great role in providing career related information. Amani and Sima (2015) had the same arguments on the above findings with the view that, career guidance and counseling in higher learning institutions was provided. The majority of students were receiving guidance through orientation once they had joined the university. However, many of them reported that they were being provided with general guidance about social welfare and university by-laws, but little information was being given regarding the chosen courses. In spite of the information received during orientation concerning the courses, many students were not allowed to change their courses except for special reasons.

On this regard, Chireshe (2011) argued that, career guidance and counseling services are inadequate in educational institutions including higher learning institutions. In most cases, students are provided with partial information on what they are going to learn in the class as well as its implication in the world of work. As a result students fail to make a clear connection between classroom teaching and the labor market demands and hence compromise their employability competence.

Apart from their importance in developing students' career competence, career guidance and counseling were seen not given much consideration by HLIs. As it was reported by the current study findings and the reviewed literature; most of students were being provided with insufficient career information on various cases including course selection, career selection, career adjustment and management. More often, students were working hard to achieve high grades in their examinations. However, this did not guarantee their employability skills. This is because employability is not about just having high marks or degree and getting a job. Rather, employability is more than simply developing attributes, techniques or experience just to enable a student to get a job, or to progress within a current career. It is about developing critical, reflective abilities with a view to empowering and enhancing competence to meet demand of work environment (Fallows & Steven, 2000; Shavelson, 2010).

The above argument was supported by the following response from one of the interviewed wardens:

*Career guidance and counselling services are not sufficiently given to students. There are no formalized career programmes such as career days within our institutions, no professional career counsellors to take the responsibility; at least students acquire career information through teaching practices, seminar presentations and internships.(***Warden "W"; 16th March 2017, SJUT).**

The quotation above indicates that, career guidance and counselling services are provided in HLIs. However, the services were inadequate. Lack of trained career counsellors and formalized career related programme prohibit sufficient students' acquisition of career information that could help to promote their employability competence. Fulgence (2015) proposed that, most of higher learning students lack employability skills due to inadequate career guidance and counselling within the university. Given the current state of the labour market and motive to attain middle income economy through industrialization, HLIs need to focus on employability skills and prepare students for world of work. Employability is also of immediate concern to students to adjust in industrial led economy by either creating or competing successfully in the available employment opportunities. This is because by attending university, students not only acquire in depth subject knowledge but also their employment prospects should be enhanced

(Rahman *et al,* 2012). In this aspect therefore, HLIs have to establish various career related programmes within the university to enhance students' employability skills.

On the same view, another warden from UDOM-CoED had this to say;

*Unavailability of formalized career guidance and counselling services within the institution, leads to low access to students' career information. However, through seminar presentations students get an opportunity to orient themselves on how they can express themselves for the future job interviews. (***Warden "M"; 16th March 2016, UDOM-CoED).**

The above findings imply that, despite being institutionalized, higher learning students are provided with opportunity to exercise their employability skills. Through seminar presentations, students learn how to sell their ideas to their fellow students and lecturers. This also helps them develop confidence and self-awareness which are important in determining their employability competence. As it was argued by Mghweno et al. (2014), self-confidence helps an individual to present his/her knowledge on a particular field. Jackson, (2013) also cement on the study findings by arguing that, university has a big role to play in ensuring that, students are well oriented for the future employment. Apart from providing much support on academic achievement as the current practice, career, social and personal guidance and counselling are also important to complement students' interpersonal skills.

Generally, the study findings at this particular objective have shown that, there are inadequacy provision of career guidance and counselling in HLIs. In most cases, lecturers and wardens were found to be the ones offering the services to students. However, the provided services were not satisfactory to enhance students' employability skills. Partial career information was given to students with limited chances to improve their employability skills. The reviewed literature also emphasized that, career guidance and counselling play a big role in enhancing students' employability competence and hence, HLIs are urged to formalize the services to enhance students' academic achievements.

CAREER GUIDANCE AND STUDENTS' EMPLOYABILITY SKILLS

By reflecting on the general aim of the study that focused on improving students' employability skills through career guidance and counseling; this objective was developed to facilitate the collection of relevant data from the respondents. An interview was used to collect data from lecturers and wardens while focused group discussion was used to students. Tables and voices were used to present the findings as follows:

According to the findings in Table 3.3 above, a number of informants reported that career information plays a big role in enhancing employability skills through facilitating self-awareness, building self-confidence and sharpening students' knowledge and skills. Almost half of the respondents from UDOM-CoED and SJUT revealed that, when students are provided with career information they are able to develop self-understanding which includes knowing their strengths and weakness.

By knowing themselves, students can also develop self-confidence which in turn provides opportunity for them to compete in the current competitive labour market. The study further found that, it is difficult for students to identify their potentials by themselves; however through guidance and counselling, they will be able to get information that will open up their eyes to career related issues. These results were supported by one of the interviewed lecturers and wardens who reported that:

Table 3. Role of Career Guidance on Students' Employability Skills

S/No	Key quotes	Lecturers				Wardens			
		UDOM-CoED		SJUT		UDOM-CoED		SJUT	
		F	%	F	%	F	%	F	%
1	Career information facilitates self-awareness development	3	27.27%	3	37.5%	2	66.67%	1	50%
2	Career information helps to build self confidence	4	36.36%	2	25%	0	0%	1	50%
3	Career information helps to sharpen knowledge and skills	3	27.27%	2	25%	1	33.33%	0	0%
4	Career information facilitates decision making	1	9.09%	1	12.5%	0	0%	0	0%
Total		**11**	**100%**	**8**	**100%**	**3**	**100%**	**2**	**100%**

Source: Field Data (2017)
KEY: F = Frequency, %=Percentage

*It is true that, through career guidance and counselling, students get information relating to various issues including career matters. For examples, they can be informed on how to choose careers of their expectations, how to develop and maintain them in the future (***Lecturer "Y"; 17th March 2017, UDOM-CoED).**

The implication of the quotation above is that, HLIs in Tanzania have not yet initiated the provision of the services in a professional way. It might be the task thought to be delivered by any one rather than professional career counsellors. However, for the purpose of addressing students' career needs effectively, there should be comprehensive support provided in a professional way. Each student has his/her own personal career needs, therefore, it is not easier to identify each of them; it needs knowledge and skills (Niles & Harris, 2013; Shavelson, 2010). However, with professional career counsellors, and structured career programmes it will be possible to facilitate students' employability enhancement. In the same way, another respondent added by saying that:

*There must be a professional counsellor to take charge of guidance and counselling services in the institution. We have been witnessing a number of cases that needed a professional help in guidance and counselling. But still the task is left to us who are not specialized in the area. (***Warden "Y"; 16th March 2017, SJUT).**

The findings above indicate that, despite their importance, career guidance and counselling is still taken for granted in HLIs. In most cases, lecturers and wardens were found to be responsible to provide the services at their own risks. This might be a hindrance for students to improve their employability skills. Lack of professionalism in career guidance and counselling threatens students' access to adequate career related information.

Such findings concur with the study by Jackson (2013) which reported that, career information is a tool in facilitating employability skills to graduates. Again, a prudent and effective way to inform students on career issues has been through career guidance and counseling services. Therefore, it is a role of HLIs to establish well planned career guidance and counseling services to provide students with an access to career information and employability. Similarly, Akkermans *et al*. (2013) support these findings by arguing that, it is not about high GPA, rather graduates need to have significant employability skills such as creativity, self-awareness, confidence and self-dependence that would cement their chances for employment. Correspondingly, students had the same view as the findings shown in the following Table 4

The findings in the table above show that, career guidance and counseling services are very essential in the development of employability skills among students. Majority of the respondents on this case reported that, through career guidance and counseling services, people get to know their hidden potentials and interests crucial in meeting their career expectations. When students are well informed on career issues, understand labor market requirements that help them to adjust their educational efforts and align

Table 4. The Role of Career Guidance on Enhancing Students' Employability Skills

S/N	Key Quotes	UDOM-CoED		SJUT	
		F	%	F	%
1	Career information facilitates self-awareness development	10	14.29%	4	13.79%
2	Career information helps to build self confidence	15	21.43%	5	17.24%
3	Career information helps to sharpen knowledge and skills	20	28.57%	10	34.48%
4	Career information helps to link academics with world of work demands	15	21.43%	6	20.69%
5	Career information facilitates decision making	10	14.29%	4	13.79%
Total		**70**	**100%**	**29**	**100%**

Source: Field Data (2017)
KEY: F = Frequency, %=Percentage

their wishes into realities. The findings further show that, through career guidance and counseling services students understand the implications of what they are studying at the school towards their career journey or labor market demands.

Based on findings above from students are congruent to those given by lecturers and wardens from UDOM-CoED and SJUT. This implies that, career guidance and counselling services facilitate the development of employability skills among students. It is through these services that students get an opportunity to know themselves and link that understanding to the world of work. As it was found that, university education it is not about achieving high grades; rather students need to understand the use of those high grades in their careers. A positive attitude plays a big role in developing ones career and maintains it (Fulgence, 2015). Nevertheless, this can also be shaped through formal career guidance and counselling to students. Aroko (2014) also support the study findings with the view that, while subject knowledge is an important factor for students' employability; however, they should possess reflective skills to help them deliver what they learnt in the class. Students need to be acquainted with good communication skills, positive thinking, creativity, social skills, and flexibility to enable them not only to get a job but to maintain and develop within employment.

RECOMMENDATIONS

This study recommends the following;

- HLIs should first recognize the importance of career guidance and counseling services to students to enhance their career information and skills for succession of their employability.
- HLIs need to initiate career programmes within higher learning institutions that will offer opportunities for students to understand their career journey and hence achieve their career expectations.
- Field practicum on various specializations apart from teaching should be well organized and implemented for the purpose of providing opportunities for students to practice what they have learnt in the class and therefore, get exposure and increase their employment opportunities.
- Various programmes such as organizing career weeks, career visits and career clubs through students' governments should be emphasized for students to share experiences on career issues and support each other on career related matters.

CONCLUSION

In the light of the study objectives and discussion of the research findings, the following conclusions are made: From the two institutions studied and based on the findings from the study subject; first, there were no professionals in career guidance and counseling employed solely for offering such services, the task was left to lecturers and wardens some of whom lack formal training for such responsibility. Second, there is inadequate career guidance and counseling services in HLIs. Students are provided with partial career information that threatens their employability competence to further the industrial economy. With limited knowledge on career issues and employability skills, students are at the greater risk of unemployment. In addition, the study revealed that, institutional based strategies to improve students' employability skills were not sufficient. The selective career guidance and counseling services had failed to generate employability skills for the students. It was seen that, more efforts were devoted in academic guidance than other areas such as career, social and personal which are also crucial ingredients for students' employability skills. Therefore, the problem of inadequate employment competence among HLIs students might also impact on the national efforts of attaining middle income economy through industrialization that demands for people who are creative and innovative, coupled with extra skills on top of good academic performances.

FUTURE RESEARCH DIRECTIONS

This study focused on the role of career guidance and counseling in enhancing employability skills among students in HLIs. However, the experiences from the field revealed that career guidance and counseling services were not yet formalized in HLIs. Therefore, it is recommended to have research done to find out how career guidance and counseling services can be implemented in HLIs to prepare students for the world of work. It was also limited to one Urban district, that is, Dodoma Municipality. It is therefore recommended the study be replicated to other regions and cover a wider part of Tanzania in order to provide the understanding on the importance of career guidance and counseling services to students in both secondary and HLIs.

The study recommends for action researches to be done in the area of career guidance and counseling since these levels seem to be the foundations of career journey to most of students in Tanzania. Since study used mixed approach deign with questionnaires, interviews and focused group discussion in collecting data from the respondents, however, it was thought that, purely qualitative could be very much suitable since most of the data are individual perceptions and opinion based.

The sample used in the current study were students, lecturers and wardens that discovered to narrow information from other categories such as policy makers and administrative. Therefore the study recommends further researches to be done that will include various participants from different government and non-government organizations to provide more information on how career guidance and counseling services can be implemented in secondary schools, tertiary institutions and HLIs.

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KEY TERMS AND DEFINITIONS

Career: Means variety of jobs taken by a person within the field in various periods of time throughout one's work life based on his/her formal training.

Career Guidance: Services designed to help students in universities to get career information and skills that will help them to advance themselves in career related matters to include ability to search obtain and maintain the job.

Career Guidance and Counseling: Refers to the services that include all actions which deal with giving students information and psychological assistance that may directly affect their decisions and choices about their schooling and employment.

Employability: Capacity of a graduate to get employment, maintain it and being able to be employed in his/her entire career life.

Employability Skills: Skills that enable graduate to get a new job, work successfully and remain employable within his/her career long life.

Chapter 12
The Influence of Role Play Teaching Technique on English Performance Among Learners With Hearing Impairment, Kenya

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ABSTRACT

Role-play is a holistic pedagogy in teaching. The technique instills critical thinking in pupils, enhances emotional intelligence, and improves morality and forms of realism about information. The chapter examines the influence of role-play teaching technique on English performance among the pupils with hearing impairment in Kenyan primary schools. The chapter looks at several elements of role-playing such as games, real-life expression, imitation, positive impact, and the challenges facing the effective implementation of the use of role-play in teaching and learning in primary schools of learners with hearing impairment. This study is a desktop review and only relies on secondary materials. The literature was sourced in various databases. The review revealed that role-play improves the self-efficacy of the learner since the technique is grounded in reality. Learning is enhanced when the activities involved are memorable and engaging.

INTRODUCTION

The Universal Declaration of Human Rights (1948) article 26 stipulates that children with special needs have a right to education as it is a fundamental human right. In Africa, Kenya is considered to be the most advanced country in the provision of special education. The Kenya Institute of Curriculum Development (KICD) has been at the forefront in the development of policies and strategies that schools should adopt and enhance quality education for learners, inclusive of those with hearing impairment. Despite all efforts made by the Kenyan government to provide education to learners with special needs, learners with hearing-impaired still lag behind in the National examinations more so in English subject (MOE,

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2015). Several factors have been attributed to their poor performance among them being poor teaching strategies, lack of teaching and learning resources, incompetent personnel in the field of sign language, and many others. Learners with hearing impairment always need approaches that will engage them and improve their learning skills. This chapter looks at the Influence of role-play teaching technique on English performance among learners with hearing impairment in Kenya.

According to Emre (2015) role play is an active teaching technique that integrates theatre, imitations, games, and expressions of life realities in any educational topic. It involves, assigning roles, objects, or purpose to one or more members in a group. Role-play may be steered by a single individual, two persons, or in sets of persons (Mweri J., 2014). Play is a behaviour that is self-motivated, freely chosen, process-oriented, and enjoyable (Awopegpa et al., 2013, p, 99). Using role play as a teaching strategy could yield unflinching performance among the deaf (Emre, 2015). Therefore, this chapter addresses the impact of games on English performance of learners with hearing impairment, the extent to which imitation teaching approaches have on English performance among children with hearing impairment, the extent to which real-life expressions influence English performance among learners with hearing impairment. In addition, it analyses the positive and negative impact of role-playing on English performance among learners with hearing impairment, and investigate challenges facing the implementation of role-play teaching methodology.

In Kenya, English language dominate politics and commerce, spheres that are responsible for industrial development (UNICEF, 2016). The language is hailed for creating inclusive society (Mweri J., 2014). It is for this reason that the article 7 of the Kenyan constitution recognizes Swahili and English as co-official languages (Njogu, 2020). Moreover, the language is a de facto international language for business, advertising, academics media among other economic and industrial development (Ufier, 2017). Kenyans teach English as part of school curriculums and stand-alone subjects. English is the language of instruction in all Kenyan learning institutions. It is believed that language skills promote international trade and better workforce.

The understanding of English language by LHI not only promote inclusivity in industrial development but also enables the learners to be socially inclusive in the society. Studies carried out by Chabari and Awori (2017) state that the deaf student and pupils have continuously performed poorly in English in Kenya National Examination, both at Kenya Certificate of Secondary Education (KCSE) and Kenya Certificate of Primary Education (KCPE). The extensive studies blame poor performance on teaching strategies employed by the teachers (Chabari & Awori, 2017; Maina, 2018).

In teaching English, Chabari and Awori (2017) identify teaching new words and using them in sentences, continuous writing and copying sentences. On the other hand, Maina (2018) observed that teachers use old methods such as lecture and group discussion. Mweri (2014) criticized these pedagogical strategies, the scholar argues that they are a state of denial since they focus on teaching the deaf how to speak. This analysis of literature provides evidence of role play as effective teaching strategy in solving the chronic poor performance in English among the LHI.

"When I hear I forget, I see I remember, I do, I understand (Chinese old saying). "Tell me, and I will forget. Show me, and I may not remember. Involve me, and I'll understand" (Ancient American Proverb).

Globally, it is estimated that 15% of the world population are living with a disability (World Health Organization, 2011). More, than 400 million people live with hearing loss. Of this population 34 million are children. In Africa, 300 million people are believed to be disabled. In Kenya, 10% of her 44 million population is believed to be disabled (Emre, 2015). There are no recent statistics on people living with disabilities in Kenya. However, the survey conducted in 2011, grouped disability in six categories this include; Mobility 1.16 million people (26.2%), Visual-84 million people (19.09%), Auditory-.55 million people (12.4%), Speech-45 million people (10.6%), Cognitive-36 million people (8.2%) Other-1.05 million people (23.6%) (Lazar & Stein, 2017). The deaf falls under speech disability and it is estimated that there are over 300,000 people with hearing impairment.

Communication forms the foundation of learner interactions within an institution. Upon enrolment in Kenyan special needs schools, learners with hearing disabilities take up Kenyan Sign Language and English, to aid their communications (Kenya Institute of Curriculum Development, 2018). The teaching of English in Kenya involves four skills; listening, speaking, reading, and writing. Children first listen, then speak, after which they read and write. However, children with hearing deficiency develop observation and signing skills before they read, and write. Once they can observe and sign, the skill of reading and writing can now be developed just like that of their hearing peers (Njogu, 2020). Signing or speaking supersedes writing. Learners have to enrich themselves with efficient vocabulary to enable them to communicate effectively (Mweri G. J., 2014)

Learners who have difficulties with hearing have limited vocabulary because of a lack of language exposure (Chabari & Awori, 2017). Language is a tool for learners to learn, regulate, and manage one's behaviour and emotions (Cohen, 2010). At a tender age, children learn language through imitation. Those with hearing impairment are incapacitated when it comes to language imitation, as they are unable to grasp what is being said due to the nature of their disability. Hearing impairment affects learner's language, intelligence, and speech development thus affecting their learning (Lazar & Stein, 2017). Learners with hearing impairment need to establish support within the educational system to facilitate their acquisition of knowledge (Chabari 2017). Studies postulate that pupils with hearing impairment constitute the most delicate category of society's population. Hence, they need support for good environmental learning. Among the factors, determining the success of learning is the methodology of teaching used by the teachers. A teaching strategy used by the teacher to teach is very important, as it can make a learner develop a liking or hatred for the subject being taught (Maina, 2018).

The teaching strategies used can make learners improve in the performance or perform poorly in a given subject. The teaching component is essential in evaluating the process of learning from the preparation stage to feedback from learners (Ufier, 2017). It has to be given much attention to enabling both teachers and students with hearing difficulty to realize their performances in all subjects including English. It is also necessary to remediate learner's stimulating their desire for education to the highest level from primary schools to colleges. To achieve this, a combination of strategies is required, since a single strategy is not effective to all the learners.

Learners have different understanding levels, hence, the application of strategies should be dynamic to accommodate all pupils helping them to learn and achieve good results (Samoei, Adoyo, Kochung, & Okutoyi, 2020). Studies postulate that motivation plays a significant role in learning. Role-play technique is important to students who have hearing problems, as they need to be motivated and become part of the learning process (Satterlee, 2019). Learners with hearing impairment are normally discouraged when taught without full involvement.

Studies shows that teachers have devised activities that involve learners and assist them to improve their social skills like patience, team spirit, and cooperation, obeying rules, and regulations (Awino, 2019; Chabari & Awori, 2017; Kajirwa, 2009). The active involvement of these learners in lessons are also important. Therefore, participatory learning strategies borrow from the idea that pupils with hearing impairment need memorable activities to necessitate them to understand what they are learning (Lazar & Stein, 2017). It is the role of the teacher to stimulate them to learn through using instructional strategies, this prompts a search for an effective strategy to fill the lacuna. The study combed the selected role-play elements such as games, imitation, and real-life expressions.

It is also believed that the teaching strategy not only help the leaners to acquire knowledge but also enable them to acquire life skills that nurture them for their future role in employment. Hence, such skills are important for nurturing industrial development in a country (Quittner, et al., 2016). There is evidence showing relationship between teaching strategies and expertise development both in language and technical skills (Shehu & Shittu, 2015). Language skills are significant in conducting and transaction in all sectors and industry (Maina, 2018). It is for this reason that the author feels that language expertise of learners with hearing impairment is significant in nurturing industrial development in Kenya and beyond.

A study by Kaovere & Mbaukua (2018) on "The Role of Role Play as a Teaching Method on Social Skills" reveals that role play as a mode of teaching enhances social interaction for learners in and outside the classroom. Other scholars' consent to this notion that education is when happenings are interactive and unforgettable. Therefore, role-playing is fun and motivating to pupils with hearing impairment it enables them to express themselves forthrightly as the classroom world is broadened to accommodate the outside world (Harmer, 2003).

Problem Statement

Pupils with hearing problems have been scoring low grades in English as a subject countrywide. Moreover, they face difficulties in learning. Their understanding of writing and speaking English is very poor. This has made them perform poorly in their national exams while recording poor marks in their KCPE results due to the inability to write and speak constructive English. If this problem persists, students with hearing difficulties may not find space in the employment sector, may not proceed to tertiary institutions hence making them prevalent to poverty. The teaching strategies of learners with hearing problems should be realistic with the language of learners. They should imbue learners with hearing problems with knowledge skills and attitudes which will make them perform better. There however exist very few studies addressing the actual influence of teaching strategies in English such as imitation, games, and real-life expressions as forms of role-playing on the grade scores of students with hearing difficulties in Kenya. Therefore, this study is set to examine the influence of role-playing on teaching and learning of English to students with hearing difficulties in Kenya, with a special interest in how it enhances pupils learning in different ways.

Objectives

1. To evaluate the impact of games on English performance of learners with hearing impairment in Kenya.
2. To determine the extent to which imitation teaching approaches have on English performance among children with hearing impairment.
3. To examine the extent to which real-life expressions influence English performance among learners with hearing impairment.
4. To analyse the positive and negative impact of role-playing on English performance among learners with hearing impairment.

5. To investigate challenges facing the implementation of role-playing in teaching methodology among learners with hearing impairment in Kenya.

THEORETICAL FRAMEWORK

Role-play teaching technique hinges upon the Social Learning theory. The social learning theory was developed by Albert bandura in 1979. The theory posits that new behaviours can be acquired through the observation and imitation of others (Bandura,1979). Learners with hearing impairment learn more effectively through observation and imitation, they use visual cues more often as compared to other cues. This theory integrates both cognitive and behavioural theories to result in a comprehensive model accounting for the diverse range of learning experiences that take place in the real world. The social learning theory developed by Bandura and Walters (1963), is composed of several tenets.

First, the theory proposes that learning does not constitute exclusive behavioural acquisition; rather, it incorporates cognitive processes occurring within a social environment (Ippolito & Horsburgh, 2018). The minds of learners with hearing impairment develop depending on the surroundings of the environment in which they inhabit. A child with hearing impairment can develop signing skills faster within the environment of fellow children of the kind as compared to that living amongst hearing peers. Secondly, the theory states that learning can take place either through the observation of behaviour, or vicarious reinforcement, observation of the consequences of the behaviour (Cohen, 2010).

Thirdly, learning involves a defined process of observing, the abstraction of lessons from the observation, and the articulation of decisions on the performance of the behaviours, modelling or observational learning (Alos-Ferrer and Schlag 2009). This implies that learning can take place even without a noticeable behaviour change. Learners with hearing impairment need not exhibit the behaviour learned instantly but can apply what they learnt later by solving their problems in the future. The fourth tenet of the theory states that despite the role played by reinforcement, it is not entirely responsible for learning. Finally, the fifth tenet of the theory is reciprocal determinism; whereby behaviour, cognition, and environment mutually influence each other during learning, and the learner is not reduced to a passive recipient of information. This applies to learners with hearing impairment when role play is used in their teaching and learning, learning becomes child-centred in which learners participate actively.

Theories that typically depict stimulus-response rely fully on the presence of a stimulus, a direct experience, to result in a behaviour (Ippolito & Horsburgh, 2018). Bandura, by the social learning theory, opened up the field of mechanisms in learning by introducing the possibility of observation. He added upon this ability of creation by implying human beings could symbolically simulate actual outcomes. Using these models, it is possible to postulate that role-playing teaching strategy is a consequence of the typical stimulus-response theory and determinism forms of an integral part of social learning.

Therefore, the assumption is made that the influence between an individual's behaviour and the environment is reciprocal; one influences the other and vice versa (Ippolito & Horsburgh, 2018). In addition, the behaviour of an individual, his qualities, and the environment reciprocally influence each other. For example, children with hearing impairment who are exposed to violent video games are likely to become violent. Consequently, the violent nature of these children would prompt them to play violent video games more often (Kajirwa, 2009).

Bandura (1979) laid down three types of modelling from which the social learning theory draws heavily. The first is the live models, where an individual displays the desired behaviour. Children with hearing impairment display the desired behaviour by observing and imitating what their teachers do. Secondly, verbal instruction, whereby a person provides a detailed description of the desired behaviour and gives instruction to the recipient about how to display the behaviour. It is through verbal/signing that pupils with hearing impairment learn to take in instructions and carry out activities as instructed. The final model is symbolic, which constitutes the use of media in modelling, including the internet, television, radio, and literature for modelling. The characters to be imitated are either real characters or fictional ones. The type of model and a sequence of behavioural and cognitive processes that include the following, define the information gleaned from an observation.

For learners to learn effectively they have to pay attention to the behaviour being modelled. Studies done on this process have demonstrated that the learning outcomes of the interaction are boosted by the awareness of what is being learned and the reinforcement mechanisms of the modelling (Emre, 2015). The cognitive and perceptual abilities, past performance, and arousal of he observer, and relevance, functional value, affective valence, and novelty of the behaviour event affect the attention, the below mentioned social factors contribute to attention in learning.Retention – the ability of the observer to reproduce the behaviour displayed depends on their ability to remember the components of the behaviour. Similar to attention, cognitive rehearsal, cognitive capabilities and the complexity of the behaviour influence the retention capacity (Awopegpa, 2018). Bandura described the cognitive processes that determine retention as verbal and visual. In more complex situations, verbal descriptions of the models are used.

1. Reproduction – Bandura implied the implementation of the model in reproduction rather than the direct propagation of it. Therefore, reproduction would require a degree of cognitive skill, and rarely some sensorimotor capabilities. However, reproduction often proves challenging in cases of behaviours that require reinforcement via self-observation (Alos-Ferrer and Schlag, 2009). Therefore, the input of others is required to provide self-correcting feedback. Recent studies support this perspective as they prove that the performance of participants is enhanced when there is effective feedback that helps in the correction and observation.
2. Motivation – the observer often decides to take up or reject an observed behaviour based on the expectations of the observer and the available motivations (Gibson, 2004). According to Bandura, motivations are determined by the functional value of the various behaviours within different settings, fundamentally basing on the social and environmental factors.

The attention of Learners with hearing impairment is built on visual cues, their attention span lasts longer if teaching is accompanied by teaching aids that can be seen and manipulated. A teacher who uses teaching aids is more likely to win learners' attention than one who lectures most of his/her teaching period (Awino, 2019). Learners with hearing impairment retain what they have learned more if involved in the learning by carrying out the activities themselves. If learners participate in role-play, they are bound to remember their roles and the impact it had on them unlike when told a story on the same. If faced with similar situations in the future, they can apply what they ones played to solve a problem. The Social Learning Theory by Bandura suites the study as it encourages motivating learning, paying attention, reproduction, and retention of knowledge (Kajirwa, 2009).

METHODOLOGY

This was a desktop study. The researcher relied on secondary material, empirical studies from different database were searched, evaluated, and synthesized for analysis of the chapter. The literature search was done through the Google Scholar database. The researcher used phrase searching and truncation techniques to acquire the significance of the review of the literature. Role-play teaching and role-play technique are some of the sayings produced after truncation. The sayings that were utilized included the influence of role-play teaching technique on English performance among junior learners and students with hearing impairments in Kenya. Throughout the text, the words students and pupils were substituted for learners.

Criteria of Inclusion and Exclusion

Upon carrying out the phrase search, 34,000 results returned on Google Scholar. The results were further filtered based on relevance and the desired time frame, which trimmed them down to 1000. Additionally, the concept of learners meant those who were undertaking primary school education, further narrowing the pool to 300. The fact that the study concerned the role-play teaching technique in English lesson delivery further diminished the sources to 40. Accessibility to full information, costs, and internet charges only left 8 sources that could be adequately reviewed.

The studies in this paper are primary with the data and subjects of the study collected, analysed then compared with an existing evidence pool. Sources used mainly qualitative and sometimes mixed study approach. The choice of sources harnessed in this study is validated as the topic focuses mainly on the qualitative outcomes of role-play teaching technique on English performance. Most of the studies employed focus and in-depth interviews, and observation to collect data, coupled with the administration of survey questionnaires to the school administrators and teachers. The use of quantitative data by some of the sources acts as an intermediary step to inform qualitative conclusions that constitute the subject of the study.

Appraisal Strategy

A schematic scan of the summaries and abstracts of the articles and journals available online formed the basis of the appraisal of the literature utilized. According to Bellet, Adams & Morris (2012), themes, analysis of data, validity, reliability, and viability of ethics are important components considered an appraisal. Besides, the limitations of the individual studies are evaluated. Summarily, the appraisal measures are determined by the link between findings and the original research question.

The strategy of Data Extraction

The extraction of data was informed by the study's year of publication, research objectives, criterion on sample selection, and concepts of collection and analysis of data. Considering the practice and policy impacts of the research question in the study, evidence extracted from the sources had to bear considerable acknowledgement. The resources that could be supported and verified were selectively gathered and prioritized through analysis of evidence hierarchy. The information collected from the studies was accrued through the indulgence of the respective texts.

Synthesis Strategy

A chronological and seamless account was obtained through a narrative synthesis of consolidated data and information. The narrative synthesis formed a decision-making basis for more research and advancement of policy as it used a transparent and systematic approach in creating an objective narration. Besides, a thematic approach was preferred as it amalgamates the important theories and themes that require discussion to avoid the unnecessary consideration of detail at the cost of vital coverage of content. Additionally, a systematic approach helps in maintaining study objectives insight so that the discussion is targeted.

ANALYSIS OF THE FINDINGS

Impact of Games on English Performance

A game is a system that engages one or two persons in an artificial play (Afael, Laura, & Sánchez, 2015). It is a competitive activity involving skills of two or more persons displayed according to a set of rules for own amusement or amusement of spectators (Maina, 2018). When games are used in teaching and learning, they encourage more fun for learners, contribute to their emotional, cognitive, and social development. Learners who are uninterested in learning always find games interesting when used in teaching and learning (Quittner, et al., 2016). Learners with hearing impairment find it thrilling when watching video games, they occupy their minds thus increasing their attention span.

Video games transcend the constraints of a single class. Matching games are a kind of entertainment for learners with hearing impairment, they also stimulate their thinking and application skills. Matching games enable learners to navigate problems on their own. When learners find they can solve the problem on their own, they feel encouraged and are motivated to carry on with the task at hand thus leading to interpersonal development. Teachers should use games in teaching and learning of pupils with hearing impairment since through games they can devise ways of solving problems naturally (Salvin 2006).

The usage of games in education is believed to have emerged from socio-drama. It was developed to assist pupils to get to know the subtler parts of literature, arithmetic, and some elements of science and social studies. Games are implicated in communication and linguistic purposes. In Kenya, several types of games have been identified to enhance English performance. Such games include chess, Sudoku, board games like scrabble, and video games (Afael, Laura, & Sánchez, 2015). However, these techniques are very unpopular and sometimes practised outside the classroom.

Studies support that games usage in teaching on the basis that they not only get learners involved in knowing more about the material but also in knowing how to put the skill in action by finding out more about alternatives (Maina, 2018). In addition, Samoei, et al (2020) observed that games enabled learners to explore novel solution, and find answers to problems. Mwangi (2016) adds that playing reduce anxiety caused by peer pressure amongst learners with hearing impairment. More empirical evidence show that games allow rehearsal time for learners to map out what they are going to say thus lowering anxiety (Kenya Institute of Curriculum Development, 2018). Moreover, games are the most appropriate means of finding initiative, solving communication problems, awareness of self, and working together as a team (Blatner, 2009).

Several studies have supported the use of games in teaching LHI (Emre, 2015; Kajirwa, 2009; Kenya Institute of Curriculum Development, 2018). Pointing out to the evidence that it enables LHI develop their vocabulary. Also, games wake up uninterested learners in the classroom, contribute to the development of communication, problem-solving, and creativity, which takes place naturally during the lessons.

In the western part of Kenya, Richard & Rodgers (2001) observed that pupils with difficulty in hearing scored well in the vocational course. The study reported that they are enticed to play cricket, which improves their interest in the courses they are doing. With such motivation teaching strategies there is no doubt that games contribute significantly in understanding skills. In support of games as a teaching strategy, studies in the United Kingdom Blatner (2009) and Deesri, (2002) argue that the technique helps in developing speaking skills. It is an effective technique for developing confidence and decreasing the shyness in the students as it fosters social interaction. This means that LHI who acquire such skills during the language lesson will have high chances to be employed in many industrial sectors.

On the other hand, using games in teaching the English language raise students' motivation and builds their confidence, which in turn promotes higher levels of understanding (Lazar & Stein, 2017). Games build learners' self-confidence and excellent self-image. Learners who possess great self-confidence and good self-perception tend to be successful in life unlike those with low self-esteem. For example, better English language will enable these students to have better curriculum vitae writing skills, and improve their job interview skills. These skills could reduce unemployment among people living with language disability and foster income equality in the country hence building several industrial sectors (Ufier, 2017).

Games thrive over traditional pedagogical techniques (Afael, Laura, & Sánchez, 2015). For instance, Chabari and Awori (2017) notes that lecturing techniques do not create realistic connection between what is learnt and applicability, hence, a learner cannot make a connection or feel empathy towards reality (Mweri, 2014). Learning may be disabled when it is complemented with the teacher's incompetency in sign language. This makes it difficult for pupils to follow communication. However, when pupils with hearing-impaired participate actively through games, they understand better unlike when they are taught with a teacher who may be incompetent in sign language or one who uses the lecture method (Satterlee, 2019). The lecture method is a traditional method that reduces learners to passive listeners, they become bored and lose interest and concentration in what the teacher is teaching. Most research findings advocate the use of games in teaching the English language because they easily attract learner's attention influencing their motivation and enhance their ability in the English language both spoken and written (Mweri, 2014).

Despite the evidence across the world that game teaching strategies has a great impact of knowledge assimilation among learners with hearing impairment there is little evidence of their use in Kenya schools for the LHI. Although, several computer games application such as Supermarket role play pack, and My Shopping List Writing Frames (A4) just to mention a few, have been developed to help LHI improve their language they are not exploited by the teachers. Instead, Chabari and Awori (2017) observed that writing skills are taught using; teaching new words and using them in sentences, continuous writing, and copying sentences. The scholar argues that teachers lack broad pedagogical knowledge especially the role play techniques. However, these teaching methodologies have been criticised that they do not foster critical thinking or even help those students with entrepreneurial skills which are essential for economic and industrial development due to their impracticability (Ufier, 2017). Also, Mweri (2014) mocked the strategies claiming they focus on teaching the deaf how to talk something the scholar consider as a denial.

Studies conducted outside Kenya show that video games are effective in teaching languages. For instance, Afael, Laura & Sánchez (2015) from their literature search found out that the popularity of video games provided a rich opportunity that could be leveraged to develop new teaching and learning resources that could be interactive to the children, the use of digital games could reduce the mechanical nature of learning and encourage more fun for the students' excitement with each successful match that they made within the game and at every moment, they started a new game. They needed help within the first twenty minutes of play. Thereafter, both the children began to play the games alone and navigated the problems without any assistance.

Kilgour et al (2015) support the use of video game not only in language subjects but also in other subjects. The scholar argues that the use of "games" Facilitate Learning, Self-Reflection and Social Awareness in Teacher Education. Scholar's empirical evidence revealed that games enables; First, simulation of societal microcosm in a multicultural education class with students taking roles of minority groups. Second, the delivery of a historical lessons. For example, student engaged in video game depicting world war, through qualitative analysis the scholars recorded three main outcomes enhanced understanding of history, a personal improvement that is attributable to the gaming, and increased involvement with history.

The responses from the students regarding the effect of the games on their history understanding depicted depth and diversity. Some of them pointed out an increased visual perception. Others reiterated that their cognizance of written history, which had prior been distant and flat, was transformed and a stronger grasp of the logistical occurrences occurred from the practical demonstration as opposed to the traditional theoretical delivery. Consequentially, their understanding had developed into an experiential, intimate, and deeply rooted in detail while remaining more balanced and complete conceptually. Therefore, a stronger sense of grounded insight transcends the experience as opposed to the superficial and intellectual view of the wars obtained from the books.

In Kenya, the use of traditional games such a drama has been employed in teaching strategies. Mwangi (2016) reveal that teacher prefer teacher centred methods. The study revealed that 30.9% use lecture, 3.2% used role-play, 19.8% used discussion method and 27.7% use brainstorming. The study revealed that the use of role play enhances English performance, the employment of games such as "Hot Seating" which involves asking English related questions, dialogue and the use of the right sign language enhance student writing skills and sign use. In addition, music festival, birthday Party and netball games also helped in language learning. Teachers also use the dramatized poetry where they introduce poetry or a play on specific subjects such as, marriage and initiation ceremonies then divide the class into groups to practices the game and simulation as guided by the teacher. The learners use miming technique through nonverbal communication to act various characters in the poem. This role play technique helps learners to develop critical thinking and improve their language.

Kenya Institute of Curriculum Development (2018) recognizes the importance of games as a method of teaching learners with hearing impairment. The outcome of each lesson should enable the learner to enjoy playing language games with words containing selected sounds (HoH)/signs (DEAF) for listening (HoH)//observing (DEAF) comprehension. Although, games are not listed as a teaching strategy, they are listed as non-formal activities to support learning. Perhaps, this is the reason as to why the teachers do not exploit games as a teaching methodology. Also, there are no specific studies in Kenya supporting the use of games as a teaching strategy that could enhance learners with hearing impaired literacy.

Kilgour et al (2015) games also demonstrated a high capacity to engage the students as they reported finding the lesson enjoyable and fun, capturing even the apathetic students. A study done by Kajirwa, (2009) point that games has the potential of linking education to the life skills and preparing the child to the world outside school. This can be seen in extracurricular activities like cultural dances and games. Which has prepared learners with hearing impairment for employment and has natured several talents making student to succeed outside the country. These games also support learning and pronunciation of English vocabulary (British Association of Teachers of the Deaf, 2013).

Imitation Teaching Approaches on English Performance

An imitation is a form of role-playing that enables one to recognize and produce one's actions. It is a means of learning and developing new skills from observing and performing the skills. Learners with hearing impairment are fond of imitating their siblings, parents, teachers, and fellow peers. They imitate signs and behaviours from their teachers and peers. Imitation arouses keen concentration in learners as it calls for keen observation to enable one to carry out instructions correctly (Samoei, Adoyo, Kochung, & Okutoyi, 2020). Imitation learning is a learner-based technique allowing learners full participation thus making him/her active throughout the lesson. Imitation allows learners to emulate traits they desire thus making them build on the desired careers or future vocations. Teachers of learners with hearing impairment should encourage imitation in their teaching to enable learners to participate fully in lessons of English. Imitation draws much of it notion from early childhood development.

Satterlee (2019) reviewed the available psychological evidence related to the psychological behaviour of neonates. They based on the assumption that an understanding of the imitation mechanisms involved in an infant could provide valuable insights into the understanding of adult behaviours and the impact of imitation on interpersonal empathy and the theory of the mind. The study also entailed an analysis of the studies regarding functional neuroimaging that investigated the neurophysiological substrate responsible for imitation in adults. One of the studies analysed revealed that infants had the capacity of imitating four different adult gestures without confusing neither the actions nor the body parts.

Maina (2018) defines imitation as an act of using someone or something as a model in instilling knowledge. Imitation, therefore, requires two participants; the person being imitated and the one imitating. Teachers should be able to use diverse techniques for the effective learning of learners (Emre, 2015). Studies done in Kenya show that some teachers use imitation to teach the English language. Mweri, (2014) in the study, "Diversity in education: Kenyan sign language as a medium of instruction in schools for the deaf in Kenya" states that there ought to be dynamic use of imitation in Kenya sign language. However, it is rarely used, as the majority of the teachers prefer verbal communication. The scholar notes that imitation is the first teaching strategy where the teacher demonstrates several signs and the pupil's repeat. This strategy has proved to be effective in learning the English language.

Based on the hypothesis, imitation can be considered a form of teaching strategy for language, Awino (2019) identify dramatization as a form of imitation that enforce practical learning. Awino study revealed that teachers of English in deaf institution in Kenya engage student in demonstration of the complete operation with explanation. Majority of the respondent indicated that the method is effective in acquiring English writing skills as well as signing. Mweri G. J., (2014) observes that imitation techniques for the deaf children enhance their ability and capacity to cultivate different expertise and aid them in mastering the world around them. Imitation also enables the deaf child develop the value of cooperation as they enjoy and play with other deaf children and in the process it enhances their ability to acquire visual language, in this case KSL.

Students with hearing impairment have also been observed to learn how to sign with imitation especially when they observe their teachers. Studies by Awino (2019) and Kenya Institute of Curriculum Development (2018) support the use of imitation learning. They note that imitation motivates pupils, makes them concentrate and helps them in organizing information, comprehending the content and stimulating their memory. In their recommendation, they suggest that teachers need to assess pupils' learning progress. The constituents provide an environment of inspiration and probe, keeping the learners lively in their learning bustle, enhancing interaction among learners, and developing an understanding base at levels suitable to the students. Through imitation, learners can understand their mental ability and develop their social cognition. Imitation helps learners to learn and acquire motor skills and life experiences (Mwangi, 2016) .

Peter (2015) found out that higher education institutions benefit from the triangulation of several teaching techniques. The scholars singled the imitation technique, which is a form of role-playing. Role-plays constitutes active and participatory learning. In his study, Chabari and Awori, (2017) observed that imitation is a form of active learning and creates an interaction between pupils through simulation of scenarios. Teachers of learners with hearing impairment should choose exercises that facilitate learner's imitation such as real-life stories, demonstrations, videos, and use of textbooks with more examples.

Mweri (2014) observes that the application of imitation ensures that students who have hearing problems duplicate characters in question. This makes learning more realistic as they can connect with realities, which in turn stimulate their memories and understanding of the natural world. Realism helps learners with hearing-impairment deal with career choices. Moreover, imitation technique allows learners to express themselves in their understanding of a particular phenomenon. Besides, Emre, (2015) notes that imitation enables learners to identify themselves with the characters they love and develop an urge to become one in the future.

Other studies outside Kenya support imitation as a teaching technique (Lazar & Stein, 2017; Afael, Laura & Sanchez, 2015). For instance, training of the students with hearing problems all over the world has been amongst the most controversial subjects of discussion. The problem is the trouble in finding a suitable schoolroom communication structure that efficiently delivers access to course content. Playing games make the classroom more interesting subsequently, there have been alterations in pursuit of an improved teaching approach, from pure orals to complete communication and now in the direction of sign bilingualism (Koutsoubou, 2004). With the role-play, technique in teaching, quieter pupils get to express themselves in a more outspoken way. Therefore, it is fun and motivating. The classroom world is widened to accommodate the outside world, hence, offering a much broader array of learning breaks.

It is no doubt that these skills are important not only in English performance but also improves their social skills (Afael, Laura, & Sánchez, 2015). Studies in human resource management posits social skills reduces redundancy and help employees to cop up with the technological changes in employment. Nurturing the skills at an early age in children means a lot in building a strong personality for employment. Moreover, English has been considered important for inclusivity in several economic and industrial development aspect (Njogu, 2020). For instance, Lazar & Stein, (2017) states that those with better English skills both in writing and speaking had a posibility of increasing their income and had many opportunity for employment than their counterpart with limited English expertise.

Real-Life Expression and English Performance among Learners with Hearing Impairment.

Real-life expressions are occurrences in realities drawn from actual events. They are natural encounters that take place naturally. The encounters enable learners to make choices between doing good or bad depending on the experiences learned. Real-life expressions are good teaching techniques to learners with hearing impairment as the expressions enable them to empathize with other people's situations. The expressions enable learners to mould their behaviours depending on how they would like to be treated. A learner would not want to repeat a behaviour or action that will lead to painful, bitter, or hard experience. He/she will avoid such activities and try to emulate those behaviours that led to positive rewards (Afael, Laura, & Sánchez, 2015).

Role play teaching strategies such as real-life expression is also important in nurturing the learners with hearing impairment with language skills (Kajirwa, 2009). It is assumed that learners with hearing impairment can improve their language through adequate exposure and practice. The real-life expression technique exposes students to experience candid circumstances to boost learner's ability for communication naturally and importantly with their mates about their day-to-day routine and upcoming professional environment (Asuncion, 2018). This method is most effective when learners use visual channels of communication and relate them with their real-life expressions or daily activities. Real-life expressions assist learners to understand different relationships, lifestyles, and cultures within the community. They provide learners with skills knowledge and attitude required for self-sufficiency and independence in the adult world. This is essential to pupils with hearing impairment who have little exposure to the happenings in their community and environment activities. Consequently, they get to understand different relationships, cultures, customs, and lifestyles (Lazar and Stein, 2017). Real-life expressions enable learners to express their problems typically through discussions and role-plays. It is here that learners develop social skills. They create a lasting effect on learners and enable them to appreciate themselves and others.

Learners' exposure to real-life expression improves their fluency in the English language. Studies postulate that role-play enhances their social relationship amongst fellow students after a series of role-playing and improvement on learner's social engagement (Sadeghi and Sharifi, 2013). Pedagogical studies consent that role-play solves social problems faced by learners in communicating (Emre, 2015). Scholars agree that role-play assists in learning new vocabulary and assists learners to recognize the role-played elements outside the class and react accordingly. The real-life expression is "self-driven, a social endeavour, and wakes the body up and occupies free time" (Berinstein & Magalhaes, 2009). Creativity and resourcefulness are demonstrated through real-life expressions. These are influenced by culture. Play is also beneficial to children with hearing impairment, contributing to their physical, cognitive-emotional, and social wellness. It creates an opportunity for children to learn from new experiences by being close to the community and objects with which they are familiar (Satterlee, 2019).

In Kenya, most learners practice role-play as a way of learning. Learners with difficulty in hearing have reported a positive mind-set towards performance. The role-play has enhanced English learning, by enabling the learners to realize spelling mistakes when writing composition. Role-playing enables learners to express themselves in a whole sentence that is grammatically correct without difficulties. They can take part in conversations, pronounce specific sound example "r" and "l" and tell about experiences and situations that the listeners can understand. Role-play improves critical thinking for problem-solving and places the learner at the centre, unlike other teaching techniques. The pupils become actively involved, they acquire intrinsic rewards (Emre, 2015). Moreover, learners are postulated to acquire knowledge and the ability to assimilate, retain what they have been taught and to foster creativity (Mweri 2014). The focus on English language skills may be to the detriment of other useful skills, and this may negatively affect poorer students without opportunities to put English skills to use. Therefore, strategies used in teaching the language should be able to reflect real life situation for easy assimilation.

Positive Impact on the Practice of Role Play in Coaching and Learning in Primary Institutes of Pupils with Hearing Impairment

Role-play is a learner-based strategy of learning that helps learners to develop attitudes, scientific skills, and abilities to face the challenges of the 21st (Satterlee, 2019). There are various educational benefits of using role-play for coaching and learning English to students with hearing difficulty. Often, users of role-playing technique and researchers identify such benefits as, it can be used with learners of most ages, even pre-schoolers so long us the difficulty of the role conditions are minimalized. Play is the best platform for learning; learners take full understanding of the environment and activities around them when they take part in pretend play (Mooney 2013). The Roleplaying process encourages peer learning and enables teachers and learners to share responsibilities. It improves listening, speaking, and understanding skills. Role-play enables learners to construct ideas well, thus contributing to language development. The techniques permit learners to make errors in a non-threatening situation. These enable them to explore an alternative solution to the problem expressed. Besides, it also justifies the basic teaching principles in the learning progression such as learner participation and inherent motivation. It also creates a positive atmosphere for self-awareness. Through role-play, teachers and learners attain vocabulary easily in a more controlled and exciting way (Huang & Shan, (Huang & Shan, 2008)2008).

The role-playing participation, participants can create both an emotional and subject matter attachment. When a skilful teacher accurately matches the problem situation with the requirements of his group, solving real-life hitches can be expected as pupils will be put into a realistic communication situation. Role-play sharpens the pupils' attention and comprehension skills (Kajirwa, 2009). Differences in how people think are highlighted, their communication ways are perceived by both others and themselves. This stimulates their imagination and enables them to engage with concerns of other people and complexities within an understanding environment. It is an effective technique for decreasing the shyness in the pupils with hearing difficulties and boosts their self-esteem. It helps students with hearing difficulties to improve interpersonal skills as well as signing skills. These dynamic skills can boost self-confidence and increase behavioural change (Chabari & Awori, 2017).

Participation in role-playing helps embed concepts. Role-play creates an active learning environment well reorganized with deep objectives, rather than surface learning (Awino, 2019). Critical thinking is encouraged, for example analysing and solving problem skills. Individuals learn to accept not only their feelings but those of others too and creates a fun environment for learning and signing. Role-play minimizes the boring situations inside a classroom and can be used where the possibility of recall of experience is likely to be even among learners. The technique opens learners' minds to issues faced by parents, children, and professionals. It should, therefore, be used by all the teachers of learners with hearing impairment (Mwangi, 2016).

The value of role-playing is to bring about long-term retention and enhance communication and interpersonal skills. Learners with hearing impairment can remember after a long time what they participated when role-playing (Afael, Laura, & Sánchez, 2015). It can be utilized individually or in cohort situations, whereby in an individual situation, one takes a role of a musician and sing to the end while in a group role play, learners take a scenario of either a hospital and take roles of persons in the hospital. It is through role-playing that pupils with hearing difficulties can empathize with situations and positions of others and look beyond their immediate assumptions and expectations. Role-play helps individuals to accept not only their feelings but those of others too and understand different perspectives. Through role-play, a reflection of knowledge is enhanced and this enables teachers to attain their set goals in teaching (Shehu & Shittu, 2015).

Role play develops conǒdence and efficacy in oneself and supplies the trainer with feedback about the pupil's understanding and ability to apply concepts immediately. Role-play is helpful for a range of topics, such as counselling skills, interviewing, team working and personal relationships, and develops competence. It minimizes discipline problems that often arise, from lack of motivation and boredom. In role-playing circumstances, students get the opportunity to practice skills they may not utilize regularly. Discussion, reasoning, and negotiating skills can be flexed in theoretical situations when they cannot ordinarily use skills in a typical school situation. Learners can also adapt to situations they are not used to, forcing the innovation of the learners to be exerted. Interpersonal and verbal communication skills are also taught and help pupils with hearing impairment overcome shyness. It creates a funny and exciting environment for learning self-expression and speaking skills (Banita, 2012).

Regardless of the usefulness of role-playing, it also has its demerits in such a way that it may awaken previously passive or suppressed emotions. A pupil who witnessed robbery with violence may recall what exactly happened when they were robbed and may start crying because the play has awakened the past scenario. In the case of a large group, it may not be effective and can instead cause chaos. The teacher may not be able to involve every pupil in the play and those left out may act unruly, not interested, and stop being attentive thus act disorderly. Forcing the play to try to accommodate more pupils, will result in a chaotic mess with everybody speaking at the same time. Students at times act foolishly whenever they are not comfortable, which may result in other inappropriate acts such as teasing and snickering. Generally, role-plays work greatest after the teacher has explained the purpose and outlined ground rules so that pupils do not make mistakes during the class or an acting event and get distracted (Satterlee, 2019).

In cases where teachers like lecturing, he/she may find it difficult to accept his/her new role in facilitating other than dominating the class. Some pupils may feel embarrassed to take up certain roles like in a boy school; boys will shy to take up roles of girls in the play and vice versa. Role-play needs proper planning and monitoring. Teachers must oversee the pupils through the play and not leave them to do it on their own.

If role-play does not get good monitoring it can easily lead to chaos, as some pupils may not be ready to take up certain roles. A situation may arise where all the pupils want to role-play one character and not the other. Role-plays are unpredictable when it comes to outcomes. You may aim at correcting behaviour and get that the behaviour has worsened. Role-play is also time-consuming. The stipulated time for pupils in primary schools is 35 minutes. Staging a play within 35 minutes may not be possible. Many at times teachers find themselves consuming the next lesson's time. Role-play may make a pupil uncomfortable, since some people are not comfortable with role-playing scenarios, and hence can affect enactment; it may lead to low self-esteem more so if a pupil realizes that she/he cannot communicate fluently before others. She/he may feel intimidated thus killing her/his confidence and contribution to the sessions. While some are comfortable with role-playing, they may be less skilled in adapting to the required mood necessary to replicate a situation. Individuals may either find the whole practice funny or not be able to act in an angry scenario when meant to.

At the same time, others find the theatrics of role-playing to be overwhelming and turns the session into entertainment other than learning, they do not treat it with the seriousness it deserves. Role-playing states may not come out as expected, as some pupils are uncomfortable and conservative about pretending out a part dramatically. This causes the role-playing act to be awkward and less productive since one or more pupils will not be participating fully. A self-conscious student will be more worried about what others think of him, instead of how the problem can be solved. Pupils will also have difficulty with the activity when they cannot understand how their character should be thinking or behaving

Challenges Facing Effective Implementation of the Use of Role Play in Teaching of English in Primary Schools of learners with Hearing impairment in Kenya

Common barriers to effective implementation of the utilization of role-playing in learning in Kenyan primary schools of pupils with difficulties in hearing include lack of preparation for the lesson (Samoei, Adoyo, Kochung, & Okutoyi, 2020). If teachers do not prepare adequately or early enough for role-play lesson the pupils may not be ready to take up certain roles given to them or even fail to pretend as expected and fail to contribute to the session. The teacher is supposed to prepare for the lesson and prepare the pupils psychologically for the roles expected (Shehu & Shittu, 2015). Lack of confidence among learners can be a big challenge.

Lack of self-identity and self-confidence in pupils with hearing-impairment compels them to withdraw thus making it difficult for trainers to convey teachable materials to them. Students with hearing disabilities tend to adapt low self-esteem due to their hearing loss; this hinders their free role-taking thus affecting their learning process negatively (Lazar & Stein, 2017). Insecurity among learners themselves pauses a big threat to taking up certain characters in the play. A learner may shy to take up a role in a play example role of Judas Iscariot for fear of negative branding by other members of the class. As a result, they may not be confident enough to imitate a character expectedly, thus not being able to bring out the aim of the play. The teacher should fast build a pupil's confidence before assigning them roles to take.

Lack of rapport between learners and the teacher, and amongst learners themselves pauses a challenge. Research by Libarente (2012) on the relationship between the teacher and the pupil discovered that this relationship is the most influential element inside the learning structure that comprises the basis for social contact by which learning occurs. A harsh teacher may scare the pupils to take up roles in fear of punishment should they make mistakes. If the play is assigned with other pupils who are prefects, they may shy off from taking junior roles, as they will feel intimidated and deprived of their daily power to command others. The teacher should have a good relationship with pupils and make sure that the pupils have good relationships amongst themselves (Quittner, et al., 2016).

The class population can also be challenging to implement role-play effectively. As in the regular classroom, the challenge may be a large number of pupils while in classes of learners with hearing-impaired it may be the opposite. In the schools of learners with hearing impaired, pupils who manage to go to school are few compared to their regular counterparts. Teachers of learners with hearing impairment may be willing to stage role-play in class and find incapacitated due to a limited number of learners in the classroom (Lazar & Stein, 2017).

Lack of time is also a challenge for the effective implementation of role-playing in teaching and learning. The Kenyan primary school timetables do not give room for role-plays. The timetable allocates 35 minutes per lesson, which cannot enable a teacher to take pupils through a play. If the teacher plans for a play, then he/she will be forced to use other subject's time, which is inconveniencing to other teachers. Irrelevance of the topic can also be a challenge if the teacher does not equate the play to the topic or the lesson or goal to be achieved in the syllabus. Some teachers are lazy and if found off guard, they may go to class unprepared and ask pupils to role-play any scenario irrelevant and not compatible with what is meant to be covered in the syllabus. For example, asking learners to stage a play at the market, shop, or in the hospital yet it does not concur with the intended topic (Shehu & Shittu, 2015).

Lack of learning teaching resources can also be a challenge in that, some students with hearing difficulties have some residual hearing thus need amplification by use of hearing aids, public address systems earphones, or personal FM transmitter/receiver units to allow them to participate equally in learning. Lack of these resources may incapacitate the learner and hinder him/ her from participating actively as compared to their hearing peers. The teacher should outsource the needs of a class and establish if there are means in which the materials can also be adjusted such that the pupils can partake in what will become a thrilling knowledgeable experience for all participants (Njogu, 2020).

The confusion of Kenyan sign language is also another challenge where, the Kenyan sign language contains a grammatical configuration of its own that is not consistent with the spoken or written English language (Afael, Laura, & Sánchez, 2015). Given example is that the traditional English language configuration follows Subject, Verb, and Object (SVO) such as Kevin is going home. The Kenyan sign language arrangement is utterly different since it follows the Object, Subject, and Verb (OSV), an example will be home Kevin go. Thus, when a pupil with hearing impairment is signing to the teacher who is not competent in Kenyan sign language may find it difficult to understand what the learner is trying to communicate (Lazar & Stein, 2017).

Towards A Successful Implementation of the Role Play Use in Teaching

Greater implementation of role-playing in teaching could be achieved through the development of an educational syllabus that targets its use in all subjects (Emre, 2015). Decreasing teacher-speaking intervals in the classroom while aggregating pupils speaking intervals can also bring success to role-play. For role-play to succeed it should be pupil-centred and not teacher-centred, the tutors should offer the all-out opportunity to pupils to communicate in the play by providing a conducive environment that promotes collaborative work (Awino, 2019). The teacher ought to try to engage each pupil in each communication and take the role of a facilitator.

The positive attitude of both teachers and pupils could bring about the successful implementation of role-playing, the teachers who see role-play as a waste of time and time-consuming technique should change their attitude and embrace role-play as the best strategy for instruction (Kenya Institute of Curriculum Development, 2018). They should see role-play as an instructional technique that gives pupils room for creativity and building of self-confidence. For the shy pupils, it should help them by giving a mask where their difficulties in the dialogue are progressive, their signing skills and understanding are improved (Chothibul, 2011). Teachers should indicate positive remarks and give positive rewards when commenting on the pupil's response.

In-servicing teachers on the importance of using role-play can also improve the implementation and in what way they can incorporate role-play in their coaching and learning. The school should provide a variety of resources required to support the school's instructional techniques. Teachers should plan a process to help them achieve the intended goal. Teachers should plan their lessons before teaching to make the teaching-learning process successful, meaningful, and effective. A lesson well planned is bound to yield better fruits unlike one not well planned. It gives both the teacher and the pupil's confidence in carrying out their roles with minimum confusion and tension (Mweri J., 2014).

CONCLUSION

Theorists such as Vygotsky have proved that play is very effective in learning. It is a very important method to be used in class as it supports the concept of learners centred education, which suggests that learners learn best when they become the centre of their learning. The use of role-playing technique is an effective technique in developing speaking, encourages learners to develop their confidence, enthusiasm, and empathy. Role-play improves interpersonal skills as well as communication skills and decreases shyness in pupils thus encouraging deep order of thinking. This technique should be used by all the teachers while teaching, more so trainers of pupils with difficulties in hearing. Role-play is fluency-based undertakings that inspire pupils to grow language functions. Therefore, all the teachers should use it. It creates a fun environment for learning signing skills; it can maximally minimize boring situations and stimulates thinking. So, all the teachers are advised to use the role-playing technique in their teaching.

Role-playing in education is summarized as a technique borrowed from socio-drama that can be utilized in helping learners grasp the more subtle areas of literature, social studies, some areas of science and mathematics. Furthermore, it may assist them to become more fascinated and involved, in not only the material learning, but also learning to include the knowledge into action, by solving problems, looking for alternatives, and exploring new and creative solutions. It is seen as the best method in developing initiative skills, communication skills, self-awareness, problem-solving, and team cohesion in working together, and all these are above all the knowledge of simple facts, many of which, if not all will be out-of-date or irrelevant shortly. Facts that will help the youth prepare in handling the challenges of the Twenty-First Century

RECOMMENDATIONS

From the discussions on the literature reviewed, the following recommendations are put forth;

The Kenya Institute of Curriculum Development should deliver Project-centred teaching and learning strategy where pupils will participate actively. The ministry of education should regularly organize seminars and workshops to in-servicing teachers of students with hearing difficulties on the importance and professional utilization of role-playing. School authority particularly school administration should encourage teachers to use role-play strategy in teaching by providing the necessary resources. There should be proper scheduling of the timetable to incorporate role-plays. Teachers should realize the success of using role-play in their coaching and tryas much as possible to integrate it with other teaching strategies. Teachers should guide learners when working on their given roles and exercise a lot of patience during the play.

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Chapter 13
A Dual Band Frequency Reconfigurable Metasurface Antenna

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ABSTRACT

In this chapter, a single feed metasurface antenna with smooth dual-band frequency reconfiguration is proposed. The designed antenna has a simple and compact structure to be used in portable wireless communication devices. The antenna consists of two circular layers of substrate material placed one on top of the other. The lower layer is printed with a rectangular patch antenna in one side, and the other side is a ground plane. The upper substrate layer lay on top of patch antenna side is printed with a number of unit-cells on its upper side. To achieve frequency reconfiguration, the upper substrate layer is mechanically rotated at an angle θz in a clockwise direction along Z-axis. Based on rotation angle, the antenna scattering parameters (S11 and S21) of the unit cell are subjected to change which thereby affects relative permittivity of the upper layer resulting to a frequency reconfiguration.

INTRODUCTION

As the wireless mobile technology focus to offer multiple services located at a different frequency band, the demand for a compact antenna with reconfigurable characteristics is unavoidable. The antenna reconfiguration refers to the ability of the particular antenna to change operating frequency, radiation pattern, polarization or combination of the mentioned antenna characteristics. Even though the use of switches/diodes and variable reactive loads are the most common techniques to archive antenna reconfiguration characteristics, material change and mechanical change can also be used (Christodoulou, Tawk, Lane, & Erwin, 2012). Several researchers demonstrated the use of PIN diodes to achieve reconfiguration

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feature. By changing states of PIN diode, antennas presented in (Boudaghi, Azarmanesh, & Mehranpour, 2012; Chichang Hung, 2015; Wang et al., 2016) achieved frequency reconfiguration. Moreover, smooth frequency tuning is reported in (Onodera, Saitou, Ishikawa, & Honjo, 2014; Tariq & Ghafouri-Shiraz, 2012) using varactor diodes. On the other hand, antenna proposed in (Majumder, Kandasamy, Mukherjee, & Ray, 2016; Rao et al., 2018; Zhu, Liu, Cheung, & Yuk, 2014) employ mechanical turning to attain frequency reconfigurable feature band. A voltage source is needed to facilitate diodes switching in (Boudaghi et al., 2012; Chichang Hung, 2015; Wang et al., 2016)and to alter the capacitance of capacitors in (Onodera et al., 2014; Tariq & Ghafouri-Shiraz, 2012). One of a common challenge in the proposed reconfiguration techniques is the design of the bias circuit in a way that an electric current flow through it has a negligible effect on antenna performance. Furthermore, diode placement angle has a major impact on the direction of antenna radiation pattern. In order to avoid the effect of d.c bias current to the antenna performance a metamaterial structure can be used to achieve the antenna reconfiguration characteristics. A metamaterial can be defined as an artificial engineered material formed by an array of small unit-cells (scatters) occupied a full 3D space. Due to its compact size, the two-dimensional metamaterial (Metasurface) is commonly used in various antenna application to offer unique characteristics of negative permittivity and permeability which are not found in nature but physically feasible (Caloz & Itoh, 2006; Nader & Richard, 2006).

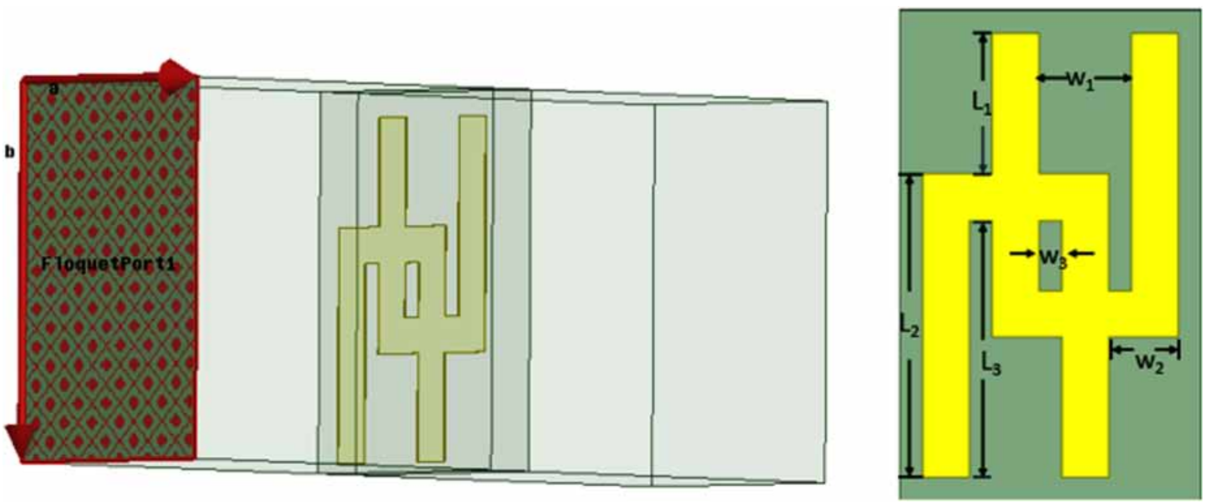
The use of metamaterial to attain frequency reconfiguration is reported in (Cheribi, Ghanem, & Kimouche, 2013; Majumder et al., 2016; Mirzaei & Eleftheriades, 2011; Rao et al., 2018; Yue, Member, Jiang, Panaretos, & Werner, 2017; Zhu et al., 2014). Furthermore, (Majumder et al., 2016) demonstrated the use of dual metasurface layers to achieve dual band frequency reconfiguration. The proposed metasurface layers are printed with the same unit-cell(periodic) structure. To achieve reconfiguration at different frequency band, metasurface layers are rotated in opposite direction to one another. The proposed antenna has dual metasurface layers of 3.06 mm thick, source antenna substrate material of 1.53mm thick and diameter of 20mm. For a mobile handled devices, a more compact structure is desirable. In order to achieve a compact antenna size, a dual-band frequency reconfigurable antenna design using a single metasurface layer is proposed and presented. Though the technique to achieve frequency reconfiguration presented in this paper follows the same procedure as in (Zhu et al., 2014), to the best of authors' knowledge, there is no any other proposed antenna that use similar compact design to attain smooth frequency tuning between two frequency bands. The proposed antenna structure has metasurface layer of 1.53mm thick, source antenna substrate material of 1.53mm thick and diameter of 20mm. To attain the compact size and low profile, the gap between two metasurfaces is eliminated by allowing direct contact of two substrate materials. Both substrate layers are of the same dimension for easy fabrication and mechanical rotation.

Following the introduction of Section 1, this paper is organized into five sections. Section 2 presents the structural details of unit-cell design and analysis. The design and simulation of the metasurface antenna are presented in Section 3. In section 4, simulations results of the proposed antenna structure are presented and the conclusion is drawn in section 5.

UNIT-CELL DESIGN AND ANALYSIS

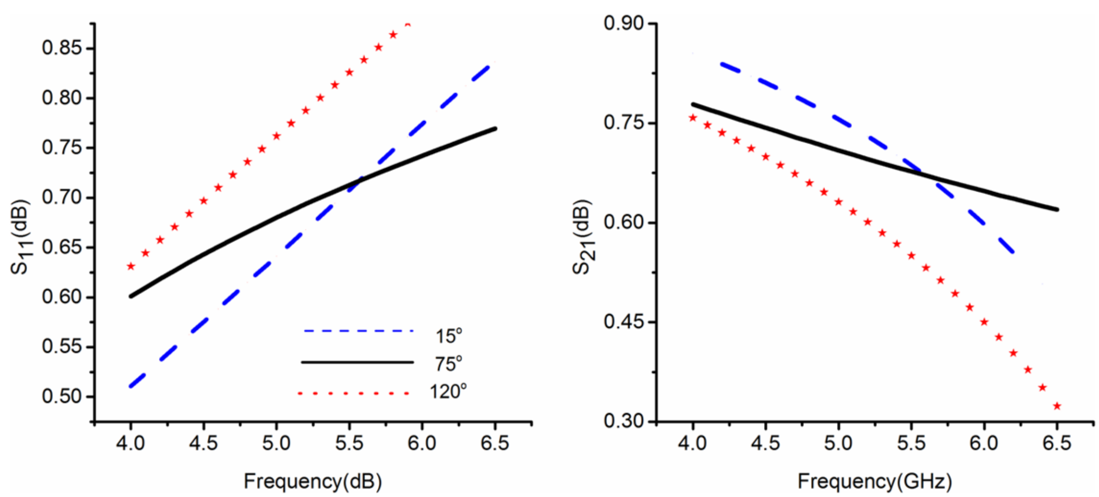
Analysis of a unit cell scattering parameters is vital in metasurface antenna design. A unit cell is designed by imprinting a metal conductor on top of substrate material with a dielectric constant of 2.94 and thickness of 1.52mm.

Figure 1. Structure of the unit-cell



The scattering parameters of a unit-cell obtained from an incident plane wave from two floquent-ports along *Z*-axis is analyzed. A unit-cell formed by two rectangular metallic rings with one open ends are etched on top of the substrate material. The top part of the unit-cell is subjected to an incident plane wave from Port1 while the bottom part of the substrate material is exposed to an incident- plane wave

Figure 2. Simulated magnitude of scattering parameters for a different angle of rotation



from Port2. Upon rotating the unit-cell by an angle $\boldsymbol{\theta}_z$ in a clockwise direction, a variation of scattering parameters is observed as depicted in Figure 2(a) and Figure 2(b). This, in turn, affects effective impedance (Z_{eff}) results to a change of the effective permittivity and permeability of the substrate material as calculated in (Smith, Schultz, Markos, & Soukoulis, 2002). The effective impedance of the periodic structured can be computed as:

$$Z_{eff} = \pm\sqrt{\frac{\left(1+S_{11}\right)^2-\left(S_{21}\right)^2}{\left(1-S_{11}\right)^2-\left(S_{21}\right)^2}} \tag{1}$$

$$e^{iN_{eff}k_0d_{eff}} = \frac{S_{21}}{1-S_{11}\left(\frac{Z_{eff}-1}{Z_{eff}+1}\right)} \tag{2}$$

Wherein (2) d_{eff} is an effective thickness of a unit cell substrate, $k_0$is the wave number and $Neff$ is an effective refractive index of the substrate material. The calculated $Neff$ in (1) above have a complex value because (1-S11)2 < (S21)2. Relative permittivity and relative permeability can be expressed as:

$$\varepsilon_r = \frac{N_{eff}}{Z_{eff}}, \mu_r = N_{eff}Z_{eff} \qquad (3)$$

In Figure 2, at any point of antenna operating frequency, as the value of S11 increases with increase of rotation angle, the S21 decreases. The increase in value of S11 implies increase in effective refractive index of the substrate material. High value of effective refractive index compared to effective impedance results to a high relative permittivity and the antenna operates at lower frequency band.

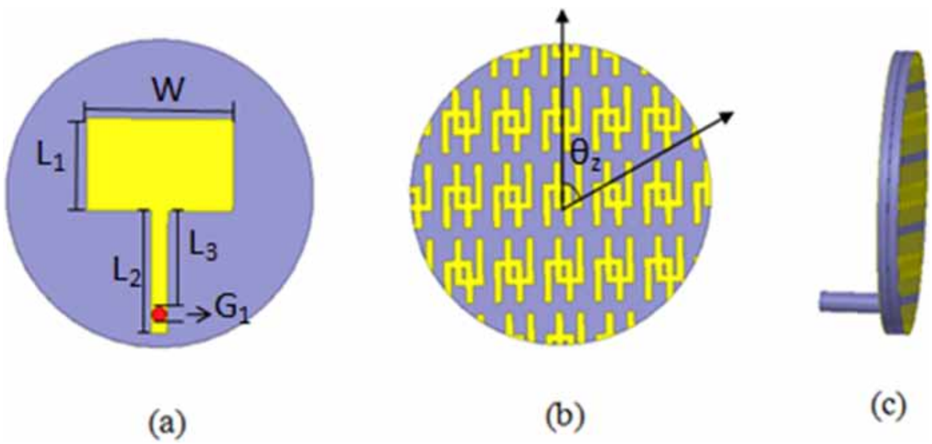
Antenna Design and Simulation

The rectangular patch antenna is used as the source antenna that radiates fields to the upper metasurface layer. The proposed antenna in Figure 3(a) is fabricated on the upper surface of Rogers RO4350 substrate material of 1.53mm thick. The rectangular strip line of 2.2mm wide is used to link the feed point to the main radiating element. Table II shows the dimensions of the source antenna. In absence of the upper metasurface layer, the source antenna resonates at around 5.26 GHz as shown in Figure 4. A finite unit-cell metasurface layer having the same thickness as of the source antenna substrate layer is placed in direct contact of the lower substrate layer. For simulation simplification, the unit-cell design in part II assumes finite and single structure however the change in relative permittivity and permeability based on rotation angle is the same as of the periodic structure in Figure 3(b). The proposed antenna structure is designed and simulated using a commercial HFSS software.

Table 1. Dimensions of Source Antenna (In mm.)

W	L1	L2	L3	G1
16.4	12.5	15.3	12.5	3

Figure 3. Configuration of (a) source antenna, (b) metasurface, (c) side view of the combined structure



RESULTS AND DISCUSSION

In general, shifting of the antenna return loss demonstrate the frequency reconfiguration phenomena. The simulated return loss for a different rotation angle is depicted in Figure 5.

Upon rotating MS layer from 0° to 15° in a clockwise direction, the antenna attains dual band resonance covering 4.7-4.85GHz for lower band and 5.7 and 5.9GHz for higher band. Whereas, when the metasurface is rotated at an angle of 75°, the antenna frequency band of operation is 4.6-4.75 GHz for lower band and 5.67-5.83 GHz for higher band. For a rotation angle of 120°, the 10dB bandwidth for the lower band covers 4.48-4.65GHz while for higher frequency band the range is from 5.46-5.75GHz.

The simulated fraction bandwidth is 3.14% (4.7~ 4.85 GHz) with respect to a centre frequency of 4.77GHz and 3.4% (5.7~ 5.9GHz) with respect to a centre frequency of 5.8GHz at 15º. For rotation angle of 75º, the fraction bandwidth of 3.2% (4.6~4.75GHz) and 2.8% (5.67~5.83GHz) with respect to the centre frequency of 4.675 GHz and 5.75 GHz respectively is observed. Addition to that, a fraction bandwidth of 3.7% (4.48~4.65GHz) and 5% (5.46 ~ 5.75 GHz) with respect to centre frequency of 4.675GHz and 5.75GHz at 120º respectively

Realized Radiation Pattern

The realized gain of proposed antenna design for a different angle of rotation is shown in Figure 6. For 120º rotation angle, the realized gain is 3.5dBi at around 4.54GHz and 4.2dBi at around 5.6GHz as illustrated in Figure 6(a) and 6(b) respectively. Figure 7(a) and 7(b) shows realized gain at 75º which

Figure 4. Simulated return loss of the source antenna

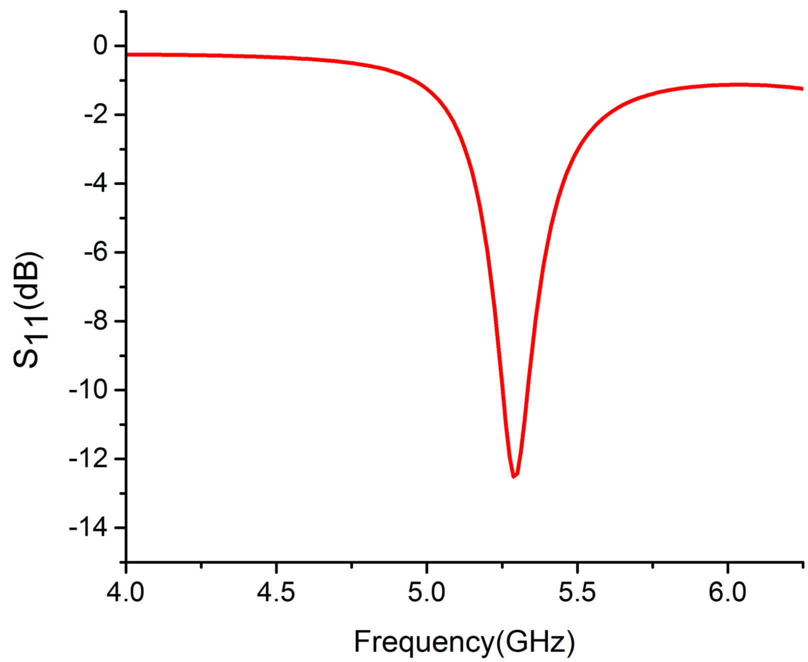


Figure 5. Simulated S_{11} for different rotation angle. Red 120°, Black 75º, Blue 15º.

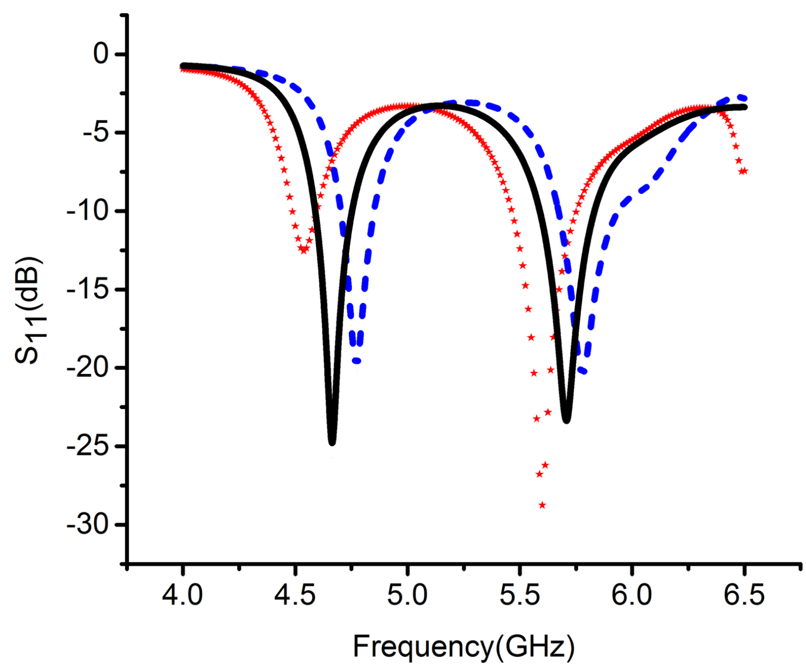
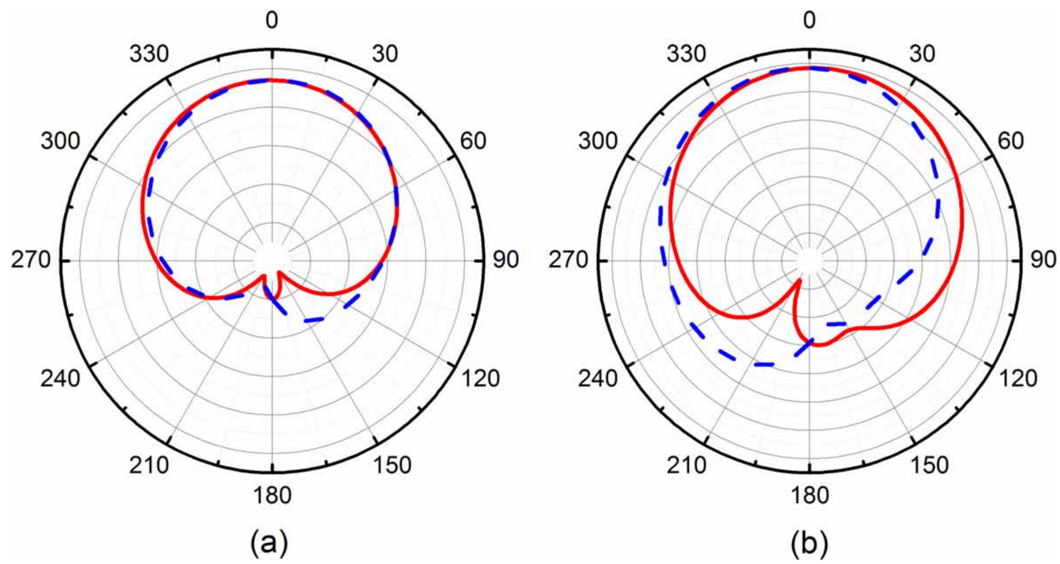
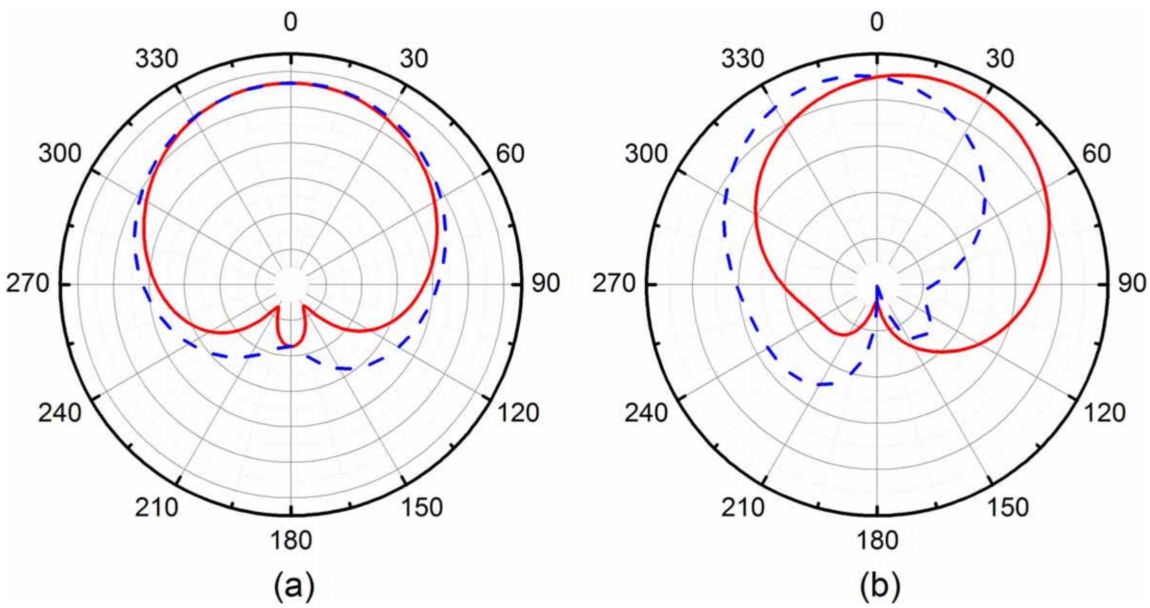


Figure 6. Simulated radiation pattern at (a) 4.54GHz and (b) 5.6 GHz.



is 3.2dBi at 4.675GHz and 4.2dBi at 5.75GHz. For 15º rotation angle, the realized gain is 3.4dBi at 4.77GHz and 3.1dBi at 5.8GHz as illustrated in Figure 7(c) and 7(d).

Figure 7. Simulated radiation pattern at (a) 4.675 GHz (b) 5.75 GHz (c) 4.77GHz (d) 5.8 GHz. E-plane H-plane



CONCLUSION

In this paper, a single layer metasurface antenna with dual band frequency reconfiguration capability is presented. The proposed antenna has a reasonable gain for all operating frequency band. The simulated fraction bandwidth is 3.14% (4.7~ 4.85 GHz) with respect to a centre frequency of 4.77GHz and 3.4% (5.7~ 5.9GHz) with respect to a centre frequency of 5.8GHz at 15º. For rotation angle of 75º, the fraction bandwidth of 3.2% (4.6~4.75GHz) and 2.8% (5.67~5.83GHz) with respect to the centre frequency of 4.675 GHz and 5.75 GHz respectively is observed. Addition to that, a fraction bandwidth of 3.7% (4.48~4.65GHz) and 5% (5.46 ~ 5.75 GHz) with respect to centre frequency of 4.675GHz and 5.75GHz at 120º respectively.The presented antenna design finds application in WLAN in range of 5.46-5.75GHz, vehicle-to-vehicle (V2V) communication at 5.9GHz frequency band, license free WiMAX applications at 5.8GHz and fixed satellite applications at 4.5-4.8GHz frequency band.

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Chapter 14
Challenges and Strategies TowardsTeenage Mother Re-Entry Policy Implementation in Secondary Schools

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ABSTRACT

This study investigated challenges and strategies towards teenage mother re-entry policy (TMRP) implementation in public secondary schools in Bungoma County. Objectives were to examine extent of TMRP implementation, establish challenges faced, and assess strategies towards implementation. Data collection instruments were interviews, questionnaire, and document analysis. Convenience, snowball, and purposive sampling techniques were used to select 36 parents of TMs, 49 TMs, 19 principals, and sub county director of education, respectively. The study established that extent of implementation was low (AMR=2.40), on overall challenges were high (AMR=3.20) with fear, shame, and stigma (MR=3.73) strategies (AMR=3.40) with parental involvement (MR=4.15). The study concluded that implementation was low due to lack of commitment. Recommended to MOE to conduct seminars for school administrators and parents on TMRP alongside individual and national economic development benefits associated with TM re-entry.

INTRODUCTION

World over, education is recognized in several international, regional policy documents as a basic human right and phenomenal for country's growth. There are global organizations and declarations that seek to address gender disparities in education by stressing the values of education. Such include Convention on Elimination of all forms of Discrimination Against Women of 1979, The Millennium Development Goals by United Nations 2000. Others are Education for All (EFA) Dakar Declaration and Beijing Plat-

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form for Action of 1995 which stress value of education. These documents serve as guidelines for state parties to provide substantive education to all on impartial basis.

According to Plan (2012), education was recognized as a basic human right 60 years ago in article 26 of Universal Declaration on Human Rights of 1948. This was acknowledged and approved by most governments globally that education and specifically girls' education masks a huge outlook towards industrial development. Girls going through complete school cycle are better placed in acquisition of quality education and skills related to healthy and productive life.

Similarly, UNESCO (2010) describes education as crucial in social and economic development of any country in enhancing quality of citizens' lives. Tabreek (2017) acquaints importance of educating girls for overall development of society. The study recorded benefits where 100% associated with achievement of girls' fundamental rights and improved gender parity. According to 90% of respondents, educated girls bring positive change and development in society while 77% said educated girls in adulthood bring better educated children. Additionally, 67% said girls' education enhances economic development and poverty reduction, 53% linked to better health and quality life while 43% associated with empowerment, leadership for active participation in decision making.

As Bhana, Morrel, Shefer and Sisa (2010) argue, allowing pregnant teenagers continue with studies after delivery delays subsequent pregnancies as re-entry gives TMs second chance to proceed with education and safeguard their economic levels. According to King and Winthrop (2015), girls from poor backgrounds with no family property or business to fall back to as source of wealth gain from education. Girls spending more years in schooling earn potential into competitive employment and better wages as re-entry positions them better for sustainable economic development.

Ozer, *et al* (2014) describes underage as individuals under age 18 as per the Convention on the rights of children. Citing 2008 Turkish Demographic Health Survey, 6% of females who started child bearing were adolescents out of which 7% were uneducated while 4% were high school graduates. Besides, 9% of teenage pregnancies were from rural and 5% urban areas. Teenage pregnancy was commonplace among uneducated and poor families hence negatively impacts on both TMs and their infants socially and economically. To Melterm (2011) education increases women's participation in labor force while lack debase their willingness and ability to participate, uplifts their power in formal employment and offers reference for job market.

Plan (2012) observes in Sub Saharan Africa (SSA) girls are more likely to drop out of all levels of school and have minimal chances to transit to secondary due to pregnancy. On average, from every 1,000 females in African countries, 143 were reported pregnancy. This does not spell doom for pregnant teenagers and TMs as SSA countries Kenya included formulated and revised Teenage Mother Re-entry Policies (TMRPs). The GPE (2015) states that investing in girls' education boosts agricultural productivity by 25% and attainment of 35% higher gross domestic product per capital. Increased productivity which relates with an additional year of education, identifies a nexus between girls' education and food security locally and nationally.

According to Chulu (2016) in Zambia, prior to the development of re-entry policy, it was commonplace for government owned schools to expel pregnant girls. The effect was devastating as most pregnant teenagers and TMs ended in early marriage, infringed girls' basic rights to access impartial education and expanded gender inequality in participation and development. This saw women movement and civil society espouse re-entry policy, later ratified by government in 1997 to allow pregnant girls school re-entry after delivery. This portrayed positive trajectory in upholding girls' basic right to education, expansion of future job options and contribution towards the country's economic development. Despite policy ratification, dropout in government schools was rampant due to stigma, lack of financial support and jostling between breastfeeding and class.

According to Centre for Reproductive Rights (2013), between 2003 and 2011 an estimated 55,000 adolescent girls in Tanzania either dropped out of primary and secondary schools or were expelled for being pregnant. Martinez and Odhiambo (2017) upholds that in Tanzania, 8,000 pregnant girls are forced to leave school annually while 30% drop out of secondary schools. While expulsion had legal basis, pundits argued that it was concomitant with lack of national level laws, regulation or policy. The National Bureau of Statistics Tanzania (2013) indicated between 2007 and 2013, 23% of girls aged 15-19 years were TMs and only few around Iringa were re-admitted to Public Secondary Schools(PSSs) after delivery. Discrimination of pregnant girls and TMs flanks stigmatization, an affront to basic right to education and demeans participation in formal economic activities requiring knowledge and skills.

The World Declaration on EFA at the Jomtein Conference documented that among the children out of school, girls were more. This informed the notion that girls' education is important for global social justice (UNESCO, 2002). Kenya being a signatory to most international policy documents identifies basic education role in safeguarding sustainable socio-economic and human resource development. In 1994, Kenya government through the MOE formulated TMRP to address education of pregnant teenagers and TMs school re-entry without undue discrimination. School pregnant teenagers were expected to drop out and only re-admitted after delivery (Republic of Kenya, 1994). The transformative policy addresses gender issues and practices on parity and access and major longstanding concern of combating ignorance, disease and poverty. Education empowers girls acquire credentials crucial to cope with demands of the ever increasing selective labor market.

According to Undie, Birungi, Odwa and Obare (2015), there is a nexus between girls completing their education and higher wages which plays part in breaking poverty cycle. Educated girls are less likely to enter into early marriage practices by going against parents' plan on the vice. On health matters, girls have slim chances dying of childbirth, support families through their better wages and cater for their children's schooling. Further, TMs re-admission provides opportunities for self and family sustainability alongside the country's socio-economic development.

Mwansa (2011) argued that TMRP is a valuable initiative that provides TMs a second chance to complete their education and a conduit to attainment of EFA goals. Kenya as a developing country has taken various initiatives to promote TMRP aimed at promoting girls' education, achievement of Bill of Rights in the New Constitution and attainment of EFA policy. The Kenyan New Constitution 2010 and Basic Education Act 2013 allude to the right to education as a basic human right (Republic of Kenya, 2013, 2010).

Despite TMRP formulation and various documents supporting implementation, pundits have poked holes in implementation. The Kenya NCPD, (2017) indicates skills obtained through education are essential for individual and society's economic development. However, 72,683 and 19,478 of secondary and primary school age teens respectively were out of school. Equally, Achoka, Njeru and Muthoni (2012) asserted that 13,000 girls' drop out due to teenage pregnancy in Kenya. The re-entry policy lacks implementation guidelines for teachers which provides latitude for head teachers and Board of Management discretion to implement or not. Likewise, Omwancha (2012) argues that according to teachers and MOE officials TMRP faced setbacks including lack of awareness creation and implementation guidelines to MOE officials. The figures are unsettling though all is not lost since the situation is rescindable through re-entry.

Wekesa (2014) study in Bungoma North Sub County, Kenya demonstrated that TMRP implementation was to some extent where 24% rated high, 16.1% low while a paltry 8.1% acknowledged full adherence. Nonetheless, 33.2% of girls cited nonexistence of policy while 22.7% were unaware of its existence. Girls' re-entry was affected by teenage pregnancy, early marriage, poverty, FGM, parental and community preference for boys. The GPE (2015) noted that a child of a literate mother is 50% more likely to live past six years of age and that 12.2 million children from TMs escaped underdevelopment. Mortality rate among TMs and their babies that is common place during birth is minimal among older mothers than teenagers.

In Mt Elgon sub county, Bungoma County, Kenya, several teenage pregnancies between 2012 and 2016 in both primary and secondary schools were recorded. A study in Chepyuk location, Mt Elgon Sub County, noted strategies in place to encourage TMs full participation and retention in schooling. According to teachers (28%), TMs received support through G&C while 22% and 17% allowed late school arrival and departure respectively. Despite the strategies in place, TMs experienced family rejection, stigmatization and discrimination by some peers and teachers which occasioned dropout (Chenane, Mandela & Nyambura, 2018). Discontinuing schooling spells grim future for TMs and their children but they can redeem themselves for a promising future through re-entry. Educating girls empowers them to increase household income by contributing towards socio-economic development of society and nation. This study therefore sought to investigate challenges and strategies towards implementation of TMRP in Public Secondary Schools in Bungoma County, Kenya.

Statement of the Problem

Kenya government being a signatory to various international and regional documents including the New constitution of 2010 advocate for education as a human right and EFA. The MOE formulated TMRP with the aim to allow re-admission of TMs after delivery to continue with education. Reports indicate that in Bungoma county, 0.7% of teenage girls were pregnant of their first child while 13.8% had already given birth at some time. Then 14% of age 14-15 of TMs out of which 11.1% were from Cheptais sub county. Despite the TMRP in place, its implementation status in PSSs in Cheptais Sub County was at 0.6% which provoked thinking to interrogate the missing link between policy in theory and practice. In 2012, 140 girls fell pregnant in Chepyuk location, in 2014, in Chepkurkur primary school 18 girls were reported pregnant. while in 2016; Chelebei secondary school reported 20 teenage pregnancy cases aged between 14 and 18. Cases of early marriage were evident in Cheptais sub county hence the begging question on extent of TMRP implementation. The focus and choice of Cheptais Sub County as study area was informed by the gravity of statistics on teenage pregnancy and teenage motherhood and unknown data on TMRP implementation.

Purpose of the Study

The purpose of this study was to investigate challenges and strategies towards TMRP implementation in PSSs in Cheptais Sub County, Bungoma County, Kenya.

Research Questions

1. What is the extent of TMRP implementation in public secondary schools?
2. What are the challenges faced in implementation of TMRP in public secondary schools?
3. What strategies are in place to enhance TMRP implementation in public secondary schools?

THEORETICAL FRAMEWORK

This study adopted the Human Capital Theory (HCT) coined by the classical founder Adam Smith in the 18th Century. Schultz (1961) and Becker (1962) in development of contemporary roots of HCT sought to take account of the increase of productivity that could neither be explained by improvements in technology nor fiscal capital. Becker' (1962) HCT basically looks at the investment of resources in human capital that is believed to improve quality of labor force that in turn influence labor input to elicits productivity. He argues that education and on- job-training is not only key to human formation but holds clear on economic development. Education and training significantly hold place in adequate human capital investment to prepare young people as a potential productive labor force in global economies. According to Woodhill (1997 cited in Almendarez, 2010), proponents of HCT argue that an educated population is a productive implying provision of formal education is highly influential and essential as a human capital investment that supersedes fiscal capital. Human capital theorists emphasize the significance of education as an asset of human capital development and training fundamentally key in participation of the new global economy regarding improved productivity and efficiency.

The HCT was relevant to this study as education is believed to develop human capital for productivity. Nevertheless, teenage pregnancy and TM which influence drop out of school imply that their capabilities as human capital are curtailed along the way. On the contrary, if pregnant teenagers and TMs are provided with an opportunity such as TMRP to continue with education, they acquire knowledge, skills and technical literacy to penetrate the competitive labor market.

Human capital perceives education as an investment with potential benefits to both the individual and society which necessitates huge investments by governments and stakeholders. Investments ranging from policy formulation, implementation and improvement of learning environment depicts level of human capital establishment to competitively prepare an admirable labor force to nurture economic growth. This line of thought relates with TMRP, teenage pregnancy and TMs' education and strategies required to enhance their education challenges notwithstanding.

LITERATURE REVIEW

Extent of TMRP Implementation

Implementation of TMRP largely depends on several factors ranging from existence of policy, TMs, school, parents and community. The Malawi MOE formulated re-entry policy for TMs in 1993 and revised implementation procedures in 2006. The policy stipulated suspension of pregnant girls immediately once known to be pregnant for one year and re-admitted back to a different school in the new academic year. This period provided latitude to TMs to identify a schools of their choice for re-entry. Further policy instructions required head teachers to record pregnant teenagers and TMs' re-admitted however, such records were hard to come by (Birungi et al, 2015).

Mwansa (2015) conducted a study on re-entry policy after delivery focusing on the process used to design and implement. The MOE Zambia formulated re-entry policy in 1997 and revised in 2012. In between 2005 and 2012, 100,000 girls from primary and 14,000 from secondary schools dropped out but 37.7% and 60% respectively returned to school. An evaluation of re-entry policy report confirmed that between 2002 and 2009 per MOE 2010 data, re-admission rates were between 36% and 43%. Conversely, gender links Zambia (2011) posit that despite existence of the policy, between 2005 and 2007, number of dropout girls rose from 7,700 to 9,700 raising concerns on implementation.

Mwenje, Onyango and Nyerere (2015) study in Nakuru County, Kenya, established that out of a sample of 188 girls, 19% knew of only three who dropped out of school and re-entered after delivery, 12% cited four, 9% cited one, 6.9% listed six while 6.4% knew of ten. Most teachers only knew 0-2 girls re-admitted after delivery as opposed to 39.9% who knew none. Additionally, teachers (50.1%) knew 0-3 girls, 27.8% knew four, 16.7% listed five, 37.5% of head teachers cited five, 37.5% knew two while 12.5% named 20 girls. The statistics was revelation that teenage pregnancy is real even as TMRP implementation was crawling.

According to Jumba, Chang'ach and Githinji (2017) study in Trans-Nzoia West Sub County, Kenya 23% of form two TMs, 34.6% form threes and 42.3% form fours were re-admitted in schools after delivery. Further, 26.9% were re-admitted in same schools while 73.1% re-admitted in new schools signaling likely challenges in former schools. The administration had a task of promoting socialization mechanisms to enable TMs cope.

In Chenane, Mandela and Nyambura (2018) study, teenage motherhood started as early as 13 years where 17% returned to school, among 14 and 15 year olds, saw 25% and 42% re-admitted respectively while 16 and 17 year olds, 8% re-admitted. The statistics revealed number of TMs re-admitted reduced as they transited to secondary schools, various challenges affecting implementation cited led to recommendation for multi-sectoral approach strategy for sub county improvement.

Challenges Faced in Implementation of TMRP

Teenage pregnancy and motherhood is a global problem affecting developed and developing countries of today's society has constrained girls' full participation in education in developing countries. Some governments and other policy makers formulated policies to promote girl child education albeit challenges to implementation.

In South Africa, high rate of teenage pregnancy lead to dropout hence difficulty in achieving re-entry and gender parity. Socioeconomic factors such as poverty, domestic responsibilities and orphan-hood influenced pregnant teenagers and TMs re-entry. Girls' requirements including sanitary pads and other effects requires financial support to keep them in school but poverty and orphan-hood require psychological and financial support for them to cope up with school needs. The hostile school environment had pregnant teenagers expelled, their other socioeconomic status notwithstanding and principals' contravention of government policies encouraged dropout. In such cases, it is unrealistic to implement re-entry policy (Ramulumo & Pitsoe, 2013).

Tanzania a SSA country without a functional re-entry policy following the president's directive albeit Non-Governmental Organizations and female organizations efforts. Kihombo, Paulson and Noss, (2017) enlisted poverty, culture, traditions and lack of re-entry policy as challenges facing TMs re-admission. Girls from poverty stricken homes were uncomfortable being in schools and skipped or dropped out besides FGM contributing to early marriage. Parents together with teachers are supposed to contribute to children's retention in education yet there was weak cooperation between them. The few that sought re-entry played seek and hide for lack of policy that has seen more TMs out of school.

In Eldoret West sub county, Kenya, Tarus (2020) study, head teachers cited lack of information on TMRP with 40.8% strongly agreed, 23.98% agreed, 16.33% disagreed while 3.57% strongly disagreed as challenge. Head teachers' observation that school environment was unfavorable for TMs' re-entry, raises questions on MOE commitment on policy follow-up. On whether head teachers provided moral, emotional and spiritual support to TMs, 21.9% strongly disagreed, 20.41% strongly agreed, 19.90% agreed, 19.36% disagreed while 18.37% were undecided. Head teachers claimed to be too busy with other school matters to attend to TMs raising questions on level of commitment to implement.

According to Wekesa (2014) study in Bungoma North Sub County, Kenya, a number of challenges associated with TMRP implementation. According to principals, re-admitting TMs set bad example to other girl students while 70.2% cited poor guidance from teachers on TMRP while 29.8% linked intimidation from peers. While 44.1% of students were aware of the policy, 89.7% of TMs cited difficulties balancing between home life and school, divergent to 10.3% on balancing. Further, students (33.3%) indicated policy non-existence of the policy while 22.7% were totally unaware of TMRP. Lack of stakeholder involvement like parents in implementation procedures deterred policy implementation in Bungoma North Sub County.

Cherui, Kipkoech and Kisilu, (2018) study in Bungoma County, Kenya, school girls (33.1%) cited attitude towards TMs where culture holds that teenage motherhood suggests end of education. At least 25.9% said prejudice demeans girls' education in preference for boys which is commonplace among patriarchal societies. Consequently, societal development is considered disproportionate in the presence of gender disparity in education. The 19.2% of respondents cited gender discrimination explicitly encouraged early marriages alongside 12.6% citing FGM while 9.2% were undecided on cultural practices as affecting re-entry. The findings correspond with G&C teachers that regarding TMs as adults and parents discouraged re-entry. The patriarchal belief practices and traditions viewing girls as source of wealth led to forced early marriages however such challenges could be overcome by putting proper strategies on TMRP implementation.

Strategies to Enhance TMRP Implementation

The GPE (2016) indicates that girls with secondary schooling were six times less likely to enter into early marriage and their future earnings increased by at least 10% through additional year of school. In most countries, teenage pregnancy and early marriage contribute to school dropout among girls yet their education has benefits for posterity through policies and legislation. The measures put in place to assist TMs' re-entry are however inexplicit in content.

In USA, Jennifer (2012) study indicated that school programs alongside support groups provide support and guidance readily to TMs to facilitate school completion. The programs ideally include small schools to serve TMs, collaboration with outside school communities, school individual counseling and mentoring strategies initiated involve teachers.

Kenya's TMRP approaching three decades since initiation to address girls' education during pregnancy and after delivery, 98% of girls who have ever been pregnant were however out of school (Walgwe, Termini, Birungi & Undie, 2016). Macharia and Kessio (2015) asserts that treating TMs on re-entry simply as new comers helps other students readily accept and integrate them in system minimizes stigma. Majority of head teachers avoided talking about TMRP implementation as was perceived to encourage and condone girls' early engagement in sexual activities. However, teachers (33.30%) strongly approved TMs' school re-admission implied most teachers were cognizant and positive about TMRP. A record of re-entry cases and country wide sensitization on importance of TMRP and recommended support.

In Kuria District, Kenya, Kodek (2012) revealed that stakeholder sensitization as an implementation strategy should include creating awareness to girls on TMRP and its importance. The strategy encourages

TMs to consider re-entry after delivery and develop positive attitude towards TMRP. Other measures included collaboration or partnership with other government departments on sensitizing youth on re-entry and training teachers on support towards TMRP.

The establishment of TMRP dates back in 1994 with an intention to reduce number of TMs out of school through unconditional discrimination. The policy was formulated based on the discussions surrounding high dropout rates among girls due to teenage pregnancy, teenage motherhood and early marriage. The TMRP was designed to provide TMs opportunities for school readmission or be supported into re-admission in a different secondary school in case of stigmatization or discrimination. Principals are required to provide G&C services to TMs, parents, teachers and other students on TMRP, issues affecting sexuality, boy-girl relationship and peer pressure. Besides teachers or any male responsible of teenage pregnancy should be exposed and held legally responsible as parents needed to seek school re-entry for their daughters after delivery (Birungi et al, 2015., Republic of Kenya, 1994). Wekesa (2014) argues that re-entry policy requires schools to establish centers where TMs breastfeed their babies as they attend class. She however poked holes in challenges undermining implementation such as the school administrations discretion to determine how long the pregnant girl would stay in school before delivery. Omwancha (2012) likewise cited weak MOE policy follow-up mechanisms to determine effectiveness of implementation process hence difficulty to confirm schools not adhering to guidelines.

METHODS AND MATERIALS

Research Design

This study adopted a mixed methods research design. Johnson and Christensen (2004) describe mixed methods approach as one with elements of qualitative and quantitative data collection instruments, analysis and inference technique among others. The design was adopted because this study had qualitative and quantitative elements of data collection, analysis and presentation.

Study Area

The study was carried out in Cheptais Sub County, Bungoma County, Kenya. Cheptais sub county had 19 PSSs and no private school was purposively chosen as study area. The sub county as one of the 12 sub counties in Bungoma County was curved from the larger Mt Elgon and administratively named Kopsiro. However, educational administration, its Cheptais sub county manned by a SCDE with its headquarters in Cheptais town. The sub county borders Mt Elgon on the East, Republic of Uganda on the West, Bungoma West on the South-West and Kimilili sub county on the South-East (Bungoma County Statistics, 2019).

Study Population

The study population consisted of Principals, TMs, SCDE and parents of TMs in PSSs in Cheptais sub county, Bungoma county, Kenya.

Sample and Sampling Technique

The sub county had 19 PPSs which comprised of three girls only and 16 co-educational which were sampled through saturated sampling technique. Kothari (2004) describes saturated sampling as a complete enumeration of all items in the universe where no element is left to chance hence provide the highest accuracy of data obtained.

Purposive sampling technique is applicable where the sample respondents were believed to have relevant knowledge to the study (Orodho, 2004). In this study, 19 principals and SCDE were purposively selected on the premise they were responsible for policy implementation at school and Sub County level respectively and ostensibly with relevant information for the study. Principals were selected because as school managers, tasked with decision making are key players in school leadership matters.

According to Jumba, Chang'ach and Githinji (2017), teenage motherhood is a sensitive issue and finding statistics in schools is a hurdle. Snowball sampling a non-probability method of survey was adopted to facilitate easier identification of TMs in schools, avoid ambush and embarrassment associated with teenage motherhood.

Convenience sampling also known as haphazard or accidental sampling is a non-probability or non-random sampling technique where the study population is easily accessible, available at a given time or willingness to participate in the study (Dornyei, 2007). Parents were selected through convenience sampling, the only probable procedure to access them participate in the study as respondents.

Data Collection Instruments

A methodological triangulation approach of data collection instruments including face to face interviews, self-administered questionnaire and document analysis were used. Face to face structured and unstructured interviews were used to collect data from principals and SCDE.

A questionnaire as data collection instrument has capacity to uphold respondents' confidentiality (Kombo & Tromp, 2006) hence a self-administered one was used on TMs. The number of questionnaires to a particular school was guided by the number of respondents available in school.

Bowen (2009) described document analysis as a form of qualitative research where documents are interpreted by researcher to give voice and meaning around the topic. Document analysis tool collected data from school admission records, G&C department, class registers and AGM minutes to establish extent of TMRP implementation, challenges and strategies.

Methods of Data Analysis

A mixed methods research approach of both quantitative and qualitative data analysis was used. John and Christensen (2004) observed that quantitative and qualitative research methods are compatible and could be used in a single study. Qualitative data generated from unstructured interviews, questionnaires and document analysis were organized and coded content into themes. Summarized data was thematically analyzed and reported descriptively and verbatim. Quantitative data collected from structured interviews, closed–ended questionnaires were cleaned, coded and keyed into computer Software Statistical Package for Social Sciences (SPSS) version 20.0. This was to generate necessary statistical output in line with study objectives and presented in form of frequencies, percentages and means.

RESULTS AND DISCUSSION

Extent of TMRP Implementation in Public Secondary Schools.

Teenage mothers' responses on extent of TMRP implementation were as illustrated in Table 4.1

Table 1. Teenage Mothers Responses on Extent of TMRP Implementation

Extent of TMRP implementation *(n=49)*	**SA** **f %**	**A** **f %**	**N** **f %**	**D** **f %**	**SD** **f %**	**åf$_{iri}$**	**MR**
Schools have TMRP implementation guidelines	2 4.1	5 10.2	17 34.7	14 28.6	11 22.5	120	2.45
Schools have programs to sensitize TMs and parents	3 6.1	2 4.1	9 18.4	29 59.2	6 12.3	114	2.33
TMs are re-admitted to schools according to TMRP	2 4.1	4 8.2	13 26.5	23 46.9	7 14.3	118	2.41
Schools have friendly environment for re-admission	8 16.3	9 18.4	10 20.4	13 26.5	9 18.4	141	2.87
TMs are supported academically	4 8.2	4 8.2	9 18.4	17 34.7	13 26.5	110	2.24
TMs are allowed to break off class to breastfeed babies	1 2.04	2 4.1	6 1.2	26 53.1	14 28.6	97	1.97
Stakeholders support TMRP implementations	4 8.2	6 12.2	9 18.4	16 32.7	14 28.6	117	2.38
Teachers provide G&C services to TMs on TMRP	2 4.1	5 10.2	9 18.4	21 42.9	12 24.5	111	2.26
Parents support TMRP implementation	5 10.2	8 16.3	10 20.4	19 38.8	7 14.3	132	2.69
Total						**1060**	**21.63**
Average Mean Rating							**2.40**
MR= Mean Rating. AMR=Average Mean	**Rating**						

According to TMs responses, availability of TMRP implementation guidelines was rated as low (MR=2.45) with 34.7% taking a neutral stand implying that even if the guidelines were available, TMs were not privy to it. Document analysis revealed that 100% of school had no TMRP guidelines. Principals (62%) affirmed that their schools had no TMRP document. However, they indicated that that never hinders TMRP implementation since they were aware of its existence as an MOE policy. In a dissimilar trajectory, a principal discoursed:

Guidelines on TMRP were in place even though incognito because of the stigma that comes with teenage motherhood and implementation is on course. It is manifested in school- parent collaboration to re-admit TMs with or without knowledge of TMRP and during re-admission, we don't talk about the girls' motherhood because of stigma. How to get them to school is one hell of an exercise"

This finding resonated with Kurgat (2016) findings where 55.6% of students confirmed that Head teachers re-admitted girls who dropped out due to pregnancy.

Teenage mothers' responses on whether there are programs to sensitize them, parents and community on TMRP, little extent (MR=2.33) as 59.2% disagreed there was such a program. This implied TMs neither comprehended schools' expectation of them and vice versa. Document analysis data revealed lack of specific information on programs to sensitize TMs, parents and community. According to principals (32%) programs were in place though incognito because of the stigma that is associated with them. A principal observed:

The programs are disguised in approach because of the diversified understanding and interpretation of the TMRP by TMs and parents. We do it during class meetings, AGM and through life skills sessions with all students and parents. Its discussed in general without pointing out to specific students neither do we segregate TMs from such sessions. So yes, programs are in place here.

The purpose of having programs assists TMs complete their education albeit challenges. This finding concurs with Tarus (2020) that 51% of principals advocated for the program through class registers to de-stigmatize policy implementation.

An item on whether TMs were re-admitted to schools per TRMP guidelines, TMs responses (MR=2.41) depicted little extent where 46.9% disagreed with the item. This finding resonates with Tesia, Matula and Mari (2012) study in Tenges division, Baringo county, Kenya where 12% of principals indicated that the policy was hard to implement. The TMRP requires schools to provide level grounds for TMs' re-entry to schools of their choice without discrimination. A Principal asserted:

Re-entry is no different from any other student admission as most TMs and parents never disclose motherhood status. Of course we seek to know the girls' previous school and why they left and where there is unconvincing reply, we quietly consult with former school principal. In some cases, parents confided in the absence of TMs but our former students we just re-admit., nothing much from any fresh admission

Teenage mothers rated parental support for TMRP implementation as somewhat (MR-2.69) although majority (38.8%) disagreed that there was. The support was however conflicting based on backgrounds and literacy levels as re-admission interpreted to reflect psychological, moral and financial in nature. Document analysis data revealed that some TMs were supported by guardians and well-wishers but unclear whether parents support or not. A principal opined:

Parents who allowed re-admission I would say support re-entry as they openly talked about re-entry in class meetings and AGM. They go fishing out TMs in villages through local administration to ensure re-entry which is encouraging. Such parents are there for TMs both at home and school by monitoring their school performance to ensure girls' school retention

Conversely, another principal observed:

Teenage mothers who sought for re-admission either on their own or through well-wisher, lack parental support. Such parents as we know are knowledge poor on importance of giving TMs a second chance in education. These girls just struggle to procure personal effects or fees

This finding is concomitant with Passy and Luketero (2014) findings where parents (62.50%) never made a follow up of their daughters' academics means lack of support.

On whether TMs were allowed to break off class to breastfeed their babies, majority of TMs (53.1%) disagreed and 28.6% strongly disagreed saying they were disallowed (MR=1.97). This portrayed principals' irrational undertaking in their role to provide moral support as articulated in TMRP guideline. This finding disagreed with Kurgat (2016) where girls (52.6%) asserted that in Baringo county they were allowed on request to break off to breastfeed babies in between lessons which was within the tenets of TMRP.

Whether school management allowed TMs to break off class to breastfeed babies, principals (100%) responded in the negative. There were diverse reasons including but not limited to confidentiality of their status and distance to homes. A principal observed:

Most TMs hardly revealed their motherhood status, it would be improper to have them break off class, go home to breastfeed babies especially when they don't ask for permission. But if they seek for it, well, we will allow since its healthy but it has stigma to some level. So everybody goes silent on it to safeguard their motherhood status. Otherwise we always imagine that they make necessary arrangements for their babies or are re-entry is after weaning babies

Asked whether stakeholders supported TMRP implementation TMs indicated little support (MR=2.38) as 32.7% disagreed and 28.6% strongly disagreed with the item. Omwancha (2012) observed that TMRP should be all inclusive so that all stakeholders including TMs whose voices were missing have an input. Principals were in agreement with TMs and one asserted:

In our school I can authoritatively state that apart from the education office and local administration, most stakeholders are openly against TMRP. Some say implementation encourages teenage pregnancy and is an example of bad morals. Others just lack of knowledge on the policy, pessimism and cultural beliefs'

Another principal observed:

The issue of TMRP implementation, one has to be very careful when discussing with stakeholders in this patriarchal minded community. Girls education comes a distant second to boys and worse is for TMs. Community stakeholders don't support thus why many TMs are either rearing their babies or slipped into forced early marriage

This finding concurs with Molosiwa and Bernard (2012) study in Botswana that many TMs are still out there for lack of follow up measures after dropout due to pregnancy. Teenage mothers and their parents seeking re-entry was blamed on MOE for poor dissemination to schools or awareness creation to communities hence lack of knowledge. A principal postulated:

Principals are government agents and eyes at school level and unconditionally hold the title of policy implementers. We are therefore obligated to implement the TMRP like any other government policy by doing all that is administratively possible within our limits and of course with all stakeholders' support

Stakeholders support of TMRP is to eradicate any bottlenecks towards girls' education rights to enhance EFA and gender parity for economic development. Impact of countrywide educational campaign awareness to equip masses with knowledge on social and economic benefits that come with TMs' education cannot be over-emphasized. Tarus (2020) supports the current study that stakeholders should be educated on the policy to enable them support re-entry policy where 51% strongly agreed while 35.7% agreed.

Principals as school administrators are tasked with government policies and guidelines to implement at school level by working with and through teachers. Even when G&C is the most relevant department to assist TMs cope up with school and any other tormenting issue, TMs responses (MR=2.26) indicated little extent. Teenage mothers (42.9%) disagreed that G&C was up to task regarding its mandate implying TMs struggled to come to terms at school, home environment notwithstanding. Chulu (2016) observed that in Zambia, TMRP and TMs require collaborated approach for principals to realize implementation success. The G&C teachers and everybody else should strive to prepare school environment for TMs' calm landing.

Principals held divergent views on G&C role to provide administrative support to TMs. One principal opined:

The G&C is in place and doing their work including supporting TMs whenever need arises. But it is not easy identifying a TM as some reported to school merely as new entrants on transfer for reasons known to parents and the girls. Some are unintentionally uncovered whenever a problem comes up and they are booked for G&C services

Nevertheless, document analysis data established no particular data on TMs other than the usual G&C issues that cut across all students.

For effective implementation of MOE policies in schools, the SCDE office is tasked with the responsibility of ensuring principals adhere to any policy implementation requirements. However, document analysis revealed no record on SCDE office follow up on TMRP per se or captured in other reports. The SCDE's responses on extent of TMRP implementation observed:

All schools are required to have the TMRP guidelines to provide guidance on implementation but with technology, I am sure principals google for it where necessary. This sub county has several cases of teenage pregnancy both in primary and secondary schools some of which you might have come across in the media, leading to teenage motherhood and dropout as we know. As MOE sub county office, we are cognizant that this is not and should not be the end of girls' education; thus why we encourage implementation as our support to our TMs. I believe schools are implementing without discriminations and so far I can confidently affirm the progress is good since we haven't received any serious complaints of total rejection on re-entry. Through local administration and parental sensitization during our stakeholders' meetings we hold conversations about it and encourage parents to support implementation by supporting TMs for re-admission. We also encourage principals to collaborate with all stakeholders including parents, communities, church and name it. The response has been phenomenal, so to speak but we know we are not yet there

The SCDE responses on involvement of stakeholders towards implementation was divergent from Wekesa (2014) that slow implementation process of re-entry policy could possibly be attributed to non-involvement of stakeholders. According to SCDE, even if principals were aware of teenage motherhood status, it was naïve to candidly put it to them. This justifies why majority of TMs disagreed with the item "schools have programs to sensitize TMs" as there were no records except in isolated cases.

Challenges Faced in Implementation of TMRP

Table 2. Pesents results on challenges principals face in TMRP implementation in PSSs.

Challenges (*n=19*)	**SA f %**	**A f %**	**D f %**	**SD f %**	**åf$_{iri}$**	**MR**
Cultural norms, beliefs & practices	10 52.63	7 36.84	1 5.26	1 5.26	64	3.36
Lack or inadequate parental support	12 63.15	5 26.31	1 5.26	1 5.26	66	3.47
Fear, shame and stigma among TMs	15 78.94	3 15.78	1 5.26	0 0.00	71	3.73
Principals' laxity to implement TMRP	9 47.36	5 26.31	4 21.05	1 5.26	60	3.15
TMs multitasking in capabilities	11 57.89	3 15.78	3 15.78	1 5.26	60	3.15
Lack of support systems	3 15.78	4 21.05	9 .36	3 15.78	45	2.36
Lack of policy awareness	13 68.42	2 10.52	2 10.52	2 10.52	64	3.36
Lack of M& E of policy implementation	8 42.10	6 31.57	3 15.78	2 10.52	58	3.05
Total					**488**	**25.63**
					AMR	**3.20**

Key: MR= Mean Rating, LS=Likert Scale, AMR=Average Mean Rating

Culture and lack of support from parents due to economic constraints in households plays a major role in frustrating government and other stakeholders' efforts to implement TMRP. Principals rated cultural norms, beliefs and practices (MR=3.36) where 52.63% Strongly Agreed with item as a challenge to TMRP implementation. Cheptais sub county residents are a patriarchal community entrenched in old cultural norms, traditional beliefs and practices which demean socio-economic independence of females or TMs. The community is gradually coming of age to loathe FGM practice where parents still engrained in preferred marriage to education.

A principal in a rural school observed:

While I am really trying to implement re-entry policy, cultural norms, beliefs and practices of this community such as early marriage, child labor are detrimental. The belief that once a girl gets pregnant should straight away get married and dowry paid to parents and never waste resources for re-admission. It is an uphill practice to fight because they fight back school administration with rage and only local administration can handle to support re-entry

This finding concurs with Namunwa (2013) that early marriage was associated with dropout in Katilu division, Turkana County, Kenya. Early marriage practice was encouraged because of the belief that girls were a source of wealth to families through dowry payment. For this reason, parents hardly considered re-entry or provided required support to TMs which forms basis for hitches in implementation as TMs dropped out.

Culture impacts on the way children participate in education, influences peoples' beliefs and values about education. According to parents, culture or not it all boils down to one's attitude and perception on education in this 21st century. A parent conversed:

Personally I value girls' education hence support re-entry. The problem with this sub county, some parents still believe that pregnant girls should just marry implying end of education for her. The belief and practice of FGM affects re-entry implementation as girls are viewed as adults ready for marriage albeit their ages hence lack of support

The finding concurs with Cherui, Kipkoech and Kisili (2018) that girls' pregnancy is perceived as shameful to culture and pregnant girls should be married off to evade shame. Besides, even with ban of FGM, there are still traces of the vice executed in privacy. After FGM ceremony girls drop out for marriage because of the teachings such as never to say no to men as culture hence FGM portends lack of support for implementation.

Parents play a significant part in their children's education albeit diverse factors. Principals rated lack or inadequate parental support for TMRP implementation (MR=3.47) as a challenge. A principal asserted:

Most parents don't fully support TMRP as in cases where TMs seek for re-entry on their own, parents rarely provide financial (fees), moral or psychological support. On financial support, poverty levels may not allow them to support TMs for re-admission and in such cases, girls decide on early marriage or just rear their kids. So TMs don't come to school due to poverty and its irrational to point an accusing finger to parents that they don't support TMRP

Another principal observed:

Some parents' attitude and perceptions towards girls' education is retrogressive. This community believes in boys' education than girls and its unconvincing for them to rethink TMs' education through re-entry. In most cases parents are upset and keep on taunting them rather than support them for re-entry, in which case such parents are against TMRP. So we are helpless

It emerged that some school factors contribute to poor TMRP implementation as indicated by a parent. Parents' support for TMRP was divergent. A parent opined:

Of course l was unhappy with my daughter's pregnancy, but six months after delivery l willingly organized for her re-admission. She has been in school for over a year now but stigma, discrimination and mockery from teachers and other students is unbearable. I mean is my daughter the first to be pregnant? The re-entry policy should be completely abolished if adequate sensitization is magic

The issue of stigmatization and discrimination of TMs impacts negatively at school. Stigma is linked to peoples' interpretation of social relationships where they are judged for not meeting socially prescribed norms of morality like no pregnancy.

Principals cited fear, shame and stigma among TMs (MR=3.73) as challenge experienced towards TMRP implementation where most principals SA (78.94%). A principal quipped:

Majority of TMs lack knowledge on TMRP and just a handful aware are confronted with shame and stigma which threaten their re-admission. Girls re-admission is guided by parents of TMs perception of girls' education and TMRP. Most of them run away from home for fear of their parents and hardly seek *re-entry. Others are ashamed for re-admission because of peers who laugh at them which stigmatizes them. Majority would rather not seek re-entry and look after their babies than undergo humiliation*

Another principal observed:

Pregnant teenagers and TMs would certainly live under fear, shame and stigma because of their teen age. They need role models to encourage and instill confidence that re-entry is doable and benefit them in future. Unfortunately, there is scarcity of voluntary role models to encourage TMs' on re-entry, they end up living in fear and ashamed of re-admission due to stigma. Implementation is unfeasible since parents or girls don't seek re-entry, we can't get them as some are already wives

This goes against amplification of school completion meant to equip girls with knowledge and skills necessary for socio-economic development individually and beyond. This finding corroborated with UNESCO (2010) study in Tanzania that young mothers were subjected to teasing and taunting by peers in schools which left them with emotional scars. The situation in co-educational institutions recorded heart wrenching feeling.

While TMRP is over two decades since inception, principals (MR=3.15) in self-examination, faulted themselves where 47.36% Strongly Agreed while 26.31% Agreed that there was evident laxity among them to implement TMRP. They argued that re-admitting TMs encourage such vices, giving the school a bad image as TMs are viewed as failures who would lower school mean score. Principals decide when pregnant girls drop out and whether to re-admit or not. Which impacts on effective implementation and due to lack of follow up by MOE to check effective implementation (Omwancha, 2012).

Principals (58%) strongly agreed that TMs were overwhelmed with nursing babies and adhering to full school participation. Principals were reluctant to re-admit TMs because of inability to multitask (MR=3.15) which affected participation. A principal observed:

Sometimes TMs are absent from school when their babies fall sick which affects performance. They also miss out on completing assignments as they concentrate on baby care and some drop out while learning is ongoing

While principals cited lack of support systems (MR=2.36) towards TMRP implementation, its a weak challenge. Teenage mothers' fundamental rights to education as a tool to social and economic change, are therefore curtailed in their realization of family development and beyond. This study concurs with Arowoshegbe and Anthony (2011) that community leaders as support systems are accorded authority to influence families allow girls attend school. Such awakens parents' accountability for TMs education.

The TMRP requires awareness creation within and without school environments. Principals' revealed lack of policy awareness (MR=3.36) from MOE as a challenge to TMRP implementation where 68.42% strongly agreed with item. Principals claimed to be aware of the policy but lacked copies. One principal said:

We don't have a copy of re-entry policy but from what we hear SCDE meetings TMs should not be denied access. So, yes lack of knowledge on the policy hinders implementation, because I don't know the dos and donts which applies to pregnant teenagers, TMs, teachers, parents and community at large. Like any other government policy, challenges are expected

This finding corresponded with Tarus (2020) where head teachers strongly agreed (40.8%) while 23.98% agreed there was lack of information on re-entry policy and were unaware.

Lack of knowledge on TMRP hinders parents in seeking re-entry stated a parent:

l have no knowledge of such policy but the former Bungoma County Women MP at some point talked about it. So how do I support what I don't know? I see from what you say the policy is bad even though my daughter is in school courtesy of well-wisher

Lack of policy awareness is largely blamed on MOE and school leadership. Implementation of government policies requires MOE support through M&E to establish level of implementation. However, Principals (MR=3.05) underscored lack of M&E as part of implementation. As is the norm, SCDE is expected to make consistent reminder on policy issues through M&E while the contrary creates room for laxity. A principal opined:

Sometimes we tend to drag our feet on policies based on them nature or intent.

For instance, on TMRP most of us are reluctant because of factors like poor

performance, influence on other girls and parents' perception of re-entry. So

we need to be reminded regularly which is never the case though we are also

expected to be on top of things. I think the MOE is also silent on it

The SCDE responses indicated some parents reported cases of unfriendly school environment to the office as justification for transfer to different schools. The SCDE observed:

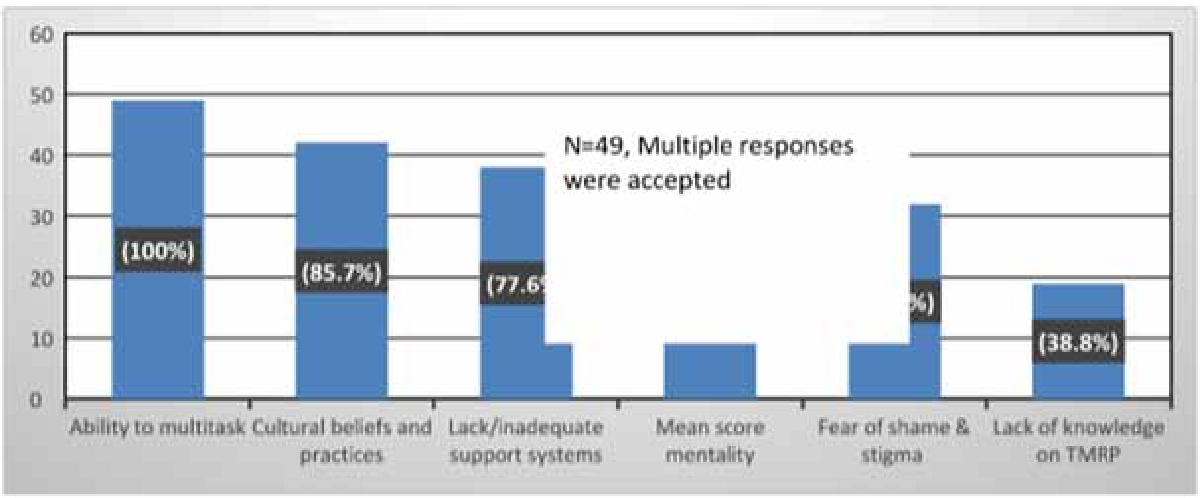
Culture is with every community and sometimes its difficulty doing away with it. Here, they have their own culture and has its effects on girls' education especially FGM and their principles do not connect well with pregnant teenagers and TMs' education. principals' role in awareness creation to both teachers' and students to accommodate TMs should suffice but failure creates room for re-entry. Moreover, any form of harassment goes against Human Rights where everyone has a right to education regardless of their condition or status. I am aware some principals create unfriendly environment for TMs and in such cases you see implementation is difficult although it shouldn't happen. About creating awareness, we try but sometimes it might not reach everybody hence parents and TMs silent on re-entry and implementation. However, on M&E, its because of staff shortage in our office but its handled under other quality assurance and standards sections

This finding corroborates with Kukali (2013) study that understaffing at sub county office is stalling effective implementation and M&E of the safety policy in girls' boarding secondary schools. The responses signaled the need for strong-willed efforts to strategize on effective implementation.

Teenage Mothers' Reponses on Challenges in Implementation of TMRP in PSSs

Teenage mothers were asked to indicate challenges faced in TMRP implementation and responses were as in figure 1.

Figure 1. Teenage Mothers' Responses on Challenges Faced in Implementation of TMRP



According to TMs (100%) re-admission, oscillating between child care and academic work was quite draining that one side suffers. Consequently, some TMs missed school attendance in preference for their babies affected their full participation and overall academic performance. Teenage mothers who drop out concentrate on child rearing or slip into forced early marriage could not allow principals implement TMRP to the letter. Education is the best investment for girls, families, society and the country is demeaned without re-entry. This finding concurs with Chulu (2016) that its difficulty for TMs to multitask between taking care of their babies and school. Besides, some are full time bread winners for their babies making it more strenuous for TMs to concentrate on studies.

The TMs (85.7%) cited issues of cultural norms, traditional beliefs and practices as challenge towards TMRP implementation. Cheptais Sub County is home to patriarchal community that devalues girls' education, embraces cultural practices such as FGM and early marriage for purposes of dowry to parents. It's impracticable for principals to implement the policy in an anti-girl education community. Girls' dropped out of school after being daunted through oppression and subordination fabric that eventually hurts their potential contribution to industrialization. This study corresponds with Cherui, Kipkoech and Kisilu (2018) that FGM and early marriage were setbacks to girls' education and TMRP implementation. Acquisition of knowledge and skills through education is an invaluable instrument for social and economic change.

When pregnant girls drop out they undergo psychological trauma necessitating moral, psychological and financial support to facilitate re-entry processes and care for babies. In this finding, TMs (77.6%) submitted that such support systems were lacking or inadequate especially from parents due to economic constraints. Societal negative attitude degrades TMs and many withdraw in isolation rather than re-admission consequently TMs become a burden in their adult lives by depending on others in economic times. This finding concurs with Macharia and Kessio (2015) that principals hardly discussed teenage pregnancy and TMRP in schools as they believed such encouraged and condoned the vice. Teenage Mothers under TMRP façade their motherhood status to survive in prejudiced school environment where principals hardly associated them with. Parents are a support system to TMs' education however negative attitude towards TMs' education and poverty weakens financial support.

Kenya is an exam oriented country which believes in good performance and teachers promotion based on their subjects or schools' general performance. Teenage mothers (73.5%) indicated implementation was affected by principals' imagination that they would perform poorly in exams and affect school Mean Score. In light of attitude, re-admission prospects were wearing as principals gave it a deaf ear. This finding related with Wekesa (2014) that 36.4% of change in performance of mother-student was dependent upon implementation in PSSs. Lack or inadequate implementation holds loose on TMs potential to participate in meaningful nurturing of the country's industrial economy.

Teenage mothers (65.3%) enlisted fear, shame and stigma associated with teenage motherhood as challenge. Most girls conceal their motherhood status because of shame and stigmatization from peers, teachers and support staff at school as underlying factor. Put differently, principals would not implement TMRP without TMs in schools. Birungi et al (2015) opined that TMs re-admitted in same schools were talked about by their school mates which stigmatized them. This implies re-entry in different schools shield TMs from shame and stigma.

Publicity of TMRP was rather weak and not many especially those without formal education were not in a position to comprehend. Teenage mothers (38.8%) revealed that lack of knowledge on TMRP among TMs influenced dropout and non-re-entry. This finding is consistent with Macharia and Kessio (2015) that out of 0-2 TMs, 92% returned, 3-5 dropouts, 6.5% returned while out of 6-8, only 1.5% returned. The study recommended that government intensifies level of awareness creation to general public so that principals implement without excuse.

Strategies to Enhance TMRP Implementation

Principals were asked to rate strategies on a scale of 1-5 and responses were as in Table 4.4.

Cultural norms, traditional beliefs and practices fundamentally have a great influence on girls' full participation in schooling, retention and transition. Parents describing teenage pregnancy as culturally shameful is reason to force early marriage rather than re-entry. Principals (MR=3.84) asserted that cultural norms and traditional beliefs should be challenged so educate parents, community and TMs rethink re-entry. Majority of principals (47.37%) strongly agreed while 26.31% agreed with the strategy. A Principal opined:

Working to minimize community cultural norms, beliefs and practices to enhance girls' education is an uphill task given possible community rejoinder. Although the strategy requires other government ministries like Ministry of Interior, children's department and church we work with them. At our level we approach the issue through guest speakers who provide motivational talks to parents and students. If achieved, chances of TMs' re-entry would be enhanced and parents willingly provide essential support for education.

Table 3. Strategies to Enhance TMRP Implementation

Strategies towards TMRP implementation (*n=19*)	SA f %	A f %	U f %	D f %	SA f %	åf$_{iri}$	MR
Challenge local cultural norms, beliefs and practices	9 47.37	5 26.31	0 00	3 15.78	2 10.52	73	3.84
Parental engagement in girls moral development	8 42.10	8 42.10	1 5.26	2 10.52	0 00	79	4.15
Publicize TMRP	4 42.10	3 15.78	0 00	8 42.10	4 21.05	52	2.73
Staffing of qualified G & C teachers in schools	4 42.10	5 26.31	0 00	3 15.78	7 36.84	53	2.78
Improve on M&E practices	3 15.78	2 10.52	4 21.05	9 47.37	2 10.52	55	2.89
Employ multi-sectoral approach	6 31.57	4 21.05	1 5.26	5 26.31	3 15.78	62	3.26
AVERAGE						**374**	**19.68**
AMR							**3.28**

MR=Mean Rating. AMR= Average Mean Rating

This study concurs with Aslam and Kingdon (2010) that women with little or no education end up working in unpaid family labor and or casual work whereas better education decreases such vulnerability.

According to principals, parental engagement on girls' moral development (MR=4.15) where 42.10%) strongly agreed and agreed with strategy. The school management in partnership with parents regarding TMs' education improves re-entry, retention and transition, moral development and provision of any form of support. A principal observed:

We work with parents by maintaining good relationship and as partners on TMs' moral development. We encourage parents during school meetings to seriously support their daughters through free discussion on TMRP especially those with pregnant teenagers or TMs. In view of this, parents cooperate and work with teachers to implement policy without discrimination. Parents denying their daughters re-entry are oblivious that education provides an alternative economic route for better jobs in life

This finding concurs with Kiptanui, Kindiki and Lelan (2015) where 40% strongly agreed that education achievement depends on how parents responded to teenage pregnancy and TMs. Parents supporting TMs achieve education as motherhood leads to low educational attainment.

The TMRP is arguably silent and unknown to many including some teachers hence poor re-entry and implementation mechanisms. Principals observed that publicizing TMRP (MR=2.73) is an avenue to create awareness to pregnant teenagers, TMs, parents and community to promote implementation. Exploring all ways improves implementation and TMs' education for future development. A principal asserted:

Government policies always receive publicity and TMRP is no exception. We do publicity at our level and partnering with local clergy and administration to create awareness. Of course given community attitude towards girls' education we also discuss benefits associated with school completion to TMs and families. We also advertise and provide safe school environment supporting girls as part of publicity and other TMs re-admitted serve as our ambassadors

Principals proposed staffing schools with qualified G&C teachers (MR=2.78) as a strategy towards effective implementation. On this strategy, 42.10% Strongly Agreed as it provides a friendly and professional environment to discuss with TMs and TMRP. A principal observed:

The need for more qualified G&C teachers helps boost school staffing and G&C services. They assist greatly especially in our day school where girls are at risk of falling into the hands of perpetrators on their way to and from home. Qualified G&C teachers assist to hold conversations with TMs and all students on TMRP and importance of education

To employ G&C resonates with Kamunge 1988 report which advocated for establishment of G&C department in secondary schools to augment girls' participation in education (Republic of Kenya, 1988). In Jumba, Chang'ach and Githinji (2017) study, G&C teachers (73.1%) indicated TMs were re-admitted in different schools which might have been fueled by stigmatization and discrimination related to dropout.

Policy implementation stage is critical and a lot is required from line ministry and pertinent stakeholders from all levels. Monitoring and Evaluation as formative process in implementation informs local decision making, promotes effective intercessions and addresses emerging issues. Girls are variously vulnerable and M&E is advisable to advocate for friendly re-entry environment. A principal argued:

You know there is weak policy M&E by MOE thus why there is laxity or poor implementation. In my view, the MOE at sub county and county offices, should make it their routine program to enforce and establish gaps for review. The office is fairly silent, parents and TMs are dissuaded to seek re-entry however if they do the onus is upon us to implement to the letter. Hope we shall be bold enough to suggest to our directors

This study corroborates Omwancha (2012) that MOE had no follow-ups on re-entry policy implementation signified failure to identify policy effectiveness and implementation.

Government policies require multi-sectoral approach to realize effective implementation. Most principals (MR=3.26) indicated the approach improves implementation. A principal observed:

The inclusion of local administration, church, role models and guest speakers to give motivational talks to TMs, teachers and parents play role in minimizing shame, discrimination and stigmatization. The policy is for all and involving all stakeholders makes a difference than dealing with parents and TMs alone

Kodek (2012) observes that all stakeholders should be engaged in the process in order to draw different views that provide basic information, discussion and meaningful enlightenment to handle constraints. While local administration reaches out to parents and community, media communicate to larger groups highlighting re-entry policy and its benefits. Although principals aptly articulated strategies, none was captured in school documents.

CONCLUSION AND RECOMMENDATION

Conclusion

According to this study, the level of TMRP implementation was low and no documentation was available in schools on TMs re-admitted. This was attributed to weak policy Implementation from principals and parents side and weak M&E measures from MOE. The cultural beliefs and practices and lack of knowledge on the existence of the TMRP among community, parents and girl child. Challenges including fear, shame and stigma, lack of support and negative attitude affected implementation and discouraged TMs in re-entry. Strategies coined to outweigh cultural norms and beliefs, parental engagement in girls' moral development and multi-sectoral approaches to improve implementation.

Recommendation

Based on the findings, it was evident that TMs agonized from shame, stigma, negative attitude and lack or total lack of support from home and school. Teenage mothers should be provided with an enabling environment for re-entry from home and school to enhance implementation. There was inadequate knowledge on TMRP besides retrogressive cultural practices and beliefs among parents and TMs hence low re-entry. More awareness creation on the policy through relevant line ministries and emphasize on relationship between TM education and development is recommended. The onus is with MOE and TSC to mount workshops and seminars for school administrators on TMRP.

Recommendation for Future Research

A comparative study should be carried out to establish the level of TMRP implementation in private and public secondary schools. Teenage Pregnancy is prevalent in primary schools affecting transition; further study should be conducted to assess the level of TMRP implementation in primary schools in the county.

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Chapter 15
Decentralization and Good Governance

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ABSTRACT

Decentralization and good governance are policy instruments whereby the world in general and African in particular have pursued it for the past 40 and 50 years. Despite empirical studies not yet being conclusive, decentralization helps to improve good governance. Decentralization and good governance are brought into Africa following the beginning and end of structural reforms, to bring economic development, respectively. The chapter has six parts. The first part deals with the introduction and background of good governance and decentralization. The second part highlights the meanings or concepts and elements of good governance, and issues and concepts related to decentralization. The third part insights the relationship between decentralization and good governance. The fourth part gives some highlights about decentralization and good governance in Africa, and when and why decentralization has been introduced among African nations. The fifth part investigates the relationship between decentralization, good governance, and economic development; and the last part provides conclusion.

INTRODUCTION

There have been several scholarly contributions to decentralization and good governance. However, most scholars have addressed them discretely. These two concepts are highly interwoven to support each other. Decentralization, as a policy instrument, has been rigorously implemented to improve the efficiency and effectiveness of service delivery by making the decision making processes transparent, accountable, responsive, participative, and predictable, which ultimately instills good governance.

Good governance as a concept of quality governance has been implemented both in the post-cold war and structural adjustment periods as a means of improving the economic performances of Sub-Saharan African countries. Good governance has been subjected to many conceptual related problems. Perhaps, the problem doesn't lie in the concept but the definition of what is good? Does "good" mean western

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system or processes? For whom "good" is it? The relativeness and judgmental concept of "good" make good governance difficult to define.

The idea of good governance has been greatly promoted by the World Bank since the early 1990s. It is therefore argued that the most common definition of governance, which is provided by the World Bank is: "how power is exercised in the management of a country's economic and social resources for development". The World Bank also refers to good governance as a 'sound development management' and sees it as 'central to creating and sustaining an environment which fosters strong and equitable development and it is an essential complement to sound economic policies' (World Bank, 1992:1).

The OECD defined it same how similar to the World Bank's definitions, how it gives more emphasis to democratization and reduction in military spending in developing countries. According to OECD, the rule of law, public sector management, control of corruption, and reduction of military spending within developing countries are important aspects of good governance.

There have been emerging perspectives that address decentralization as a process of transferring powers, resources, and functions to the lower echelons of government (Miraftab, F., 2008; Rodríguez, A., and Ezcurra, R., 2009; Cheema, G. and Rondinelli, A., 2007; Merilee, S., 2007), which ultimately promotes the process of good governance (Utomo, 2011). Decentralization is a process of transferring power, resources, and responsibilities from the central to the sub-national levels of government, whereas governance is a new model of government characterized by heterarchy rather than by hierarchy, creating a horizontal or a flattened relationship among a multitude of actors both public and private. Different authors have implied the direct relationships between decentralization and good governance in many ways as decentralization aims to promote good governance by enabling citizen participation, enhancing public accountability and transparency, promoting rule of law and equality, and enhancing effective and efficient service delivery (Utomo, 2011). Harikumar, S. L. (2013), has also indicated decentralization as a mechanism or tool for good governance to be addressed through which public goods and services can be distributed effectively and efficiently. Decentralization also makes local needs evident through active participation, transparency, accountability, and development. Saito (2008) and Oyugi(2000) have also argued that there is a causal relationship between decentralization and good governance. Decentralization wields positive outcomes to ensure good governance, however, if it is successfully implemented. The synergy between decentralization and good governance can ultimately lead to economic growth and development as it fosters the quality of institutions (Nadeem, 2016). Decentralization, particularly fiscal decentralization has also a positive and significant effect on government quality (Huther and Shah, 1998; Kyriacou, A., and Roca-Sagales, O. 2009). Hence, this paper argued that decentralization would lead to good governance, however, decentralization needs to be successful in terms of scope, intensity, and commitment.

Generally, this chapter has aimed at providing conceptual understanding about good governance, elements of good governance, decentralization, forms of decentralization, dimensions of decentralization. Moreover, the chapter tries to figure out the relationship between decentralization and good governance, highlights the process of decentralization and good governance in Africa, and when and why decentralization was introduced in African nations, and the contribution of the synergy between good governance and decentralization on economic development.

BACKGROUND

The word "good governance" came into existence in the late 20th century when the World Bank published a report entitled "Sub-Saharan from Crisis to Sustainable Growth" in which the report noticed that Africa was witnessing a crisis of governance (World Bank, 1989 and Demmers and et' al 2004: 3). Right from that time, the word came to take the center stage of the world political and development discourses. Various definitions are being provided to good governance by many authors and organizations, but what makes it interesting is that those definitions of good governance are similar in many respects. Dahal et' al (200l) defined good governance as a 'process of executing a coherent governing plan for the nation based on the interests and priorities of the people'. Good governance makes those who are in office accountable, transparent, and responsive to the interests or needs of the people. Generally, good governance empowers the people at a grassroots level as it is based on participatory decision making whereby citizens are active in decision making. On the other hand, Dahal pointed out that the 'belief that every citizen has an equal say in the conduct of public affairs is the heart of good governance, which lies with one of the attributes of good governance.

The word good is a value-laden concept that has no common ground everywhere. It is because of this some authors like Aubut (2004:10) implicitly said that "Good governance has been claimed as a vague term by which its vagueness' becomes the reason why the term is being increasingly manipulated by the one who uses it". Even some scholars like Knack as cited in Aubut (2004) narrowly define the term good governance and limited its meaning only to institutions. World Bank as cited in Aubut (2004) defines good governance from the point of economic perspective as "how power is exercised in the management of a country's economic and social resource for development". World Bank makes good governance equivalent to sound development management.

Although no intrinsic differences, many authors define decentralization differently (Harikumar, 2013). For example, Decentralization is a process of transferring power, resources, and responsibilities from the central to the sub-national levels of government (Utomo, 2011, Miraftab, 2008; Barnett et al, 1997; Ndegwa, 2002; Besfat, 2018). The World Bank (2004) defined it as a multifaceted concept that transfers the authority from the central government to the sub-ordinate or quasi-independent government organizations. It is used to ease the bottlenecks in decision-making which is often caused by central government planning and control of important economic and social activities. Decentralization with de-bureaucratization can help to enhance the sensitivity of government officials to the local conditions and needs. The UNDP also defines, "Decentralisation as a complex process that reaches beyond structural reforms proposed in institutional frameworks. Decentralization can be addressed as the multifaceted social, economic, environmental, and technological problems. Burns et al., (1994) have also defined decentralization in two senses. "Firstly, it refers to the physical dispersal of operations to local offices. Secondly, it refers to the delegation and devolution of authority to lower level of administration or government." There are Proxima definitions to the concept of decentralization, however, the big differences have happened concerning the aim or objective of why decentralize? And the process and parameters to evaluate the successful implementation of decentralizations. Authors like Green (2005) argued that decentralization aims to promote good governance by enabling citizen participation and democratic elections. Or, the outcome of decentralization should result in a more participatory government for citizens and improved delivery of public services because of the local participation and accountability.

The present paper has also argued that there is a strong link between decentralization and good governance in a way that good governance involves a situation of power-sharing between the center and sub-national units in decision making. Most literature over the last fifty years raises the idea that decentralization is a prerequisite for good governance (Oyugi, 2000). Similarly, Huther and Shah (1998) synchronize decentralization and good governance in a way that ‘quality governance can be enhanced by closely matching services with citizens’ preferences, and by moving governments closer to the people, which ensures greater accountability to the public. The above authors explicitly noted decentralization as a prerequisite for good governance by which decentralization creates a fertile ground for good governance.

The process of decentralization is believed to improve the quality of governance by making the government more accountable, responsible, transparent, effective, and efficient. Many authors like Nyiri (2003: 1) agreed that the relationship between ‘successful’ decentralization and ‘good’ governance is quite high”. By the same token, among others, one of the most important goals of good governance is; to provide efficient, effective, and equitable services to the local people. Decentralized governance can better assure quality governance or good governance that would consequently, create more efficient, effective, and equitable services to the community.

MAIN FOCUS OF THE CHAPTER

Good Governance

The word good governance is a recent phenomenon that comes to take the world’s political and development discourse in the last three decades. It was coined when the World Bank published a report entitled Sub-Saharan African- from crisis to sustainable growth in 1989. The report has analyzed the problems of development in Sub-Saharan Africa. In the 1980s, the economic performance of Sub-Saharan countries had worsened despite the World Bank structural adjustment programs (SAP’s) was implemented to address the lack of good governance (World Bank, 1989).

The Concepts of Good Governance

Before looking at the meaning of good governance, it is necessary to define governance. There are various definitions given by different authors. Brinkerhoff (2007) defined governance as a broad concept, which is not confined to public sector institutions, structures, and processes. When someone talks about governance, it is supposed to see how societies are organized to pursue collective needs and interests, therefore, to materialize these collective needs of the society it is possible to say that collective decision making the “heartbeat” of governance. According to Keohane and Nye as cited in Brinkerhoff (2007:3) governance can be defined as “the process and institutions, both formal and informal that guides and restrain the collective actions of a group.” The World Bank as cited in Brinkerhoff (2007:4) also identified governance as the “economic policymaking, service delivery and accountable using of public resources and regulatory power.” The World Bank has tried to view governance from the economic and development dimensions.

Governance can be defined as “an elaborate system of third-party government in which crucial elements of public authority are shared with a host of nongovernmental or other-governmental actors, frequently in a complex collaborative system”. Therefore, governance involves many collaborative actors in the decision-making process (Salamon, cited in Bell and Hindmoor, 2009:4)

United Nations Development Program (2003), on the other hand, defines governance as the exercise of economic, political, and administrative authority to manage a country's affairs at all levels. The concept of governance comprises mechanisms, processes, and institutions, which allows citizens and groups to articulate their interests, exercise their legal rights, meet their obligations, and mandate their differences.

Jain (2009:2) underlined that it is through an evolutionary process that the sub-discipline of bureaucracy, development, and administration has transcended from its limited scope of all that was associated with the concept of development and administration to that of the broader framework of "governance" and hence in the 1990s, after series of academic discourses, the word good governance has come to exist. "The notion of good governance seems to have first appeared in 1989 World Bank report on Africa, entitled with Sub-Saharan from Crisis to Sustainable Growth, the report noticed that Africa was witnessing a crisis of governance"

So far, various scholars and organizations have given various definitions to conceptualize the term good governance. But interestingly the definitions, though different, have something in common to share. United Nations (2005) regarded good governance as the combination of participation, transparency of decision making, accountability, rule of law, and predictability. A governance system that tries to fulfill the above principles would be accorded as good. The main aims of good governance are; to make institutions transparent, accountable, and responsive that would enable the people to articulate their interests through active participation, to exercise their legal right, and meet their obligations.

Good governance can be considered as quality governance characterized by participatory, consensus-oriented, and accountability, transparency, responsiveness, effectiveness, efficiency, equitability, and inclusiveness, and follow the rule of law. Many authors try to identify some indices for good governance. However, the word good is a value-laden concept, which is used for comparison based on certain standards; hence those indices have been used to judge what is good or bad in the governance system (Sharma, 2007).

Santiso Carlos (2006: 5) considered good governance as a means to address the challenges of quality governance in the following ways.

The shift from the notion of governance to good governance introduces a normative dimension in addressing the quality of governance. A good governance system puts further requirements on the process of decision-making and public policy formulation. It extends beyond the capacity of the public sector to the rules that create a legitimate, effective, and efficient framework for the conduct of public policy. It implies managing public affairs in a transparent, accountable, participatory, and equitable manner. It entails effective participation in public policy-making, the prevalence of the rule of law and an independent judiciary, institutional checks and balances through the horizontal and vertical separation of powers, and effective oversight agencies.

This entails that, good governance is the way to address the challenges of quality governance as good governance needs a collective decision and policy makings to manage public affairs in a transparent, accountable, participatory, and equitable manner. As a result of this, the notion of a shift from governance to good governance is considered as a normative way of addressing the challenges of good governance.

Elements of Good Governance

Just like the variations in the definition, differences in the elements of good governance are clear. Many authors and multilateral organizations have prescribed their elements while defining the concept of good governance. However, the following elements are commonly drawn by many authors.

Participation

According to the United Nations Development Program (2003) participation is a "means through which men and women get a voice in decision making either directly or indirectly through intermediate institutions that represent their interest. On the other hand, Sarfraz Khawaja (2011), conceptualized participation as a means through which the government structures are flexible enough to offer the beneficiaries and others affected, the opportunity to improve the design and implementation of public programs and projects. Participation can be defined as the psychological and emotional involvement of a person either in a group situation whereby actions are made towards the attainments of the goals of the group or individually to attain private goals. On the other hand, participation can be considered broadly as a means through which citizens, either individually or in the group, hold a consensus and enter into the responsibility for undertaking development and changes in the directions desired by exploiting personal qualities such as capability and available resources at every step of the decisions making process (King Prajadhipok's Institute, 2002).

In many cases, the participation of the people either in the development or political process is manifested in two ways, citizens directly get involved by themselves in voting, election campaign, approaching elected representatives, public hearings, and lobbying. So, direct participation includes both electoral and non-electoral participation of citizens, where citizens are supposed to engage not only in the political but also in the development agendas. Indirect participation has manifested indirectly. Citizens are entitled to participate indirectly in many cases via their elected representatives. Elected representatives are representatives elected by the people through competitive, fair, free, and periodic elections and they are also considered as a representative of the whole population for whom they are elected. Therefore, the participation of these representatives in the political and development agendas of the nation is considered as a tradeoff to the participation of every citizen since their consents are kept on the shoulder of the representatives. The level of participation can be interpreted by using the following five types of participation; passive participation, and participation by giving information, participation by consultation, participation for material incentives, interactive participation and self-mobilization, or active participation (Susan, 2008).

Transparency

According to the United Nations Development Program (2003), transparency is the core element of good governance. "it is built on the free flow of information and process, institutions and information are directly accessible to those concerned with them and enough information is provided to understand and monitor them". Eriko Aoki (2008) said that Transparency is very instrumental in creating openness and answerability in public offices for the people. As a result of this, transparency is considered as one way of promoting the trust and legitimacy of appointed and elected officials. Not only enhances trust and legitimacy but also increases administrative efficiencies of the public offices as transparency enhances the participation of the people, enables administrative agencies equipped with a lot of inputs like information, ideas, and alternatives from the people that would help them in decision making and implementing decisions.

Rosario, et al (1999) viewed transparency from the viewpoint of reducing uncertainty and crippling down corruption. Under this view transparency is simply the provision of relevant and reliable information. The government or the concerned bodies are required to provide accurate and timely information about the economy and government policies. This promotes effective decision making and implementation, which in turn reduces uncertainty or increases predictability and crippling down corruption. To promote transparency at local government, the government should make progress reports public, make annual reports public, make decisions public, and accessing information to all who need them.

Responsiveness

Responsiveness implies that institutions and processes try to serve all stakeholders or the government, exercising good governance, agencies should strive to serve and respond to the needs and interests of its constituents at a reasonable time (UNDP, 2003, UNDP 2006). This does mean when agencies, especially public agencies, are making decisions, policies, programs, or projects, they have to be concerned in addressing the needs and interests of the mass of the people in time. On the other hand, Deleon (2005:115) defined responsiveness as 'a process through which citizens' choices are converted into administrative practices'. In this definition, the author used to mean that administrative practices and decisions should be emanated from the choices of the citizens, not from the interests of governors or elites. The responsiveness of the government demonstrates the ability and flexibility of the government to respond to the needs of the mass of the people. Some of the main indicators that will measure the extent of the responsiveness of the government are the people's right to question the government official, offering immediate responses to the needs of the people, mass-based decision-making process or making decisions in consultation with the citizens, having information about citizens' preference before making a decision, satisfaction of citizens by the decisions made and services delivered are used to measure the responsiveness of the government.

Equality

The basic intent of equality is that no individual should be denied the opportunity to benefit from the development. All men and women should have equal opportunities to improve or maintain their well-being. Every citizen is entitled to get the opportunities of the country's development irrespective of their sex, culture, political affiliation, religious affiliation, and any other regards (UNDP,2003).

Effectiveness and Efficiency

It is the capacity of the organizations, and institutions to produce results that best meet the needs of society while making the best uses of resources. Effectiveness requires competence; sensitivity and responsiveness to specific, concrete, human concerns; and the ability to articulate these concerns, formulate goals to address them and develop and implement strategies to realize these goals (UNDP, 2006). Effectiveness is about the degree to which public services reach the clients and achieves the intended objectives. Efficiency, on the other hand, refers to the processes and institutions that are effective in producing results that meet the needs while making the best use of available resources (UNDP, 2006). It is about the most favorable ratio of costs and time to outputs in the range of choice open to the program administrator. In private sectors, profit-oriented, the intent of efficiency and effectiveness can be considered in terms of cost per output in line with a specific target as their primary concern is boosting up their profit. In public sectors, however, the main motive is to better deliver services to the people without any calculated business returns or profit motives, but their profits are measured based on the satisfaction of the citizens. Under this condition, efficiency and effectiveness in public sectors can be measured in terms of accessibility of services, timely public service delivery, the satisfaction of the people for the quality of services.

Accountability

According to United Nations Development Program (2003) the three most important actors in governance, the government in decision making, civil society organizations, and private sectors need to be answerable and accountable to the public as well as to the institutional stakeholders. However, accountability differs depending on the organization and whether the decision is external or internal to an organization. Accountability is closely related to the question of participation and responsiveness. Local governments are accountable if they are held responsible for their actions. There are two main lines of accountability: civil servants should be accountable to elected representatives (upward accountability) and elected representatives should also be accountable to the public (downward accountability). If there are corrective measures for both politicians and civil servants for unresponsiveness and misbehavior, they will have great intentions to act in the people's interest instead of their own; there will be encouraging participation and addressing demands. Hence, accountability promotes the participation of the people and responsiveness of public officials despite participation is equally a precondition for accountability because, without the engagement of the population, there will be no demands to hold officials accountable.

The monitoring power of the people on the public officials is strongly related to the proximity between the government and citizens, meaning that the closer the government to the citizens increases the monitoring power of the people. Hence decentralized governance creates opportunities to increase the accountability of public officials. More than anything else, how to make officials accountable is a very important issue or the mechanisms to make public officials accountable is the very important question that one needs to give appropriate answers. Different mechanisms are used for ensuring accountability, but among which auditing and evaluation or appraisal process, election (that makes elected representatives accountable in fear of losing power or authority), and procedures for recalling (in time of irresponsible action) are some measures of accountability (Susan, 2008).

DECENTRALIZATION

Decentralization can be defined as the transfer of authority, responsibility, and functions from the central government to the intermediary and local governments (Besfat, D., 2018). The aims of decentralization are addressing failures to foster development, strengthening democracy, provision of effective and efficient services, and combating poverty. Economists linked the rationale behind decentralization with the issues of the subsidiary. Accordingly, decentralization is justified on the ground of "allocative efficiency". Decisions taken closest to a local constituency are expected to better reflect the preferences of citizens, especially the poor. As a result, local governments are more likely to implement policies, plans, programs, and projects through community participation and social inclusion. Therefore, decentralization is an instrument for good governance (Besfat, D., 2018).

Concepts of Decentralization

Miraftab (2008:2) describes "the existence of decentralization in the global era as a pervasive trend for the devolution of governmental responsibilities from the strong central government to localities". The process of pushing powers, functions, and resources to the local governments is known as decentralization. Many scholars like (Miraftab, F., 2008; Rodríguez, A., and Ezcurra, R., 2009; Cheema, G. and Rondinelli, A., 2007; Merilee, S., 2007) have described that the concept of decentralization come to take the political stages of the world politics in the 1970s and 1980s, which was triggered by challenges of centralized states. As a result of this, after the 1970s the world states have been aspired to give the powers, functions, and resources to the lower tier of government to make the government closer to the people. Hence, this makes the government responsible, transparent, and accountable to the local people. The central state is often blamed for being too far from the realities of the people (Saito, 2008). However, just like other political, economic, and administrative developments, decentralization has also first come to exist within the developed states.

Miraftab (2008), Barnett et al (1997), Ndegwa (2002) define decentralization as the transfer of authority, responsibility, and accountability from the central government to lower administrative bodies. For a long period, the powers and functions of the state were strictly controlled by the central government, but many authors and organizations have argued that a centralized state is strongly related to an inefficient and ineffective kind of government. Hence, decentralization after the last quarter of the 20th century is proposed by authors and organizations to cure the inefficient and ineffectiveness of the government that is surfaced because of the centralized state.

Adamolekun L. (1991: 2) has also given the following definition where decentralization;

will be interpreted as the organization of government activities outside the headquarters of the central government, either as an administrative measure involving the transfer of resources and responsibilities to agents of the central government located outside the headquarters or as a political arrangement involving the devolution of specific powers, functions, and resources by the central government to sub-national level government units.

According to Mawhood and Smith, as cited in Ribot, J. (2002) decentralization is defined as any act in which a central government formally cedes powers to actors and institutions at lower levels in a political-administrative and territorial hierarchy. If one sees the definitions propounded by many authors, they share a certain commonality in the way that decentralization is viewed as a means of transferring power from the center to the local governments.

Forms of Decentralization

There are different forms of decentralization provided by many authors but before seeing the forms of decentralization one should understand two things; first, distinguishing the nature of power that is being transferred, and second, it is important to consider the institutional nature of the decentralized unit.

After viewing the above questions, it is possible to distinguish generally four forms of decentralization. Cheema and Rondinelli, (2007) have described the following forms of decentralization; Deconcentration, Delegation, Devolution, and privatization.

Deconcentration- according to Mugabi (2002), deconcentration is the least extensive form of decentralization, involving the very limited transfer of authority. It entails the transfer of authority for specific decision making, financial and management functions by administrative means at different levels under the same jurisdictional authority of the central government.

Delegation- it refers to the transfer of decision making and administrative authority/responsibility for carefully spelled out tasks/ functions to institutions and organizations that are either not directly controlled or semi-controlled by the central government (Mugabi, 2002).

Devolution- It is the highest and most preferred form of decentralization. Under devolution, autonomous locally elected units are legally constituted as separate governance units. So, the transfer of powers, functions, and resources to these units from the central government is referred to as devolution. One thing that one has to know is that unlike delegation, the power which is given to these kinds of units is not conditional whereby the federal government gives and takes away by its will and also their (units) power has both constitutional and legal bases.

Devolution has the following characteristics; first, local units of government are autonomous, independent, and perceived as separate levels of government over which central government exercises little or no direct control. Second, the local governments have clear and legally recognized territorial boundaries within which they exercise authority and perform public functions. Third, devolution implies the "need to develop local governments as institutions" in the sense that they are perceived by local citizens as organizations producing services that satisfy their needs and as governmental units over which they have some influence. Lastly, devolution is an arrangement in which there are reciprocal, mutually beneficial, and cooperative relationships between the central government and local governments (Mugabi, 2002:23).

Privatization; is the fourth form of decentralization. This form of decentralization refers to units outside the formal government structures, which are used to transfer functions and responsibilities to NGOs, companies, and cooperation. Even though this form of decentralization is included in discussions of decentralization, the nature of these transfers is not level-specific, i.e., transfers could occur at the same level, which is often the central one. These phenomena are best not treated as forms of decentralization but of divestment. Divestment occurs when planning and administrative responsibility or other public functions are transferred from the government to voluntary, private, or non-government institutions (UNDP, 1999).

Dimensions of Decentralization

Based on the forms or ways of decentralization in which power and responsibility are transferred to the lower level of government, many authors have made a distinction in the dimensions of decentralization. The form of decentralization is the extent to which the deepness and flippancy of power, authority, and responsibility are reflected in the dimensions of decentralization. Generally, there are three dimensions of decentralization; these are administrative decentralization, political decentralization, and fiscal or economic decentralization.

Administrative Decentralization- According to Rondinelli &Nellis as cited in Dahal et' al (200l:34) "administrative decentralization underlines state control over territorial and administrative units, seeks to encourage the division of labor through functional differentiation". From the administrative perspective "decentralization can be considered as the transfer of responsibility of the planning, management, and the rising and allocation of resources from the central government to its agencies and subordinate units". Administrative decentralization can be viewed as an "intra-government transfer of authority and responsibility among units of administration within the same organizational hierarchy. It is through a deconcentration form of decentralization that administrative bodies or agencies at a different level of hierarchies would secure delegated responsibilities and functions by the central administrative bodies (Meheret, 2002). To judge the effectiveness of administrative decentralization, autonomous power for hiring and firing civil servants, planning and budgeting capacity, decision-making authority, clear assignments or division of functions and responsibilities, policy implementing capacity are the major important things that one should consider in local administrative systems.

Political Decentralization- is the second important dimension of decentralization. According to Dahal et' al (200l), this dimension of decentralization is considered as "the transfer of decision-making power and authority to the locally elected political representatives". As the positive aspects of political decentralization, it increases political participation and accountability by making the government closer to the people. On the other hand, political decentralization is considered as "the territorial division of the state power, which is aimed at achieving complete devolution of decision making power and transferring political responsibilities to the lower level of elected political officials" (Meheret, 2002:130). Political decentralization can be assured when the political system fulfills competitive, free, fair, and periodic election, the existence of elected local representatives, autonomous and devolved power given to district council, the responsiveness of elected local representatives, and downward accountability. Political decentralization may include laws on (a) elections (b) the establishment of local governments; (c) tax authority; (d) spending responsibilities or "competencies" among types of governments and (e) borrowing and debt issuance (ECA, 2011).

Economic or fiscal decentralization- is the third important dimension of decentralization. This dimension is the most debatable particularly in most developing countries where the central government is unwilling to cede fiscal power to the sub-national government. Fiscal decentralization is taking place through the reallocation of fiscal or economic resources to the sub-national units. It comprises both the fiscal transfers (intergovernmental transfers) and empowered the capacity of sub-national governments to raise, manage, and mobilize their revenues. In fiscal decentralization, some important questions might be raised. These are; who sets and collects what taxes? Who makes what expenditure? And how any "vertical imbalances" is rectified? (UNDP, 1999).

Fiscal Decentralization is a broad concept comprising of distinct intergovernmental arrangements. Devolution is an ideal form of fiscal decentralization: independently established subnational governments should have given the responsibility to deliver a set of public services along with the authority to impose taxes and fees to finance the services. Devolved governments have considerable "own" flexibility to select the mix and level of services. Some financial support (e.g., transfers such as revenue sharing and explicit central-local grants) may be provided (ECA, 2011).

There are five fundamental questions to be addressed with a devolved system (Bird, 1993):

1. Which type of government does what (expenditure assignment)?
2. Who levies which revenues (revenue assignment)?
3. How can vertical and horizontal fiscal imbalances be resolved (a role for intergovernmental transfers)?
4. How is the timing of revenues addressed (debt and the hard budget con*straint)?*

5. What institutional framework (i.e. organizational, institutional, and *human* capacity*)* is required to deal with the implementation challenges of decentralizing States?

FACTORS FOR SUCCESSFUL DECENTRALIZATION

Despite not denying the fact that there are numerous factors for a successful decentralization process, the present paper has summed up the factors into three. These are political factors, fiscal factors, and administrative factors.

Political Factor

The political commitment of higher officials, policy coherence, accountability mechanisms, political mobilization of the poor, and institutionalized participation are among the political factors, which are essential to successfully implement decentralization.

Political commitment. the commitment to decentralization from the center is essential for effective decentralization and especially pro-poor decentralization processes. Evidence suggests that successful pro-poor decentralization is associated with governments that are politically committed to the democratic empowerment of local governments, through the delegation of power and resources.

Political commitment and leadership from the local government are also the keys to ensure an effective response to the opportunities presented by the higher-level official's commitment. The electoral process plays a vital role as it promotes the competition required to put in place the best leaders (Robinson 2003).

Policy coherence. Policy coherence is a sign of commitment to decentralization. It is often the case that the central government adopts sectoral policies that undermine the power of local authorities by indirectly limiting resources and functions, compromising the decentralization process (Jütting et al., 2005).

Accountability mechanisms. It is needed to put in place accountability mechanisms to hold bureaucrats accountable to elected representatives and elected representatives are supposed to be accountable to the citizens (Crook and Manor, 2000).

The political mobilization of the poor. The extent of people's engagement, the poor in particular, with decentralized policy processes, depends, to some extent, on the presence of an organized civil society, which is independent of the state and with the capacity to promote the interests of the poor. A strong civil society and inclusion of it in the decentralization process are important to have strengthened the pro-poor outcomes of decentralization (Crook and Manor, 2000).

Institutionalized participation. Having institutionalized arrangements to support will facilitate public engagement (Robinson, 2003). Therefore, systematic and institutional public participation is important for having successful decentralized governance.

Fiscal Factors

Adequate financial resources are fiscal factors that determine the success of decentralization. Adequacy of financial resources is the availability of financial resources, which is a basic condition for effective decentralization. As a result of, lack of some degree of fiscal decentralization, it is difficult and problematic to operationalize the transfer of responsibilities and functions. However, the financial autonomy of the local governments is constrained by the limited scope for raising local revenue. Moreover, transfers from the central government are often reserved for specific programs and activities, and salaries and recurrent expenditures tend to account for a large share of local government budgets. Hence, limited financial autonomy may emasculate the local government's capacity to implement local development programs, which respond to the needs of local people.

Administrative Factors

These factors have administrative relevance. It includes the division of administrative roles and technical and managerial competencies.

Division of administrative roles. The presence of clarity about the sharing of responsibilities and powers between central and local government and about the expected relationship between different levels of governance, such as the rules and practices governing fiscal transfers are very important to make decentralization successful. (Jütting et al. 2005, Ekpo 2008).

Technical and managerial capacity. Technical and managerial capacities are often weak at the local level. Decentralization of responsibilities and resources are not necessarily accompanied by measures to ensure the local government's capacity for planning, budgeting, implementing, and monitoring. Lack of such competencies is likely to harm the quality of service delivery (Robinson, 2003).

THE RELATIONSHIP BETWEEN DECENTRALIZATION AND GOOD GOVERNANCE

Many authors and multilateral organizations have been creating a strong relationship between decentralization and good government. Saito (2008) and Oyugi(2000) said that there is a causal relationship between decentralization and good governance. This means that implementing decentralization properly can certainly wield positive impacts on the exercise of good governance, but if things happened in the reverse, a negative impact on the exercise of good governance would certainly prevail. The decentralization measures that were taken in the past few decades particularly since the 1990s have intended to contribute to further democratization, effective development, and good governance.

Many academics and practitioners believed that the process of decentralization underway in the 1980s was important to ensure good governance. Decentralization is purposively intended to transfer powers, functions, and resources from the central government to the lower level of government. In doing so, it would probably make the government, more close to the people. But for many years, under the centralist regime, the government was far from the peripheries and confined only to the center while maintaining loose relations with the peripheries. This kind of system certainly creates an inefficient and ineffective government that is not accountable, responsive, and transparent to the local people. Hence, it is believed that the paradigm shift from the centralized state to the decentralized state would certainly create a government, which is accountable, transparent, responsive, efficient, and effective. That is why many authors hypothesized that the relation between successful decentralization and good governance is quite high (Merilee, 2007).

There is a close connection between decentralization and good governance. It is stated that "decentralization is directly or indirectly associated with many aspects of good governance including consensual decision making, equity, representation, accountability, and responsiveness of public institutions to the community concern" (Meheret, 2002:127).

Cheema and Rondinelli (2007) have analyzed three important historical waves of decentralization. In the 1970s, the first wave of decentralization focused on deconcentrating hierarchical government structures and bureaucracies. The second wave of decentralization, in the mid-1980s, has broadened the concept to include political power-sharing, democratization, and market liberalization, which expands the scope of decentralization to include the private-sector decision-making process. Finally, around the 1990s the concept of decentralization was seen as a way of opening governance to wider public participation. Hence, if we see the second and third waves of decentralization, it has boldly aimed at enhancing good governance.

Most authors have established an empirical relationship between decentralization and quality governance (Muringani et al., 2019; Treisman, 2002); fiscal decentralization and quality governance (Kyriacou, & Roca-Sagales, 2009), Decentralization and Public Services (Khaleghian, 2003), Fiscal Decentralization and Municipal Performance (Khanal, 2016), Political decentralization and corruption (Fan, C, et al., 2008), Decentralization and Sub-National Governance (Vu and Zouikri, 2011), Decentralization and the quality of public services:(Diaz-Serrano and Meix-Llop, 2019), Fiscal Decentralization and the Efficiency of Public Service Delivery (Sow and Razafimahefa, 2015), Fiscal decentralization and the quality of public services in Russian regions (Freinkman and Plekhanov, 2009), Applying a Simple Measure of Good Governance to the Debate on Fiscal Decentralization (Huther and Shah, 1998). And decentralization and corruption

Despite not all but most empirical studies have confirmed a positive relationship between decentralization and good governance. For example, Andrés Rodríguez-Pose & Vassilis Tselios (2019) have made a study on well-being, Political Decentralisation, and Governance Quality in Europe. In the study, the authors confirmed that, though not necessarily, there is a positive relationship between quality governance and wellbeing and it is also mediated by political decentralization. Vu and Zouikri (2011) have had a study on decentralization and the quality of subnational governance. The authors, in the study, have empirically examined the impact of decentralization on the quality of sub-national governments and come up with a conclusion denoting ‘decentralization has improved local government efficiency’. Khanal (2016) also investigated the relationship between fiscal decentralization and municipal performance in Nepal. In the study, the author empirically concludes that there is a statistically significant positive, albeit moderate, relationship between revenue decentralization and municipal performance. In another study, using the cross-country data up to 75 countries, a positive association between tax decentralization and quality of governance is evident provided that the share of local to national expenditure is relatively low (De Mello and Barenstein, 2001). Hika N. et al. (2018), in a study on The Role of Decentralization in Promoting Good Governance in Ethiopia: The Case of Wolaita and Dawuro Zones, indicated that decentralization improves good governance when there is an institutional framework which enables public users to participate in planning, implementation, evaluation and controlling of service delivery, empower women, youth and disadvantaged groups at woreda and local level. Fisman and Gatti (2002), Huther and Shah (1998), and De Mello and Barenstein (2001) all have reported a positive relationship between fiscal decentralization (the subnational expenditure share) and the absence of corruption. Kyriacou, & Roca-Sagales (2009) in an empirical study on Fiscal and political decentralization and government quality, confirmed that fiscal decentralization has a positive impact on government quality. They further revealed that in the form of subnational elections, bicameralism, and especially federalism and autonomy, political decentralization tends to mitigate the positive impact of fiscal decentralization on the quality of government.

Kyriacou, and Roca-Sagales (2009), have made a study using a sample of 29 poor, middle-income, and rich countries over the period 1984-1997. In the study, they found that fiscal decentralization has a positive effect on institutional quality but this effect diminishes as countries become wealthier. Moreover, the positive effect of fiscal decentralization on government quality is reduced by electoral and decision-making decentralization in poor and middle-income countries whereas these forms of decentralization seem to improve the impact of fiscal decentralization on government quality in rich countries. Freinkman and Plekhanov (2009), in a study on Fiscal decentralization and the quality of public services in Russian regions, concluded that decentralization also has a positive impact on the quality of municipal utility provision.

Those empirical studies have supported the very argument of the present paper. The present paper, as mentioned earlier, has an argument that supported the successful decentralization should bring about good governance. Because decentralization makes the government closer to the people and gives immense opportunities to them to participate in the local government decision-making process, empower them to hold accountable the local government, access them the local government with a great sense of transparency and responsiveness, delivered them efficient and effective services, and provides equality, equity and rule of law to them. These ultimately ensure good governance.

AN OVERVIEW OF DECENTRALIZATION AND GOOD GOVERNANCE IN AFRICA

Over the past three and more decades, 80% of developing and transition countries have pursued a decentralized form of governance. However, the number of nations that pursued decentralization has grown from time to time. So, the popularity of decentralization spans all over the territories of the world from the 1970s onward. The world states were not incarnated with the policy of decentralization at the same time. Hence, developing and transition countries were blessed with the system of decentralized governance a bit later decentralization was well pronounced in the developed countries. As a developing nation, African states could share the above denominator or it is for the last three and four decades the policy of decentralization came into the political arena of African nations, which is comparatively more recent than the developed state (Meine, 2008).

Africa has a long history of a formally centralized rule, which dated back to the colonial time, or even in some instances, it goes much beyond the colonial time. It is the independence constitutions that gave, at least in the former British colonies, the legal base for the constitution of local government with elected councils. The assumption goes with the genesis of local government had strongly tied up with the provision of service delivery. Local governments had claimed the responsibility for the provision of education, health, road, water supply, and agricultural extension services, etc. Even though their constitution is one that can be said earlier but until recent times, their competencies have said to be underestimated. Scholars have put forth different reasons for why the competencies of local government have been paralyzed. Among these, the main reasons are; single party, military rule, and the necessity of centralized planning led to the marginalization and outright suppression of the elected councils and district councils. As a result of these, the competencies of local government have become undermined throughout the late1960s and 1970s. Not only those but also external factors like, the economic philosophy by which the world had especially after the Great Depression, called Keynesian style, which rigorously followed by the donors had created the sense of the establishment of a strong centralized state in Africa. Except for the military regime of Nigeria, which had initiated a substantial decentralization program in 1976, the central governments were not willing to cede power, resources, and responsibilities to local governments and so far, local governments have been continued with little power, resources, and responsibility. Against this background history of centralization, nowadays, there is a remarkably strong consensus on the desirability of decentralization with the support of the donors, civic organizations, and central governments in charge of implementing it (Meine, 2008).

African nations are pursuing decentralization for different reasons. Over the last 40 years, African nations have pursued decentralization with the aims of improving the efficiency of governance and making the policy more responsive to the needs of local people, particularly the poor (Cabral, 2011). Some nations like Mozambique, Uganda, Mali, Senegal, Rwanda, and Sudan have used decentralization as a conflict management tool and improving service delivery, while some others like South Africa has used decentralization as a solution for political crisis and still, some others like Ethiopia used decentralization as a response to regional or ethnic desires to have greater participation in the political process. Ghana and Malawi have also instituted decentralization to build up local capacity and grassroots institutions and adequately maintaining the participation of local peoples or it is designed as a machinery of government to shift the governance from commanding to consultation processes, which in turn brings participatory governance. The historical trends of decentralization in Tanzania had had a paradoxical memory in the country unlike other countries in the continent. Initially, in 1972 as a result of the “decentralization of government administration act”, local governments were abolished and replaced by the district and urban development councils and regional councils. Those who were the members of the councils have been dominated by the central government officials. However, a decade later, in 1982 local governments were reestablished with series of local government acts, and in the 1990s decentralization was held back by the Tanzanian government with the aim of the full recovery of the previously abolished and now reestablished local government. After the re-introduction of local government authorities in 1983, Tanzania has introduced a new decentralization reform called decentralization by devolution was introduced in 1990s and became operational in 1994. It was a means of reforming local government to transfer them some of political, financial and administrative power. Decentralization by devolution focuses on service delivery improvement by addressing community needs reflected by affording them the opportunities to participate in the development planning and implementation (Kisumbe, L., et al., 2014). To put it bluntly, decentralization in Tanzania was aimed at devolving more powers to the previously demolished local governments (Meine, 2008).

Therefore, the above statements have shown us why decentralization is first introduced across the nations of the continent. But generally, the main motive of tracking down decentralization in Africa is to equip up itself with the principles of good governance adopted by many multilateral and donor organizations. Because donors and multilateral organizations had a claim that Africa’s failure of development was not inherent in the policy (structural adjustment program) but the absence of good governance in the continent led to a crisis. Hence as a solution to this, many Africa nations were devoted much to decentralizing governance to wield transparent, participant, accountable, and efficient and effective systems in the process and procedures of governing.

Looking into the Stephen N. Ndegwa (2002) decentralization rank and the Mo Ibrahim Foundation quality governance reports of African countries, the paper confirmed some kinds of associations between decentralization index score and quality governance in Africa. In Stephen N. Ndegwa’s decentralization index, countries like South Africa have a high index in political and administrative decentralization and high governance quality score; Uganda has a high score in all types of decentralization index and good governance quality scores; Namibia has a high political decentralization index and high governance quality score; Kenya and Ghana have high, moderate and moderate political, administrative, and fiscal decentralization index respectively and they have good governance quality score; Nigeria, Rwanda, Madagascar, Zambia, and Tanzania have moderate decentralization index score and good governance quality; Senegal has high and moderate political and fiscal decentralization index and also has good governance quality score in the Mo Ibrahim Foundation quality governance report. On the other hand, countries like Congo DRC, Niger, Chad, Central Africa Republic, Sierra Leone, Eritrea, Congo Republic, Congo Democratic Republic, Niger, Angola, and Chad have weak decentralization index scores and these countries have low governance quality scores. These could not be a mere coincidence but fertile grounds have been created by the process of decentralization for having good or high governance quality. However, there are some odd results where countries (i.e. Benin) with weak decentralization index scores have high governance quality scores. This could be attributable to some other political factors; For example, the 2015 Afrobarometer rated Benin as a full democracy or a democracy with minor problems by 54% (Bentley et al., 2015).

GOOD GOVERNANCE, DECENTRALIZATION, AND ECONOMIC DEVELOPMENT

The implementation of decentralization, in the 1970s, and good governance, in the 1990s, in Africa had strong economic causes. For example, when the economic crisis of the 1970s had emerged, most African countries had responded to it by adopting structural adjustment programs (SAPs), in which decentralization was approached to local governments as a possible way for reducing central government expenditures (Olowu, D., 2001). Therefore, an economic reform which was called SAPs had an impact on decentralization. And on the other hand, good governance has been brought into Africa with the failure of structural adjustment program and the world bank gave stewardship for African countries to implement the structural adjustment program with the basic elements of good governance to recover the economies of African countries (World Bank, 1989). Hence, both concepts are directly connected to economic development. Decentralization and good governance are not an end in themselves or instrumental to achieve development in the continent. Harikumar, S. L. (2013) argued that the goals of development can be realized through decentralization. It has been strongly argued that local bodies are more efficient in allocating resources and local planning are also efficient not only to respond to the preference of the people but also in utilizing natural resources as it is very closer to the people.

Democratic decentralization helps to improve the efficiency of implementation, however, if the development process is made participatory and transparent. Democratic decentralization is instrumental to avert the misuse of resources and enhances the evaluation and monitoring capacity of policies and programs. Even though arguments are yet open for discussion and there are inconclusive conclusions about the effect of decentralization on economic development, the present paper found many empirical studies that proved the relationship between decentralization, good governance, and economic development. For example, a study made by Ebel and Yilmaz (2002) having 6 Transition countries sampled from the year 1997 to 1999 using the Bivariate OLS method concluded that decentralization is positively related to economic growth. Thießen (2003) has also made a study taking samples from 21 developed countries (1973-1998), the study using the OLS method concluded as decentralization of spending by 10% increases the growth of real GDP per capita by 0.15% (5% significance level). In another study made by Thießen (2003a), having panel data from 1981-1995 of 26 developed countries, the study using GLS method comes up with a finding that supported as decentralization of spending by 10% increases growth of real GDP per capita by 0.12%-points (5% significance level). Eller (2004) also made a study taking 22 OECD countries spanning from 1972-1996, using fixed effects and time dummies methods the study revealed that decentralization is positively related to economic growth. Iimi (2005) has made a study taking 51 developing and developed countries from the period 1997 to 2001, using the OLS method the study confirmed that a 10% higher decentralization of spending increases the growth of real GDP per capita by 0.6%-points (1% significance level). Iimi, A. (2005) also found that there is a significant positive relationship between per capita growth rate and fiscal decentralization measured by the local share of the expenditure to total government expenditure.

Khumalo, P. (2015) made a study on decentralization and local economic development in four Southern African countries. The paper concludes that "constitutional provisions for the authority and functions of decentralized structures are key to the realization of local economic development. Despite associated challenges, decentralization provides better room for local economic development than a centralized government". Therefore, many empirical studies supported the importance of decentralization to bring about economic development.

On the other hand, good governance is also important to bring development. Authors like Rita Abrahamsen (2000) had integrated the emergence of good governance agenda with development discourses that have long been sponsored by the Norths. Besides, the failure of structural adjustment programs in Africa had also necessitated the emergence of the concept of good governance agenda in the continent. Hence, like decentralization, good governance has also been implemented to bring development. The pursuance of good governance in Tanzania, for example, has something to do with economic policy, management, and proper use of government revenue and national resources (Mhina, A., 2000). Fayissa, B., & Nsiah, C. (2013) conducted a study on the impact of governance on economic growth in Africa based on an annual panel of data of 39 African countries covering the years between 1995 and 2004. The results of the study suggested that good governance has a positive and significant impact on growth. The conclusion drawn from this study revealed that good governance is important for the economic growth of sub-Saharan African economies. These results showed that decentralization and good governance are important to bring, maintain, and sustained development and economic development. So, policy recommendation goes around in the continent to decentralize power, function, and authority and enhance the quality of governance or good governance to increase economic development.

CONCLUSION

Decentralization can be defined as the transfer of authority, responsibility, and functions from the central government to the intermediary and local governments. The aims of decentralization are addressing failures to foster development, strengthening democracy, provision of effective and efficient services, and combating poverty, and ultimately promotes good governance. Good governance can be considered as a quality of governance, which is characterized by participatory, consensus-oriented, and accountability, transparent, responsive, effective, efficient, equitable, and inclusive, and follows the rule of law.

Decentralization and good governance are highly intertwined whereby the former is used as a policy instrument to achieve good governance in any political system. This has been supported by different studies. Meheret (2002:17) has concluded that "decentralization is directly or indirectly associated with many aspects of good governance including consensual decision making, equity, representation, accountability, and responsiveness of public institutions to the community concern". Saito (2008) and Oyugi (2000) said that there is a causal relationship between decentralization and good governance. This does mean that implementing decentralization properly can certainly yield positive impacts on the exercise of good governance, but if things happened in the reverse, it would harm the exercise of good governance. Therefore, successful decentralization practices could be an impetus to achieve good governance.

In the context of public sector reform, conditioned with the structural adjustment, the wave of decentralization in Africa has started between the late 1980s and early 1990s. Countries like Uganda, Ghana, Nigeria, Botswana, Côte d'Ivoire, Kenya, and Tanzania, were among the first to include decentralization in the public sector reform packages. Research gaps are still found on decentralization in Africa. Few studies reviewed the decentralization experiences across the region comprehensively and comparatively. Much of the available evidence is anecdotal or focused on a very specific set of issues, such as participation, empowerment, or fiscal autonomy. Generally, African nations are pursuing decentralization for different reasons but ultimately improving the quality of governance.

According to the Stephen N. Ndegwa decentralization rank and the Mo Ibrahim Foundation quality governance reports of African countries, the paper concludes that some kinds of associations between decentralization index score and quality governance in Africa become apparent. In Stephen N. Ndegwa's decentralization index, countries that have a high index in decentralization could have high governance quality scores in Mo Ibrahim Foundation quality governance reports.

Decentralization and governance quality have a positive effect on economic growth. Although authors are still facing challenges to bring conclusive results about the effect of decentralization on economic development, numerous empirical studies have confirmed the positive relationship between them. On the other hand, it seems conclusive regarding the relationship between good governance and economic development. Authors have brought many empirical studies that have confirmed the positive and significant impact of good governance on economic development.

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Chapter 16
Massive MIMO-Based Network Planning and Performance Evaluation for High Speed Broadband Connection in Rural Areas of Tanzania

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ABSTRACT

The need for high speed broadband connection in rural areas is inevitable since services like e-governance, virtual classrooms, telemedicine, video-on-demand, home entertainment, etc. are needed. However, in order to provide broadband services, service providers must incur high deployment costs and wait for long time for return on investments. Thus, massive multiple-input multiple-output (MIMO) with its favorable propagation phenomenon can be exploited as an alternative to boost signal coverage in rural areas while providing high speed broadband connection. In this chapter, planning and performance evaluation for massive MIMO network has been conducted for rural areas in Tanzania. Infovista and MATLAB tools were used for network simulation. The results show that massive MIMO network at 5MHz bandwidth performs better in terms of RSRP and SINRu when compared to 10 MHz and 20MHz channel bandwidths.

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INTRODUCTION

People living in rural areas need broadband connection for services like e-governance, virtual class rooms, telemedicine, video-on-demand, home entertainment etc (Camp & Beaulieu, 2016). Therefore, the need for high speed broadband connection in rural areas is inevitable. However, in order to provide broadband services, service providers must incur high deployment costs and wait for a long time for return on investments (Simba, Mwinyiwiwa, Mjema, Trojer, & Mvungi, 2011). One of the technology that can help to bring down the cost is Long Term Evolution (LTE), which has been proposed in (Rekawt, Rahman, & Abdulrahman, 2014; Yogapratama, Usman, & Wibowo, 2015).

However, with LTE based proposals, a bandwidth of 5 MHz at 900MHz and 6 cells were required to serve 7582 users in average when eight villages with 14.6 km2 were considered. Study by Larsson et al. (2014) found that it is possible to reduce the reported bandwidth and number cells if massive MIMO is considered as an alternative. This is because massive MIMO can use hundreds or thousands of antennas to serve more users in the same bandwidth (Björnson, Larsson, & Debbah, 2015). In addition, massive MIMO has a potential to boost the coverage through a favorable propagation phenomenon (Ngo, Larsson, & Marzetta, 2014). Favorable propagation inherent in massive MIMO can be exploited to reduce the number of cells proposed in (Yogapratama et al., 2015) by deploying large cells. It is evident that massive MIMO based network can bring down the cost via bandwidth and cells reduction. However, before deploying the massive MIMO based network in rural areas it should be planned first.

Several works on planning and performance evaluation of broadband networks can be found in literature. Yogapratama et al, (2015) planned and analyzed the performance of 900 MHz and 1800 MHz LTE network for 5 MHz and 20 MHz channel bandwidths for rural Indonesia. Results show that using 900 MHz band at 20 MHz bandwidth would serve better throughput and smaller number of cells for selected areas.

Another study conducted by Tchao, Gadze and Agyapong (2018) evaluated performance of deployed 4G LTE network in Ghana at 2600 MHz frequency band. Throughput and coverage were computed to compare its performance based on different antenna configurations. The results of the research work indicated that better performance in terms of throughput and coverage can be achieved by using several numbers of antennas at base station.

Moreover, a near similar study conducted by Cueto, Mello and Rodriguez (2013) compared capacity and coverage of LTE-Advanced networks at 700 MHz and 2600 MHz bands. In this study higher channel bandwidths (20 MHz, 40 MHz, 60 MHz 80 MHz and 100 MHz) were considered. The results showed that a 700 MHz band to have better coverage and capacity. However, careful planning is required to properly benefit from this carrier frequency. To the best of our knowledge, a study that plans and evaluates performance of massive MIMO based network for high speed rural broadband connection in Tanzania is lacking in literature.

In this chapter, a broadband network for Tanzanian rural areas based on massive MIMO technology at 2.1 GHz carrier frequency was planned and its performance was evaluated. This was to support the initiative of the United Republic of Tanzania in bringing broadband services to rural areas so that at the end of 2021 and 2024 broadband population coverage in Tanzania should be 60% and 90% respectively (TCRA, 2018).

The rest part of this chapter is organised in the following sequence; overview of massive MIMO, favorable propagation phenomenon in massive MIMO networks, radio propagation models, network parameter planning and simulation methods, results and conclusion.

OVERVIEW OF MASSIVE MIMO NETWORKS

Massive MIMO was proposed for the first time by Thomas L. Marzetta in 2007 (Marzetta, 2007). It is a significant breakthrough, going beyond conventional MIMO system. In current wireless systems, Massive MIMO is also known as large-scale antenna system, or very large MIMO, or hyper MIMO, or full-dimension MIMO (Larsson et al., 2014).

Marzetta (2015) described massive MIMO as the use of large number of antennas for transmitting and receiving signals. Using massive MIMO technology, a BS is equipped with large number of antennas to serve many users in the same active time-frequency block (Araújo, Maksymyuk, Almeida, Maciel, & João, 2016). The large number of antennas helps in increasing throughput (Larsson et al., 2014) at the receiving side without requiring extra bandwidth which is a scarce resource. Further, massive MIMO increases robustness against unintended man-made interference (Larsson et al., 2014), which is the problem in wireless communication systems especially for large cells in rural areas. Increased diversity is another benefit of massive MIMO (Spencer, Peel, Swindlehurst, & Haardt, 2004).

Moreover, the number of the antennas deployed at each BS in every cell is usually several tens or even more, and simultaneously serving tens of users is another most notable characteristic of massive MIMO and for the same cell, the number of antennas at each BS greatly exceeds the number of active users in the same time-frequency resource (Andrews et al., 2014). This property distinguishes massive MIMO from conventional MIMO where the number of antennas is limited. For example, according to LTE standard, the data rate during uplink communication is 75 Mbps using 20 MHz of spectrum with 4 x 4 antennas (Liu, 2012).

FAVORABLE PROPAGATION IN MASSIVE MIMO NETWORKS

Björnson et al., (2017) defined favorable propagation for massive MIMO networks as mutual orthogonality among the vector-valued channels to the terminals. It is one of the key properties of the radio channel that is exploited in Massive MIMO (Ngo et al., 2014). This propagation turns the directions of User Equipment (UE) channels asymptotically orthogonal. This leads the Base Station (BS) mitigate interference between UEs, which at last improves spectral efficiency, thus system capacity is improved. It also lets the use of linear combining and pre-coding easier.

Favorable propagation conditions enhance optimal performance by the help of linear processing technique. In its simplicity, on the uplink (UL), with a simple linear detector like matched filter, noise and interference can be canceled out (Ngo et al., 2014). Furthermore, favorable propagation in massive MIMO networks results in coverage extension such that large geographical area may be covered with large cell. This is beneficial for rural area where there is sparse population which needs coverage and improved capacity too.

Mathematically, favorable propagation can be defined as follows; given a pair of channels $\mathbf{h}^j_{lk}$ and $\mathbf{h}^j_{li}$ to *BSj* give asymptotically favorable propagation if

$$\frac{(\mathbf{h}^j_{li})^{\mathbf{H}}\mathbf{h}^j_{lk}}{\sqrt{E\{\|\mathbf{h}^j_{li}\|^2\}E\{\|\mathbf{h}^j_{lk}\|^2\}}} \rightarrow 0$$

for number of antennas M_j®¥ at BS j. This means that the normalized inner product of channels tends asymptotically to zero. However, this does not mean that the inner product of channels $\mathbf{h}^j_{lk}$ and $\mathbf{h}^j_{li}$ turns to zero but channel directions become orthogonal.

RADIO PROPAGATION MODELS

Radio Frequency (RF) planning requires propagation models in order to predict coverage and link budget among other performance parameters. These models are functions of frequency band, type of deployment area and type of application (Naseem, Nausheen, & Mirza, 2018). The type of deployment includes; urban, suburban, and rural areas. Moreover, the models are classified as indoor and outdoor propagation models. Okumura-Hata, Longley-Rice, COST231-Hata and Durkin models are most applicable for outdoor environment. Okumura-Hata and COST231-Hata models find their wide range of applications in wireless communications systems.

The Okumura-Hata model (Song & Shen, 2011) is applicable for cellular propagation to estimate channel behavior in 150 to 1500 MHz range. The coverage distance is around 1 to 20 km. The Okumura model's formulae are;

$$L(dB) = FSL - A_{mu}(f,d) - G(h_{te}) - G(h_{re}) - G_{area} \tag{1}$$

Where;

FSL = free space loss,

$$FSL = 32.45 + \log(d) + 20\log(f) - 10\log(G_t) - 10\log(G_r) \tag{2}$$

Where;

d = ditance between the transmitter and receiver in km.
f = carrier frequency in MHz,
Gt,Gr = transmitter and receiver gains,
Amu(f,d) = median attenuation relative to free space,
G(hte) = base station antenna height gain factor,
G(hre)=mobile antenna height gain factor,
Garea = Gain due to the type of environment.

On the other side, COST231-Hata model provides path loss estimates for large urban cells of 1 to 20 km, within a wide range of frequency, BS height of 30 to 200 m, and in rural, suburban or dense urban environment (Song & Shen, 2011). The prediction formula for rural environment is follow;

$$L_p(rural) = L_p(urban) + 18.33\log(f_c) - 4.78\log(f_c)^2 - 40.94 - a(Hue) \tag{3}$$

Where;

$$L_p(urban) = 46.3 + 33.9\log(f_c) + [44.9 - 6.55\log(Hbs)]\log(d) - 13.82\log(Hbs) - a(Hue)dB \quad (4)$$

$$a(Hue) = [1.1\log(f_c) - 0.7]Hue - [1.56\log(f_c) - 0.8] \quad (5)$$

Where;

fc=indicates the system's carrier frequency (MHz)
Lp= path loss (dB)
Hbs= BS's antenna height (m)
Hue = user equipment's height (m)
d= separation distance between user equipment and the BS (km)
a(Hue) = user equipment antenna height correction factor. This model was adopted for this study.

NETWORK PARAMETER PLANNING AND SIMULATION

This paper adopted existing methodologies for network planning whereby link budgets were computed for both UL and DL directions. The coverage planning and site placement was accomplished with the help of a special planning tool Infovista Planet. The tool was chosen among other tools because it is capable of modeling and planning most wireless technologies, including massive MIMO technology for 4th Generation (4G) and 5th Generation (5G) networks (Infovista, 2019).

Link budget calculation intended to obtain the Maximum Allowable Path Loss (MAPL) from UE and BS. The computed MAPL was subjected to COST-231-Hata model in order to predict possible cell radius for a given site. The cell radius estimated was used as an input to Infovista Planet planning tool for automatic site creation and placement for the selected area of interest. In this study, an area of 43.5125 km2 was selected and used as a representative sample for the rural areas of Tanzania selected from Dodoma region, Bahi district.

Coverage Parameter Planning

Coverage planning involves DL and UL radio link budget designs. Its aim is to predict cell coverage on the basis of device capabilities. The MAPL was computed at this stage. Moreover, the maximum path loss for DL and UL was converted to cell radius, with the help of propagation model for rural deployment environment. Parameters like antenna height, antenna gains, path loss, transmitted power, receiver sensitivity were included in link budget calculation (Rappaport, 2013). The massive MIMO technology was implemented on New Radio (NR) system. The aforementioned parameters were subjected to equation 6, 7, and 8 in order to design link budget for coverage planning;

$$P_{rx} = P_{tx} + G_{tx} + G_{rx} - L_{tx} - L_{rx} + PM - PL \quad (6)$$

$$L_{MX} = P_{tx} + G_{tx} + G_{rx} - L_{tx} - L_{rx} - L_{sens} + G_{div} \quad (7)$$

$$R_{sens} = kTB + NF + SINR + IM - G_{div} \tag{8}$$

Where,

P_{rx}= received power (dBm),
P_{tx}= transmitter output power (dBm),
G_{tx}= transmitter antenna gain (dBi),
G_{rx}= transmitter antenna gain (dBi),
L_{tx}= cable loss and other losses in the Transmitter (dB),
L_{rx}= losses in the receiver side (dB),
R_{sens}= receiver sensitivity (dBm),
NF= noise figure (dB),
IM= interference margin (dB),
G_{div} =Diversity gain (dB),
SINR= Signal-to-Interference plus Noise Ratio (dB),
k=Boltzmann's constant,
B=Channel bandwidth (Hz)
T=Thermal noise temperature (K)
PM=Power Margin
PL=Free Space Path Loss.

Table 1 and Table 2 summarize the link budget calculations for UL and DL respectively.

Simulation Method

Simulation scenarios were created based on the channel bandwidth, whereby for each scenario, network analysis was run. Simulation scenarios I, II and III used 5 MHz, 10 MHz and 20 MHz channel bandwidths respectively. These channel bandwidths of 5 MHz, 10 MHz and 20 MHz were chosen for scenario creation because similar bandwidths are used in conventional LTE network (Chadchan & Akki, 2010), and are mostly used in cellular networks. Results from network analysis were exported to Microsoft (MS) Excel 2007 software, ready for further data analysis using MATLAB software. Parameters for massive MIMO network planning and simulation are summarized in Table 3.

RESULTS AND DISCUSSION

The objective of this chapter was to plan and evaluate the massive MIMO based network for high speed broadband provision in selected rural areas in Tanzania. Simulation was carried out to evaluate performance of network. Thus based on coverage parameter (cell radius), it has been possible to have three massive MIMO sites covering a selected computational area of 43.5125 km^2 (Figure 1). The cell radius was obtained from selected propagation model, with the help of designed link budget.

Planning of network was accomplished with the help of Infovista Planet radio planning tool which automated the site creation/generation and placement in specific location in selected geographical area.

Table 1. Link Budget Calculation for DL

Parameter	Unit	DL Calculation
Transmitter-BS		
Tx RF Power	dBm	43
Tx Diversity Gain	dB	4
Tx RF line loss (cable loss)	dBi	1
Tx Antenna Gain	dBi	18
EIRP	dBm	64
Receiver-UE		
Thermal Noise Power	dBm/Hz	-178.77
Noise Figure	dB	7
SNR	dB	5
Fast Fade Margin	dB	4.5
Rx Diversity	dB	4
Rx Faded Sensitivity	dBm	-101.50
Rx Antenna Gain	dB	0
Rx line loss	dB	0
Effective faded receiver sensitivity	dBm	-101.50
Body, Vehicle, Building loss	dB	5
Interference Margin	dB	3
Maximum Allowable Path Loss (MAPL)	dB	**157.50**

Figure 1 shows a coverage digital map containing planned base station sites equipped with massive MIMO technology. Site locations have been presented in Table 4 as a result of parameter coverage simulation.

The simulation results for RSRP have been presented graphically in Figure 2. It can be seen from Figure 2 that a planned network at 5 MHz outperforms 10 MHz and 20 MHz channel bandwidths in terms of RSRP. This performance gain results from a smaller number of resource blocks that can be supported in 5 MHz bandwidth. The lesser number of resource blocks, the higher the RSRP. Another observation that can be drawn from this result is that almost all channel bandwidths provide similar coverage for selected area but with different received signal strength at UE.

Figure 3 presents simulation results for SINRu. In this case, massive MIMO network at 5 MHz bandwidth performs better than other higher channel bandwidths despite the fact that same number of base station antennas used. This is because less noise can be experienced when using low channel bandwidth. However, all channel bandwidths provide equal percentage of coverage but with different SINRu at different location.

Considering the DL throughput at 5 MHz, 10 MHz and 20 MHz channel bandwidths, it can be seen that massive MIMO network at 20 MHz channel outperforms other lower channel bandwidths by having higher DL throughput as compared to others. However, for a given DL throughput, the coverage area decreases as the channel bandwidth is increased (Figure 4).

Table 2. Link Budget Calculation for UL

Parameter	Unit	UL Calculation
Transmitter-UE		
Transmitter Power	dBm	24
Tx RF line loss (cable loss)	dB	0
Transmitter Antenna Gain	dBi	0
EIRP	dB	24
Receiver-BTS		
Thermal Noise Power	dBm/Hz	-178.78
Noise Figure	dB	3
SNR	dB	-8
Fast Fade Margin	dB	8
Rx Diversity Gain	dB	4
Rx Faded Sensitivity	dBm	-139.78
Rx Antenna Gain	dB	18
Rx line loss	dB	7
Effective faded receiver sensitivity	dBm	-128.78
Interference Margin	dB	1
Maximum Allowable Path Loss (MAPL)	dB	**151.78**

Table 3. Parameters for Massive MIMO Network Planning and Simulation

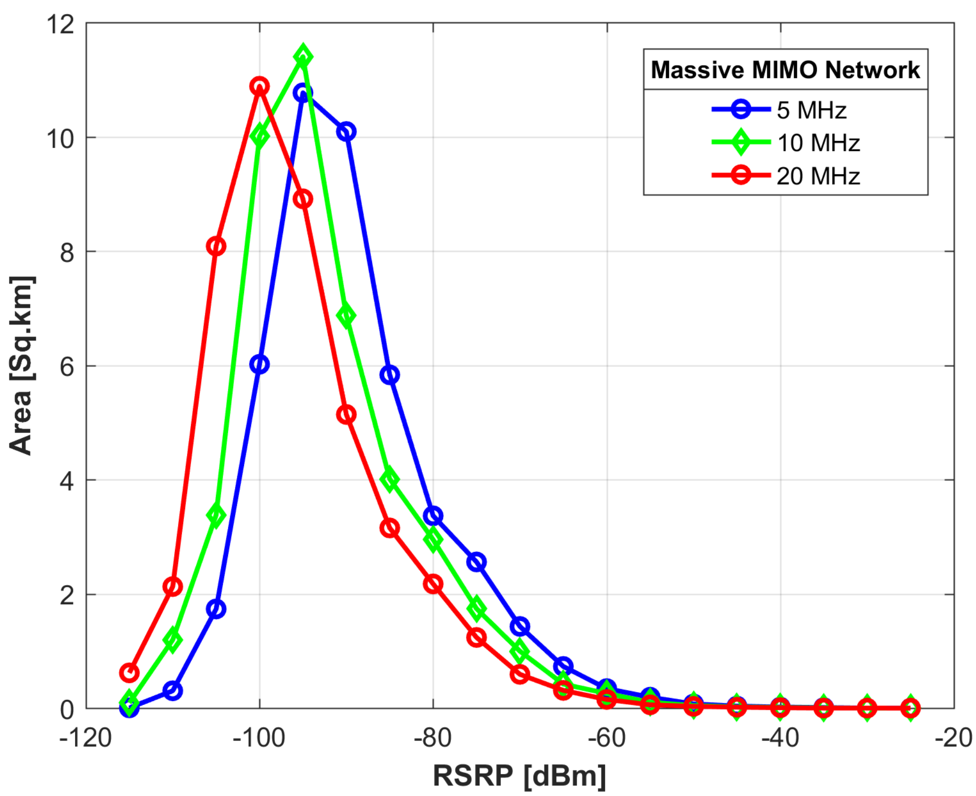
Parameter	Value	Unit
Carrier Frequency	2100	MHz
Propagation Model	COST-231- Hata	
MIMO Configuration	8x8	
Number of BS Antennas	192	
Tx Power-BTS	43	dBm
Tx Power-UE	24	dBm
Antenna Gain-BTS	18	dB
Tx Power-UE	24	dBm
Duplexing Mode	TDD	
Channel Bandwidth	5, 10, 20	MHz
BS Antenna Height	50	m
UE Antenna Height	1.5	m
Cell Radius	2.20	m
Coverage Area	43.5125	km^2

Figure 1. Planning Area with massive MIMO BS

Table 4. Site Location with Coordinates

Site Name	Longitude	Latitude	Altitude (m)
Massive_MIMO_Site_1	35.758880E	6.119617S	1097.74
Massive_MIMO_Site_2	35.722856E	6.119159S	1088.67
Massive_MIMO_Site_3	35.789456E	6.126189S	1069.47

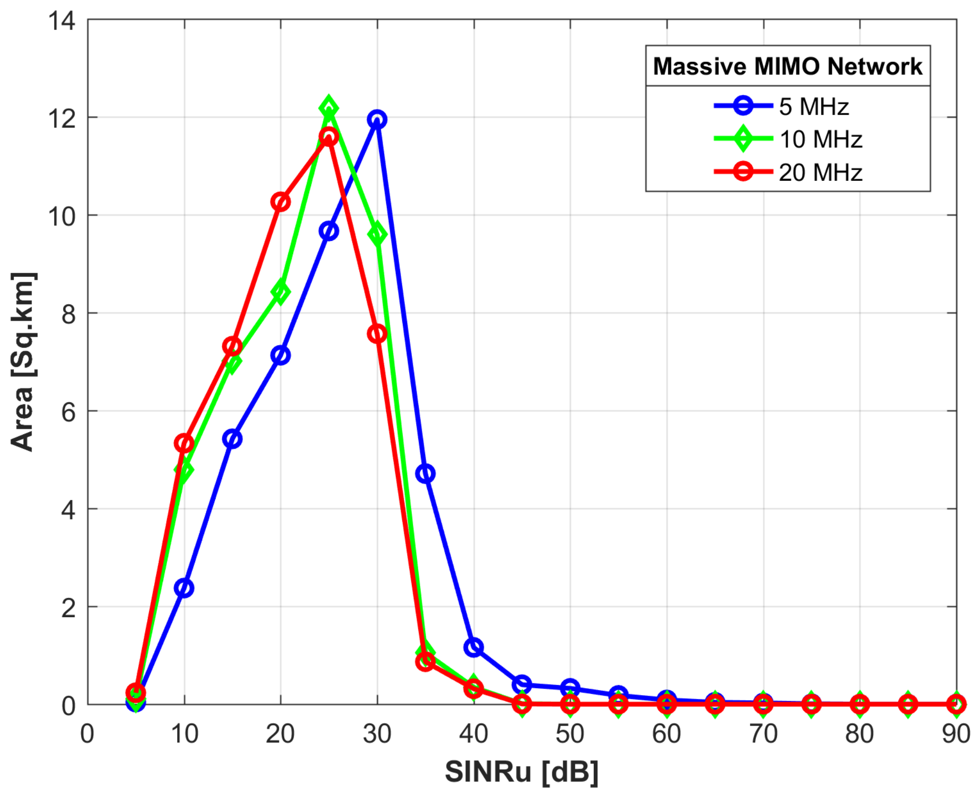
Figure 2. RSRP Coverage at 5 MHz, 10 MHz and 20 MHz Channel Bandwidths



CONCLUSION

Planning and performance evaluation of massive MIMO based network for high speed broadband connection in rural areas of Tanzania has been presented in this chapter. Based on simulation results; 90.54%, 84.80% and 71.32% of the selected area can be covered with RSRP>-105 dBm when using 5 MHz, 10

Figure 3. SINRu Coverage at 5 MHz, 10 MHz and 20 MHz Channel Bandwidths



MHz and 20 MHz channel bandwidths respectively. Thus, it can be seen that 5 MHz performs better in terms signal coverage among other channel bandwidths. Therefore, it may be recommended that 5 MHz channel bandwidth suits rural areas where more coverage in required than throughput, because users in rural areas are sparsely distributed. However, a 94.99% of selected area can be covered with RSRP from -115dBm to -25dBm for both channel bandwidths (5 MHz, 10 MHz and 20 MHz). Furthermore, results have shown that three massive MIMO cell sites can cover 43.5125 km2 with 82.89%, 68.98% and 66.85% with SINR>=15dB (good) when using 5 MHz, 10 MHz and 20 MHz channel bandwidths respectively. It can therefore be concluded that 5 MHz channel bandwidth performs better that other higher channel bandwidths. However, for the case of DL throughput, 20 MHz provides higher throughput with less coverage area compared to lower channel bandwidths. Future work should look upon comparison between massive MIMO network performance and conversional LTE network for high speed broadband provision in rural areas.

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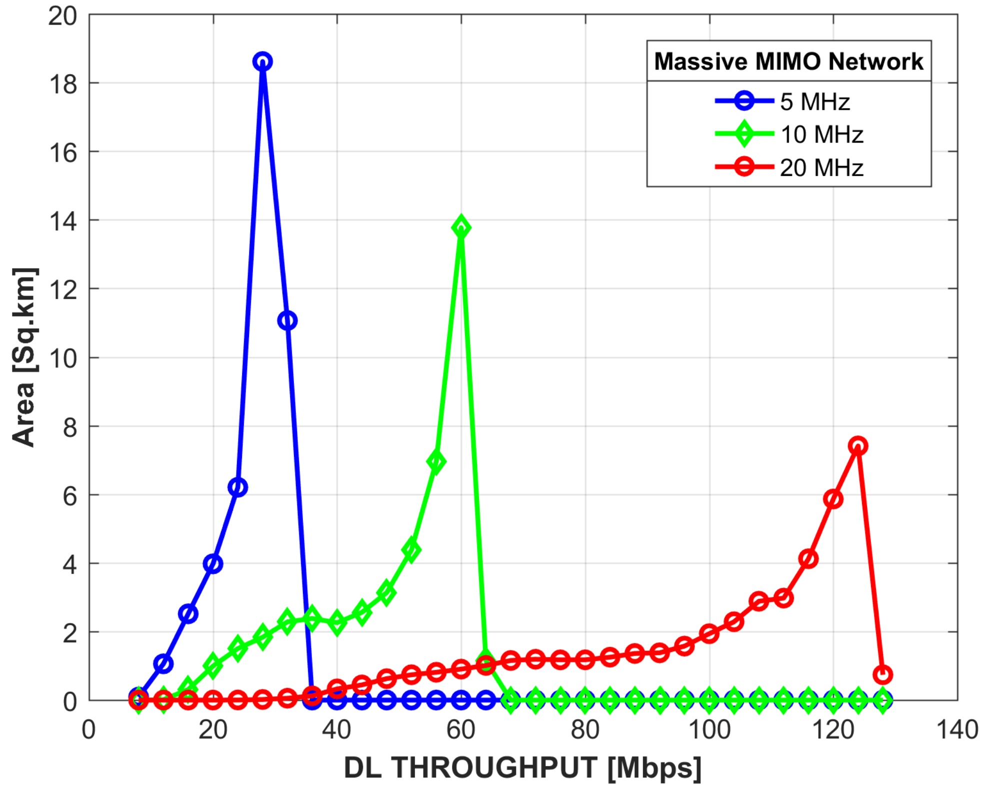
Figure 4. DL Throughput Coverage at 5 MHz, 10 MHz and 20 MHz Channel Bandwidths



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Chapter 17
Primary Socialization on the Formation of Child Behaviors in Kenya:
Systematic Review

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ABSTRACT

Early childhood socialization is particularly important in the formation of personality. Usually, through socialization, children learn to make important future choices in all spheres of life. This can be in terms of political, social, economic, and physical decision making. Recently, children have been reported to use inappropriate language on adults and their mates; fighting teachers, parents, and adults; burning schools; abusing drugs; engaging in premarital sex; even trafficking drugs; among other social vices. Moreover, children have been seen to value ethnic and religious pessimism. The pessimism has led to the retention of negative ethnicity leading to prejudice and stereotyping. Studies have pointed out poor parenting as the main cause for this disturbing trend. The study was guided by the social learning theory and cognitive development theory. The study adopted a simple analytical framework—the search, appraisal, synthesis, and analysis (SALSA)—to examine the main review types. Data were analyzed using discourse and content analysis.

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BACKGROUND

The term Socialisation is a polemic in sociology, social psychologists, anthropologists, political scientists, and educationalists (LibreTexts, 2019; Aransiola, 2016). The definition is relative and has a different meaning in social science literature (Perez-Felkner, 2013). Despite these being based on intuition or aligned with professional silos. The preponderance explains child behaviour, attitude, eccentric, upbringing and what informs a child personality (Denzin, 2010; Garry, 1982). The solid construction among socialization practices is based on the performance of adult roles to sway child behaviour (Ayiro, Mbagaya, & Othuon, 2019). However, adults do not pass on a unitary and static culture to children. The child experiences in various institutions such as a church, family, neighbourhood friends, and school partly defined their behaviour.

The institutions shape child predisposition (Bar-Tal, 1998). The researchers assume that the process is a long-life process of inheriting, disseminating norms, customs, and ideologies. The process provides an individual with the skills and habits necessary for participating within his or her society (Crisogen, 2015). For instance, parents type sex and stipulate roles for the children to adopt as they grow into adulthood (Gaskin, 2015). There is evidence that such practices influence career choice in Kenya education and industry development. A study done in Kenya shows that parents influence career choice by 40% (Gitonga, 2011). Also, female students dominate careers that are perceived by society as feminine (Macharia, 2011; Gitonga, 2011). The choice of the profession is dependent on parental beliefs and cultural background; these studies allude that parents instil behaviours and attitude that embrace gender equality. Therefore, it is obtaining social and cultural continuity and its sustenance (Oprea, 2016). In short, it is a process through which one generation sets the pattern for the next generation.

With the above explanation, the researchers do not wish to delve further into the definitions. However, there has been yet another varied understanding of the term. For instance, Sosteric (2019), understands socialization in two perspectives, “The social order and environment”. Sosteric urges that the process does not give one a choice. He explained that the social order imposes itself even before one understands what is going on. Hence, the process impacts, influences, and shapes how one express themselves and understand the world (Sosteric, 2019). In support of Sosteric view, Kilonzo (2017) observes that the physical environment influences physical activity and behaviour. Nicolao (2014), made a similar observation. In his study, the researcher observes boys’ express interest in hard work while girls on the other side express interest in soft work. The scholar believed parental behaviour and cultural belief inform such perception.

According to Denzin (2010), the behaviour is products of culture, political, and economic systems established in a specific environment. Moreover, it is antecedents of the demand of the situation which continues throughout an individual’s life. The formation takes two forms, primary and secondary behaviour formation based on the age, agents, modes of interaction and environment.

Primary and secondary forms of interactions are significant in understanding the formation of children’s behaviour (Crisogen, 2015). This review, however, focuses on early childhood experiences and adult interventions that shape child behaviour. Denzin (2010) explains that initial experiences entail interactive relationships and experiences that nurture a child into a human being. The central to this is the language which provides the child with the link to primary groups (Flanagan, 2002).

Charles Darwin investigated early childhood experience and behaviour formation. In 1887, he published, ‘‘ *Biographical Sketch of an Infant*’’. Charles described the development of his son in a period of two years, which mark the beginning of genetic psychology, which he based on the order of evolution relationship, species expression of intelligence and emotion (Wyse, 2003). Darwin's concepts later become the foundation of many theories of child development and child behaviour formation (Santrock, 1988). However, the researchers will not discuss the development of those theories. Instead, researchers will highlight some of the understanding of social interactions that nature child behaviour.

Scott, (1963) understood such interaction as primary socialization. The process he described as forming social relationships in the early stage of a child's life, his understanding was later clarified as ''bonding'' by (Flanagan, 2002). Scott noted that the process begins at 5- 6 weeks in infants. The scholar based his understanding of a detailed comparative study between human infants, dogs and bird's, initial social development and learning. The observation indicated that the process does not go beyond seven weeks for a human infant. Although, this understanding is closely related to ''imprinting'', a unique form of learning which take place rapidly during the early development period in animals (Flanagan, 2002). Currently, sociologist and psychologist have accepted that "Primary Socialization" is the acceptance and learning of a set of norms and values established through the process of interaction (Chalari, 2017; Gaskin, 2015; Perez-Felkner, 2013). The process occurs in, childhood, generally, the span between birth to puberty (Perez-Felkner, 2013).

Primary child nurturing does not take place in a vacuum or isolation (Ayiro, Mbagaya, & Othuon, 2019). The process takes place in an ecosystem where several social interaction agents interact with the child to informs his/her behaviour. The social agents encompass family, school, church, neighbourhood and environment that a child interacts with during its early days (Chalari, 2017). In a family set up, parents are not only social agents, but siblings are also involved in nurturing of the children behaviour. Some studies have indicated that older siblings act as a role model for the young ones. Religion brings up the idea that "*the child is father to the man*" which finds it roots on the biblical text. So does the idea that an adult's rectitude depends on having received proper training earlier in life from parents and other educators. Religious leaders and philosophers over the years have described kinds of child training which produce well-behaved adults.

Currently, child nurturing has become the focus of scientific study in the contemporary world (Maccoby, 1999). The scientific studies have attempted to explain prosocial behaviour and deviant behaviour among children. However, most of these studies are scattered. This review brings several works of literature together to understand the current state of "Primary Socialization" in Kenya.

Primary socialization involves "learning the rules of behaviour, norms and values at early ages. And, that is informational and emotional baggage of any person (Crisogen, 2015). Lack of primary socialization contributes to deviance and inability to cope up with the dynamic society. For example, in 2017, A global estimate of 262 million children and young people were out of school. An estimated of 387 million primary school-aged children and 230 million lower secondary school-aged adolescents did not achieve basic numeracy and literacy (United Nations Children's Fund, 2019).

It is not only poverty, political, and economic factors that are associated with the statistics, but also indiscipline, lack of life skills, drug abuse, early pregnancy and poor parenting is considered as vectors to this plight (United Nations Office on Drugs and Crime- UNODC, 2018). Child pregnancy is a problem globally and, while there are cases involving adult's copulation with children, the preponderance of cases is among children themselves (Otieno et al., 2018). It is no longer a question of whether a boy and a girl should have sex while in a relationship. The is question is when they should have it? Young people have ignored traditional values such as abstinence and are hence sexually active (Perez-Felkner, 2013).

World Health Organization (2018) reports that an estimate of 16 million girls aged 15 to 19 years and 2.5 million girls under 16 years give birth each year in developing regions. Its further reports that every year, about 3.9 million girls aged 15 to 19 years undergo unsafe abortions (WHO, 2018). In Kenya, about 12% of girls and 20% of boys first have sex before their 15th birthday, and by the time they are 18 years old, 59% of boys and 50% of girls have had sex (Otieno et al., 2018). Kenya has lost the fight against sexual morality among the children. A section of parents and leaders are proposing to the children to use contraception to prevent pregnancy. Children are conscioustized that having sex is tolerable if they use contraception and protect themselves against sexually transmitted infections. The virginity value in African communities has lost meaning in contemporary child nurturing and life. This deviant behaviour is not limited to drug abuse.

Another report warns that (12-14 years old) to late (15-17 years old) adolescence is likely to be initiated in substance abuse. The report implies that substance use is the prevalence among young people aged 18-25 years (UNODC 2018). In Kenya, A study by NACADA in 2007 revealed that nationally, 8% of 10 to 14 year-olds have ever used alcohol while about 40% of people aged 15 to 65 years have used one type of an alcoholic drink in the past (NACADA, 2011). About 14% of Kenyans aged 15-65 years are current users of alcohol (NACADA, 2011). This plight is due to poor parenting and parents' behaviour.

Drug abuse increase child delinquency. Children who abuse drugs have lowers inhibition, inappropriate or risky behaviour, impaired judgment, psychotic distortions of thoughts, depression, and paranoia. Kenya is already facing severe challenges in child delinquency (Oetting, Donnermeyer, Beauvais, & Trimble, 1998). Drug abuse has become quite common among children. Among other deviant behaviours are also attributed to drug abuse.

Deviant behaviour among children is not a new phenomenon in Kenya. Juma (2008) gives chronological events where children have caused the disturbance and even killed a fellow student in Kenya. For instance, over 300 secondary schools were closed following violent students' unrest between July and September 2008. In 1991, male students in a mixed high school invaded the girls' dormitory and raped more than 70 girls. At least 19 female students lost their lives at the tender age of 15. In yet another incident in 1999, a group of male students locked up four prefects in their cubicles at night and doused them in petrol. In 2001, sixty-eight students got killed and scores injured after their dormitory was set on fire by two boys who petrol-bombed the school. Another mass rape of 15 girls occurred in 2006 as other students staged a protest march in the middle of the night. In May-to-August, 2016 Over 130 secondary schools suffered arson as a result of student unrest and violence (National Crime Research Centre, 2018).

This deviance is not limited to sexual immorality. Students engage in sex orgies and similar deviant behaviour. In 2015, forty-one students were arrested for smoking bhang, drinking alcohol and having sex inside a moving bus (Murimi, 2015). In 2017 July, ten male secondary students sneaked out of school and walked 34km to a girl's secondary school at night for a sex orgy (Otieno, 2017). Recently, the cases of sexual immorality have increased, sex party among the youths have become very common in Kenya. For instance, on 3/22/ 2020 twenty-one youth were arrested while shooting pornographic movies. In 2017, June five female teachers at Kirimon Primary School in Samburu were ambushed and beaten by class six pupils (Otieno, 2017). In 2018, November a 16-year-old boy was reported to have hacked his father to death in Malava sub-county. These series of violence are not limited to suicide and verbal abuse. Many studies in Kenya have focused on factors contributing to child delinquency. However, there are limited studies on primary socialization and formation of children behaviour.

THE PROBLEM STATEMENT

Children are the future of any nation. They must assimilate moral and values, to aid them in their development and the development of the state. To achieve these parents, teachers and the society need to infuse moral principle, beliefs and life skills that are essential in the formation of the right behaviour in their children. However, there is an emergence of delinquency among Kenya's children attributed to child nurturing. Traditional forms of child nurturing and behaviour formation have been denigrated and are now considered obsolete.

Parents have a hard time managing their children behaviour. Some children manifest delinquent behaviour. For instance, running away from home, beating up parents, others have exhibited prejudice towards their fellow students and even adult members of the society. We presume that the root cause of these problems is behaviour formation and nurturing at the early stage of a child's life. The available measures to abate the plight have been futile. Such include; the ban of corporal punishment, elimination of extra tuition. There are also institutions offering training in responsible parenthood. Despite the efforts, children are still increasingly showing delinquent behaviour. The persistence of the problem could lead to insecurity in future, increased crime and slow down social, economic, and political development. Therefore, this empirical review investigates child naturing in the family set up, learning institutions, peer groups, and community influence.

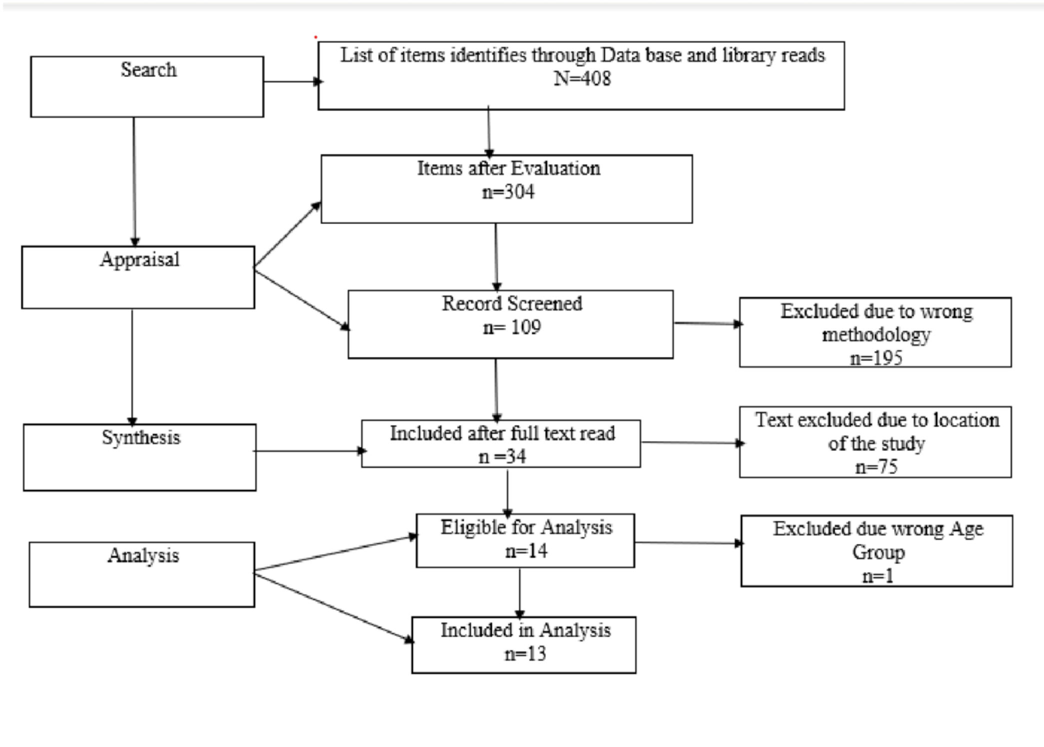
Objectives

The general goal of this study is to analyse the role of primary socialization in the formation of children behaviour in Kenya. The specific objectives of this study are: To evaluate school primary socialization on the formation of child behaviour Kenya; To analyse the influence of parental socialization on the formation of child behaviour; To determine the extent to which peer socialization affect the formation of child behaviour: and to show the conflict between traditional and modern primary socialization and formation of children behaviour.

Method

This study is a desktop review based on secondary materials. The Google scholars web was used to obtain information. The researchers use keywords like; "Primary Socialization," "Children behaviour, "behaviour formation, "The Importance of Children Primary Socialization" and, "Challenges in Primary Socialization". To obtain information, the scholars searched journal database; (Jostor journal database, Elsliver database, and Wiley and Sons Journals database). The government website, and United Nation Organization database provided statistical information. The search was limited, to English articles and excluded dissertations and theses. The researchers created an exclusion criterion for the literature to obtain relevant literature for synthesis. The complete process followed the Grant method of literature review, which is SALSA (Search, Appraisal, Synthesis and Analysis) framework.

Figure 1. Literature review framework
Source: **Author 2020**



THEORY FRAMEWORK

This study is guided by two theories the social learning theory, focusing on environment influence of child nurturing and cognitive development theories on rational aspect and cognitive development. The Social learning theory, which was developed by Bandura (1997). states that behaviour is learned either by modelling the behaviour of others or by direct experience. Social learning theory focuses on the roles played by symbolic, and self-regulatory processes in psychological functioning. It views human behaviour as a continuous interaction between cognitive, behavioural and environmental determinants (Perry and Parcel 2008). The Social Learning Theory posits that a child's behaviour is a product of the dynamic interplay of personal, behavioural, and environmental influences. The common application relies on the role of parents, teachers, and peers to convey the message or to effect change. During the early years of child development, children learn both bad and good behaviour from the social environment in which children live. Parents or other family members are primary sources who supply information, reinforce, and instruct stereotypes contents. Other sources, such as media, peer groups and schools also serve as influential agents in children's acquisition of stereotypes. Besides, stereotypes develop because of children's real-life observations of differences between groups (Wolfe, 2012).

Social learning theory should be read closely with the historical earlier construct by Piaget (1896-1908), the famous French-born Swiss scholar. He had said that children learn through actively constructing knowledge through the first-hand experience. Heavy reliance was put on the discipline of biology, philosophy, logic, and psychology to fabricate complex theories about cognitive or expertise acquiring development. He suggested that the role of an adult in helping the child to learn was to supply the space, right materials for the child to interact and construct (Santrock 1988, Wyse 2003). Piaget's theory focused on the rational thinking of the developing individual. That cognitive development improves in a stage-like sequence and uniform manner. I.e. how individuals come to believe certain things and how they act in specific ways rather than in his thought or behaviour. However, Piaget's stages theory of child development has remained a point of disagreement amongst child psychology researchers. They dispute the evidence of and the characteristics of Piaget's stages in a child's intellectual growth. Another point of disagreement is whether a child's learning is through the unlearned, biological processes, or, his experience and the social, environmental processes (Berk, Laura (2003), Wyse (2003), Santrock 1988). Critics of this notion insist that this area requires extensive research before providing any proof. Santrock accommodated this debate in his book. He insists that child development depends on both processes, i.e. interaction of genetic, biological components and environmental, social factors (Santrock 1988:18-19). However, Bandura speculates that behaviour is a product learnt through social interaction and influenced by environmental factors. In applying the social learning theory of Bandura to this study, therefore, we suggested that learning take place via observing the older generation, through processes, of children continuing to inherit norms, value, and attitude.

LITERATURE REVIEW FINDINGS

Parental Socialization on the Formation of Child Behaviour

The family set up is the antecedents of child behaviour (Crisogen, 2015). The [REMOVED CITATION FIELD]Institution lay ground to political ideologies, gender, language, social morals, and values as well as a set of belief which are the basics to behaviour formation (Flanagan, 2002). In traditional African society, the formation of children behaviour is the responsibility of a parent. For instance, a Swahili is saying that "*Mtoto umleavyo ndivyo akuavyo", "Mtoto wa Nyoka ni Nyoka"*. The say has it that the way you raise a child is the way s/he become in future and that the child of a snake is a snake, this is to mean that the child behaviour is a reflection of a parent behaviour irrespectively. However, there has been disagreement among the scholars as empirical evidence indicate that infant prosocial behaviour immerges in the second year of their life (Brownell and Lab, 2016).

Brownell (2015) explains that prosocial behaviour in infants results from parental empathy expressed during infancy, unique cognitive and social capacities that ground good behaviour, motivations to share attention, perception, emotion, and information with others that, when combined with growth in social understanding, naturally generate other-oriented prosocial behaviour. We can therefore assume that primary form of socially accepted behaviour in infants is due to two elements natural and social. However, in this issue, we have looked into the social rudiments of behaviour formation. On the other hand, deviant behaviour results from peer influence and weak parental attachment (Green, 2020).

Studies in Kenya show that primary socialization begins at birth when a child is signed its sex (Gaskin, 2015). The infant named as per signed sex. Naming determines which gender it should conform to their behaviour. Already the society has socially constructed the role they are to play in life. The process preceded by language acquisition (Aransiola, 2016). An examination of the "Primary Socialization of Luo infants in a period of 24 months", Blount (1972) indicates that parents use baby talk despite the child inability to talk. Also, a child often resorts to crying when it needs attention, but the cry would stop when the demands are satisfied. The child would then form cognitive inertia even after it learnt how to talk well, but would still cry when it needs something. The parents avoid frightening sounds and would use a low tone to converse with the child. The mode of the conversation teaches a child to be gentle (Blount, 1972). Such acts are significant in the formation of a good character in a child (Brownell, 2015).

Among the Kisii community, Mesman, Basweti, and Misati (2018) observe that caregiving and punitive controlling strategies teach the infant the behavioural boundaries that are important to maintaining cultural values. The scholar notes that parents can spot deviant behaviours in their children through physical expressions such has hitting or reports from other community members. The punitive strategy breeds delinquency. Mwangi, Kariuki, Ndung' and Gachahi, (2017) observed that children from the abusive family had vulgar language and developed psychopathic behaviour. Brownell and Lab (2016) explain that children are likely to imitate their parents' acts. This critical in the formation of their behaviour. The parental descent behaviour aid in naturing strong personality and attitudes. For instance, morals, and values such as integrity are instilled in children at a young age by the parents (Archana & Kiran, 2012).

Primary nurturing of children is highly dependent on assigned sex (Blount, 1972). However, sex-typing may be more inclined to cognitive development. Studies postulated that adult involvement affirms typed sex (Garry, 1982). A study done by Abdullateef and Kehinde (2017), found that sex difference in behaviour among children are accredited to them by the common stereotypes by the parents. Researchers revealed that parents teach boys to be antagonistic and girls to be nurturant. In Kenya, this has influenced career choice. For instance, Gitonga (2011) observe that female student goes for professions that they consider feminine and male student go for the careers they considered masculine. Also, this explains why girls have a negative attitude towards science and mathematics subjects in secondary schools in Kenya (Kashu, 2014). The career choice is pivotal in nurturing industrial development; hence gender stereotyping is very important in economic development as it determines the human capital essential for industrial growth.

Concerning gender stereotyping, parents enable sex differentiation among children by assigning them specific roles or task based on their sex (Nyatuka & Nasongo, 2010). A child learns gender roles from an assignment given by the parents. For instance, girls do more work than boys, girls are involved domestic chores and caring for other family members, particularly infants; Boys, on the other hand, are required to engage in activities, such as herding animals and the farm-related which necessitate either a single work or cooperation with peers. The original tasks, and the patterns of association that arise from them, are held to be the antecedents of behavioural sex differences (Oetting, Donnermeyer, Beauvais, & Trimble, 1998). This aspect explains why females tend to be demure and defer to men in society.

Both the mother and the father play a distinct role in nurturing a child. However, in Kenya, mothers are more involved in child upbringing compared to fathers (Ayiro, Mbagaya, & Othuon, 2019), because, there is a solid bond between the mother and the infant which is universally virtual (Garry, 1982). Psychoanalysis theories postulate that child bonding between the mother and the child influences child behaviour (Flanagan, 2002). The theory postulate that deviant behaviour like aggressiveness in boys is because of conformity. The theory states that boys who spend more time with their mothers acquire feminine characteristics. They eventually reject the feminine and elements of socially accepted behaviour before replacing them with masculine and socially acceptable behaviour. Thus, the transition explains the aggressiveness in boys. The father figure enables a smooth transition and the formation of that socially accepted behaviour in boys (Flanagan, 2002).

Kenya is home of single mothers, broken family, and busy parents. An estimate of 60% of Kenyan women experiences single motherhood before they are forty years and that 47% of women become single mothers at the age of 15-19 years (Clark & Hamplová, 2013). Single parenting influences child behaviour Oburu (2011) observes that Kenyan mothers are more likely to make attributions regarding adult-controlled failure in caregiving situations than were fathers. Also, fathers tend to be more authoritative as compared to mothers. Hence, a child with both parents is more likely to refrain from deviant behaviour.

A study conducted by Chonge (2016) confirms that boys who came from single families were more aggressive as compared to those who had both parents. Empirical studies show a relationship between family structure and child behaviour. Thus, parents who tend to give their children more attention had a positive influence on behaviour formation (Gathua, Muthee, Murugami, & Tesfu, 2015). However, those who happen to spend little time with their children give a chance to negative peer influence hence the development of deviance behaviour (Abdullateef & Kehinde, 2017). This notion consent to Oetting, Donnermeyer, Beauvais, and Trimble (1998) study which found that children develop deviance due to lack of a strong bond between the child and the parent. Parents spend little time with their children due to work commitments and change in traditional patterns of child nurturing.

The change in the traditional pattern of doing things has eroded a cluster of old social economic and psychological commitments leading to new ways of moulding a child and behaviour among the parents (Bethesda, MD, 2019). Parents now spend little time with a child much time is spent on occupational work. The absence of parents has a negative influence on child upbringing (Berk, 2003). Although some parents have resorted to the use of new technology to monitor their child, this includes the installation of CCTV cameras and internet control apps to monitor internet use and on television. However, only a few parents can access advance technology (Denzin, 2010). On the other hand, the middle-class family who happens to be working deprive the child of love and attention (Flanagan, 2002).

Bowlby, in a study commissioned by the World Health Organization in 1950, found that children deprived of love and attention (maternal) could suffer affectionless psychopathy. The condition contributes to psychopathic behaviour. Gao et al., (2010) consent to this hypothesis, they note that children separated from their mother at an early age has a high probability of developing psychopathic personality. The researcher's study found that those youth deprived of love and attention had a low emotional attachment and had some deviant behaviour. Could this explain the killings of twenty-four female universities students in Kenya in 2018 by their boyfriend due to love tussle? Also, bullying and assaults among the youths. It is, therefore, important for both parents to give their children attention despite the high demanding of occupational work.

Another condition related to deprivation of maternal love and attention is anaclitic depression. Anaclitic depression is responsible for several impairments, such as intellectual development, social and physical development in children (Wolfe, 2012). A study conducted by Eisenberg, Cumberland and Spinrad (1998) on *"Parental Socialization of Emotion*", found that children who had a low parental attachment in childhood had a high temper and were likely to injure their fellow children. Also, these children had low social competence, perform poorly in class, and inability to cope up with life challenges (Unyoke, 1998). Could this be the reasons as to why students kill each other in Kenya? Or justify why student commit suicide? Or poor academic performance among some children in Kenya? Then later parents respond with violence in correcting them for their own mistake. However, parents also try to instil morals on their children.

Guardian or parents tend to nurture children in harmony with those values that they find significant in the formation of prosocial behaviour (Chalari, 2017). In Kenya, parental practices do not occur in a vacuum or isolation but a cultural context and societal norms (Perez-Felkner, 2013). Parents teach children the importance of good values and morals based on traditional values such as obedience, honesty, kindness and religion (Nganga, 2012). The parents also instil political ideologies and stereotypes.

According to Keller, (1978) political socialization is the development process by which children become oriented towards the beliefs, cognitions, attitudes, values, knowledge, opinions, norms, behaviour, civic identities and participation patterns related to their society's political culture, social institutions, systems and practices. Kenya has had a long history of election violence dividing the country along the tribal line. The sporadic election violence has created some prejudice and stereotypes among the Kenyan community. Mokua (2017) conducted a study on *"Children's Perceptions of the Images of Kenya's Principal Political Leaders",* the study revealed that children showed some preference to some political leaders since their parents were supporting that candidate. Children conform to their parent's prejudices or older members within society (Bar-Tal, 1998).

In Kenya, stereotypes resulted from the ensuing history of mutual fear of ethnic domination, through economic and political exclusion during independence (Line, Arnim, & Sulley, 2017). Also, the children have been able to be developed political pessimism based on these stereotypes which have penetrated in Kenya school affirming tribalism. For instance, children engage in tribalistic and politically sensitive conversation like why your community is rebellious (Luo) or why is your community stealing (Kikuyu). Sometimes the use of derogatory language against other ethnic community, e.g. (Kipii) uncircumcised. Of which they believed that such men should not lead. These pessimisms threaten the national unity of the nations. However, parents have both tried to instil discipline in their children using traditional methods like canning.

Studies show that most parents prefer to chastise their children when they commit mistakes (Kilonzo, 2017; Wolfe, 2012). Parents believe in reinforcing behaviour through a negative and positive mechanism where children learn through reward and punishment (Nganga, 2012). Munyuoki, (1998) observed that occasionally parents in rural settings cane their children when they commit mistakes or denies them food and not providing them with any needs in abide to discipline them or get them to learn values or morals. Parents would also buy gifts to their children and give them treats when they perform well in class to express joy with what they have done (Kilonzo, 2017). However, this strategy is dynamic as parents keep on changing their stance with the advancement of child's age (Crisogen, 2015).

Reward and punishment strategies do not address the potential behavioural problem the children face (Kagoiya & Njogu, 2018). Otieno et al. (2018) revealed that youths did not change their sexual behaviour when punished by parents for engaging in illicit sex with one another. These children were in primary six and O level. The students indicated that they are humiliated when punished. The punishment lowers their self-esteem. These students believe that love calls for sacrifice. Instead, the children ran away from home, continue engaging in risky sexual behaviour, drop out of school and engage in drug abuse. The scholars recommended counselling and advice for the children. Kenyan parents are in three categories; authoritarian, authoritative, and permissive (Abdullateef & Kehinde, 2017; Kagoiya & Njogu, 2018).

Authoritarian, use control measures, and rule-setting for the child, which come with consequences if not obeyed (Ayiro, Mbagaya, & Othuon, 2019). Authoritative parents are concerned with general parenting practices, a combination of parental support and control (i.e., warm, and caring parents with appropriate supervision), is considered to contribute to the best mental health outcomes for young people (Oprea, 2016). According to Kiche, Muhindi, and Thinguri, (2019) parental control lower degrees- of adolescent alcohol use, smoking, cannabis use and delay of sexual debut (Ayiro, Mbagaya, & Othuon, 2019). However, studies show that without parental sensitivity and concern for the pressure's children face during their experimentations parental control may become irrelevant or even contribute to rebelliousness through their unreasonable and rigidity (Otieno et al., 2018; Abdullateef & Kehinde, 2017; Wolfe, 2012). Likewise, parents who leave the process too much to chance or try to approach their adolescent as a friend may not provide the guidance adolescents require to avoid deviance behaviours like sexual immorality (Egsmose, 1990). Concerning sexual morality, parental anxiety centres on sexual shame and guilt rather than sex and reproduction. Often, there is no discussion at all (Abdullateef & Kehinde, 2017). The more the guilt a parent feels, the less they communicate with the child about sex (Martin, 2010). Most research on family sexual communication reveals that parents tend to avoid topics such as the mechanics of sex (Wolfe, 2012). Indeed, parents rely on their understanding of their children as young and immature. Parents assume that his/her child is asexual and not yet capable of managing the responsibilities that involve sexual activity (Ayiro, Mbagaya, & Othuon, 2019). For example, in Kenya, extensive narratives reveal that parents equate teen sexual activity with deviance (Odhiambo, 2011). Also, children, peer relationship influences their behaviour (Hinnant, Erath, Mina, & Mona, 2020).

Peer Socialization and Formation of Child Behaviour

Primary socialization occurs when a child learns the attitudes, values, and actions appropriate to individuals as members of a culture (Paul, Utendale, & Caroline, 2007). Family and friends influence the assimilation of norms and conformity of socially accepted behaviour (Myra, 2010). Friends are mostly their peers. Children form friendships in the learning institution, religious setting, and neighbourhoods (Oetting, Donnermeyer, Beauvais, & Trimble, 1998; Gaskin, 2015; Oprea, 2016). These relationships influence their behaviour and shape their personality during their adolescence (Crisogen, 2015; Wanjiru, Ndung'u, & Gachahi, 2018; Mwangi, Kariuki, Ndung', & Gachahi, 2017). It is at this point that they start to form social relationships. Flanagan, (2002) argued that peers play a significant role in the formation of social relationships, the scholar observes that those relationships are formed based on involvement in mutual conforming activities, Mwangi, Kariuki, Ndung', and Gachahi (2017), points out that play was the basis of the formation of relationships. Their findings support Perez-Felkner, (2013) who observes that children form relationships based on common interest or games. This relationship formation was not limited to indulgence in delinquency (Ayiro, Mbagaya, & Othuon, 2019). In their support, Mwangi, Kariuki, Ndung', and Gachahi, (2017) observes that pupils who associate with peers who use abusive language also acquire such language. For example, if a child saw his or her peer discriminating against another child, then that child may think the behaviour is acceptable and could continue to have this opinion about other children (Gaskin, 2015). Oetting, Donnermeyer, Beauvais, and Trimble, (1998) observes that peer influence may also be because of the lack of strong bonds between school and family. However, Perez-Felkner (2013) noted that peers contribute significantly to a child prosocial behaviour. Flanagan (2002) holds the same notion the scholar explained that peer helps children develop confidence, ability to give verbal instruction in an academic task, and share plans strategies. This literature also concurs to this fact. Studies show that peer groups enable child freedom of expression, equality, and information (Crisogen, 2015; Kiche, Muhindi, & Thinguri, 2019; Wanjiru, Ndung'u, & Gachahi, 2018). The peer can happen to form proactive and reactive responses to the needs of others that serve to promote the well-being of others (Paul, Tindale, & Caroline, 2007).

In Kenya, studies associate peer influence with child delinquency. For instance, peer influence contributes to risky sexual behaviour, that leads to underage pregnancy, drug abuse, poor academic performance, school dropout, rudeness, and aggressiveness (Busienei, 2012). However, peers' groups have also contributed to better academic performance, development of prosocial behaviour and acquisition of interpersonal skills among the children. According to Kagoiya and Njogu (2018), children who happen to hang out with their fellow who is bright in class are likely to perform well. The researcher argues that these children will try to conform to prosocial behaviour and vice versa. Further, as adolescents move from middle school to high school and experience increasing autonomy, peer effects may become more influential (Trudeau, Mason, Randall, Spoth, & Ralston, 2013).

School Primary Socialization on the Formation of Child Behavior Kenya

For one to understand child nurturing and behaviour formation, one needs to focus on three agents involved in child upbringing (LibreTexts, 2019). The schools, parents, peer and the tools used in behaviour formation (Egsmose, 1990; Ayiro, Mbagaya, & Othuon, 2019; Perez-Felkner, 2013). In schools, teachers use; punishment, reinforcement, role modelling, and dialogue to shape a child behaviour (Munyuoki, 1998). However, repression dominates behaviour modification and formation. The literature indicates that most teachers in Kenya use repressive. A form of control mechanism that gives limited freedom to the child makes him obedient and compel him or her to know social values and norms (Ayiro, Mbagaya, & Othuon, 2019; Kagoiya & Njogu, 2018; Kiche, Muhindi, & Thinguri, 2019; Mweru, 2010). The literature also noted that there are more effective ways that have been developed by teachers to address delinquency among children.

A study conducted by Mwaniki (2018) revealed deviant behaviour/indiscipline cases among Kenya secondary school student. These include sneaking out of school, abusing drugs, stubbornness, (speaking in vernacular when prohibited), truancy, theft, improper dressing, bullying of a fellow student, forgery, boycott of lessons and failing to do the assignment. In his study, the researcher points out factors that contribute to the indiscipline cases in school; poor teacher-student relationships, poor teaching, lack of facilities, overprotective guardians and lack of religious moral (Mwaniki, 2018). The scholar did not propose any solution but recommended participatory approaches in solving the identified indiscipline cases.

Another study by Chonge, (2016) found that teachers deal with several indiscipline cases such as; Noise-making, lateness in school, incomplete assignment, missing lessons, school dropout, boy-girl relationship, fighting, stealing and abuse of drugs. Njedu, (2014) identifies several factors that influence and contribute to deviance behaviour among school-going student; teachers' behaviour, social-economic status, types of the family (single parents' family), and the social institutions; school, church and family structure, which also affect learning. The scholar notes that teachers employ the preventive measures, corrective measures and supportive measures to modify student behaviour. The preventive measures entail guiding the pupils, setting rules and consistently talking to the pupils on good character. Corrective Measures entails; physical punishment, (example; canning, suspension, giving of manual work and denying the victims break). On the other hand, supportive measures involve; giving more task to first-time pupils, rewarding best-performing pupils, group discussion for slow performing pupils, providing counselling to pupils and having role models talk to them.

The practices help a child to develop good values, work hard and increase their resilience (Njedu, 2014).

In Kenya, schoolteachers have difficulty in addressing deviance among children. Wanjiru, Ndung'u, and Gachahi, (2018) found that teachers lose half of their lesson in addressing deviance behaviour, these behaviours include; aggressiveness, negative self-image, Anger, and Stress. The researcher identifies the strategies used by teachers; teaching social skills, locus control, managing aggressiveness skills, developing positive self-image skills, anger management and stress management strategies. However, studies show that corporal punishment is still a preferred method of instilling discipline.

The repressive mechanism used in Kenyan schools is corporal punishment. However, the government banned corporal punishment in 2001. Matofari (2019) revealed that teachers use corporal punishment in Kenyans public schools. In his study, the scholar observed that both teachers and pupils support canning. However, the support was more inclined to gender, age and work experience of teachers. For instance, male teachers were more pro corporal punishment than female teachers. In addition, teachers with less than 12 years of experience were in support of corporal punishment. The study concurs with a study conducted by Mweru, (2010) who notes that most teachers believe corporal punishment is the only effective way to enforce discipline despite the State ban.

Kenya's Children's Bill, drafted in 2017, define corporal punishment as "*the use of physical force applied on a child by the use of any means, including a cane or other object, to inflict pain or rather discomfort for corrective discipline or punishment*''. During the colonial era, teachers used corporal punishment to instil discipline in schools. Physical punishment was acceptable and was a way to weed out deviant and child delinquency in schools. According to Busienei (2012), society accepted physical punishment. Corporal punishment even had some support from the children acts. Article 127 of the Children's Act 2001 confirmed customary law. Customary law gave the parents and other adults freedom to administer reasonable punishment to a child (Global Initiative Bond, 2020). Although, this law still exists it is obsolete under Article 2(4) of the Kenya Constitution which states that "Any law, including customary law, that is inconsistent with this Constitution is void to the extent of the inconsistency, and any act or omission in contravention of this Constitution is invalid. (Uraia, 2012)"

A study conducted by Ombori et al., (2016) on "the *Ban of Corporal Punishment and Its Effects on Pupils' Discipline on Public Primary Schools in Manga Division* Nyamira County, Kenya", revealed that the ban of corporal punishment contributed to indiscipline in schools. Kilonzo, (2017) points out that, truancy, bullying, indecent dressing, lying, theft, sexual harassment, absenteeism, drugs, and substance abuse, disobedience, not completing an assignment, noisemaking in the class were due to lack of punishment in schools. The scholars explain that the teacher complained that there is no alternative to administer punishment. Hence, pupils would get away with mistakes (Mwangi, Kariuki, Ndung', & Gachahi, 2017). The findings, however, contradicted several studies on corporal punishment. For instance, Dhana, (2014) explains that corporal punishment mechanism contributes to; phobia, inferiority complex, loss of concentration and loss of interest in studies. Instead, the scholar advocated for guiding, counselling, and positive reinforcement to correct a child (Murimi, 2015). In addition, Busienei, (2012) notes that teachers can use reflective measures like asking a child to write negative impact of his/her behaviour, compel the child to make an apology in front of other children and isolate the child to make him/her think of his/her mistakes.

Ayiro, Mbagaya, and Othuon (2019) support repressive mechanisms. The scholars explain that in Kenya, extreme or light chastisement is seen as a sign of discipline to make children better persons. The scholars cite an African proverb and Biblical verse view, '' *If you don't make a child cry, you will cry', and he that spares his rod hates his son: but he that loves him chastens him betimes''* Proverbs 13:24''. Teacher hold these beliefs in Kenyan teachers (Mwangi, Kariuki, Ndung'u, & Gachahi, 2017). According to Crisogen (2015), repressive mechanisms helps a child to be submissive, respect the authority and external control. Corporal punishment practice has drawn much of its basics from traditional behaviour modification theories associated with B. F Skimmer (Busienei, 2012). The theory posits that cognition and emotions are covert behaviour that requires the same conditions as overt behaviour. The behaviour formation relies on reward and punishment mechanism (Ayiro, Mbagaya, & Othuon, 2019). Mweru, (2010) consent that in Kenya, corporal punishment is one of the common forms of repressive strategies used for discipline despite its ban in 2001. The scholars argued that correcting a child is either withholding of a reward or the application of the unpleasant stimulus to extinguish an undesirable response (Ombori et al., 2016; Kilonzo, 2017; Ayiro, Mbagaya, & Othuon, 2019). According to Kagoiya and Njogu (2018), disrespect for school authority, disobedience of set rules and regulations and non-maintenance of established standards of behaviour among children, should be suppressed by corporal punishment. The teachers are, therefore, mandated to model the children's behaviour to prosocial (Sosteric, 2019). However, Wanjiru, Ndung'u, and Gachahi (2018) point out that the punitive strategies used by the teachers in Kenya to instil prosocial behaviour are illegal, this limits their ability to instil discipline, for example, teachers are not supposed to cane a child as a method of behaviour modification. It is against the Kenyan law and child rights. Any teacher found doing so is likely to face the law or even disciplinary action (Wanjiru, Ndung'u, & Gachahi, 2018). Moreover, teachers are reluctant to explore other alternatives methods of child discipline or correcting them. The reluctance to explore alternative measures by teachers ret on the teachers training methods (Mwangi, Kariuki, Ndung', & Gachahi, 2017). National Crime Research Centre (2018), explain that Kenya burnt corporal punishment because there is evidence that it hurt child behaviour. The same reasons apply to other repressive mechanisms. Punitive practices, canning, or hitting a child, hurt their emotions and may cause physical harm as well (Ombori et al., 2019). Children have reacted to harsh punishment by striking, burning schools (National Crime Research Centre,2018). Moreover, due to emotional imbalance children resort to brutal ways of expressing their grievances such as gang-raping teachers, looting, destroying schools and public properties, drinking, smoking, murdering their teachers and even fellow pupils (Wanjiru, Ndung'u, and Gachahi, 2018). Also, teachers act as role models.

Modelling has been defined as the act of an educator to display specific characteristics intentionally to teach certain behaviours to children (Mieke, Korthagen, & Anja, 2007). The idea of modelling draws its concept from social learning theories. Within the school environment, children observe and imitate their teachers. The leading influence shapes the child personality. Gathua, Muthee, Murugami, and Tesfu (2015) explain that bad-mannered teachers promote immorality because they are role models for school children. The scholars observe that there is a poor relationship between staff with poor grooming and children. Besides, teachers having affairs with the students set a bad example. Such behaviour may prompt students to engage in sexual immorality among

themselves or with adults.

According to Mieke, Korthagen and Anja (2007), teachers influence children behaviour through their actions. For instance, children will copy the morals and values as reflected in the models that their teachers and older peers have set. This fact is supported by Chonge, (2016) who observed that children learn to treat each other fairly because their teachers do so. Thus, they learn to care for others, display patience, show concern about others, appreciation and learn how to listen to others. Teachers whose personal characteristics match with the children, provide a powerful positive role model. Learning at school has been noted to play a very influential role in girl students in particular fields or careers (Oetting, Donnermeyer, Beauvais, & Trimble, 1998).

Traditional and School Primary Socialization and Formation of Children Behaviour

While every society aims at producing the best citizens, respectful children, creative and, sensitive youths, they should examine how they nurture their children for these achievements (Chalari, 2017). Traditionally, 44 ethnic groups in Kenya had varied ways of bringing up children in ways that are compliant with their norms and traditions. However, there are cross-cultural and conjoint nurturing practices by communities. These methods include storytelling, use of poems, wise saying and riddles. Cultural ritual influence child education and learning.

In Kenya, many communities were communal. Children learnt to live together and care for one another based on a shared philosophy of African socialism and Ubuntu. The philosophies fostered the value of hospitality, to both the relatives and the stranger, and respect to adults. Much of the education happens during initiations. Children learnt how to establish family systems, venerating marriages, and customs. Currently, the education system is based on the capitalist model and teaches children on personal goals, competition, autonomy, and individualism (Egsmose, 1990).

According to Sosteric (2019), socialization imposes a social order that influences and shapes how children express in and understand the world. Traditional ways of child upbringing in Kenya is complex to understand due to the presence of a diverse community (Odhiambo, 2011). Examining how they bring up children would, therefore, require a great deal of understanding of the cultural background of these communities - their values, norms, attitudes, and beliefs (Martin, 2010). Egsmose (1990) accused the formal education system in Kenya of teaching children to be obedient to authority and power while African traditional society taught a child to respect and obey the elders, the values were still taught and expected of young people.

In that way, any adult in society could discipline the child (Odhiambo, 2011). However, currently, the youths have not only lost respect, but they are also disobedient (Ayiro et al.,2019). Children disrespect adults on social media, insult their elders and publicly abuse each other (Kiche, Muhindi, & Thinguri, 2019). Primary six pupils assaulted their teachers in Kirimoni Primary school in Samburu because they lacked respect to them and because of erosion of traditional values that existed before formal education.

In Kenya, cultural learning at family and community levels is fast fading due to the overwhelming influence of western cultures. Children interact with external cultures, urban life, and a western type of education, which has bred new lifestyles, and behaviour (Odhiambo, 2011). Conflict emerges when balancing traditional values and acquired values. Egsmose (1990), explains that girls traditionally learnt to produce and reproduce. However, the formal education systems, teach them how to be the head of the household. There are no distinctions of roles between them and boys though the gender roles remain unchanged (O'Brien & Tresch, 2015).The formal system education is authoritative (Egsmose, 1990). The system teaches children not allowed any room for discussion (Ombori, Edu, Peter, Yambo, & John M. O., 2016). Formal education focuses so much on individualism while traditional African society custom that promoted unity, for example, working together on the farm (Odhiambo, 2011). Egsmose (1990) accused the education system of promoting discord. The scholar argues that the education system encourages competition, which creates envy leading to disunity among the children.

For a long time, Kenyan children and parents have shown negative attitudes towards technical or vocational studies. Egsmose (1990) explains that tradition demanded and valued physical work activities since they were agrarian societies. On the other, formal education value intellectual output. Perez-Felkner (2013) support Egsmose, the scholar explains that children from a middle-class family in developing and developed countries are less likely to participate in practical activities due to overemphasis on abstract knowledge and intellectual output.

The influence of Christianity and other faiths on children have made them polemicist against their own culture (Chalari, 2017). It is, therefore, hard to explain how culture has influenced children behaviour. However, traditional ways of teaching children contribute to a positive outcome, for example, positive cognitive development in terms of prosocial behaviour (O'Brien & Tresch, 2015). Also, traditional education enabled the formation of resilience. Elders taught children good morals and life lessons using folk songs, stories, and wise saying. Modernity eroded Traditional education systems and replaced it with a capitalist orientation where parents hardly find time to talk to their children about sexuality (Odhiambo, 2011). We can, therefore, assume that the frequent killings of students by their misguided colleagues over love tussles happen as a result of psychopathic behaviour or analytic depression carried to adulthood.

SUMMARY AND CONCLUSIONS

The literature revealed that child upbringing is a challenge for parents and teachers. Modernity has changed traditional child upbringing in a family set up, and the formation of child behaviour begins at birth. Parents, peer and teacher behaviour affect child behaviour. Parents have difficulties in parenting and use violent ways to correct children. Teachers still use corporal punishment to instil discipline. However, there are alternatives to corporal punishment examples of role modelling strategies, counselling, task assignment, a suspension. There is a conflict between the traditional and modern school education system in the formation of child behaviour. Peer influence can be a source of prosocial behaviour as well as and delinquency.

In conclusion, child nurturing and behaviour formation need more attention, parents, and teacher's involvement is incredibly significant in addressing deviance behaviour in children. This review recommends that;

1. Parents should also maintain a strong bond, give more attention to a child,
2. Teachers should be encouraged to use nonviolence methods to instil discipline,
3. The government should introduce counselling department in every public school.
4. Parents and teachers should explore positive traditional forms of child nurturing.

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Chapter 18
Rating of Cash Crop Insurance Contracts in Tanzania Using Nonparametric Methods

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ABSTRACT

This chapter used nonparametric methods to establish the parameters of cash crop insurance contracts based on zone yields. The secondary historical yields data obtained from the Food and Agriculture Organization of the United Nations, for the period of 1961 through 2018, for cotton and cashew nuts, were used both in estimating the kernel density function and forecasting the mean yield. The estimated kernel density and mean forecasts were used to tabulate, at a different level of coverage, the probability of loss, the expected yield shortfall (kilogram per hectare, denote kg/ha), and the actuarial-fair premium rates for each crop. The results showed that, at different levels of coverage (i.e., from 50% to 90%), the actuarial-fair premium rates range between 0% and 32% of the sum assured. However, the range for cashew nuts is narrow (0% to 8%) while that of cotton is 4% to 32%, a very wider range compared to cashew nuts. Further, the expected losses for cotton, in the same coverage intervals, ranges from 11.58kg/ha to 256.06kg/ha while that of cashew was 0.44kg/ha to 19.69kg/ha.

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BACKGROUND OF THE PROBLEM

Agriculture is a key sector for development especially in Africa as most of the people are living in rural areas and households depend directly or indirectly on agriculture (Diao, Hazell, & Thurlow, 2010). For instance in Tanzania, the agriculture sector, among others, contributes around 30.1% of the Gross Domestic Product (GDP), employs around 66.3% of the population and accounts for 20% of export earnings (URT, 2018). The agriculture sector is vital in the economic development of a country because it provides food for manhood and raw material for industrialization. Farming of cash crops also known as commercial farming is of much interest compared to food crops. Cash crops focused on making a profit through selling of crops rather than personal use. The export of cash crops not only increases food security but generates foreign currency which contributes to the country's economy. Wage and employment to rural the economy are brought by cash crops (Achterbosch, Berkum, & Meijerink, 2014).

Given the importance of agriculture in the country, the government of Tanzania in collaboration with other stakeholders came up with several programmes to improve the sector. These were Kilimo Kwanza, Agricultural Sector Development Programme (ASDP) I & II, Agricultural Sector Development Strategy (ASDS), to mention a few. Moreover, the government has set aside strategic plans to improve some of the crops, the potential for the industrial economy and middle-income countries by 2025.

Despite all these efforts, farmers still face a number of risks, beyond their control, which affects production and overall investment in farming systems. The risks are climate change which results in droughts, insufficient rainfall, high temperatures and floods (Rondhi, Khasan, Mori, & Kondo, 2019), pests, diseases, price fluctuation in the world market, etc. All these risks affect agriculture production in one way or another. Achterbosch, Berkum, & Meijerink (2014) argued that for cash crops to be successful, economic and environmental risks have to be prevented or reduced. Because of unforeseen events, crop insurance is inevitable in order to reduce and/or cover the losses faced by farmers.

Basing on risks associated with agriculture, the government plays a vital role by providing substantial subsidies in premium, loss adjustment expenses, and reinsurance services (Smith & Glauber, 2012). As a remedy, the government of Tanzania through National Insurance Corporation (NIC), planned to launch crop insurance as an innovative solution to manage the risks faced by farmers and stabilize farmer's income. To ensure effective implementation of the same, all farmers in the country will be registered to establish the number of farmers and their location.

Agriculture insurance has been in existence for two centuries now. It started in Europe and then the United States, and spread to other countries around the world. Agriculture insurance contracts are available at two levels: farm and area. The contracts, at each level, cover losses caused by yield shortfalls and/or revenue losses (Barnett, Black, Hu, & Skees, 2005). In contributing to the government efforts of implementing the agriculture insurance policy, this chapter focus on establishing the framework to be used in rating an area-yield crop insurance, among other types of crop insurance available, using nonparametric methods. Two strategic cash crops namely; cotton and cashew nuts will be involved.

This chapter is comprised of five sections. Section one is the background of the problem which describe the problem and rationale, chapter two presents a review of statistical methods used in rating crop insurance contracts and theories of crop insurance. Section three describes the data, scope of the selected cash crops and the analysis plan. Results and discussion are presented in section four while conclusion is presented in section five.

REVIEW OF STATISTICAL METHODS IN RATING CROPS INSURANCE CONTRACTS

This section discusses various methods used to rate crop insurance contracts. The discussion is based on previous similar works in order to get a clear understanding of how the rating is done. Moreover, to determine the strengths and weaknesses of statistical rating methods which is the base of selecting the rating method to be used. In addition to that, theories behind crop insurance contracts are discussed.

Methods Used in Rating Crop Insurance Contracts

To rate a crop insurance contract, a proper understanding of the data generating processes of the crop to be insured is of particular importance. Specifically, one needs to know the crop yield distribution. The distribution can either be parametric or nonparametric. The choice of parametric yield distribution, one needs to know a family of distribution from which the historical data was drawn, otherwise, misspecification of the parametric yield distribution can lead to either underestimating or overestimating of the expected yield and lead to biased premium rates (Zhang, Wang, & Boyd, 2011) (Goodwin & Mahul, 2004).

Different researchers have proposed parametric methods to be used when modeling yield distribution. Among others, (Just & Weninger, 1999) argued that yields are normally distributed. However, there has been a lot of criticism against this argument. For instance, Ramirez, Misra, & Field (2003) criticized the normality assumptions in modeling crop yield distribution. They concluded that crop yield distributions are non-normal, kurtotic, and right or left-skewed. Further, Gallagher (1987) suggested Gamma distributions, Nelson and Preckel (1989) proposed beta distribution, and Moss and Shonkwiler (1993) argued that inverse hyperbolic sine transformations to be used in modeling crop yields, etc.

On the other hand, Goodwin and Ker (1989), among others, applied nonparametric methods to model crop yield and apply the same to rate group risk crop insurance contracts. In addition to that, nonparametric methods would give more accurate premiums than parametric methods (Ozaki, Goodwin, & Shirota, 2011). The strengths of nonparametric methods over parametric methods are; no functional form is required, and are free from distributional assumptions while the weakness of nonparametric methods is in modeling multiple variables with small samples (Ramirez, Misra, & Field, 2003).

Based on the literature, nonparametric methods are preferred to estimate the yield distribution from historical data if and only if a correct parametric distribution cannot be established. Moreover, bias is reduced in nonparametric method- which capture more information- compared to (biased) misspecified parametric distribution (Zhang, Wang, & Boyd, 2011) (Deng, Barnett, Hoogenboom, Yu, & Garcia, 2006). Among the most commonly used nonparametric method is the kernel smoothing, for nonparametric density estimation (Xiang, Yunxianb, Zhenweib, & Zelianga, 2012) (Guidoum, 2015).

The idea of nonparametric method is to determine the probability density function (pdf). According to (Silverman, 1986), the closest estimator of $f(y)$, which is the pdf of the area yield in our case, is given by

$$\tilde{f}\left(y\right)=\frac{1}{nh}\sum_{i=1}^{n}\check{s}\left(\frac{y-y_i}{h}\right) \tag{1}$$

Where h is the optimal bandwidth parameter. An optimal h will result into smoothed density-choosing larger h will result into over smoothed density and smaller h into irregular density (Zhang, Wang, &

Boyd, 2011). Further, we have K(.) as the kernel function, which is symmetric and satisfy the following three properties;

1. $\int_{-\infty}^{\infty} \check{s}\left(u\right) du = 1$
2. $\int_{-\infty}^{\infty} u\check{s}\left(u\right) du = 0$
3. $\int_{-\infty}^{\infty} u^2\check{s}\left(u\right) du < \infty$

From the three properties above, it follows that the kernel function will be a symmetric probability density function. The Gaussian distribution (with mean 0 and standard deviation of 1) is the commonly used kernel function. Other kernel functions are Uniform, Triangle, Epanechnikov, Quadratic, Triweight, etc (Xiang, Yunxianb, Zhenweib, & Zelianga, 2012) (Guidoum, 2015). In this chapter, we used the Gaussian kernel function, given as

$$\check{s}\left(\mathrm{u}\right) = \frac{1}{\sqrt{2\pi}} \mathrm{e}^{-\frac{u^2}{2}} \tag{2}$$

Therefore, substituting Equation (2) into (1), our kernel density estimator will be

$$\tilde{f}\left(y\right) = \frac{1}{n}\sum_{i=1}^{n} \frac{1}{h\sqrt{2\pi}} \exp\left\{-\left(\frac{y-y_i}{2h}\right)^2\right\} \tag{3}$$

From Equation (3), it can be concluded that, one advantage, among others of kernel smoothing is that it centers a kernel function at each data point (Gramacki, 2018).

Theoretical Concepts of Crop Insurance

Crop insurance was pioneered by Harold G. Halcrow in his 1948 Ph.D. thesis. He proposed three types of crop insurance contracts namely; all-risk insurance, area-yield insurance, and weather-based crop insurance. Crop insurance contracts are available either at the individual farm level or area level. Experience shows that many tailor-made individual-farm level contracts failed due to the problems of adverse selection, and moral hazard. Also, high transactions cost (Miranda, 1991). Adverse selection occurs when a farmer has more information than the insurer while a moral hazard, which happens after a policy is put in force, is when a farmer intentionally takes an additional risk or exaggerates a loss because the insurer is going to bear the costs of those risks. Based on this experience, area-yield crop insurance is the most practiced in developed and developing countries.

Under area-yield crop insurance, premiums and indemnities are evaluated based on the average yield received in an area of normally uniform crop conditions. In this regard, districts or regions or even zones with similar soil profile and climatic condition are considered as a cluster. Indemnities and premiums are then paid on the basis of average yield from such cluster (Halcrow, 1949)

Miranda (1991) extended the work by Halcrow and proposed area-yield insurance to be based on aggregate rather than on individual farm-level yield. The aim was to overcome the problems of adverse selection and moral hazards, as well as reduce transactions cost. These problems are attributed to asymmetric information (Zhang, Wang, & Boyd, 2011). To overcome these problems, farmers exposed to similar climatic conditions and soil profiles will be insured in aggregate. If a farmer in an insured area (region/district/zone), suffers a yield loss when the whole area does not, this particular farmer will not be indemnified. The indemnity will be available if and only if the average area yield falls below the pre-specified critical yield value.

In this chapter, it is assumed that indemnities are paid in units of production (i.e., kilogram) per hectare. The indemnity model for area-yield insurance is (Miranda, 1991)

$$\eta = \max(yc - y, 0) \tag{4}$$

Where $y_c = \mu \times coverage$, with 50%£*coverage*£90% in 10% increments (The choice is arbitrary); μ is the expected area yield (this is calculated from historical yields data); y *i*s the realization of the stochastic area average yield, measured in kilograms per hectare.

From Equation (4), there is a possibility for a particular farmer to experience a yield shortfall and receives no indemnity. This would occur if the cause of loss reduced the yield on this particular farmer but was not sufficiently systematic enough to reduce yield measured at the area level. On the other hand, the inverse is true. It is possible for a farmer to receive a yield greater than a pre-specified critical level ($yc_)$, and yet receive an indemnity.

It is from this perspective risk is classified into two components i.e. systematic and idiosyncratic (residual) components. This was formalized by (Miranda, 1991) as follows;

If y_i is projected orthogonally onto y then

$$y_i - \mu t = \beta i(_y - \mu) + \varepsilon i \qquad (5_)$$

Where

$$\beta_i = \frac{Cov(y_i, y)}{Var(y)};$$

$$E(\varepsilon i_) = 0,\ Var(\varepsilon_i) = \sigma^2_{\varepsilon_i}, Cov(y, \varepsilon i_) = 0;$$

$$E(y_i) = \mu I_,\ Var(y_i) = \sigma^2_{y_i};$$

$$E(y) = \mu,\ Var(y) = \sigma^2_y;$$

Equation (5), decomposes farm yield into a systematic component, measured by βi times the (average) area yield (measured in kg/ha) deviation from expectation, and an idiosyncratic component εi. The coefficient βi measures how sensitive is individual farm yield is to the systematic risks that affect the average area yield.

On the other hand, the actuarially fair pure premium, denoted as π, under area-yield insurance contract is given by

$$\pi = E(\eta) = \int_0^{y_c} (y_c - y) f(y) dy \tag{6}$$

It follows that, to determine the pure premium (from Equation (6)) for a particular crop, we should establish the probability function, $f(y)$ of the stochastic area yield, y. In other words, using the historical area yield over the past years, we can estimate the yield distribution and the same will be used to establish (actuarially fair) pure premium (Goodwin & Mahul, 2004). We will adopt this approach because area-yield crop insurance is a new line of business in Tanzania.

Equation (6) can further be rewritten, to allow for calculation of pure premium rates, as follows

$$\pi_{rate} = P(Y < y_c)\left(1 - \frac{\bullet\left[Y \mid Y < y_c\right]}{y_c}\right) \tag{7}$$

DATA, SCOPE OF THE SELECTED CASH CROPS, AND ANALYSIS PLAN

Data

The secondary crop yield data (measured in hectogram per hectare) for cotton (seed) and cashew nuts (with shell) were obtained from the Food and Agriculture Organization of the United Nations (FAO). The time span for the data is 1961-2018. For simplicity, the data were converted into kilogram per hectare.

Scope of the Selected Cash Crops

Major exported cash crops in Tanzania includes tobacco, cotton, cashew nuts, coffee, tea, cloves, cotton, and sisal. Out of these, only two crops namely cotton and cashew nuts were selected purposely. The main reasons for selecting these two crops were the availability of data, to make comparison between annual and perennial crops in terms of the risk involved when insurance is introduced, and the fact that the government has chosen cotton as a pilot in establishment of crop insurance in Tanzania. The historical yields data are used to establish insurance parameters as there were no loss experience data to suffice insurance rating (Goodwin & Mahul, 2004).

Cotton is a strategic crop which significantly contributes to export earnings. It is an annual crop mainly grown by smallholder farmers in Tanzania. Farming is associated with several risks such as drought, pests and diseases, world price fluctuations, availability of quality inputs e.g. seed, fertilizers, crop protecting products, and access to extension services (Syngenta, 2014).

Like cotton, cashew nuts is also an important export for Tanzania. It is the source of income to small scale farmers in southern coastal regions. Tanzania ranked 5th place of cashew nuts production globally in 2017. The main production risks are deteriorating export crop quality, farmers unable to access loans to finance inputs, low yield due to old trees, shortage of domestic processing industries (Mitchell, 2004).

In practice, area-yield insurance is implemented at district/county level or even at region level or zones with similar climatic and soil conditions (Skees, Black, & Barnett, 1997). In this paper, the historical yields at the national level are used to establish area-yield crop insurance. The coverage area in our analysis is a zone with similar climatic and soil conditions. The main reason for proposing area-yield crop insurance at zone level is due to absence of yields data at administrative district level. However, the nature of the selected crops, in terms of location, suffice the implementation of area-yield crop insurance at zone level.

For instance, about 90% of the area planted with cashew nuts are found in southern coastal regions, which consist of Mtwara, Lindi, and Pwani. Of this 90%; 50% is from Mtwara, 35% Lindi and 15% from Pwani (NBS, 2017). These three regions exhibit similar climatic and soil conditions, we grouped them into a zone. Further, Nearly 97 to 99% of cotton cultivation is from the northwest part of the country, near lake Victoria, with Mwanza, Simiyu, and Shinyanga regions as the top three producers (Syngenta, 2014). In the same fashion, we grouped cotton producing regions into a zone because they belong to lake zone and exhibit similar climatic and soil conditions.

Data Analysis Plan

The historical yields data used in this paper were checked for stationarity, a necessary condition before ARIMA modeling and forecasting was implemented. Both Autocorrelation Function (ACF) plots and Augmented Dickey-Fuller test were used to check for stationarity of the time series data. The next task, after attainment of stationary time series for each crop, was to identify the best model, estimate the parameters using maximum likelihood methods, and perform diagnostic checking. Then, the forecasts over the next five years were obtained using the "best" estimated model. Further, the rating of cash crop insurance contracts in Tanzania was determined by nonparametric methods. Specifically, the kernel density estimator was used.

The specified kernel density estimator was used to estimate the possible losses and the probability that particular losses occur. However, it should be noted that the yield distribution estimated (for new insurance scheme) is from the historical yields data of uninsured farmers, so probably if were insured before, the data would have been different. Despite that, yield distribution can be estimated because our objective is to establish area yield insurance in which case a particular farmer cannot control the behavior of the farmers in an insured area (Chambers and Quiggin, 2002) (Harri, Coble, Ker, & Goodwin, 2011). In other words, the problem of moral hazard is solved and hence the pattern of the yield distribution does not deviate to a large extent when insurance is introduced.

Further, a time series approach for forecasting crop yield, μ was used. The same is used to calculate the critical yield, y_c at different coverage levels. In literature, various crop yield forecasting methods like ARIMA, exponential smoothing, spline regression, etc have been used (Khuda et al., 2005) (Miranda, 1991) (Goodwin B. K., 1994). Based on our preliminary analysis, non-seasonal ARIMA models are used because of availability of annual data (from 1961-2018) and different literature have proved ARIMA models to be the robust models for crop yield forecasting (Choudhury & Jones, 2014) (Iqbal, Najeeb; Bakhash, khuda; Maqbool, Asif; Ahmad, Abib Shohab;, 2005), (Suleman & Solomon, 2011), (Hemavathi & Prabakaran, 2018).

ARIMA model is generally identified by its parameters, $ARIMA(p,d,q)$ where p represents the order of autoregressive, d is the order of difference required to archive stationarity and q represents the order of moving average model (Barun, Dhaliwal, Singh, & Sundhu, 2014). Generally; ARIMA model is written in the following backshift form;

$$\Omega(B)(1-B)^d y_t = \delta + \Psi(\mathrm{B})\varepsilon t \quad (8)$$

Where

Ω is the Autoregressive (AR) function,

Ψ is the Moving average (MA) function,

δ is the mean, and

d represents the order of differencing required to attain stationarity. In most cases d=1 is satisfactory to attain stationary time series and rarely d=2 is used. Difference is not always satisfactory in attaining stationary series but rather other transformations methods like Augmented Dickey-Fuller (ADF) (Montgomery, Jennings, & Kulahci, 2015).

RESULTS AND DISCUSSION

This section presents and discuss results for the selected two strategic cash crops in Tanzania: cotton and cashew. At first, the forecast for each crop is presented and later crop insurance parameters estimated from nonparametric kernel density estimator are presented and discussed.

Forecasting Crop Yields Using ARIMA Models

Under this subsection, a thorough analysis of ARIMA modeling and forecasting is presented. Before forecast, the model is identified, estimated and checked. The next five years yield forecast for each crop is presented.

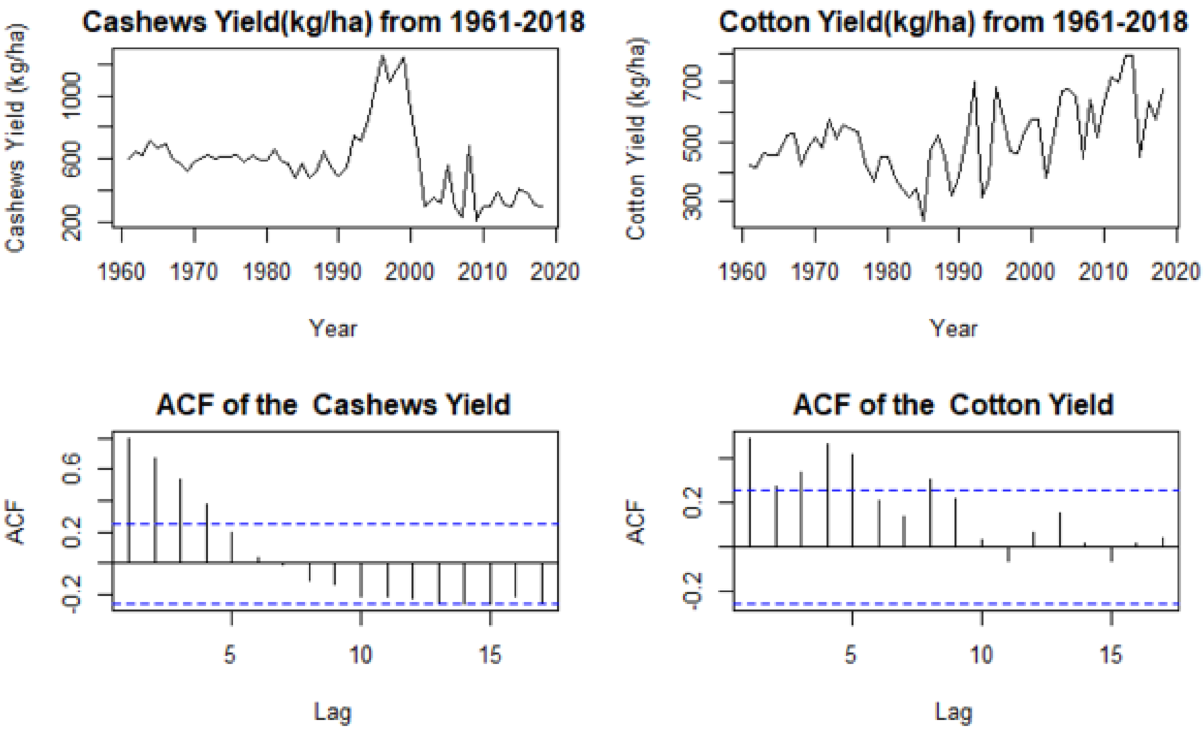
Model Identification

Before model identification, stationarity of historical crop yield data was checked using Autocorrelation function (ACF) plots and the Augmented Dickey-Fuller (ADF) test.

ACF was plotted to inspect the stationary of a time series by looking at the behavior of the plot at different lags. For a stationary time series, only a few lags go beyond the limits of the confidence interval and the autocorrelation drops quickly to zero. In addition to that, the lags are supposed to be random without following any specific pattern (Hyndman & Athanasopoulos, 2018). From Figure 1, it can be seen that the ACF plots (bottom panel), for each crop, show a clear pattern and some of the lags goes beyond the confidence limit as well as slowly decreases to zero. Hence, there is no stationarity in either of the crop yield series. Therefore, the next task is to transform the data so as to achieve stationarity. But before we embark on the same, let us describe a little bit a behavior of the observed crop yield for each crop.

The top panel plots (Figure 1) show the historical movements of cashew nuts (top left) and cotton yields (top right), measured in kg/ha, from 1961-2018. For cashew nuts there seems to be a relatively stable yield from 1961 to 1990. However, from around 1991 to 2001 the quadratic trend was observed with maximum values at 1996 to 1999.

Figure 1. Observed Time Series Plots and their Corresponding Autocorrelation Functions (ACFs)



Further, from 2002 to 2018 there have been ups and down movements. Bearing in mind that a cashew tree is a perennial crop, then these variations might have been contributed to some factors like age of the trees, climatic conditions, and availability of extension services, to mention a few.

On the other hand, as we all know that cotton is an annual crop, the overall cotton yield pattern from 1961 through 2018 is very stochastic. In 1985 there was a significant drop in cotton yield and from there on there have been increasing (random) variation in the yield.

Another useful test for stationarity is the Augmented Dickey-Fuller (ADF) t-statistic test for unit root. In the ADF test, the null hypothesis is to test for non-stationary while the alternative is stationary.

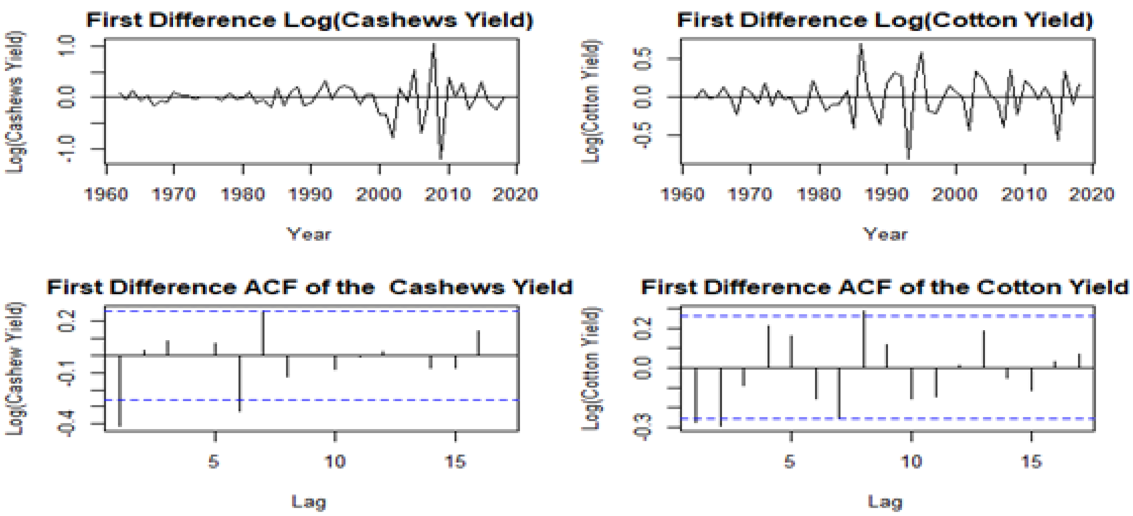
Table 1.Summary Statistics from ADF test

Crop	Dickey-Fuller Critical Values	Lag Order	P-Value
Cotton	-2.15	3	0.51
Cashew nuts	-2.47	3	0.38

For the stationary time series, the p-value is supposed to be less 5%, otherwise, we do not reject the null hypothesis. Since the p-values in Table 1 for both crops are greater than 0.05, then do not reject the null hypothesis and conclude the non-stationarity of the series.

Therefore, following the explanations from the observed time plots and their corresponding ACF plots, and the ADF test we conclude both series are not stationary.

Figure 2. Log Transformed First Difference for Cotton and Second Difference for Cashew (top panel) and the Corresponding Autocorrelation Function (ACF) Plots of Log Transformed Data (bottom panel)



Next we apply transformations like logarithm transformation and differencing, for each series, to stabilize the variance and mean, respectively. These transformations are widely used in a search for stationary time series before forecasting is done.

From Figure 2, there are only few autocorrelations outside the 95% bound test for stationarity. This suggests that crop yields are random and uncorrelated with the yields of the previous years. Also looking at Table 2, the p-values for each crop are essentially less the a 5%, which conclude that the first difference, for each crop yield series, was sufficiently enough to attain stationarity.

Table 2. Summary Statistics from ADF test after the first Difference of the log transformed data, for each crop.

Crop	Dickey-Fuller Critical Values	Lag Order	P-Value
Cotton	-6.32	3	0.01
Cashew nuts	-3.3	3	0.03

Having attained stationarity after first difference, we are certain that our identified best models have the form *ARIMA*(p,1,q) for $p, q \in \Re_0^+$. To specify the values of p and q we plot the Autocorrelation function (ACF) and Partial Autocorrelation function (PACF) of the first difference log transformed data.

Examining Figure 3 thoroughly, the parameter for each crop can be obtained. For instance, for cashew since the PACF decay exponentially quickly to zero and ACF shows a significant spike at lag 1 and none beyond it, except at lag 6, the MA(1) is appropriate in this case. Also, for cotton ACF decay exponentially relatively quick to zero and the PACF shows 3 significant spikes and none beyond it, then the AR(3) is more appropriate.

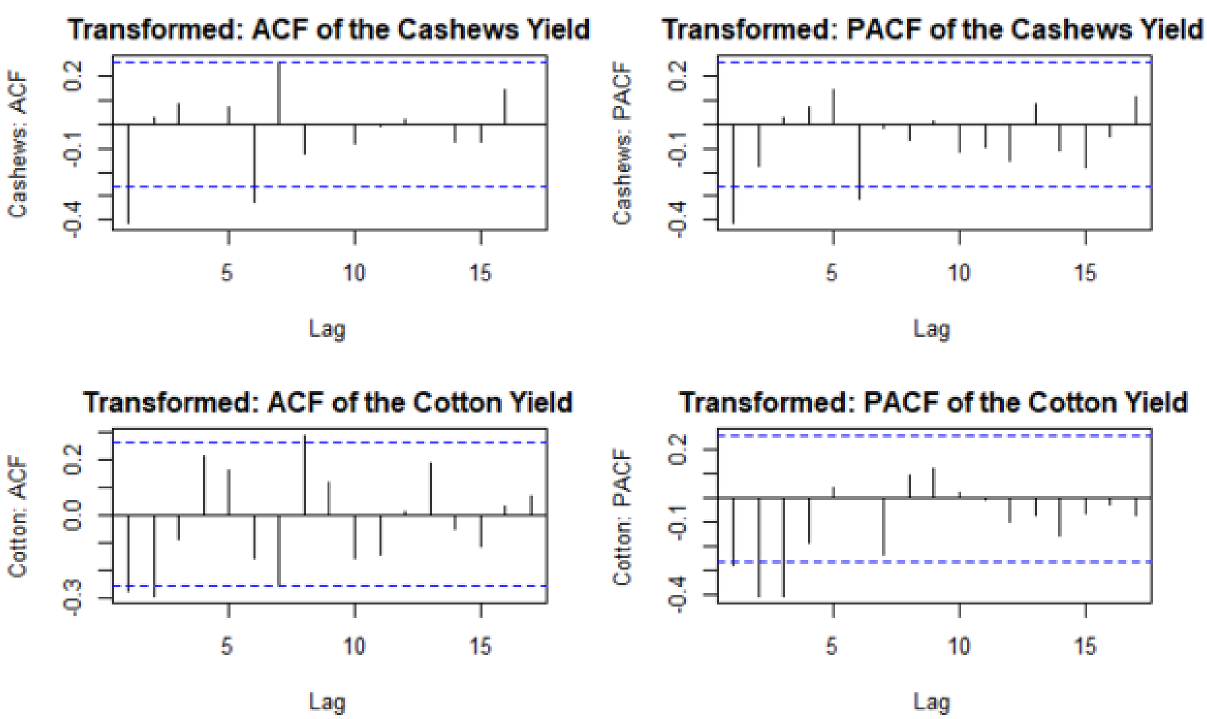
Model Estimation

After attainment of stationarity, the model was selected from ACF and PACF plots of the log-transformed first difference (Figure 3). The best ARIMA model for cotton is identified to be *ARIMA*(3,1,0) while for cashew is *ARIMA*(0,1,1). Both models were found to have zero mean, i.e., δ=0 in Equation (8). Then the estimated parametric model, using the maximum likelihood estimation (MLE) for cotton is Equation (9) while for cashew nuts is presented in Equation (10).

$$(-0.55B - 0.56B^2 - 0.41B^3)(1 - B)y_t \tag{9}$$

$$\left(1 - B\right) y_t = -0.42\varepsilon_{t-1} + \varepsilon_t \tag{10}$$

Figure 3. ACFs and PACFs of the First Difference Logarithm Transformed Cashew nuts and Cotton Yields.



Where

$$\varepsilon_t \sim N\left(0, \sigma_{\varepsilon_t}^2\right)$$

Diagnostic Checking

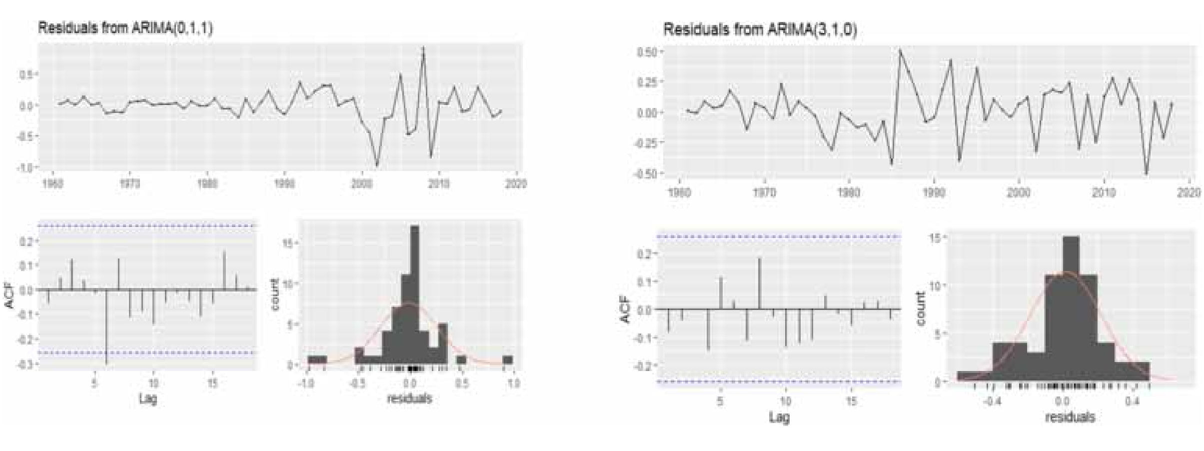
Checking for the best model fit (i.e., model error term analysis), we look at some aspects like; analyzing the residuals, ACF plots of the residuals, histogram along with normal curve to check if the mean of the residual is essentially zero, and Ljung-Box test. The results (Figure 4) showed that, for each crop, the time series plot of residuals exhibit random pattern which indicates that the model fits well with residual plots. Further, the histograms show that the residuals are white noise. In addition to that, the autocorrelations are within the 95% confidence level, except for cashew where by one autocorrelation at lag 6 goes a bit beyond the confidence limit. Lastly, a portmanteau test for each crop was also performed in order to confirm if residuals follows white noise process (Hyndman & Athanasopoulos, 2018).

Table 3. Ljung-Box test summary Statistics for Autocorrelation

Crop	Q*	Df	p-value
Cotton	7.46	7	0.38
Cashew nuts	11.53	9	0.24

As indicated in Table 3 all the p-values are greater than 0.05, which indicates that the residuals follows a white noise process and that the fitted model has captured as much information as possible with little or no was unexplained.

Figure 4. Residual Analysis Plots for the Best ARIMA Models fitted to the Cashews Yield (Left Panel) and Cotton Yield Data (Right Panel).



Forecasting

After attaining the best model, cotton and cashew nuts mean yield were forecasted (see Table 4). The mean (or point) forecasts for cotton varies from year to year while for cashew nuts the point forecasts are the same over the five years forecast horizon. But the point forecast are meaningless without prediction intervals, because it is hard to tell the uncertainty associated with each point forecast. This uncertainty is captured by introducing the prediction intervals (Hyndman & Athanasopoulos, 2018)(Khuda *et al.*, 2005). It is from this perspective, it can be observed that even though the point forecast are the same, but the lower and upper 95% confidence levels are different from one year to the next unlike point forecast. Therefore, it can be concluded that prediction intervals are necessary to show the variation from the point forecast (which is actually the mean forecast in our case).

Table 4.Five Years Points Forecast and their corresponding High 95 and Low 95 Prediction Intervals for Cotton and Cashew nuts.

Year	Cotton Point Forecast	Lo 95	Hi 95	Cashew nuts Point Forecast	Lo 95	Hi 95
2019	568.3	377.2	856.4	311.8	181.5	535.8
2020	596.6	381.0	934.2	311.8	166.8	582.8
2021	599.4	379.9	945.8	311.8	154.9	627.6
2022	625.8	392.7	997.3	311.8	144.9	671.1
2023	597.4	354.2	1007.5	311.8	136.2	713.7

Further, accuracy of the forecasts from the fitted models were checked. The three commonly used quantities to quantify the accuracy of the forecasting model are; Root mean square error (RMSE), Mean absolute error (MAE) and Mean absolute percentage error (MAPE). The same is shown in Table 5. For a forecasting method to be considered as performing relatively well, the values of RMSE, MAE and MAPE are supposed to be relatively small. The RMSE values equal to 1.22 and 1.31 and MAE values equal to 1.16 and 1.18 for cotton and cashew nuts, respectively, proves that the accuracy of the forecasts, for each crop yield model, are good. However, the MAPE values, for each model, are greater than 10% but less than 15%, which indicates that our forecast are off, on average, by the indicates MAPE values.

It is worth noting that, the larger MAPE value are common even if the model fits well the data. Because it divides the absolute error by the actual data, hence, values closer to zero do inflate the MAPE value. Therefore, symmetric MAPE (Goodwin & Lawton, 1999) and mean absolute scaled error (MASE) (Hyndman and Athanasopoulos, 2018) are used instead. In this study, we consider MASE which use

Table 5. Accuracy Measures of the Forecasts from the Best Fitted Models

Crop	RMSE	MAE	MAPE	MASE
Cotton	1.22	1.16	12.3	2.38
Cashew nuts	1.31	1.18	14.88	2.66

the in-sample data and ignore the symmetric MAPE which use the out-of-sample data not covered in this study. According to Hyndman and Athanasopoulos (2018), the MASE value greater than 1 indicate that the forecast from ARIMA model is not the best comapred to naïve forecast on the in-sample data. Hence, forecasting over the next 5 years in this case seem to be worse than just a one-period forecast. It is often the case to experience poor forecast if the forecast horizon increases.

Summary Statistics from the Fitted Kernel Density

Using kernel density estimator, it can be shown that average cotton yield is 511.7kg/ha while that of cashew nuts is 585.4kg/ha (see Table 6). Corresponding standard deviations is 124.5kg/ha for cotton and 236.7kg/ha for cashew nuts. These estimates are of particular relevance to the insurer. For instance, the mean-variance analysis, in this case, shows that the variability from the mean yield for cashew nuts is more compared to cotton. However, these two components can describe the distribution but not sufficiently enough to describe the nature of the distribution. Thus, skewness, which is the measure of lack of symmetry, and kurtosis, which measures peakedness or convexity of the curve, was added for the purpose of describing the nature of estimated kernel density. The skewness for cotton and cashew nuts are 0.23 and 0.98, respectively, which means that there is a positive skewness but the distribution of cashew nuts is relatively more skewed to the right than that of cotton. Further, the kurtosis for cotton and cashew nuts are -1.2 and 1.9 respectively. The kurtosis less than 3 implies the curve is platykurtic (flat curve).

Table 6. Kernel Density Basic Statistics Estimates for Cotton and Cashew nuts

Parameter	Cotton	Cashew nuts
Mean	511.7	585.4
Standard Deviation	124.5	236.7
Skewness	0.23	0.98
Kurtosis	-0.23	1.2

Fitted kernel density for cotton and cashew nuts is shown in Figure 5. The figure is of interest as it displays the fitted kernel density to the true density and the histogram of the observed stochastic yield series, for each crop under consideration. It can be seen that the kernel density fit well the true density and histogram with minimal bias. This means that the estimated kernel density can serve as the best estimate of the underlying true yield distribution. Therefore, the two distributions, one for each crop, gives less biased probability of loss, expected loss, and the pure premium rates.

Estimation of Insurance Parameters using Kernel Density Function

The most common parameters, among others, any insurer would like to take into account before writing any insurance contract are: the probability that the loss will occur, expected loss given loss occurs, and actuarially-fair premium rate. Thus, knowing in advance these parameters is of practical relevance. In Table 7, parameters for each coverage level are presented. It is important to note that under area-yield insurance, a practical coverage ranges between 50% to 90% of the expected stochastic area yield (Iturrioz,

Figure 5. True Density and Estimated Kernel Density for Cotton and Cashew nuts

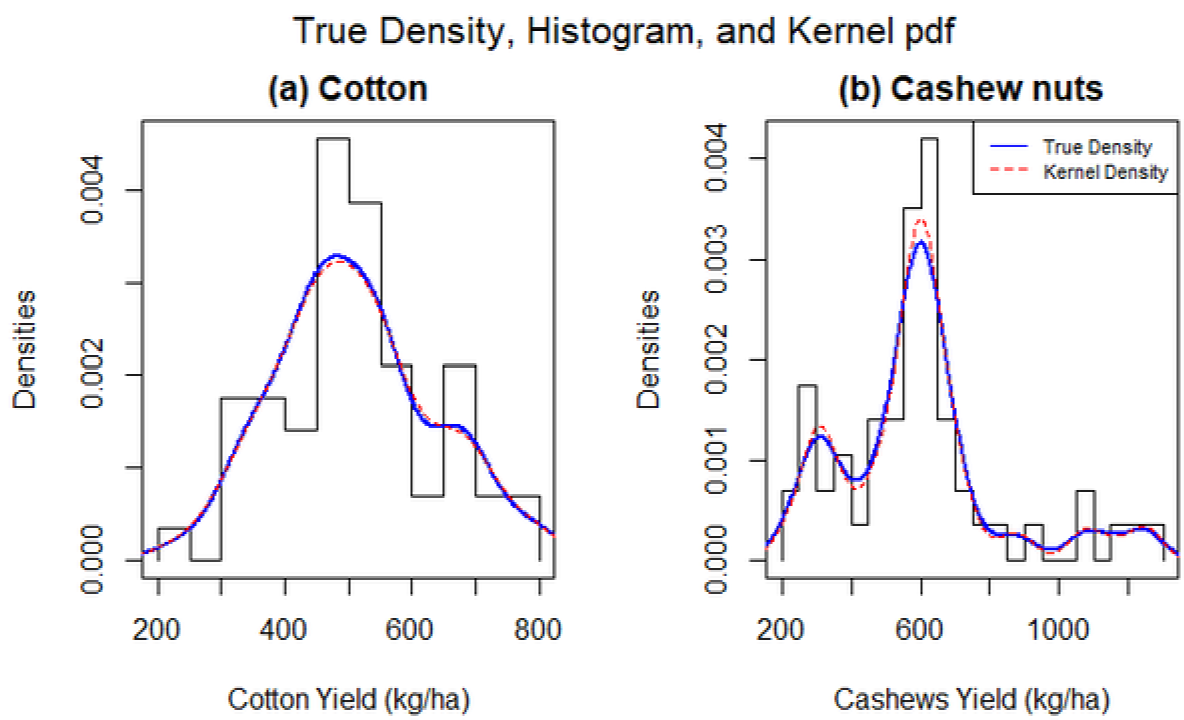


Table 7. Cotton and Cashew nuts Insurance Parameter Estimates Generated from Corresponding Yield Probability Density Function

Crop	Cotton	Cashew nuts
Probability of loss		
50% coverage level	0.05	0.09
60% coverage level	0.14	0.17
70% coverage level	0.28	0.22
80% coverage level	0.47	0.27
90% coverage level	0.66	0.36
Expected Loss given loss actually occurs (kg/ha)		
50% coverage level	11.58	0.44
60% coverage level	36.86	1.53
70% coverage level	86.5	4.15
80% coverage level	164.95	9.64
90% coverage level	256.06	19.69
Actuarially-fair pure premium rate		
50% coverage level	0.04	0
60% coverage level	0.11	0.01
70% coverage level	0.2	0.02
80% coverage level	0.28	0.04
90% coverage level	0.32	0.08

2009). From the Table 7 we see that the probability of loss increases with coverage levels for each crop. For instance, at the coverage level of 50% and 60%, cashew nuts show a higher probability of loss than cotton. But from 70% to 90% coverage levels, cotton records a higher probability of loss than cashew nuts, but in this case the magnitude is very high. That is, at 80% and 90% coverage levels, cotton has 47% and 66% probabilities of loss while that of cashew nuts are only 27% and 36%. This implies that annual crop (cotton) is riskier for higher coverage levels than perennial crop (cashew nuts).

On the other hand, expected loss in kilogram per hectare given the loss actually occurs also increases as coverage level increases. The magnitude of the expected loss in cotton yield is essentially higher compared to the expected loss in cashew nuts yield. For instance, with coverage levels of 70% to 90% the expected loss in cotton ranges, respectively, from 86.5kg/ha to 256.06kg/ha while for cashew nuts the interval is 4.15kg/ha to 19.69kg/ha. Unlike cotton, cashew nuts (generally) have relatively stable yields, and tolerates drought conditions. However, cashew nuts yield might be low if the insured farm/area has got old trees (Mitchell, 2004) and this may cause variation in the yield over time. For instance, in the observed series showed a 3 significant variations from 1961-1990, 1991-2001, and 2002-2018 as it was described earlier. Therefore, a clearer analysis of the age of cashew trees should be made before the insurance contract is offered.

Furthermore, there is an overall increase in actuarially-fair pure premium rates for each crop with the level of coverage. For instance, for the traditional coverage levels of 50% to 90%, the actuarially-fair pure premium rates range between 0% and 32% of the sum assured. However, the range for cashew nuts is narrow (0% to 8%) while that of cotton is 4% to 32%, a very wider range compared to cashew nuts. The 0% premium rate here indicate that a 50% coverage level for cashew nuts yield is insignificant, as well as the expected loss is 0.44kg/ha<1. Therefore, an insurance business might decide to cover an optimal coverage with mutual benefit to both parties.

In practice, the government heavily subsidizes the premium in crop insurance programs and the experience shows that where the government fails to provide subsidies the programs were not sustainable (Goodwin & Mahul, 2004). Based on our analysis, we have seen that cotton being an annual crop is very riskier than cashew nuts. Thus the premium rates depends heavily on the type of the crop, the region (in terms of climatic condition and soil profile) in which it is grown, and the level of insurance coverage. Therefore, the government, if were to subsidize either of the two crops, then cotton would be given more weight in subside than cashew nuts.

CONCLUSION

This chapter has used nonparametric methods to estimate yield distributions and apply the same to establish crop insurance parameters. It establish ratemaking for cash crop insurance in Tanzania. The ARIMA models were used, as an input, to obtain mean yield forecasts from historical yield data spanning from 1961-2018. These historical data, for each crop, were used to build a best ARIMA model, after a series of transformations. In this chapter we adopted logarithm transform and differencing as well as ADF test to obtain a stationary time series. The best ARIMA model for cotton was found to be $ARIMA(3,1,0)$ while for the cashew nuts was $ARIMA(0,1,1)$. Further, the estimated model for each crop under consideration was used to tabulate the five years mean yield forecast along with their corresponding 95% confidence interval.

The findings from the kernel density function, using mean yield forecast as inputs, showed that, at different levels of coverage (i.e., from 50% to 90%), the actuarially-fair premium rates range between 0% and 32% of the sum assured. However, the range for cashew nuts is narrow (0% to 8%) while that of cotton is 4% to 32%, a very wider range compared to cashew nuts. Further, the expected losses for cotton, in the same coverage intervals, ranges from 11.58kg/ha to 256.08kg/ha while that of cashew was 0.44kg/ha to 19.69kg/ha. Basing on the findings, cotton was found to be riskier to insure than cashew nuts. It is therefore recommended that, premium rates for cotton to be subsidized heavy more than that of cashew nuts.

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Chapter 19
School–Family–Community Partnerships and Their Influence on Student Achievement in Public Secondary Schools in Ilemela Municipality, Tanzania

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ABSTRACT

In Tanzania, public secondary schools, family, and community partnerships are considered to be low and students' performance in academic and discipline continues to be poor. The objective of this study was to investigate whether school-family-community partnerships in public secondary schools influence students' achievement in Ilemela Municipal. The study employed mixed research methods where questionnaires and interview were used to collect data. The total sample size was 141. Descriptive statistics analysis and thematic analysis was used, and the findings revealed that partnerships have great influence on students' achievement. The study recommends that the Ministry of Education and Vocational Training make policy reforms to encourage a national wide involvement of families and community in school development activities to ensure quality provision of education which will enhance best socio-economic returns.

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INTRODUCTION

Education continues to be the area of great concern in every country. It was believed for many years that education is the key for development of individuals and their nations. Skills and knowledge acquired through education shape individual mind-set to be able to solve various problems and discover new ways of living for the betterment of society. Nola and Irzik (2005) assert that education is a tool through which individuals acquire skills that empower one life and become productive member of the community. Also Bell-Gam (2003) as cited in the conference paper of Olumese, Okukpon & Clark (2009) that education is concerned with the transmission of knowledge and acquisition of skills that will capacitate the individual not only to survive in the society but also to contribute to the future development and transformation of the economy. This is the reason why education is referred as an investment by the families and community. Whereby, all parties must be involved in the whole process of education of their children for students 'achievement at different levels.

According to Jones and Hazuka (2012) over 20 years there has been an increased emphasis on the importance of partnering with families and communities to enhance students 'achievement in school. Most recent research have moved from the term "parental involvement" to "family involvement" to recognizes the wider family roles in supporting children education (Long, 2010). Starting from family to community level every level is obliged to ensure children get access to quality education. They are involved in various ways such as financing of education, UNESCO and OECD (2002) suggests typical sources of financing education which are; government or public which is always the largest contributor, income generated by schools, external grants, loans channelled via government accounts or direct o institutions), households (mainly parents), private organizations (NGOs), local administration and local communities. Literature insist on a better word than parental involvement which is School-Family-Community Partnerships so as not to leave school to parents but also to involve other members of the family and community in the development of the child (Epstein, 2001).

THEORETICAL FRAMEWORK

This study was guided by the theory of Overlapping spheres of influence developed by Joyce L. Epstein in 1987.The theory hold that the external structure of theoretical model of overlapping spheres of influence shows a pictorial of the major three spheres representing family, community and school which students learn and grow that may be pushed together or apart by different forces; time, characteristics, attitudes, interactions, philosophies and practices of a family and those of a school and community. The model locates students at the centre and recognizes they are active and main actors in their education in schools. School-Family-Community Partnerships may be designed to engage, guide and motivate students to perform better. The theory presents an assumption that if children feel cared for and encouraged to work hard by family, community and teachers, they are more likely to perform better in learning how to read, write, calculate and use their talents effectively. Thus, the theory emphasizes on the reciprocity of among teachers, student and family relationship (Sanders & Epstein, 2005; Deslandes, 2001; Epstein, 2011).

It was through time dedicated to help students, practices by school, family and teachers attitudes and community and teachers philosophy over education matters. When schools partner with families they pull two main overlapping spheres of influence which is very important to student success (Long, 2010).

Existing School-Family-Community Partnerships

Education should provide knowledge and various skills which shape individual behaviours and enable them to participate better in their communities. It is regarded as a process of providing knowledge, skills and also fostering right attitudes and habits (Chandra & Sharma, 2004). And in order to foster quality education School-Family-Community Partnerships exist to assist effective learning process of students. According to Epstein and Salinas (2004) there are six major types of involvement; parenting, communicating, learning at home, volunteering, decision making, collaborating with the community. To learn at a high level, all students need guidance and support from their teachers, families and community through the stated partnerships.

With regard to collaborating with the community different partners in the community collaborate with schools for example in financing government officials, donors for NGOs, parents and community are education stakeholders who mobilize financial resources for secondary schools. It is estimated that the cost of junior-secondary education student in Africa is 3-4 times of that of primary education (Lewin & Caillods, 2001). In order to provide quality secondary education, it requires school-family-community partnership to join hands with the government to provide adequate funding for education.

Sheldon and Epstein (2002) study showed that two types of involvement; parenting and volunteering, were most predictive of reducing the percentages of students who were subject to discipline. The results suggest that creating more connections and greater cooperation among the school, family, and community contexts as one way for schools to improve student behaviour and discipline.

Other types of school-family-community involvement were revealed by Crites (2008) that throughout a year families and community members are invited to special events at school such as curriculum night, reading night and math night so as to influence student achievement. Also Long (2010) asserts that adult volunteers have seen to be successful and in his review he observed that higher income communities enjoy more volunteer participation. Lemmer and Van Wyk (2004) asserted that home-school communication is one of the most traditional and a vital form of parental involvement, but it is often poorly implemented. Despite that challenge, this type of partnership is observed by other studies in Africa.

In South Africa a study conducted by Mutodi and Ngirande (2014) on the impact of parental involvement on student performance, among South African secondary schools. The study employed a quantitative approach and a sample of 150 parents, the study found that there were three highly implemented parental involvement; parenting, parent-teacher communication and home and family support. And these types of involvement were found to be positively related to students 'performance.

Moreover, according to Spreen and Fancsali (2005) in Botswana parents are invited to school twice annually to evaluate the pupils work and measure student performance, additional meetings are arranged on according to the needs. The country report shows nearly all teachers indicated that held meetings at least bi-annually and at times more. This implied that communication type of involvement is mostly implemented in various schools depending on the needs at the moment.

Also a study conducted by Muthoni (2015) in Kenya on the impact of community involvement in public school management ; a case of Machakos County, found that existing types of school-family-community involvement are raising of funds, reporting cases of truancy, ensuring safety and discipline of students. It means that all these partnerships aimed at students 'achievement.

Also another study by Kimaro and Machumu (2015) revealed that parental involvement at home, especially parents asking their children about homework regularly, and helping them with homework had some significant relationships with children's academic achievement. This confirmed the significant relationship between the level of parental involvement in school activities and their children's academic achievement.

In Tanzania one study revealed the participation of community members in the construction of classrooms in ward based secondary schools categorized into two parts; One part includes those who participated in construction through cash contribution and the second part includes those who contributed by offering labour power (Kambuga, 2013)

In addition to that Epstein and Sheldon (2006) opined that well documented problems with student achievement are contributed by old thinking of separating school and students from home and community, leaving teachers to work in isolation from other influential people in a student's life.

Therefore, all types of involvement are only become successful if well integrated with school overall mission and goals (Van Roekel, 2008). For further assisting schools to develop successful School-Family-Community Partnerships Epstein developed an action team approach for school-family-community partnership which consist of six to twelve members including family members, teachers, administrators, other school staff, community member and student (Sanders & Epstein, 2005).

However, many studies conducted in school-community partnerships in Africa revealed that there are few existing partnerships in secondary schools such as checking school exercises, communicating through parents meeting but the attendance of parents is very low (Bwana, 2013). Also a study conducted in Tanzania on Community involvement in planning and decision making for democratization in Bagamoyo district, the study findings revealed that parents and community involvement in community secondary schools was very minimal and weak (John, 2015; Mngarah, 2017).

Based on the reviewed literatures, it is observed that in developed countries there are strong existing School-Family-Community Partnerships compared to developing countries especially Tanzania, studies showed contradictions some showed that Tanzania lack parental involvement and other showed few partnerships. Therefore, this study identified the existing types of School-Family-Community Partnerships in Ilemela Municipal, using a mixed research approach and the larger sample to enable collections of credible data on problem understudy.

The Influence of School-Family-Community Partnerships on Students Achievements

Research uphold that benefits of parental involvement include greater academic achievement to students and good school-community relationships, enhancing moral development and good behaviour (Lawson and Almeda-Lawson, 2012: Henderson and Mapp, 2002; Green wood and Hickman, 1991) as cited in Baker, Wise, Kelley and Skiba, 2016.

According to Epstein (2011) there are many reasons for developing School-Family-Community Partnerships such as improving school climate, programs, and mainly to help student to succeed in school and future life. A study conducted by Kaminski (2011) suggests that family involvement lead to children attend to school regularly, positive attitudes and behaviour, complete home work, get high scores, more likely to graduate and proceed with higher levels of studies.

Another study reported that when parents are involved in their students' education, those students have higher grades and test scores, better attendance, and complete homework more consistently (Antunez, 2000). A study conducted in Georgia on the impact of parental involvement on student success; school and family partnerships from the perspectives of parents and teachers. The study used a qualitative approach and the findings revealed that parental involvement positively impacts student success

(Newchurch, 2017). In align to that these partnerships give teachers increased understanding of students background and also encouraging positive connections between student (youth) with local organizations and business (Collins, 1995). Also Long (2010) proposed that family involvement does have positive effects on student outcomes, such as reducing truancy and dropout rates, increasing academic success and building resilience in facing other barriers to success student face inside and outside the school. When families, communities and schools form partnerships to enable children's learning, everyone benefits —— schools work better, families become closer, community resources thrive, and students improve academically (Antunez, 2000).

Furthermore, another study by Erlendsdottir (2010) in Namibia suggested that parental involvement has positive effects on student's academic achievement. And Mitsue (1999) entailed that sustainable school-community partnerships are raising money, ensuring students regular attendance, providing skills and cultural information, help students with studying, and gathering resources for education. Also community participation in education promotes girls education, identifying and addressing challenges facing schools such inadequacy of materials, discipline and early pregnancies.

Another study in Kenya by Muthoni (2015) concluded that there is an interrelationship between community involvement and student achievement. The similar results on the positive influence of school-family-community partnership were obtained by Mngarah (2015).

In Tanzania a study conducted by Kikoti (2018) on parental participation in improving student 'academic performance in Sumbawanga Municipal. The study established that frequent communication between teachers and parents, helping students with their work enhance student's performance.

On the other side Nyembeke (2016) conducted a study on parental involvement on students 'academic activities in community secondary schools in Kilosa District, Tanzania as a case study. The study findings indicated that students and teachers are left alone by parents/guardians in enhancing student 'performance, thus their academic achievement is negatively affected.

However, the reviewed literatures showed that most researches have been done only on one aspect of parental involvement or community involvement. Hence, this current study was based on all aspects including family, community and school and how these partnerships influenced achievement of students; academic performance, regular attendance, discipline and morality.

Challenges Facing School-Family-Community Partnerships Implementation

Various studies have revealed challenges in implementing School-Family-Community Partnerships. Policy makers, community leaders and parents view schools and student learning as the responsibility of educator (National Education Association [NEA], 2008). Thus, only teachers are responsible for students 'achievement. The later disagreed with the current term of School-Family-Community Partnerships which recognizes the responsibility of all partners in the achievement of students.

A study in Canada by Collins (2000) on exemplary models of parental and community involvement: a study of ten Newfoundland and Labrador schools. A case study approach was used in this study. The study found that barriers to parent-community partnerships are lack of time, parent anxiety, teacher's anxiety and location or transportation. And the study recommends that for parents to find time for participation, school administration and teachers should value their contribution. Hornby and Lafaele (2011) opined that family members' level of education will influence their participation in school or home based activities. Thus, these challenges affect the effective implementation of School-Family-Community partnerships.

Another challenge revealed by Antunez (2000) is language skills. The Inability to understand the language of the school is a major barrier to the parents who have not achieved full English proficiency, interactions with the schools are difficult and also helping students with their school work is difficult. This is true in case of Africa especially Tanzania where English is not a first language, and the language of instruction for secondary schools is English except one subject which is Swahili.

Furthermore, Antunez adds that work interference is a major reason stated by parents for non- involvement in school activities. Conflicts between parent and school schedules may mean neither parents cannot attend school events nor help their children with homework due to their work schedule.

Other challenges were stipulated by a study conducted in South Africa by Gwija (2016) on the role of parents in enhancing academic performance in secondary schools in the Metro-Central Education district, Western cape uncover that one of the challenges in enforcing parents participation in children's academic performance is lack of parental involvement policy which guide the whole partnerships implementations. Policy is another great area of concern when it comes to effective implementation of these partnerships.

In Botswana another challenge of community engagement revealed by the school head's report is lack of cooperation from the community as a major problem (Spreen & Fancsali, 2005). In Kenya a study conducted on Home-school-community partnerships: an imperative in teacher education program in Kenya by Nyatuka and Nyakan (2015) which used a descriptive survey design. The findings revealed that 30% of teachers in primary schools indicated that they had never studied a course to do with School-Family-Community Partnerships at either teaching college or in-service training; this has been seen as one of the sources of challenges in implementing these partnerships in schools. Other studies from Kenya by Muthoni (2015) and Bwana (2013) revealed that community members lack cooperation from due to parents' attendance in meetings being very low. The same results was obtained by Makwinya and Komba (2014) that parents are dissatisfied by the frequency of communication and involvement in school-related issues, thus parents future plans in participating in the partnership are low.

In Tanzania one study reported lack of parental involvement in the education of students in Tanzania (Givens, 2014). While another study conducted in Kilimanjaro by Kibona (2013) used a mixed approach found that leaders at community levels were not involved in academic issues. In contrast to the previous studies John (2015) and Kikoti (2018) found that parents and community involvement in community secondary schools existed but very minimal and the factor contributed to this problem was economic hardships (poverty) of parents and community members, poor communication and parents' illiteracy. In addition to that Mngarah (2017) in his study on assessment of family-school collaboration toward students 'moral development in Lushoto District found that families did not cooperate with school to nurture students' moral development. And the study recommended that strengthening collaboration between partners and school will address moral crisis in Tanzania.

Education vision of Tanzania stated that, " to have a well educated Tanzanian, with knowledge, skills and direction: competent and ready to face social, political, and economic challenges and to participate effectively in efforts to reach development goals set by nationally and internationally by 2025" (MoEVT, 2010). Also currently our government emphasized on industrialized economy. In order to achieve these goals, schools need to partner with families and community to achieve school goals, to prepare students efficient for industrial economy. Epstein and Sheldon (2006) highlighted that all we need is to make sure that School-Family-Community Partnerships programs are linked directly to school goals for student success

As an African proverb said that it takes a village to raise a child, meaning that the responsibility of children's education is not only for one institution (school) but the whole community to ensure the academic achievement of students. Therefore, the current study conducted in Ilemela Municipal was necessary because there were few published studies conducted specifically to find out challenges facing the implementation of School-Family-Community Partnerships.

Statement of the Problem

In implementing various strategies to improve student development and academic outcomes, it is important to include all key stake holders by fostering close schools, family and community partnerships, and not only teachers and administrators, but also family and community members (Cook, Hayden, Bryan and Belford, 2016). These partnerships improve schools and lead to student's success in academic and social arena (Epstein, 2011). In Tanzania students' performance continues to be poor in public secondary schools (MoEVT, 2016). And past studies conducted on the area of parental and community involvement has shown that public schools lack parental involvement (Givens, 2014), while other studies found that parent and community involvement in community schools was very minimal and families did not cooperate with schools to nurture students' development (John, 2015; Mngarah, 2017).Thus, School-Family-Community Partnerships are considered to be low in Tanzania.

However, it is not understood whether low School-Family-Community Partnerships can be the reason for poor students' performance. Therefore, the researcher was interested in establishing whether School-Family-Community Partnerships influence students' achievement in public secondary schools in Ilemela Municipal Council.

GENERAL OBJECTIVE OF THE STUDY

The aim of the study was to investigate on School-Family-Community Partnerships and its' influence on students 'achievement in public secondary schools in Ilemela Municipal, Tanzania.

Specific Objectives of the Study

1. To identify the existing School-Family-Community Partnerships in public secondary schools in Ilemela Municipal.
2. To investigate whether School-Family-Community Partnerships influence students 'achievement in public secondary schools in Ilemela Municipal.
3. To find out if there are any challenges facing School-Family-Community Partnerships implementation in public secondary schools in Ilemela Municipal.

MATERIALS AND METHODS

The study was conducted in Ilemela Municipal Council. The researcher has chosen Ilemela Municipal as a study area because of the availability of public secondary schools where students perform poor (MoEVT, 2016). Hence the targeted respondents were essential to provide the answer to the problem at hand in relation to School-Family-Community Partnerships and its influence on students' achievement in Ilemela Municipal.

The study used a mixed approach and a descriptive survey design. The study content only focused on School-Family-Community Partnerships and its influence on students ‘achievement in public secondary school. This study used both probability sampling: simple random sampling, and non-probability sampling: purposive sample. Simple random sampling was used to select students and teachers to ensure that each individual has an equal chance to be included in the sample of the study, and purposive sampling was used to select the head of schools, DEO, family and community members who are selected specifically because of their position and important role in students' education and life. The researcher used a simple random sampling techniques to ensure each subgroup characteristics is represented in the sample to enhance external validity of the study (Oso & Onen, 2008). A study sample consisted of head of schools (5), District education officer (1), teachers (20), students (100), family (10) and community members (5).

Questionnaires and interviews were used to collect data from a representative sample of the study population. This enabled the researcher to obtain detailed information; descriptions and explanations of the phenomena under study and enable quantitative description of the variables. In this study both qualitative and quantitative data analysis was employed. This includes thematic analysis for qualitative data and descriptive statistics analysis. In quantitative analysis numerical data was recorded and grouped using tables, and then analyzed using the Statistical Package for Social Science (SPSS) version 20 and the results were presented in terms of graphical presentation; presented in frequencies and percentages. Later on results were presented in tables according to the research objectives to form a research report.

Table 1. Existing School-Family-Community Partnerships

Statement	1		2		3		4		5	
	F	%	F	%	F	%	F	%	F	%
School communicates information of students ‘progress.	0	0	1	5.0	6	30.0	7	35.0	6	30.0
School conducts meetings with family on parental skills.	0	0	2	10.0	4	20.0	3	15.0	11	55.0
School links families for support.	0	0	2	10.0	7	35.0	6	30.0	5	25.0
School enhances learning at home.	1	5.0	1	5.0	2	10.0	7	35.0	9	45.0
School invites family and community members to volunteer.	0	0	3	15.0	4	20.0	5	25.0	8	40.0
School involves family and community in school decision making.	0	0	5	25.0	3	15.0	6	30.0	6	30.0
School develops partnerships with local businesses, community organizations and companies for school development.	7	35.0	5	25.0	2	10.0	6	30.0	7	35.0

Source: Field Data (2019).
Key: 1=Poor 2=Fair 3=Good 4=Very good 5=Excellent
F=Frequency %=Percentage

RESULTS AND DISCUSSION

First objective aimed at identifying the existing School-Family-Partnerships in public secondary schools of Ilemela Municipal, data were collected using both questionnaires and interviews. Table 1 presents teachers responses on the existing types of School-Family-Community Partnerships in public secondary schools in Ilemela Municipal through questionnaires.

Table 1 above shows the responses of teachers on the existing types of School-Family-Community Partnerships in their schools. It revealed that several partnerships exist in schools. Most dominant partnerships include communication, where the majority of teachers (55%) revealed that school conducts meetings/trainings with family on parental skills at least twice a year. Schools use meetings as a means of communicating to family and community to discuss various issues concerning school and students development. It implied one of common types of involvement where schools design and implement a two way communication with families about school programs and student ‘progress.

And (35%) revealed that schools provide information regarding students ‘progress to parents. This is another finding which implied that schools implements communicating type of school-family partnerships in good way, through preparing students reports every term after annual or terminal exams and requires parents to pick them up. Communication helps parents and students themselves to understand the academic and behaviour progress of students. Hence, results to students ‘achievement.

Another type of partnerships which existed was learning at home. Whereby, 45% of teachers showed that schools enhance learning at home. Student learning is enhanced by the discussion of teachers and family on how their children can study at home. This implied that schools performed practices such as counselling to help families establishing a better environment at home to support student learning.

Also other types of partnerships existed including volunteering (40%) where schools invite families and community members to participate in different school projects. And decision making (30%) is another partnership found where community and family are involved in school governance through school board. The last one was community collaboration (35%). This was used mainly in order to mobilize educational resources for schools and students using practices such as fund raising activities.

However, few teachers (25%) rate the variable; school links family with programs and resources in the community which provide support to families excellent and 30% rate this variable very good. This means that this type of partnership is lowly implemented in public secondary schools, it could be due to lack of resources or programs nearby or lack of awareness of this type of partnership which can enhance parenting and nurture students.

The results presented by table 1 means that volunteering, decision making and community collaboration types of partnerships are implemented in a very low scale compared to communicating, parenting and learning at home types of involvements.

The results shown on table 1 on the existing types of SFC Partnerships are similar to the proposed six types of involvement by Epstein (1986) where school, community and family collaborate in school development.

On the other hand, other findings about the existing types of School-Family-Community Partnerships were collected through the use of interview and one of the interviewees, respondent X revealed that,

School-Family-Community Partnerships exist due to education policy. Education circular number one of 2018 talks about every school to have a school board and school committee which form school management team; including community leaders, members, parents and elders around the school. To make sure that students achieve their goals. Our municipal have a blog which they display and inform everything concerning schools development and partnerships where everyone can see and participate, including examination results etc. [Interview, Respondent X, April 24 2019]

The respondent X information on the existing types of School-Family-Community Partnerships implied that the Ministry of Education recognizes these partnerships and there are official circular which govern its implementation and participation from each partner starting from family, community and school.

Another respondent from family Q who was interviewed said that:

I am not usually participating in school meetings due to my busy schedule of economic activities. Meetings are on weekdays and that time and day I will be working. Also even if I went there teachers won't accept our ideas. However teachers are responsible to take good care of our children. [Interview, Family Q, April 24 2019]

Respondent Q implied that some families are not usually in support of the partnerships due to various reasons such as busy schedule, which is influenced by their economic condition. Also from the Interviewee view, it implies that some families do not participate fully due to their perception that their ideas are not accepted during the meetings. This can act as a barrier for the family or community to participate actively in school matters.

As mentioned before, the above results from table 1 and interviews on the existing types of partnerships in public schools concur with types of partnerships proposed by Epstein; six major types of involvement: communication, volunteering, parenting, learning at home, collaboration with the community and decision making (Epstein & Salinas, 2004). Although in public schools they do not call them exactly as Epstein did and they are not aware of the one proposed by Epstein. A similar result was also observed by Bwana (2013) that there is communication through parents meetings.

Furthermore, findings revealed that other partners such as families and communities are not fully participating in partnerships activities. Thus, they provide the answers to the problem that the observed poor performance of students and bad behaviour may be associated with poor partnerships existed in public secondary schools.

On the other hand other respondents of this study; students revealed their responses on the same objective of the existing types of School-Family-Community Partnerships in public secondary schools in Ilemela Municipal as shown on table 2 below.

Table 2 shows that most of the students (42.0%) revealed that their family poorly attends meetings at school. And other majority (42%) who shows that parents follow up on their progress is poor. Another result by (41.2%) of students' shows family is helping them with their home work is poor. This implies that family members are not well informed of School-Family-Community Partnerships and their importance to school and student development. And this is due to poor attendance to school meetings, helping with students' homework and making follow up on their progress at school.

However, few students (32%) rates excellent on school conducting meetings and trainings on parental skills and (28%) on school communicate information to parents regarding students' progress (excellent). This means that school meetings are not often conducted as observed by students. And training on parenting skills is not often provided by the school. This finding is different compared to teachers' response, because they have a high rate of performing these two types of partnerships and parenting. This implies that teachers may fear to tell if they have few meetings and training during the data collection.

Students data shows that the lower type of partnerships existing include; (26.8%) of students indicated that school involve family and community in decision making, (25.8%) shows that school invites family and community to volunteer. Lastly, 23.7% of students show that school develops collaboration with community local business, community organization sand companies for school development. When

Table 2. Existing School-Family-Community Partnerships

Statement	1		2		3		4		5	
	F	%	F	%	F	%	F	%	F	%
School communicates information of students ‘progress.	13	13.4	27	27.8	15	15.5	14	14.3	28	28.9
School conducts meetings with family on parental skills.	15	15.5	24	24.7	12	12.4	15	15.5	31	32.0
School links families for support.	15	15.5	25	25.8	23	23.7	16	16.5	18	18.6
School enhances learning at home.	33	33.0	20	20.6	11	11.3	22	22.7	11	11.4
Family helps you with your homework.	40	41.2	22	22.7	12	12.4	14	14.4	9	9.3
Family attends meetings at school	41	42.3	19	19.6	12	12.4	15	15.5	10	10.3
Family make follow up on your progress.	41	42.3	19	19.6	12	12.4	15	15.5	10	10.3
School invites family and community members to volunteer.	7	7.2	35	36.2	25	25.8	22	22.7	8	8.2
School involves family and community in school decision making.	18	18.6	14	14.4	17	17.5	22	22.7	26	26.8
School develops partnerships with local businesses, community organizations and companies for school development.	22	22.7	21	21.6	12	12.4	19	19.6	23	23.7

Source: Field Data (2019)
Key: 1=Poor 2=Fair 3=Good 4=Very good 5=Excellent
F=Frequency %=Percentage

results from teachers and students are compared, teachers show high rates on the existence of dominant partnerships while students’ rates low the same types of partnerships. The results means that students as one element of School-Family-Community Partnerships are not aware of the partnerships whether exist or not. Either their not involved or given information about the existing partnerships.

With regards to the existing partnerships between school, family and community, the study findings again appeared to be relevant to Open System Theory (OST) that school as an open system is based on the interaction between the interdependent elements within the school. Inputs are human, financial, physical and information resources from the environment (families, community, government, etc.), the throughput is the transformation process of teaching and learning at school where administrators, teachers, students and community interacts to achieve school goals, and the output refers to the attainment of goals represented by achievement of graduates with academic, social, cultural success. Therefore, School-Family-Community Partnerships work together to make sure schools as open systems receive inputs for its production process and work together in a cycled process toward the output and feedback process and these partnerships ensure school survival (Lunenburg, 2010) .

The study findings also agree with another theory under this study: Overlapping spheres of influence where the theory asserts that students are affected by three spheres of influence namely family, school and community (Epstein, 2011). Therefore, based on the existing few and poor partnerships, it means that three spheres of influence are not fully drawn together (not overlapping). This is the reason why in students findings show that student who is the main target of this partnership is not aware of the partnerships existed or doesn’t see the practices.

Therefore, despite student lack of awareness of the existing partnerships between school-family and community, the study found mainly four types exists; communication, learning at home, parenting and decision making. These results of existing partnerships is in contrast with the results of Given (2014) who revealed that there is lack of parental involvement in the education of students in Tanzania. This means that parents or family are involved in education but their participation is low due to various challenges such as poor understanding of the importance of these partnerships in relation to students ‘achievement.

The significance of these findings is to guide heads of school, members of the school board and teachers in public secondary schools to design effective School-Family-Community partnership, increase accountability and to have a good relationship with family and community around the school necessary to in their work in attaining education goals and bring students achievement.

The following section presents the findings under the second objective; investigating the extent to which School-Family-Community Partnerships influence students’ achievement. The following Table 3 shows the responses of this objective by teachers obtained through questionnaires.

Table 3. The Influence of Partnerships on Students ‘Achievement

Variable	1		2		3		4		5	
	F	%	F	%	F	%	F	%	F	%
Student ‘achievement	0	0	0	0	0	0	4	20.0	16	80.0
Academic achievement	0	0	0	0	0	0	1	5.0	19	95.0
Regular attendance	0	0	0	0	0	0	1	5.0	19	95.0
Discipline	0	0	0	0	0	0	5	25.0	15	75.0
Morality	0	0	0	0	0	0	4	20.0	16	80.0

Source: Field Data (2019).
Key: 1=Strongly Disagree 2=Somewhat Disagree 3=Neutral 4=Somewhat Agree 5=Strongly Agree
F=Frequency %=Percentage

In Table 3 the majority of teachers (80%) strongly agree that School-Family-Community Partnerships influence overall students’ achievements. The study results confirm the theory under the study overlapping spheres of influence by Epstein (1986): school, community and family overlaps more (drawn together) they affect children’s achievement in various aspects such as academic performance, attendance, discipline and morality. It is through their time dedicated to helping students, practices by school, family and teachers attitudes and community and teachers philosophy over education matters. All these help students to perform well and proceed with further studies. This is due to the effective support they get from the major three spheres of school, at home and within the community in their learning activities. In addition to that as these major spheres interact, plans and implement various educational goal oriented programs direct effects goes to students who are located at the intersection point of spheres at the centre.

Also the majority of them (95%) again strongly agree that academic achievement is influenced by School-Family-Community Partnerships. This implies that academic achievement is the outcome of the school, family and community to work together in creating an environment which is conducive for students learning. Similar results were revealed by Muthoni (2015) that there was an interrelationship between community involvement and student achievement. The similar results on the positive influence of school-family-community partnership were obtained by Mngarah (2015).

Another finding shows that, most of the teachers' rate (95%) of the variable regular attendance of students as an influence of School-Family-Community Partnerships. This implies that the problem of absenteeism experienced in public schools is the result of poor existing partnerships between school, family and community. Because the findings revealed the greater extent to which these partnerships influence regular attendance of students.

And (80%) and (75%) strongly agree that discipline and morality of students is influenced by School-Family-Community Partnerships. These results imply that it is true that School-Family-Community Partnerships influence student achievement in a great way in sense of behaviour. If practiced well, positive impact will appear on students' discipline and morality achievement. As every student act of indiscipline or immoral is reported and solved by school, family and community, students are more likely to change their behaviour.

In support of whether School-Family-Community Partnerships influence students 'achievement other participants were interviewed and here is what one of the participant Z said;

School-Family-Community Partnerships influence students 'achievement one hundred percent! For example, community members may see boarding students doing a bad action such as smoking marijuana and report them to school to discipline actions. Also school boards play a great role in a student's development. School is not an island; there should be communication between school and families so as to help students. [Interview, Participant Z, School A, April 12 2019]

Participant Z also agrees with other participants asked about whether partnerships lead to students 'achievement. The participant went further and revealed how community can participate to enhance students 'behaviour. The above findings also agree with other studies in Europe, Africa and Tanzania; Mngarah (2015) revealed that there is a positive effect of partnerships on academic achievement, regular attendance and behaviour of students. The same results were observed by Erlendsdottir (2010), Long (2010) and Kaminski (2011).

In comparison with the theory which guided the study, Overlapping spheres of influence which stated that: there are three spheres of influence; family, school and community. When these spheres drawn together they have a positive effect on student learning and vice versa when these spheres drawn apart Epstein (2011). The study's findings align with the later theory that strong School-Family-Community Partnerships have great influence on students 'academic and behavioural achievement. However, it was observed that only parents are considered vital and blamed for student issues, not the whole family. And this is the reason why other family members are not participating in School-Family-Community Partnerships. It is time to understand the wider role of the family to participate in students' development.

Students 'questionnaire also had a section for revealing whether School-Family-Community Partnerships influence students' achievement. Table 4 shows the responses from students.

Table 4 shows similar responses as those of teachers. Most of the students' responses (81.4%) strongly agree that students' achievement is influenced by School-Family-Community Partnerships.

Also most of them (79.4%) strongly agree that academic achievement is influenced by School-Family-Community Partnerships. Similar results were revealed by Alton-Lee (as cited in Martin, 2013) that family-school partnerships have positive impacts on academic achievement of students.

Table 4. The Influence of Partnerships on Students 'Achievement

Statement	1		2		3		4		5	
	F	%	F	%	F	%	F	%	F	%
Student 'achievement	0	0	0	0	2	2.1	16	16.5	79	81.4
Academic achievement	0	0	0	0	3	3.1	17	17.5	77	79.4
Regular attendance	2	2.1	3	3.1	3	3.1	21	21.6	68	70.1
Discipline	2	2.1	1	1.0	1	1.0	30	30.9	63	64.9
Morality	1	1.0	1	1.0	0	0	20	20.8	72	75.0

Source: Field Data (2019).
Key: 1=Strongly Disagree 2=Somewhat Disagree 3=Neutral 4=Somewhat Agree 5=Strongly Agree
F=Frequency %=Percentage

And 70.1% of students strongly agree that regular attendance of students is influenced by School-Family-Community Partnerships. This revealed that schools that build strong partnerships with families and community have shown improved attendance.

Also students' results showed 64.9% and 75.0% strongly agree that discipline and morality is influenced by School-Family-Community Partnerships. Therefore, these results suggest that School-Family-Community Partnerships have great influence on students 'achievement in many angles. And every stakeholder including students they agree that partnerships make great difference in their academic and personal development. Long (2010) found that when schools partner with families they pull two main overlapping spheres of influence which is very important to student success.

In addition to that these study findings are similar to Newchurch (2017) which revealed that parental involvement positively impacts student success. The research findings agree to the study framework whereby if all these types of School-Family-Community Partnerships practiced by school effectively they affect the dependent variable which is students 'achievement characterized by academic performance, attendance, discipline and morality.

Thus, the significance of this study's findings in Tanzania, is to create awareness of all education stakeholders including parents and other family members and community on the importance of participating and supporting education through school events and programs to enhance students 'achievement in academic, social, cultural, political and economic achievement as the respondents all agree that these partnerships influence students 'achievement.

The following section presents the findings of the objective number three; investigating the challenges facing the implementation of School-Family-Community Partnerships in public secondary schools in Ilemela municipal. The researcher uses the open ended questionnaire and interview to obtain information regarding this objective. The findings show the following themes as challenges;

Low Understanding of School-Family-Community Partnerships

Majority of the teachers 'responses on the challenges facing the implementation of the School-Family-Community Partnerships in public secondary schools were on the low understanding about partnerships and its importance on school development. Based on the interviews conducted with families and community members, most of the interviewee failed to explain about these partnerships in relation to school context.

I don't know much about the term School-Family-Community Partnerships. All I know is that parents can participate in school meeting if there is one. [Interview, Family W, April 12 2019]

This implied that not only family and community, but also teachers do not understand the partnership concept between them and how they affect students' achievement. Their participation doesn't extend to partnerships. Their relationship is not strong enough to qualify a partnership.

Poor Family and Community Attendance in School Meetings and Regular Follow Up on Children's Progress

This is another challenge with high frequency; parents do not regularly attend meetings and making follow up on their children's progress. This is due to the busy schedule of parents/ guardians for economic reasons (the time/day for meeting interferes with parents' jobs schedule).

To tell the truth I am not usually attending meetings called at my children's school, because of my job schedule. [Interview, Family F, April 12 2019]

This means the involvement only considers parents and not other family members, thus when the parents or guardians are not available other family members are not participating in school meetings or making follow up on children's progress at school. In addition to that another finding revealed that some children are not living with their parents or have been abandoned by their parents, this make difficult for teachers to help children through the available relatives.

Students' findings on the other hand do not differ from those of teachers; majority of students' response shows that parents are not attending meetings regularly and do not make frequent follow up on their progress at school. Other challenges include;

Political Interference with Education Matters

And another finding with high frequency is political interference with education matters. This could mean that some political decisions affect the development of school activities. For example the new policy of fee-free secondary education in Tanzania of 2016 allows all children to study without contributing fees. But some school's activities requires additional funds from family and community, the response from parents on contributions is low. This is revealed by one of the interviewees who said:

Some school activities require additional funds such as meals for form four students who remain for remedial classes, and parents and teachers meet and agree to contribute to their children's meal. But some parents do not agree and say that education is free why such contributions. These bring difficulties for schools to do their work and succeed in enhancing students' achievement. [Interview, Teacher, School B, April 29 2019]

Poor Communication between Teachers, Students and families

Poor communication between teachers, parents and students starts from home to school. Student's face challenges of some parents do not listen or giving them time for personal study. Also at school some students have problems and they are not given chance to explain by their teachers. This led to a broken the chain of relationship between family, student and teacher.

Poverty or Low Economic Condition of Families and Community Members

Another challenge revealed by respondents both through questionnaire and interview is poverty. This could mean that many parents of students in public school their economic status is low. Thus, they cannot provide students with their needs nor school contributions.

I am not usually in place to attend meetings at school because by that time I am always at work. It is better for me to be at work finding the daily income than lost it. [Interview, Respondent T, April 29, 2019]

The above family member represents larger group who cannot attend school meetings or making follow up on students' progress due to their economic activities interference with school timetable. This impedes the effective implementation of school, family and community partnerships at many schools.

Negative Participation of Community Members

This is another challenge revealed in the study, like initiating a music club near school area for students to dance music and have parties, and community members having an affair with students.

We as a community we are the source for poor students' performance, because near this school there is a club where you can find students dancing and drinking which is not good behaviour. [Interview, Community Member 1, 29 April, 2019]

Another interviewee added that female students are more at risk due to the behaviour of some community members who engage themselves with young girls in an affair.

It is important for every parent to make sure that you monitor your children's whereabouts, especially when they are going to school. Recently we have reported a case where a young girl passes over a man's house before going to school. These kinds of behaviours results to teen pregnancies. [Interview, Community Member 2, 29 April, 2019]

Negative Understanding of Fee-Free Secondary Education Policy

Some families and community members have negative understanding of free education policy. They think that since there are no school fees, they are not supposed to contribute for any school or students development.

The similar results on challenges facing the partnership between school-family and community were obtained by Bwana (2013); attendance of parents to meetings is very low and involvement by school is very low. However, in other places involvement seem to be high and response of parents is low (John, 2015; Mngarah, 2017). Thus, a number of studies including this current study revealed that family and community participation is unsatisfactory due to various reasons one is lack of time and economic hardship (Kibona, 2013; John, 2015; Kikoti, 2018). Hence, teachers and students are left alone by other stakeholders of partnership such as family and community and due to this students ‘ academic achievement is negatively affected (Nyembeke, 2016; NEA, 2018). The above implications concurred with Mitsue (1999) who suggest sustainable solutions such as fund raising, ensuring students regular attendance, helping students learning at home and addressing students ‘problems such as inadequacy of materials and discipline.

Therefore, the above findings suggest that School-Family-Community Partnerships are faced with numerous challenges. The most challenge seems on low family participation. Therefore, the researcher suggests that all family members should participate in school and student development activities.

CONCLUSION AND RECOMMENDATIONS

The purpose of this study was to investigate on School-Family-Community Partnerships and students ‘achievement in public secondary schools in Ilemela Municipal, Tanzania. Under the first objective the study found few and poor existing partnerships mainly communicating, decision making and learning at home. The study concludes that in order to improve students’ academic and behaviour performances it is important to enhance implementation of these partnerships by effective involvement of all partners so that students ‘achievement can be achieved.

With regard to the second objective to investigate whether School-Family-Community Partnerships influence students’ achievement, the study findings showed great influence of these partnerships on students’ achievement. The study concludes that School-Family-Community Partnerships have positive influence on students ‘achievement such as academic performance, regular attendance, discipline and morality. But these achievements are possible only if schools implements effective partnerships and all partners such as family and community participate effectively at home-based to school-based initiatives.

Furthermore, with regard to the third objective of on the challenges which face the implementation of School-Family-Community Partnerships in public secondary schools, the study concludes that public secondary schools face numerous challenges, due to these challenges schools have few and poor existing types of partnerships. Since existing challenges affect academic performance, regular attendance, discipline and moral status of students. Achievement of students is less likely to be achieved by the weak partnerships at home and schools. Therefore, the study recommends that it is very important to enhance these partnerships by all stakeholders including family not limited to parents, community, school leaders and teachers, students, local government leaders and the ministry of education. In order to make sure that, different types of partnerships are implemented so as to bring about students ‘achievement not only in school but also in their life.

Recommendations for Practice

Based on the conclusions of the findings the following are the recommendations for practice:

Due to the existence of few and poor School-Family-Community Partnerships in public secondary schools in Ilemela Municipal, the study recommends the Ministry of Education and Vocational Training should create public awareness on the importance of School-Family-Community Partnerships in relation to school development and student achievement. So that family, community and schools should participate fully in various types of partnerships to enhance students’ academic and behaviour achievement.

Also the Ministry of Education and Vocational Training should provide a course in School-Family-Community Partnerships enhancement in Teaching courses and in-service training so as to ensure teachers both in-service and newly graduates understand these partnerships which lead to effective implementation of various partnerships in schools.

RECOMMENDATIONS FOR FURTHER STUDIES

This study on School-Family-Community Partnerships and its influence on students' achievement were conducted in Ilemela district in Mwanza, Tanzania. The researcher feels that the same study should be undertaken in other parts of Tanzania, so as to ensure proper coverage and data collected will be used to generalize these findings regarding School-Family-Community Partnerships and students 'achievement in Tanzania.

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KEY TERMS AND DEFINITIONS

Achievement: Refers to student successful performances include academic performance, regular attendance, discipline, and morality.

Community: A group which share geography, tradition, culture, class, law, and race.

Family: A group of individuals who relate either by marriage or blood background.

Public Secondary Schools: Are schools that are managed, maintained, and funded by the government.

School: Is an institution provides education or learning service to children.

School-Family-Community Partnerships: Refers to collaboration between school, family and community including parenting, communicating, volunteering, learning at home, and decision making and collaborating with the community.

Secondary Education: Is a post-primary formal education offered to a person who will have successfully completed seven years of primary education and have met the requisite entry requisite.

Chapter 20

Using Indigenous Languages for Enhanced Global Marketing in Tanzania

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ABSTRACT

As the sector of commercialization is expanding, within Tanzania and globally, finding wider markets has become a great challenge. The authors opine that businesses will be enhanced by using local languages. The study maintains that language links with the culture that has a great influence on global marketing such as product design, branding, and distribution process. The study collected data through surveys, interviews, and observation in three regions, namely Iringa, Dodoma, and Dar es Salaam. The results were later analyzed qualitatively using descriptions and tables. Results revealed that out of 60 respondents that took part, 23% of the customers are from the western countries, 20% are from East Africa, 16% from other African countries, and 51% are within Tanzania. The majority, 80%, stated that even though they market their products outside Tanzania, the only languages used are English and Kiswahili. It is anticipated that companies that use indigenous languages will bring their customers individualistically or collectively much closer, widening the products' markets in Tanzania.

INTRODUCTION

This chapter focuses on using Tanzanian indigenous languages for enhancing global marketing in products and services. The work concentrates on viewing the Tanzanian indigenous languages as channels and resources that can be used in advertising various products and services creatively and innovatively. With the advancement of mass media and social networks, the globalizing business has become an easy task (Adedeji, 2015). The local ethnic languages have been marginalized although Tanzania has diverse

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ethnic languages. This research explores the linkage between indigenous languages and commercialization specifically, focusing on Tanzania ethnic languages in marketing commercial commodities across the country. Indigenous languages are the kinds of languages that are spoken by the natives and ethnic groups. Indigenous languages hold all the potentials and qualities of the natural or ethnic language and go further to implementing the functions of an ethnic language (Balogun, 2013). Hickey (2001) asserts that a language is a dynamic and complex system of conventional symbols that are used in different modes of thought and communication. Further, language progresses within specific chronological, cultural and social contexts (Lightfoot, 2006). Moreover, language learning and use are determined by the intervention of genetic, intellectual, psychosocial and ecological influences. It is important to realize that efficient and effective use of any language for communication requires a wider comprehension of human interaction that includes factors such as non-verbal nods, inspiration and social-cultural roles (Barkhuizen, 2008).

The business personnel in Tanzania use much effort and time in promoting their products and services through mass media, social networks, as well as print and short text messages to enable penetration to internal and global markets. At most times the entrepreneurs use national exhibitions, colloquiums among other modes to ensure that the given product or service reaches the targeted market. Several authors have asserted that there is complexity in the use of official languages such as English in making adverts to ethnic groups, particularly in remote areas (Atkinson & Kelly- Holmes, 2006; Bhatia, 2007; Cayla & Arnold, 2008). Some indigenous languages have in recent times been adapted and used in branding different products and the response of customers has been outrageous. The Tanzanians that do not comprehend languages such as Kiswahili and English when adverts are expressed find it unnecessary to purchase products and services. The gap is lessened by the use of ethnic languages that possibly will in an exceptional way deliver the advert to the customers leading to massive profits to the business personnel. Based on this notion, the main purpose of advertisement is to attract the attention of buyers for available products and services. Identifying a suitable language that meets the customers' demands in marketing involves linking language and culture of a society. The use of pleasant and conventional marketing language ensures that the customers' needs and requirements are not marginalized.

At present, numerous online and physical businesses use merely Kiswahili and English languages in making adverts. Tanzania requisite to celebrate uniqueness, togetherness and commonalities in the form of culture, political affairs, commerce and historic events and the diversities in Tanzanian indigenous languages (Maho, 2002). Indigenous languages are important in this chapter as the diverse languages provide various interpretations to the products and services as well as consumers attracting wider markets.

Consequently, languages used for advertisement have a great effect on global marketing in Tanzania. In working towards arousing the clients' and consumers' interests, then different inspirational techniques and skills need to be employed in advertising products and services. One good example is using the indigenous philological in publicizing commodities and services (Stoyko, 2009).

The current work examines indigenous etymological usage to enhance trade in Tanzania. Based on the data gathered, the study contributes to the deliberation of the purposes meant for Tanzanian business use of indigenous languages. The research seeks to ascertain the extent to which the indigenous language in Tanzania can be used for globalized markets and the impacts it brings with it. The current study is crucial because the authors anticipate the results obtained will contribute to the knowledge gap on the use of indigenous language in marketing in Tanzania and add value to the current trend of businesses. The main objective of the chapter is to establish the use of indigenous language for enhancing the global marketing of Tanzanian products and services.

BACKGROUND

Tanzania is an African country with a wide-ranging language multiplicity. However, little research has been done on the use of local languages in marketing businesses (Darley & Blankson, 2008). With the use of Kiswahili as the national language, indigenous languages have been stigmatized not only in branding and product design but also in education and other sectors (Yoneda, 2010).

In the Tanzanian context, the first language spoken by an individual within a specified ethnic group is regarded as the indigenous language. Vernacular languages are part and parcel of the ethnic culture (Akabogu & Mbah, 2013). Lodhi (2000) asserts that an ethnic language or vernacular language is very crucial because it links one to his/her culture in the ethnic group. A child can only be identified by the ethnic group or indigenous language he/she originates. Adeniyi & Bello (2006) assert that indigenous language depicts a language that one may in most cases cherish; determine the region one is originating in a particular country and the one that an individual may speak more.

Looking into the concept of advertising, Darley & Blankson (2008) refers to advertising as a term that has its roots from a Latin terminology '*ad verter*' meaning switch on minds headed for. In accordance with Cayla & Arnold (2008) publicity of products and services can be either via televisions, radio, social media among other channels.

In addition, publicizing is also any print, text, verbal or graphical illustration, acquiescently subsidized with an individual making the advert with the motive of drawing clients to a close, auctions as well as countersignature (Darley, & Blankson, 2008). Cavusgil Knight & Riesenberger (2012) proclaim that advertisement draws the attention of the buyers of products and services through the use of various channels of information transmission. In support, Johansson, (2000) asserts that the world of advertisement has great economic effect as well as the originality of witticism, for example, a novel catchphrase in Tanzania '*kwetu mteja ni mfalme*' our client is the king/queen.

Consequently, the publicity of products and services is crucial since the economy can be enhanced through a wide range of advertisements. This is because an advertisement assists in exposing, publicizing and promoting the sales and products. It also helps in the creation of consciousness and education on the country's whereabouts. From a wider perspective, once the government is reached by the public, the individuals also experience prosperity in the selling of their products and services (Makasi, & Goveander, 2013).

It is without a doubt that making business known to the buyers requires the use of appropriate language. A language can take different forms such as written, body language or oral communication language (Cavusgil, Knight, & Riesenberger, 2012). Adverts are spread all over the shops, newspapers, work environs, televisions stations, and social networks among others. These are in different environments or arrangements including suppliers' verses merchants; prestige advertising conducted by the government sector, classified advertising that includes house sales as well as direct dispatching. The activities involve placards, cryptograms, posters, billboards, sports attires in Tanzania for example '*simba',* meaning lion is used as a brand for a soccer club. The ears and eyes can be blitzed, with catchphrases, clanks, boulevard cries, public-address system messages, and the range of auditory effects available (Darley, & Blankson, 2008). The appropriate languages to use in advertisement remain the major question since there is shortage of sufficient market for the products and services in Tanzania. Thus, the study proposes the use of Tanzanian indigenous languages in enhancing businesses.

It is anticipated that the research would benefit the business personnel in Tanzania to make an exploration of the indigenous language use for enhancing global markets for products and services. The study will also be beneficial to entrepreneurs in numerous ways. First and foremost, the entrepreneurs will be able to reach internal market reaching million and billions of clients via a one-time language localization. The business personnel would be able to retain numerous customers with the use of diverse local languages and build trust towards the services and products resulting to an increase in brand loyalty. Moreover, the target customers within Tanzania and outside Tanzania can lead to the accommodation of more local languages to the international markets that can create international product and service brand. Additionally, the localization of Tanzanian languages creates great and powerful means of wider sales by connecting with customers from all over the nation and the ethnic communities.

Research Questions

The questions that the authors sought to respond were:

- What is the extent of practice of ethnic languages in business in both the urban and rural areas in trade?
- What is the distribution and identification of the target markets for the Tanzanian trade?
- How can the media broadcast help expose the indigenous languages?

MAIN FOCUS OF THE CHAPTER

Pluralism Theoretical Perspective

Pluralism is a situation in which people of different social classes, religions, races, etc., are together in a society but continue to have their different traditions and interests.

It is also the belief that people of different social classes, religions, races, etc., should live together in a society

Focusing on the research theory, the chapter centers on the pluralism theoretical perspective that goes for multilingualism and sees indigenous language as a resource in the society. This is contrary to assimilation theory that opts for the national official languages (Mcnelly, 2015). With the pluralism kind of the Tanzanian society, indigenous language becomes a resourceful asset both in the business and societal aspects in various ethnic groups. The theory has been in supported by several researchers who opine the significance of language in the economic and societal endeavors (Baker, 2011; Bamgbose, 1991, 2000). Multilingualism is experienced in several African countries. This trend has changed in Tanzania due the influence official languages such Kiswahili and English. This has affected the use of the first languages in the business arena. The chapter realizes the pluralism in Tanzanian diverse languages as an economic resource.

Marketing Languages Across the Globe

The English language is often used in international marketing of products and services. However, other languages are also in some cases adopted in publicizing products and services. Publicity and branding for a beer for instance “Serengeti” meaning a type of beer assimilated from the Tanzania national park depicts a good demonstration of an advert compatible with Tanzanian’s ethnic language use which can only be found in Tanzania. In cases where a similar advert is made in the Chinese language, the term is unrelated since the Chinese do not have such a term associated with beer (Cayla, & Arnold, 2008; Makasi, & Goveander, 2013).

Adedeji (2015) asserts that just like the case of Tanzania, ethnic languages are not highly valued. Kiswahili; the national language of Tanzanian has overridden all the ethnic languages. This neglect for indigenous language must be arrested before it goes into extinction. Balogun (2013) contends that the distinctiveness loss occurs in a particular ethnic language at a time where lexical items are lost, and the culture also deteriorates. Benson, Okere & Nwauwa (2006) affirm that the ethos, birthrights and lexical losses endanger the survival of a language and the ethnic group languages as a whole.

The Concept of Language

The vitality of a language is depicted in how individuals interact and transmit information to each other in the habitual routines (Winkler, 2011). Fromkin, Rodman & Hyams (2011) proclaim that any language consists of words and meanings that are combined into discrete units or sentences. The combination of sentences results into meaningful information that is useful in information exchange. The gap is manifested not in the language but the use of language skills for running businesses (Kelly- Holmes, 2010). Tanzania's vernacular languages are vital as they play crucial roles in entrepreneurship. Proper communication in indigenous languages in the grassroots of the Tanzanian ethnic groups is an opportunity to comprehend the cultures in working towards selling products and services. Meanwhile, reaching global markets requires appropriate linguistics skills that can reach diverse and wider markets at huge rates (Darley & Blankson, 2008).

Local languages are languages articulated by individuals that live in particular ethnic groups in various regions in Tanzania (Walter, 2004). In a nutshell, it is an indigenous mode of communication with people of a similar ethnic community through a particular ethnic language. An ethnic language in its totality relies on the availability of the ethnic groups (Samovar & Porter, 2004). Language and culture are inseparable within an ethnic community that helps in the transmission of messages and business transactions (Darley & Blankson, 2008).

Linking language with the concept of advertisement which is the approach of transmission of information to consumers to promote and find markets for the products and services is crucial (Thill & Bovee, 2005). This work advocates for the use of local ethnic languages in providing services and products to clients and consumers (Darley & Blankson, 2008). Additionally, the use of signs, symbols, and other forms of written and oral communication in local languages promotes the persuasion spirit to the buyers that convinces numerous buyers to purchase products and services. Hehe is one of the many Tanzanian ethnic languages that are spoken by the people of Iringa region of Tanzania. Meanwhile, Asas Yoghurt is a milk product that is processed and manufactured in Iringa region though the indigenous Hehe ethnic communities are not in contact or do not use the product in plenty (Alhassan & Ali, 2015). Distinguishing marketing from a language becomes impossible. The use of Hehe in marketing products such as Asas Yoghurt is projected to be a contributing factor to enable Hehe people to buy the product in large quantities. Marketing and language is a process that involves sequences of activities aiming towards a certain goal (Bhatia, 2007). Language is a systematic process similar to marketing of products and services. It is for this reason the marketing language requirement should be informative, enlightening, unique, persuasive and attractive. Further, the marketing language needs to be appealing and contain the ears of the customers. The use of a vernacular language in advertising is an approach of encoding an advert either in text or oral communication that sticks to the ears and minds of the target groups. This helps to figure out on whether to buy or not buy a product or service since the language used is at the end understood by the ethnic group (Varner & Beamer, 2005). Tanzania adopts and implements industrial policies. These government endeavors need to be accompanied by promoting industrial products within and beyond the country. This study, therefore, explored how advertising the product through indigenous languages could enhance the development of industries and economic growth.

Indigenous Language in Commercialization

Alhassan & Ali (2015) assert that the use of ethnic languages in publicizing products and services may be more beneficial and profitable. This is because the client comprehends the advert of the product or service resulting in immense effects.

Darley & Blankson (2008) insist that publicity should take a form that the client or user of the product is aware of. This makes it easy to take note of the advert and buy the services and products with no much struggle knowingly or unknowingly (Cayla & Arnold, 2008)· Mohochi (2003) opines that allowing an advert to become a poem or metaphor creates a better chance of promoting the product or service.

Entrepreneurs make an immense contribution to the country's economic development. It has been a habit that small-scale entrepreneurs in Tanzania, ranging from fishermen, herdsmen, market vendors, bus conductors and shopkeepers use Kiswahili as the national language. As depicted, the products sold are of foreign brand names in most cases unknown to the local consumers (Cayla & Arnold, 2008).

In the present era, marketing products and services to consumers through the use of local languages is preferred. The use of indigenous languages in commerce requires a great extent of making analysis and preparation on what is to be embedded in the marketing of the brand, product or services. The question posed is whether the Tanzanian's localities would incorporate the use of indigenous languages as an official and serious mode of business language (Adzer, 2012). This in the Tanzanian context will be a bit contrary to the normal use of Kiswahili and English official languages that is widespread and diverse in the Tanzanian and global markets. The vernacular languages are applicable in print, visual and audio-visual formats and through social networks. The main target for marketing and making adverts in local languages is to ensure the penetration of products and services to every individual in every ethnic group widening the markets (Charvatova, 2009). Further is removing the barrier that exists in the marginalized languages and regions. The form of indigenous language penetration into marketing does not leave behind the mass media and other digital technologies in reaching internal and global markets (Adeniyi & Bello, 2006). The network marketing has been on trend and business personnel are reaching out millions of clients and customers. Products accessibility in indigenous languages would reach out to the online clients as well.

Indigenous Language and Social Media Networks Businesses

Tanzanian has over 121 ethnic languages. The use of the ethnic languages is mostly manifested in the rural settings in which the various ethnic societies make use of in the day to day communication (Lewis, 2009). Kiswahili and English are the official languages used in the academic, government and non-governmental organizations as well as commercial activities in Tanzania. Even though the indigenous languages are diverse, they have been put aside and left unexploited in the commercial arena. The marginalization of ethnic languages in the commercial sector hinders widespread and more income from various businesses. The target customers are not catered for due to language barriers (Nurse, 2000). The significant contributions the ethnic languages may bring into business have been ignored and the customers for products and services accommodated are those with the capability of communicating English and Kiswahili (Cayla, & Arnold, 2008; Gaw, 2008).

The advertisement platforms that serve the majority of the Tanzanians are the radio and television broadcasting stations. In Tanzania, the media is administered by the government and private sectors. The Tanzania Broadcasting Corporation is mainly under the administration of the government. The main language used is solitary Kiswahili. Other mass media broadcast includes TV Imam, Independent Television, East Africa TV, Wasafi TV among others. Subsequent indigenous language death may be a resultant of deserting the use of local languages by the business personnel. Mufwene (2006) admits that languages become extinct at a point when the ethnic groups neglect to use them. The ethnic societies, particularly in Tanzania, are involuntarily made to use Kiswahili in day to day routines. This tendency has created the gap between the young and the old generation. The elders use ethnic languages while the young find themselves using the national language Kiswahili, particularly in all facets. This causes gradual indigenous language death (Ayeomoni, 2011).

Indigenous Language Tasks and Consumer Gratification

Indigenous languages have a great impact in providing the clients and consumers with the contentment of what is offered by the business personnel. The satisfaction of a client is dependent on the services provided by the supplier and business personnel (Cheal, 2015). Different forms of communication are crucial be it written, oral, or non-verbal. It is important to note the linkage that exists between the form of business and customer contentment (Cayla & Arnold, 2008). Customers' contentment determines the prosperity and success of the business. In this regard, indigenous languages have a great impact on making the customers content and have appreciation for the purchases they make (Cova & Dalli, 2009). As far as a business is concerned, there is a need for positivity and good gestures to create a common comprehension and love for the consumers. Identifying the requirements of clients makes it easy for the business personnel to recognize the needs of their customers. This only occurs when appropriate language is used to communicate (Darley & Blankson, 2008).

Furthermore, the business personnel need to identify a leveled and balanced format of advertisement that meets the needs of all the clients and customers. The receipt of feedback from customers in local languages can further promote the internal markets. This creates loyalty to the entrepreneurs and the business personnel (Wind & Rangaswamy, 2001).

Indigenous language Versus Tanzania Business Culture

It is next to impossible to distinguish culture from a language despite being different lexical items (Berezkina, 2016). Every culture is a composition of lexical items. Transmission of information to customers of various social backgrounds can find it difficult to understand a brand written in a language he/she is not familiar with. One can only understand the language of a product or service if one is conversant with the culture. It is possible that similar words are used for different purposes, for example, the lexical item in local language *mkulima* meaning farmer, is termed *balimi* in Sukuma ethnic language meaning farmer but also a widespread brand name for Tanzania type of beer with the popular name *balimi*. Culture signifies the process of acquiring knowledge, the exchange of customs, traditional values of a respective society (Ayeomoni, 2011). Every form of communication originates from culture. It is possible that similar lexical items are used for different purposes for example a type of green vegetable in Arusha is termed *saro*, while in Morogoro the same is known as *figiri*. Thus, business success is dependent on the culture of a particular society (Cayla & Arnold, 2008).

METHOD

The study was carried out to examine, describe and analyze the use of indigenous language in internal markets. Therefore, quantitative and qualitative methods were used in data collection and analysis. The participants in the study were from three regions in Tanzania namely, Iringa, Dodoma and Dar es Salaam regions. The informants were a total of 60 people. Among them, 30 informants were customers while the other 30 were business personnel. 20 informants in each region participated in data gathering whereby 10 were customers while the other 10 were business personnel. The informants' were purposively identified.

The data from the study was also obtained from documents that are written on the use of indigenous language in Africa and other continents in the world. Data were collected by reading and studying books, articles and dissertations related to this research and government documents.

In addition to secondary data, in-depth individual semi-structured interviews were administered to the customers through purposive sampling. The informants were Tanzanian from different ethnic groups origins in Iringa, Dodoma and Dar es Salaam regions.

Further, the informants were selected based on having a business and those with experience of doing purchases of various commodities either physically or on network markets. The variations in demographics enabled gathering different views and information from the informants pertaining usage of indigenous languages in enhancing business in Tanzania and across the world. The reason for opting for entrepreneurs and customers was due to the diversity of people in miscellaneous ethnic groups and the experience on issues to customer service from the service providers to the clients. This helped to cover an extensive range of informants with experiences on businesses either through ownership or purchasing.

The study covered 60 informants in summation on local language usage in commercializing products. Among them 30 informants were adult customers/clients, while the other 30 informants were business personnel from Iringa, Dodoma and Dar es Salaam. Each region had 20 informants in which 10 were customers while 10 were business personnel as depicted in Table 1.

Table 1. Number of informants

Region	Informants				Total
	customers		Business Personnel		
	Male	Female	Male	Female	
Dar es Salaam	5%	5%	5%	5%	20%
Iringa	5%	5%	5%	5%	20%
Dodoma	5%	5%	5%	5%	20%
Total	15%	15%	15%	15%	60%

Among the informants 50% were males and 50% were females. Out of the 30 entrepreneurs informants, 55% had their physical shops, 30% were doing network or online business while 15% had their factories or companies. The clients' gender distribution reveals that 70% were males and 30% were females. The age distribution shows that the highest number 40% was from 26-35 age group, 35% from 18-25 age group and 15% from 36-45 age group, 5% were from 46-55 age group and the remaining 5% were 55 or above. The average age of the customers was 30 which depicts that a significant proportion of the customers are still young. The overall findings from the semi-structured interview showed that the indigenous language use as a means of service requirement differs among age groups.

Apart from interviews, participants' observation was also utilized in data gathering. The qualitative research methodology helped the researcher to get more information and data on the indigenous language usage in businesses. This method was opted for over a quantitative approach on the supposition that the study seeks to explore the use of Tanzania indigenous languages and the impacts it brings with it. Within the same context, during the analysis of the findings, wide-ranging sociolinguistic technique usage aided untangle the conceptual thinking of the informants on the indigenous language practices in marketing internal and external products and services.

Requirement gathering focused on ascertaining the use of indigenous languages for enhancing internal and global markets, determining the extent of Tanzanian indigenous languages on marketing products and services; examining the link between Tanzania indigenous languages and enhanced marketing; and establishing the impacts of Tanzanian indigenous languages on marketing products and services in Tanzania. It is for this reason that the research involved detailed one on one interviews through the sociolinguistic technique with 60 informants. The business personnel involved smallholder, medium-sized and large business stakeholders. These involved tour companies, export companies, food manufacturers, wholesale and retail shops, restaurant and hotel entrepreneurs as well as mass media institutions.

In regards to research instruments, guidelines of interviews were written in English. The prepared interview had two main sections. Section one had informants' personal information for example gender, the form of business, years of experience in the business, on the other hand, section two had questions related to the objectives of the study. The designed questions were later scrutinized by professionals in the field to ensure that the questions were well written and could be well understood by the informants. Adjustments were made accordingly.

The face to face interviews was prearranged for the business personnel two weeks prior to the set date of the interview with letters that formally introduced the research motive. The prepared questions were issued via post office to the directors and owners of the businesses to create room for reflection and adequate provision of information. The interviews were administered in the respective business settings in Dodoma, Iringa and Dar es Salaam. Depending on the context, the interviews were carried out in the shops, and the respective business offices. The interviews lasted for between 30 to 45 minutes. The interviews were recorded accordingly.

The research also experienced some setbacks. To begin with, the informants were a wide range form of businesses and the component of time factor was also a challenge. Further research will focus on the specified business arena and components of time will be enhanced.

The Likert scale was used to provide the opinions received from the customers and the business personnel on the use of indigenous languages in the commercial sector in Tanzania. The authors also used SWOT analysis that helped realize the components are to be taken into account in working towards integrating local languages in the business arena.

RESULTS AND DISCUSSION

As per the informants' views, using indigenous languages in marketing products and services is very useful for the business personnel as it makes it easy to access the products and services by the target audience. The informants view that there is power in local language use in doing business. An informant gave an example of the Hehe lexical item '*Kamwene'*, a greeting that has spread all over the print and social media after being used by an actor during the best movie awards in Tanzania. So if '*Kamwene*' were a product, one could imagine how much the product could have sold out. In support of the findings, Cavusgil, Knight & Riesenberger (2012) opine adverts attract the attention of buyers and clients.

Indigenous Language Practices in Business

The diverse Tanzanian indigenous language is crucial in enabling revenues involving ethnic societies to vigorously invest in the business by creating wealth through indigenous languages.

In this regard, much can be learned from the Tanzanian indigenous languages which can be used as key instruments for marketing products and services internally for cultural exchange and excellence in commerce. The economic activity entails various industries for example mass media, creative writings, movie and film, language advertising, digital mass media, style, structural design, medication and communal disciplines. Informant 8 "Advertising using a ethnic language for example, "Similar to these findings, Makasi & Goveander (2013) proclaim that advertising assists in widening the markets for products and services to diverse ethnic communities resulting in prosperity. An informant decreed that tourism can be promoted by the use of indigenous languages. For example, the diverse Tanzania national parks such as Serengeti, Tarangire, Manyara, Ngorongoro among others use local names for unique animals found only in Tanzania based on the indigenous language of the locality. Further, the Maasai ethnic group have commodities of portraying the Maasai culture such as Maasai *Shuka* meaning shawl, necklaces, shoes and attires that attract the tourism sector promoting the business sector.

A Call for Promoting Indigenous Languages in Tanzania Commerce

It was important to examine informants' thought of employing local languages in products. The informants 66% agreed that it was crucial to have brand names especially for unique products and services available in Tanzania. 24% recommended that business personnel especially those pursuing business-oriented courses should be equipped with the local language used in business. The remaining 10% of the informants awarding excellence in business should adhere to the local language usage in product design, branding and distribution. This is in support of Ayeomoni (2011) that assert that societies encounter massive word loss, linguistic shift as a result of lack of documentation of the local languages. Ayodele (2013) further declares that the government needs to integrate local languages in business for prosperity. Moreover, Adzer (2012) avows that the government should give more attention to the development and promotion of aboriginal vernaculars than it is presently giving to Kiswahili being imposed on children to whom the mother tongue is alien. Ayeomoni (2011) states that indigenous language are tools that serve as affirmative makeover and development in the commercial sector.

The questions that the authors sought to respond to whether there was deterioration in the practice of ethnic languages in business in both the urban and rural areas. From the results, it was revealed that

Table 2. Use of indigenous languages in commerce

Region						
		No idea	Disagree	Somewhat	Agree	Total
Iringa	sum total % with the region	2 (10%)	4 (20%)	5 (25%)	9 (45%)	20 100%
Dar es Salaam	sum total % with the region	4 (20%)	5 (25%)	2 (10%)	9 (45%)	20 100%
Dodoma	sum total % with the region	1 (5%)	3 (15%)	2 (10%)	14 (70%)	20 100%
		7 (11.7%)	12 (20%)	9 (15%)	32 (53.3%)	60 100%

through the responses that businesses did not use the local language in doing business. The majority, 53% of the informants agreed that there was deterioration while 20% disagreed as summarized in Table 2.

The results from Table 2, reveal a large number of the informants in Dar es salaam manifest more deterioration in ethnic language usage at 25% while Dodoma 70% highly agree on the use of ethnic languages in business. From the researchers' observation, a lot of deterioration is witnessed in Dar es Salaam, the main commercial cities due to the composition of several ethnic languages and adopt the use of Kiswahili in doing business. Informant 1: *indigenous languages are identity markers for internal markets; however people are not used to speaking in vernacular languages*. Some of the lexical terms widely adopted in commercial activities were revealed as stipulated in Table 3.

Table 3. Local terminologies in commerce

Item	Meaning	Language
Ulanzi	Type of local Beer	Hehe
Baharia	Sailor	Kiswahili
Kuku	Chicken	Kiswahili
Samaki	Fish	Kiswahili
Mtori	Pounded banana	Chagaa
Kilimanjaro	Mountain/ A brand of water	Chagaa
Figiri	A type of green Vegetable	Luguru
Afya	Health/ Type of water brand	Kiswahili
Maasai Shukaa	A fabric made shawl	Maasai
Saro	A type of green Vegetable	Meru

Based on the responses in the semi-structured interviews among entrepreneurs and customers, Informant 2: "*indigenous languages is ignored due to the unifying language, Kiswahili*". Moreover, further examinations from the observations and interviews show that Tanzanian society is dynamic. This is because in the present century individuals are in constant movement, while at the same time the mode of communication has also advanced with the encroachment of technology. From the authors' observations, people have noticed wider usage of other languages other than the indigenous languages because of internal migration and education system in Tanzania. The media can be used to diversify the business by the use of indigenous languages for wider communication. These findings are in support of Ayeomoni(2011) who proclaims the impact of migration on culture has resulted in the marginalization of indigenous language.

Media and Exposure of Indigenous Language

The study also sought out to look at an interesting domain on how the media broadcast can help expose the indigenous languages. From the data gathered, it was noted that the broadcast media still pioneers the use of national language Kiswahili, while they were initially to preserve the local languages. Broadcast media such as Tanzania Broadcast Corporation (TBC), Independent Television (ITV), Star TV, Abood TV, East African Television and print media are at the fingertips of many Tanzanians. Further, the use of cell phones, radio and social networks such as Instagram, Twitter, and Facebook have become common business platforms. However, the indigenous languages are still playing a peripheral role. From the survey conducted, 49.5% of the informants have social network pages such as Instagram and Twitter while 60.5% own televisions. These kinds of media technologies are the platforms for exposing business stakeholders to different indigenous languages along with Kiswahili, the national and official language. Kiswahili has dominated the media and the education system. As individuals progress to be exposed to different forms of media, the business stakeholders continue reaching the target customers due to a lack of appropriate use of local language for the target audience. The use of social networks can be a good resource in reaching many audiences by the introduction of local languages particularly on product design and brand names in search of wider markets for the customers for the business stakeholders.

Branding of Products in Tanzania

Tanzania businesses can be enhanced to wider markets by using indigenous languages in branding names of products in enterprises. From the results gathered, 54% of the informants proclaimed that when business stakeholders talk about a product in the native language of the customers, it makes the products penetrate to the grassroots. This was also commented by the informants that branding ad product design needs to consider the native languages. Meanwhile, 32% of the informants asserted that branding a product in indigenous languages for some clients deteriorates the value since people prefer imported products from developed countries as they consider them to have more quality and promotes the status of an individual.

According to Informant 3 "*Products from outside Tanzania are more original and up to standard compared to those made in our country*". 16% of the informants were unaware of the impacts of using local languages on branding products and one of the informants 4 "*I don't understand the need for using my vernacular language in naming a commodity*"

Distribution of Products and Services

Another interesting area looked into was the distribution and identification of the target markets for the Tanzanian trade. From the data gathered it was revealed that out of 60 respondents that took part, 23% of the customers are from the western countries, 20% are from East Africa, 16% from other African countries 51% are within Tanzania. The majority 80% stated that even though they market their products outside Tanzania the only languages used are English and Kiswahili. Informant 5 “I use Kiswahili and learn English in advertising my services”This implies that the brands’ adverts made within and outside Tanzania are not in the native languages hence deterioration of broader markets. It was realized that companies and industries miss out tremendous buying power of customers due to failure to deliver and make adverts in indigenous languages. It is anticipated that companies that communicate with indigenous languages will bring their customers individualistically or collectively much closer, widening the products’ markets in Tanzania.

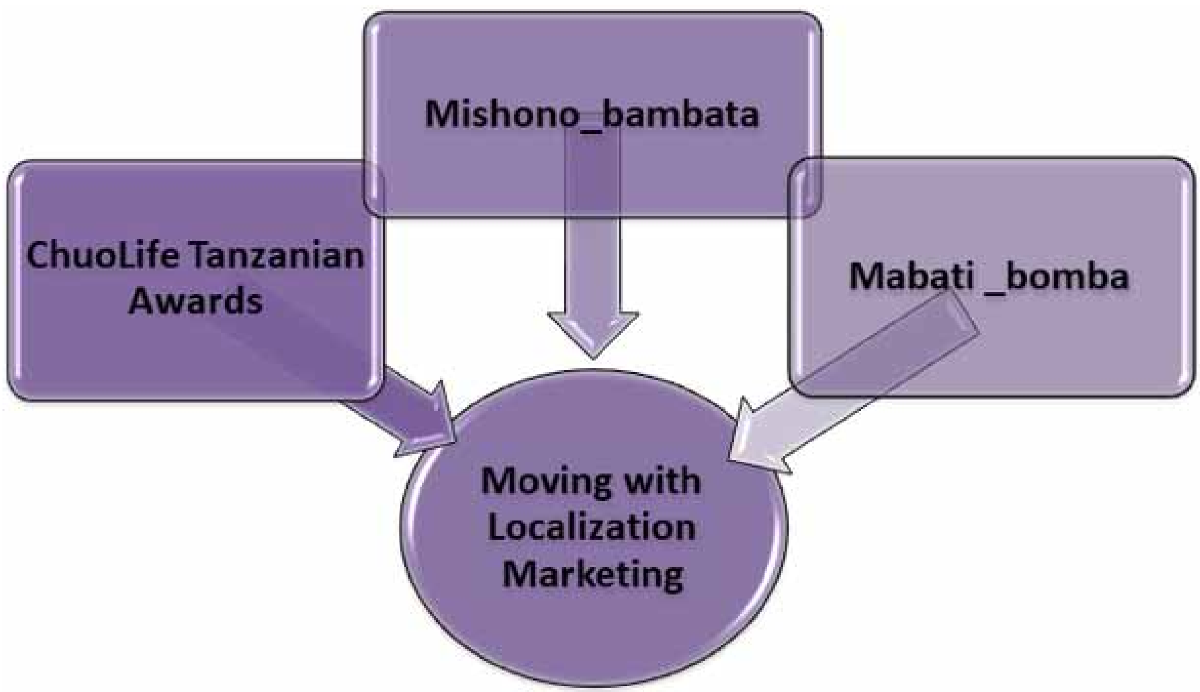
Moving Towards Digital Advertisement in Tanzania

The current era revolves around technology. The rise in social networks and network marketing has proved to reach millions of customers (Odero, 2000). However, important to note that the customers are from very different social backgrounds and the means of transmission of messages is normally misunderstood (Ayodele, 2013). Informant 6 stated “*My customers come from different communities and tribes, each has a unique need”* The results revealed that customers are in high demand for use of indigenous languages as the mode of communication in commerce particularly in branding, distribution of products and services as well as advertisements of products and services in various channels. With the immediate needs of the clients, the concept of language in use requires to be part and parcel of the digital and network marketing.

The most challenging aspect is manifested on the means of ensuring that every client’s need for preferred language is met with the diverse local languages available particularly in Tanzania. Several nations such as India, Kenya have portals and mass media stations in the local languages, that have proved an increase in connection with customers across the globe (Constantinides, 2002). Google has taken the opportunity and is creating massive wealth through the digitized mode of translation. This makes the product and services that are custom made to meet clients’ needs. From the interview conducted to business personnel in Dodoma, Iringa and Dar es Salaam, some of the terminologies that have made use of the Tanzanian Kiswahili language and have created a positive business impression with brand names such as *ChuoLife* Tanzanian Awards that promotes the spirit of entrepreneurship among university students in Tanzania. *Mishonobomba* and *Mishono_bambata* are fashion establishments that deal with styling African women attire; they use digital marketing in promoting their adverts. *Mabati _bomba* is a manufacturing industry that produces iron sheets. It links with customers and provides feedback to clients via social networks. This depicted in Figure 1.

From the gathered data, the authors made observations and presented results ofthe findings on the use of indigenous languages in internal and global markets. The indigenous language use in branding products and services, use in mass media and in making oral and print adverts are big contributors for enhanced marketing. More observations of enhancing marketing can be manifested in promoting products in different regions and across the globe, super and hypermarkets, exhibitions and other business national functions. With reference to Informant 7 “ *Promoting infant products such as mollycoddles, which have all along used the English word, pampers, most parents especially those that have no access to the provision of such services in the urban and rural areas use alternative means such as clothing*.’’ This may be a result of the language barrier, and the misunderstanding among different ethnic languages. It was observed that customers purchase products and services for different purposes. Some were in bulk and others for retail use. Noted that Tanzanian commodities are sold in bulk and retail, depending on

Figure 1. Kiswahili business brand names



the amount or number of commodities a customer requires. For example, with perfumes, if a customer requires a quarter or a dozen pieces of perfume goes for a bulk price but less than that a customer buys at a retail price, the same was noted with stationery products such as books, pens, and rulers, among others. In the food market, products such as coconut, beans are also sold at whole prices from five coconuts or 5 kilograms of beans onwards respectively. It was also noted that the business personnel had different suppliers depending on the product or service within the business settings. The businesses adhere to the Tanzania revenue authority regulations whereby a business with or less than four million Tanzanian shillings capital possess business identity cards, these are small medium-sized entrepreneurs (SMEs) while the business owners with over four million Tanzanian shillings possess Tanzania Identification Number (TIN) numbers and licenses that are paid for yearly. The payments are assessed depending on the nature of the business and the capital the business has. In all these processes the language usage remains uncovered for as the business personnel have supplies from across the globe that are mainly branded in English, while the products and services available in Tanzania are branded only in Kiswahili and English language leaving the ethnic groups unattended for. Customers can only provide feedback on the services via phones or physical visitations to the respective business organization. The authors using SWOT analysis realized that numerous components are to be taken into account in working towards integrating local languages in the business arena as discussed hereunder:

Strengths: Use, accessibility and existence of indigenous languages in Tanzanian bring with it numerous benefits in the business arena both to the customer and to the supplier. The benefits include the use of local languages in business for branding and making adverts in mass media and other social networks create a sense of understanding for the products and services. Access to products in indigenous languages increases the number of customers both in the rural and urban communities especially those that felt marginalized due to lack of being made part of the product or service due to language barriers. Indigenous languages are used to reach a diverse community and to create a unique brand that can only be available in the Tanzanian context. The availability of products in the mass media such as television, radio and social networks in local languages at all times provides massive benefits in the business world. Customers' feedback in different local languages brings in attraction and good customer service support. The spread of products and services from one community to the next is made possible since every ethnic language is catered for. Products and services in local languages create easy understanding and can be easily embedded in the culture of a particular society. The use of technology in businesses is a concept that cannot be left unattended in the present world (Kelly- Holmes, 2010).

Weaknesses: Lifecycle, proficiency, hindered communication. Despite the numerous advantages the use of indigenous languages brings with it, there are also some constraints pertaining to the conception and use in the naming of products and services as well as use in mass media. Various indigenous languages may not be used in all products and services. This is because of the diversity of the languages in Tanzania. Another downside is on the enforcement of unity through the sole use of the Tanzania official language Kiswahili, for communication and use in print and mass media. Looking at the perspective of customers, the clients are in preference of indigenous languages especially in naming products and services. The business personnel emphasizes that the concept of indigenous languages requires the approval of the government particularly in making adverts in mass media and social media networks. The other thing is that the business personnel will have to learn and have knowledge of diverse languages make it difficult to meet every ethnic group's requirements. On the other hand, the customers will need to rely on the technology and other mass media technologies that may not reach all customers, particularly in remote areas. Still, some customers are of the opinion that the business can only attract wider markets only with international languages such as English and not otherwise.

Opportunity: Associate, Engross with indigenous language, implement the usage, and acquire customers. Using indigenous language is focusing on widening marketing strategies reaching more targeted customers. It also provides novel ways to reach the all nation creating loyalty and trust among customers. At the global level, the use of indigenous languages in Tanzania products creates uniqueness with a brand that can only be found in Tanzania. The use of indigenous language creates a good opportunity for the business personnel to reevaluate the opportunities local languages bring with them in businesses. The integration of local languages also creates opportunities for mass media and educators to create more job opportunities (Adeniyi, & Bello, 2006). It is a fact that study in this area is still scarce and more research is required to indicate the need for indigenous languages in the in the business arena. A study by Cova & Dalli (2009) affirms that indigenous language creates a sense of loyalty, understanding, trust and a sense of togetherness among customers, creating a convincing power to purchase products and services. Indigenous languages widen the pace and businesses for internal and external customers across the globe (Darley & Blankson, 2008).

Threats: Brand with a target, promote product and services, reach mass customers. The use of indigenous in all sorts of products and services does not suit the context of the business arena. Thus, a local language selected will be useful when it aims for attaining a particular objective. The challenge is when too many words are used to brand products. It is important to attempt to use simple, single, eye-catching lexical items that are non-ambiguous but have the capacity to attract a wider market. The mode of making adverts also requires a lot of creativity and this may be a challenge to the promoters thus training may be a requirement prior to making the adverts. Creating content and brand names requires a lot of brainstorming so as to have an eye catching end brand products. Hence, there is a need for analyzing and doing away with unnecessary words, texts, or sentences in the local languages. This might be very challenging and time-consuming. The use of local languages is a fact that the business sector and the government may not be 100% ready for, this may need so massive writings, seminars and education and even adjustment of content in the business study and language curricula in Tanzania.

The Approaches of Implementing Local Languages Aptitude in Tanzanian Business Sectors

The research gathered data on the approaches that can be used to ensure that the business personnel integrate indigenous languages in their respective businesses. Suggested training of business personnel could be a big contributor to the use of local languages. The informants also stated that the business sectors seek language professionals in indigenous languages to enhance the choice of words to be used in making adverts. The choice of the appropriate indigenous language and phrases could help to widen the markets. The support and involvement of language and business professionals would bring in skills that would be of positive impact in the business arena.

In terms of broadcasting in mass media, the promoters and advertisers, communication is key and the choice of words and mode communication used should ensure that the target market understands and receive the message in clarity. The business tycoon, directors have the task to ensure that the subordinators bring in positive impacts with the use of the local languages in businesses.

IMPLICATIONS AND CONCLUSION

As illustrated in the chapter, indigenous languages are crucial resources for Tanzanian economic development. Being like any other resource, indigenous languages should be well managed. This is achievable by appropriate dogmas aiming to create and promote the use of indigenous languages to allow in taking part in the economic development widening the internal and global markets. The Tanzanian official languages are strictly Kiswahili and English language. At the same time, the Tanzania government calls for the preservation of all-round indigenous languages. The authors in this paper have made a demonstration that those indigenous languages can be used as vehicles for promoting trade within and outside Tanzania being part and parcel of African culture is economically crucial. Indigenous languages through product design, branding and distribution can widen markets via the online social networks, television broadcast and radio stations contributing to the achievement of the Millennium Development Goals. The authors recommend that there is a need for management of indigenous language just as other resources are managed. In this case, the management should aim at preserving, promoting and modernizing the indigenous languages and assigning them new tasks in the business arena hand in hand with the traditional roles.

Tanzania stands to lose nothing if bold decisions are taken to design, brand and distribute products using indigenous languages as this will enhance economic empowerment. Using indigenous languages in branding, product design does not mean doing away with Kiswahili and English because they enable us to communicate across local and international boundaries. Good command of the English and Kiswahili and being able to write is a non-negotiable aspect. Future work looks forward to identifying the indigenous languages in Tanzania that can be suitable in branding and promoting business and the implications they bring in.

Indigenous language in the Tanzanian business context paves way for success in the internal markets. The local languages being used in branding, provision of services and naming commodities, will, without doubt, expand businesses in Tanzania. With the rise of technology, embracing local languages can be eased. The use of local language brings with several implications for several stakeholders as indicated hereunder: To start with are business Manager: Local languages as a source for the creation of more wealth and income for products and services. There is a need for recruitment of business professionals. The other stakeholders are Customers who possess the ability to understand the language and the product or service creates loyalty and trust. This attracts more purchases. Meanwhile the government through enhanced business, the government will benefit from the Value Added Tax and make Tanzania known business-wise across the regions and the globe. The economy of the country will also be stabilized. Moreover, language professionals are stakeholders that have a chance to widen the scope of language learning by embedding local languages in the normal teachings that have resources and books in local languages. At the same time mass media has the capacity to reach a wider community, economically; the adverts will bring in massive economic benefits. As a result business students are stakeholders that need to adjust to the current business trends and review old learning habits by acquiring new learning strategies through getting trained to be able to produce content in new ways.

The use of indigenous language is the main pillar for the Tanzanian enhancing market. As depicted it is the cornerstone for widening internal markets. The chapter has also revealed that when indigenous language is involved, the culture of a society cannot be left out. It is through the language, and culture that products and services can be labeled and named formulating unique brands that can be well received locally for massive profits.

FUTURE RESEARCH DIRECTIONS

The chapter took a look at the use of indigenous languages for enhancing businesses in Tanzania. Local languages in Tanzania are diverse and have become a breakthrough for promoting business at greater extents. In the future, researchers need to make expansion and make an exploration of the implementation, impacts and assessment of indigenous languages in the business sector, focusing on the impacts the languages have on the clients in Tanzania and across the globe. Further, future studies need to focus on the kinds of products that require the use of local languages and analyze on how effective they can be used to promote business both internally. Further, the concept of branding and packaging in local languages has to be addressed. As depicted the chapter has focused on the concept of using local languages for enhancing local and international markets. The analysis of the strengths, opportunities, challenges has revealed the present nature of business and language use in Tanzania that paves the way for the integration of indigenous languages in the business arena.

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KEY TERMS AND DEFINITIONS

Advertisement: Refers to the process of marketing made through communication through print, exhibitions, mass media and social networks to promote business products and services.

Branding: Refers to the marketing strategies that business personnel and companies design, create and uniquely use to identify and distinguish a product or service. Branding creates a memorable expression and impression for a customer.

Commercialization: Refers to the act of introducing and bringing in novel products and services to Tanzania and the global market. It involves processing, production, distribution and marketing, customer care support to attain the goals of promoting the sale of products and services.

Culture: Refer to the way of life particularly the general customs and beliefs of a particular group of people at a particular time in Tanzania.

Ethnic Group: Refers to a category of people that identify on another based on similarity, for example, a common language, history, culture, region and nation that reside in a particular region in Tanzania.

Global Market: Refers to the process and activity of purchasing or selling products and services across all nations in the world. The activity can also be conducted through the network and digital means reaching target markets.

Indigenous Language: Refers to a language that is native to a region in Tanzania and spoken by indigenous people. The language is spoken by a particular ethnic group and is distinct in each community in Tanzania that has been existence over the generations.

Internal Market: Refers to a state whereby various companies in Tanzania provide products and services to the clients or customers.

Chapter 21

Determinants of Farmer Participation in Private and Public Extension Organizations in Southwestern Nigeria

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ABSTRACT

This study was designed to analyze the participation of farmers in the public and private extension organizations in Nigeria. Multi-stage random sampling methods was used in selection of 30 beneficiaries from ADP, FADU, and JDPM-RUDEP in three states from Nigeria. Questionnaires were used to collect data and analyzed with descriptive and inferential statistics. Kruskal Wallis test of difference (X2 =0.79, assymp. Sig of 0.72) shows that beneficiaries' participation in the extension services of public and private organizations was not different but correlation results indicated association between farmers' participation in public (r =0.279, p<lt; 0.10) and FADU (r =0.790, p <lt; 0.10) and benefits derived. It was concluded that farmers' participation in the study organizations were not significantly different, but was associated with benefits from some organizations. Benefit-oriented extension programmes are recommended for extension organizations in order to benefit the participants in their specific needs.

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INTRODUCTION

The inefficient administration of public sector extension was the reason for it's inability to guarantee the expected development of Agriculture and rural areas in Nigeria. Though a total overhauling of national agricultural support systems has been advocated as a strategy for increasing agricultural production in sub- Saharan Africa. Agricultural extension is a system working through the principles of education to improve the capacity of farm families and empower them to be adequately resilient to any prevailing problem. The system in the past had been severally attacked for not being relevant, insufficient impact, ineffective, inefficient and sometimes not pursuing programmes that foster equity (Williams and Qamar, 2003). But with a turning point which affected the manner in which information is transferred, considered the responsibilities of public sector extension was evolved and practiced. Not only did the Public Extension system came under Public Scrutiny and Political attack, but was faced by high competitive interests from the private sectors. Agricultural extension practiced by the public is described as the extension activities put in place by government under the control of Agricultural Development Programme (ADP) in all states to cater for the needs of farmers. Agricultural Extension is expected to foster sustainable and dynamic approach to agricultural development and which has remained of great concern to the government and priority for discourse in policy arena (Agwu, et al, 2008).

It is the consideration of this responsibility has makes the past government in Nigeria making policies to raise productivity and living standard of the rural populations. The country has therefore, over the years, tried many Agricultural Extension System to improve agricultural production. Examples were RBDA (River Basin Development Authority), OFN (Operation Feed the Nation), DFRRI (Directorate of Food Road, and Rural Infrastructure) among others. Many of these development programmes are agricultural focused. While others were non- Agricultural. These programmes were put in place with the plan to improve the living standard of rural people as well as boosting their share of Gross Domestic Product. Despite these efforts, many studies have continued to indicate the inadequacy and ineffectiveness of some of these development programmes (Ayansina, 2011).

Agricultural Development Programme (ADP) wasestablished in 1975, though at a pilot level to improve agricultural development and living standard of the farm population. ADP was put in place to accelerate a complete development in the Agricultural sector. At the period of its establishment, farmers' hope were raised' in reflection of their genuine commitment to reduce the social political and economic problem that stagnated theory in cycle of poverty (Akinbode, 1989). Agricultural Development Programme in all states of Nigeria practiced the system of "Training and Visit" (T&V) extension system in order to boost production, solve the prevailing extension problem such as administrative bottleneck and bureaucracy, limited number of extension officials and faulty policy formation. The Training and Visit extension system as written by Bennon, et al, (1984) is an extension system requires training of the extension officers during the Fortnight Meetings (FNT) and in Monthly Technological Review Meetings (MTRM) on the specific agricultural practices and visiting of the farmers on their farms and homes for onward transferring of the idea, knowledge needed within a specified frame of time. Training and visit extension system as put in place features professionalism, single line of command; time bound work, concentration of effort, regular and continuous training, farm and field orientation and regular extension linkage among others.

Furthermore, because of the huge cost of input provision, administrative failure, inadequate formation and implementation of programmes and failure to solve specific challenges linked to public extension in Nigeria and have led to patronage of private extension sector. Therefore, the more involvement of the private sector in the operations sometimes totally as in Netherland, New Zealand, Peru and U.K. or partially through contracted outsourcing arrangement adopting private sector practice such as cost recovery scheme or fee-based activities for services that were once freely provided. And therefore, increasing involvement of private sector in public extension services (Rivera, 2000). It has also been generally observed that extension services provided by the private organization are better in quality and more effective than the public systems. Public extension organizations are basically an organization possessing legal status which is financially independent of government. For this study, explanation will be provided on extension activities implemented by ADP in Oyo, Osun and Ogun States in Southwestern Nigeria. These are referred to as “Public Extension Organization” The private extension organization include Justice Development and Peace Movement’s Rural Development Programme (JDPM-RUDEP) and Farmers Development Union (FADU). The philosophy of these organizations is directed towards comfort for all within the preview of the area and to have rapid and even development among the communities. The study is set to compare the agricultural extension services delivery systems and benefit of Training and Visit Extension System of the public and the selected private extension organizations in order to establish the potent and vibrancy of the organization providing extension services in southwestern Nigeria.

Objective of the study was to establish factors determining farmers’ participation in the public and selected private extension organizations in the Southwestern Nigeria. And specifically, establish the level of respondents; participation in the extension programmes of the study organizations and to determine the level of benefit derived from the programmes of the public and private extension organizations. In the quest to find the relationships among the variables of the study, the following hypotheses were tested: There is no significant relationship between the level of farmers’ participation and benefit derived in the public and private extension organizations, There is no significant difference in the level of participation in the extension programmes of privates and public organizations and No significant association exists between selected personal and socioeconomic characteristics of the farmers; and their participation in the extension delivery of the selected extension associations.

METHODOLOGY

The Extension system practiced by government in all states of the Nigeria Federation is regarded as public extension organizations. They adopted Training and Visit extension system while privately own extension organizations are in possession of legal status which is financially independent of government and actively engaged in the political, social and economic transformation of the society. The study was designed to determine the farmers’ involvement in public and private extension delivery programmes. The study was conducted in Ogun, Osun and Oyo State in the South West geopolitical zone of Nigeria. Fig 1 show the map of Nigeria indicating the study area in Southwestern Nigeria. The location is chosen for the study due to high population of farmers and concentration of the activities of the private extension. Multi-stage random sampling procedure was utilized in selection of Ogun, Osun and Oyo States in Southwestern Nigeria. The ADP which represent the Public Extension in all the three state while FADU (Farmers’ Development Union) and JDPM-RVDEP (Justice Development and Peace Movement Rural Development Programme) represent the private extension organization in the study. Thirty (30) beneficiaries were selected from each of the three organizations in each of the three selected States making two hundred and seventy (270) respondents for the study. However, eighty seven questionnaire were returned for both FADU and JDPM-RUDEP which then makes the total response to be 264. The questionnaire was pretested and found reliable at 78.26% was utilized to collect data for the study. The items in the questionnaire were interpreted to the respondents in their languages by the officer of each organization to collect the data for the study. Descriptive and Inferential Statistics were used to analyzed the data collected, the descriptive tools used include frequency counts and percentage to present the data on participation of the respondents in the extension programmes of the study organizations and benefit derived while Kruskal Wallis One-Way Analysis of Variance (ANOVA) and spearman's rank correlation were utilized to test the study hypotheses.

RESULTS AND DISCUSSIONS

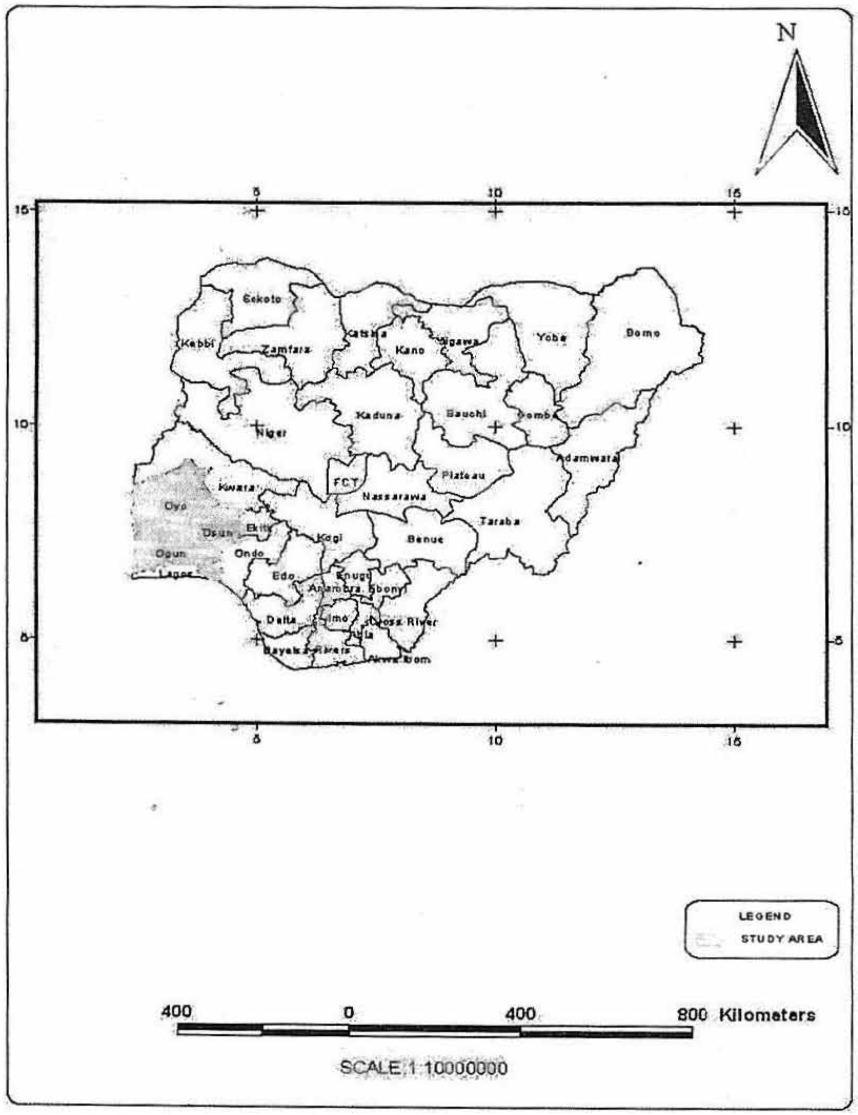
Beneficiaries' Participation in Organizations' Extension Orogrammes

Good programmes administration by extension organizations and quality delivery attract beneficiaries and hence determine to a greater extent their participation levels. As depicted in table 1, only extension programme in public outfit with average participation by beneficiaries was fertilizer supply scheme (55.5%) while in JDPM- RUDEP, the participation was higher in credit administration (88.50%), training on crop utilization (70.3%) workshop/seminar(71.2%) improved livestock breeding (87.3%) products processing management technology (59.75%) and new farming techniques (55.1%). Furthermore, beneficiaries' participation in FADU was higher in tanning of crop utilization (73.5%) supervision /advisory services (70.1%), workshop/ seminar (66.6%) information dissemination (52.85%) and fertilizer supply scheme (51.7%) in that order. This results reveal that beneficiaries placed more preference on services of private organizations than that of public extension by ADP.The reason for this might be due to good and qualityprogrammes delivery, efficiency and adequate funding. This result agrees with the findings of Rivera et, al, (2006) who recommends the hybrid sector of public and privation extension services for farmers if their lives is to be improved and better off.

ACHIEVEMENT OF BENEFICIARIES IN SELECTED ORGANIZATIONS

Achievement in this study refers to the benefits regarded as tangible and intangible benefits gained from the extension programme delivery of the study organizations. It is the measure of impact of a treatment on subject (Caselya and Lory, 1981). As indicated in table 2 major and significant achievement among respondents in public extension were adoption of more farm technologies (57.7%) and increased quality of crop produced (56.6%). While 15.5% were in high benefit category.Majority (70.0%) were in medium benefit category while only 14.4% were on low benefit profile.In private extension organizations, significant achievement made by respondents in JDPM-RUDEP were adoption of more farm technology (93.1%) improved education (81.6%) increased livestock product (72.4%) increased farm income (58.6%) and establishment of poultry farm (51.7%).In the benefit categories 20.6% were in high benefit category, 65.5%were in medium benefit profile while 13.7% belong to low benefit group.Respondents in FADU mostly achieved increased livestock products (54.0%) more land acquisition (59.7%), adoption of more farm technologies (66.66%)skill acquisition (55.1%), improved level of socialization (81.6%) and farm income (62.0%) while 85.0% and 3.4%were in medium and high benefit group respectively. Only 11.49%

Figure 1. Nigeria Map showing the study area



were in low benefit category. The finding in table 2 shows that greater proportion of respondents in FADU (88.5%) and JDPM-RUDEP (86.2%) had more benefits than the respondents in public extension organization (85.5%) even though the proportion of the respondents in the three organizations were at close range.This result corroborates the findings of Al-Rimawi and Al-Kaableh (2001) who observed that extension delivery benefits of services private organizations were better in quality, vibrant and more effective than of the public extension organizations.

Table 1. Distribution of Respondent's Participation in Selected Extension Services.

EXTENSOIN SERVICES	PUBLIC EXTENSION		JDPM- RUDEP		FADU	
New farming techniques	33	36.7	48	55.1	31	35.6
Workshops/seminar	21	34.4	62	87.3	58	66.6
Supervision/advisory	38	42.2	51	58.6	61	70.1
Information dissemination	28	31.1	41	47.1	46	52.8
Training on record keeping	13	14.4	39	44.8	33	37.9
Training on crop utilization	45	50.0	76	70.3	75	86.2
Credit admin/utilization	12	13.33	77	88.50	64	73.5
Processing/management technology	32	35.5	52	59.7	51	58.6
Veterinary services	37	41.1	33	37.9	22	25.2
Input support services e.g. fertilizer supply scheme	50	55.5	40	45.9	45	51.7
Improved crop varieties	36	40.0	31	35.6	36	41.3
Improved livestock	41	45.5	61	87.3	41	47.1

Multiple Response*

Relationship Between Farmers' Participation and Benefit Derived in Public and Selected Private Organizations

The relationship between farmers' participation in organizations' extension delivery programmes and benefit derived were sought. As indicated in table 3, there were significant relationship between participation of farmers and benefit derived in public extension ($r = 0.180$) and FADU ($r = 0.290$) organizations. Whereas in JDPM-RUDEP, r value of (0.180, $p<0.05$) revealed no significant relationship between the participation of farmers and benefit derived. The finding thus implies that rather than participation of the farmers, other contributory factors aside benefit in JDPM could largely be due to factors such as adequate input supply and efficient managerial capability. Hypothesis one is therefore rejected in respect of public extension and FADU organizations because respondents' participation in public and FADU extension organizationswere significantly related to benefit derived but not in JDPM-RUDEP extension organization. This finding is in line with Qureshi et al. (2015) who declared that appropriate agricultural research and benefits from extension programmes are very necessary to sustain food security among the rural and urban populace.

Test of Differences in Beneficiaries Participations in the Study Organizations

Differences in beneficiaries' participation were tested. According to Kruskal Wallis Ranking in table 4, it is indicated that the participations were not significant different. Could be due to variables selected or other factors. The finding therefore implies that irrespective of extension organizations' type, the participation of beneficiaries remains the same towards their extension delivery services. Participation only discriminate along the gender line which may be associated with some factors as identified by Van Den Ban, (1996) that inadequate academic qualification among women makes them unqualified for extension work and that unacceptable means of transport to some women extension agents e.g bicycle,

Table 2. Respondents Based on Achievement from various Extension Organizations

BENEFIT DERIVED	OVERALL RESPONSES		PUBLIC EXTENSION		JDPM-RUDEP		FADU	
	F	%	F	%	F	%	F	%
Farm Expansion	103	31.1	21	23.3	43	49.4	39	44.8
Increase livestock products	141	53.4	31	34.4	63	72.1	47	54.0
Acquisition of more farm land	96	36.3	17	18.8	37	42.5	52	59.7
Increase Quantity of Crop Produced	157	59.4	51	56.6	61	70.1	45	51.7
Established Poorly Farm	113	42.8	31	34.4	45	51.7	37	42.5
Established Fish Pond	92	34.8	21	23.3	29	33.3	42	48.2
Pepper Grinding Machine	80	30.3	17	18.8	30	34.4	33	37.9
Corn Mill/Cassava Grater	71	26.8	14	15.5	32	36.7	25	28.7
Purchased Tractor	24	9.0	02	2.2	12	13.7	10	11.4
Improved Family Welfare	98	37.1	37	41.1	39	44.8	22	25.2
Improved Children Education	100	37.8	25	27.7	42	48.2	33	37.9
Renovated House	72	27.2	15	16.6	35	40.2	22	25.2
New House	29	10.9	6	6.6	15	17.2	18	20.6
Purchased Motorcycle	95	35.9	30	33.3	43	49.4	22	25.2
Adoption of more Farm technologies	191	72.3	52	57.7	81	93.1	58	66.6
Purchased Motor vehicle	64	24.2	12	13.3	22	25.2	30	34.4
Increased in farm income	153	57.9	48	53.3	51	58.6	54	62.0
Skills acquisition	131	49.6	31	34.4	52	59.7	48	55.1
Improved Education	164	62.1	31	34.4	71	81.6	62	71.2
Improved level of socialization	167	63.2	45	50	51	58.6	71	81.6

motorcycle motorized tricycle etc and stay out for a night to meet farmers at a convenient time. Hence, there is no significant difference in the patronage of public and private extension services by the farmers in the study area. The result is in line with Ayansina, (2012), who asserted that differences in the patronage of extension outfits is directly a function of vibrancy and quality of their programmes delivery.

Table 3. Respondents Based on Benefit/Achievement Category

Performance rating	Overall response		Public Extension		JDPM-RUDEP		FADU		Overall private	
	F	%	F	%	F	%	F	%	F	%
Low benefit	35	13.2	13	14.4	12	13.7	10	11.4	11	12.6
Medium benefit	194	73.4	63	70.0	57	65.5	74	85.0	65.5	75.4
High benefit	35	13.4	14	15.5	18	20.8	3	3.6	10.5	12.0
Total	264	100	90	100	87	100	87	100	87	100

Source: find Sumy 2010

<20 low, 21-40 Medium, 41-60 High

Table 4. Summary of Correlation Values of Relationship between Farmers' Participation and Benefits in the Study organizations.

ORGNAIZATIONS	r- value	Significances
PUBLIC EXTENSION	0.279**	Significant
JDPM-RUDEP	0.180	Not Significant
FADU	0.290**	Significant

2010

Relationship Between Farmers' Socioeconomic Characteristics and their Participation in Organizations' Extensions' Delivery Programmes

As depicted in table 5A age, (r =0.180) was found significantly related to the beneficiaries' participation in the public extension. According to the result in table 5B, marital status (r =0.193) and education (r =0.215) were significantly related to the beneficiary's participation in JDPM-RUDEP extension delivery programmes. Married farmers are quite expected to be favourably disposed to important extension programmes because family labour is regarded to be the most important component of labour in small scale production. Small scale farmers are also the most predominant in Nigeria and most t parts of Africa (Adegeye and Dittoh, 1985). On the same table, religion (r =-0.08) was inversely related to the farmers' participation while age (r =0.159), gender (r =0.076), experience (r =0.034) were positive but not significantly related to the farmers' participation in the extension programmes of JDPM-RUDEP. In table 5C, the correlation analyses further revealed that only age (r =0.180) was the personal factor related to the beneficiaries' participation in the FADU extension delivery programmes.

Table 5. Results of Kruskal Wallis Ranking of Beneficiaries' Participation under the Study Organizations.

EXTENSION ORGANIZATIONS		PARTICIPATION RANKING
Public Extension JDPM-RUDEP FADU		137.33 137.33 131.83
TEST STATISTICS	VALUES	DECISION
Chi-Square X^2 df Asyp: sig	0.709 2 0.702	Not significant

2010

Correlation Matrix of Relationship Between Beneficiaries' Socioeconomic Characteristics and Participation in Public and Selected Private Extension Organizations.

Table 6. Public Extension Organization ADP

	Variable	Y1	X1	X2	X3	X4	X5	X6	X7
x1	Age	0.180***							
x2	Gender	-0.016	-0.126						
3x	Marital Status	0.142	0.279**	0.031					
x4	Farming Experience	0.007	0.222*	-0.105	-0.018				
x5	Religion	-0.069	-0.052	-0.116	0.12	0.135			
x6	Cosmopoliteness	0.126	0.149	0.112	0.213	-0.136	s0.133		
x7	Education	-0.014	0.327***	0.129	0.173	0.211**	0.142	0.132	

Table 7. JDPM-RUDEP ORGANIZATION

	Variable	Y1	X1	X2	X3	X4	X5	X6	X7
x1	Age	0.159							
x2	Gender	-0.120	-0.076						
x3	Marital Status	0.193*	-0.028	0.377**					
x4	Farming Experience	0.034	0.096	-0.182	-0.012				
X5	Religion	-0.08	-0.033	-0.067	0.007	-0.062			
x6	Cosmopoliteness	0.106	0.177	0.097	0.110	0.113	-0.077		
x7	Education	0.139	0.078	0.215*	0.110	-0.100	-0.017	0.025	

Table 8. FADU ORGANIZATION

	Variable	Y1	X1	X2	X3	X4	X5	X6	X7
x1	Age	0.180							
x2	Gender	0.022	-0.102						
x3	Marital Status	0.142	0.279	0.044					
x4	Farming Experience	0.007	0.222	-0.017	-0.018				
x5	Religion	-0.093	-0.156	-0.165	-0.0165	0.120			
x6	Cosmopoliteness	0.126	0.149	0.021	0.213	-0.135	0.110		
x7	Education	-0.044	0.327	-0.082	0.173	0.211	0.161	0.132	

CONCLUSION

Failure of Agricultural Extension to foster a sustainable and dynamic approach to Agricultural development did not only bring it criticism but also heightened competitive interest from private sector. This study was evolved to find factors associated with beneficiaries' participation in the programmes of the selected organizations and compare the services. Result thus, revealed that greater proportion of FADU and JDM-RUDEP (private organizations) beneficiaries had more benefit than the respondents in public extension organization delivery services while no significant difference was found in the beneficiaries' participation in the public and selected private extensions organizations. Furthermore, age of the respondents was significantly associated with participation in extension delivery services of public and FADU organizatios while marital status and education were also significantly related to participations in JDPM-RUDEP extension outfit. The study recommended that rural development agents should intensify their effort in making more use of private extension organizations with good man power to implement development programmes, Partnership work that would greatly benefit farmers in Nigeria while Government is advised to speed up the effort of providing infrastructure such as good road and communication network to enhance the efforts of agricultural extension providers are recommended.

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Chapter 22
Developing Dropout Predictive System for Secondary Schools Using Classification Algorithm:
A Case of Tabora Region in Tanzania

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ABSTRACT

Recently, there has been an increase of enrollment rate in government schools, as a result of fee free and expansion of compulsory basic education to form four in Tanzania. However, the completion rate of students is highly affected by extreme dropout rate. Researchers in previous studies have explored the causes of school dropout, and they came with general recommendation based on treatment measures. This study, however, deals with predictive measures in which classification algorithm is used in developing dropout predictive system. The targeted population of this study was obtained by employing purposive and non-probability sampling techniques. The study was guided by system theory and conducted in four councils of Tabora region in Tanzania because of high rate school dropout reported in the previous studies. After the analysis, it has been observed that social factors and academic factors have strong impact on the targeted variable dropout time. The study recommends the use of dropout predictive system in secondary schools so as to predict future outcomes of students earlier.

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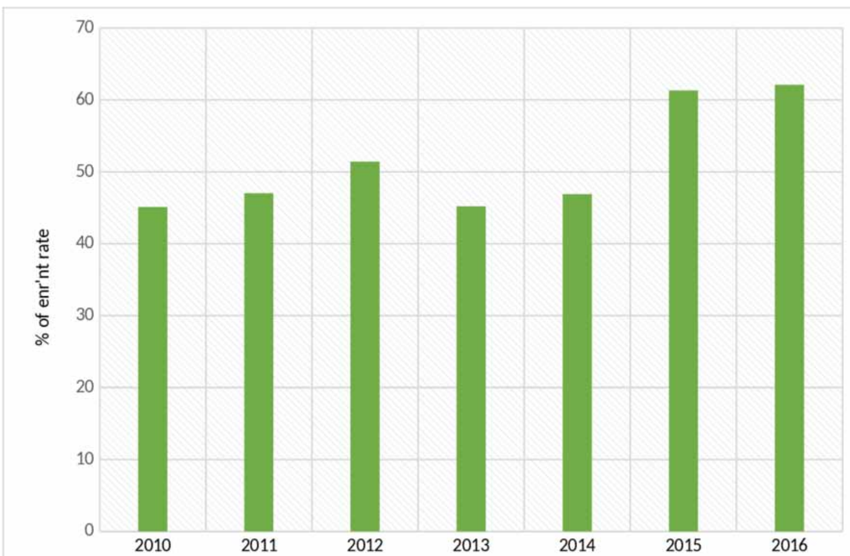
INTRODUCTION

Education is becoming a national priority for successes of the Tanzania since independence (Moevt, 2010; Todd & Attfield, 2017). Many changes in curriculum and education policies have been made in past decade to obtain competitive learners. For example, Education and Training Policy of Tanzania in 2014 expanded compulsory basic education from pre-primary to form four. In addition, the introduction of fee free secondary education in 2016 and increasing government budget in education on fiscal year 2017/2018 in which about TSh 4.71 trillion allocated for education expenditure in the country. Such government initiatives lead to increase enrollment rates in government schools as shown in Fig. 1.1 (UNICEF, 2018). However, the completion rate of students is highly affected by extreme dropout rate in secondary schools.

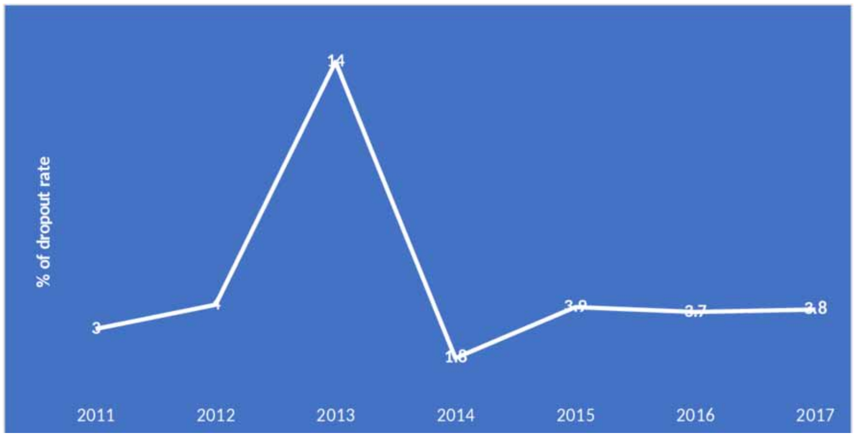
Figure 1. Enrolment rate in secondary schools in Tanzania (Source: URT (2018)



There is an evidence of increasing school dropout rate among the students in secondary schools of Tanzania as shown in Fig. 2. Dropout rate is generally defined as a number of pupils who leave school before the entire time of graduation (UNICEF, 2017). It is considered as dropout rate if it occurs during or between regular school terms. The concept of school dropout does not include students who complete one cycle and do not enroll in the successive level of the educational cycle or who transferred to another institution (Markovic, et al, 2017).

UNESCO report (2017) based on data from 128 countries in the world over the period of 2010- 2015 shows that less than 25% and 50% young children in 40 and in 60 countries respectively had completed secondary school and only 14 countries with a completion rate of at least 90%. In 2011, eight nations including Algeria, Congo and Belize had 15% primary school education dropout rate compared to 57% secondary dropout rate. Furthermore, nations such as India and South Africa had the secondary dropout rate of 17% in 2013. The problem of school dropouts is experienced in both developed and developing

Figure 2. Dropout rate in secondary school (Source: URT (2018)



countries, though the reasons are different. School dropout leads to low-paying jobs, poor health, and the continuation of a cycle of poverty that creates immense challenges for families, communities, and nation as a whole (Mudemb, 2013). Ill-health, malnutrition, truancy, indiscipline and poverty have been observed to be among the reasons of school dropouts among students (UNICEF, 2017).

Basic Educational Statistics in Tanzania (BEST) reported dropout cases of 4.1% in secondary students and 1.3% for primary school pupils in 2016 (BEST, 2017). This difference makes a researcher to opt secondary schools as case study. Dropouts in secondary schools is higher in ordinary levels of secondary as compared to advanced levels of secondary schools. In addition, 39% and 31.3% of students who drop schools in 2016 are form 2 and form 1 students respectively (BEST, 2017). This perspective motivated the researchers of this work to deal with ordinary-level secondary school's students rather than advanced level secondary schools. Lack of a predictive system for predicting time where a student is likely to drop school was another factor motivating the researchers to think about utilization of machine learning in combating the school dropout problem in Tanzania.

STATEMENT OF THE PROBLEM

Tanzania government considers basic education as obligatory to all children in the country. The government made amendment in sections of law 10(2), 13(1) and 15 of Tanzania's Law of Marriage Act of 1971. The law permitted the marriage of 15-year-old for young girls, while the minimum age of marriage for young boys is 18. However, the law is considered as unconstitutional with regard to schooling age and it has been requested to change the minimum age of marriage for young girls to be 18 years, same as for Tanzanian young boys (MoEVT, 2014). This will ensure that there is no segregation in provision of secondary education in the country.

However, despite of the efforts undertaken by the government, NGOs and international partnership like UNICEF, UNESCO to ensure that young girls and boys get equal opportunity of obtaining secondary education, the dropout has become a major bottleneck to the success of the programs as dropout trend shows in Figure 2. This situation is very bad in the world of science and technology as well as in reaching middle industry economy. The major reasons for school dropout was mentioned as truancy, pregnancy, death and indiscipline (BEST, 2017).

Several studies has been done to find solution of dropout problem like the studies done by Masamalo (2017) at Makete in Njombe and Kalinga (2013) in 3 regions (Mbeya, Kilimanjaro and Dar es salaam). However, these studies focused on the cause and effects. Moreover, despite of these studies to recommend treatment measures to be taken on combating the problem but dropout problem still exist, refer Figure 2. To the best of our knowledge, there is no any study that have addressed the preventive measures by identifying the students who are at risk of dropping school. Accordingly, this study attempts to utilize machine-learning algorithm to identify the registered students who are at risk of dropping schools.

OBJECTIVES AND MAIN CONTRIBUTION

Objectives

The main objective of this study is to develop a dropout predictive system for secondary schools (DPS_4SS) by using classification algorithm, which could identify the time in which the student is likely to drop secondary school after their registration to DPS_4SS. In order to reach the main objective, the researchers divided the study into three sub-objectives as follows:

1. To identify key factors associated with student dropout from secondary schools in Tabora.
2. To identify the best algorithm for dropout prediction in secondary schools based on identified features in objective (i).
3. To develop a dropout predictive system for secondary schools using identified algorithm in objective (ii).

Main Contribution

Understanding the variables that may cause dropout to students in secondary school will bring attention to education stakeholders in the country. The study aimed to develop DPS_4SS in Tanzania. Therefore, this study will be helpful for students, parents, and educators as follows:

i. The school, parent and education authoritative will raise the level of awareness about future events of students. It enables them to act timely to ensure that their children stay at school until completion time for future benefits of student themselves, families, communities and their country as a whole.
ii. It will increase completion rate among secondary school students, which is necessary for poverty alleviation and human resources for economic development by enhancing competitive labor skills.
iii. It will help the nation to achieve aims and objectives of education in transmitting moral and social values, cultural identity and self-esteem, good citizenship and desirable work ethics. (UNICEF, 2018).

LITERATURE REVIEW

Systems Theory

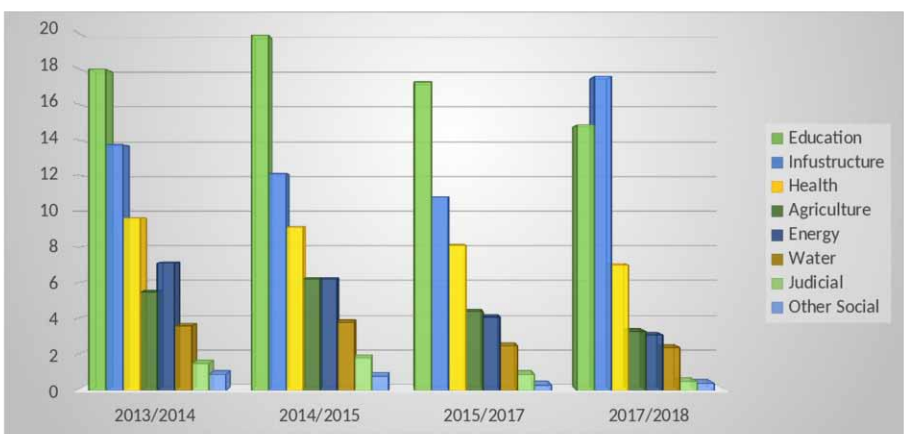
The system theory developed by Bronfenbrenner as ecological theory, helps researchers to examine both the principles and the models which can be used to express the relationship of a child in a particular context. System theory describes several interactive components which are dependent on one another (Ryan, 1992). Students with different characteristics varied in social and cultural backgrounds enrolled in the same secondary school might have different special needs that make them to choose either drop or continue with school. School is supposed to identify those students needs to help them remaining at school (Ryan, 1992).

The systems theory is suitable for this study because, the study aims to examine the key factors that causes students' dropout from secondary schools in Tabora region. The theory guides researchers with additional information to consider when tracing the root of the problem.

Secondary Education in Tanzania

The Ministry of Education, Science and Technology (MoEST) and the President's Office Regional Administration and Local Government (PORALG) manage the education budget of Tanzania. Education funding transferred to Local Government Authorities to cover recurrent costs, mostly wages of teachers, while the remaining covers development expenditure and recurrent costs of the MoEST (UNICEF, 2018).

Figure 3. Education budget in Tanzania



MoEST upholds responsibility such as policies affecting education in Tanzania and shaping guidelines for other spenders in the sector. Further, it controls almost all the non-administrative aspects of education in Tanzania such as issuing accreditations for schools and teachers and shaping national qualification frameworks and guidelines for selection and training of teachers. In the other hand, PORALG has oversight of almost all recurrent expenditures dedicated to pre-primary, primary and secondary education on the mainland. Altogether, it controls 70% of the total education budget. It manages the allocation of funds to LGAs, which are responsible for spending most of the education budget.

Secondary schools' system in Tanzania is divided into two main categories based on ownership, public and private owned schools. The public schools are a government and community owned schools. Government owned schools are referred as national secondary schools that fully managed and funded by government. Most of these schools were nationalized from missionaries and colonial masters while community schools are differentiated from the government schools in terms of community involvement. The community schools are created and constructed by the local communities but the government funds them. Private schools almost totally depend on school fees and contributions from student's parents to cover all capital costs (Kivenule, 2015). The majority of private schools in Tanzania are created by religious and other community organizations; there are few schools that are operated by individuals or groups of individuals as for-profit institutions.

After independence of Tanganyika in 1961, all secondary schools, which were owned by private parties, were nationalized to enable the government to have control on the expansion of secondary education. During that time more effort was put in primary education compared to secondary education (Cooksey, 1986). The socialist ideology of *education for self-reliance* adopted after independence in Tanzania was the major reason for less emphasis on secondary education. It believed that primary education was the only education level that could prepare people to work in their rural villages while secondary education creates classes in the society. As a result, the government directed financial efforts toward improving primary education rather than secondary education (Cooksey, 1986). More control of school was in the 1970s where the government puts restriction on the expansion of secondary education both public and private.

During 1980's there was a great change in governments' approach because the government realized that primary education did not succeed to make people stay in the rural areas instead people were moving to urban areas to look for better jobs. The economic depression experienced in 1980's had also acted as the catalyst toward expansion of secondary education (Masue, 2010). This was because the government had to open the way for economic liberalization. The liberated economy needed people with higher education. This made the government to realize that secondary education as well as higher education was important for the country's development. The door of private owners, which was closed in the 1960's - 70's was opened, private market now started to establish secondary schools.

More expansion of secondary education was much realized in 1990's – 2000's because of decentralization reforms that sought to delegate more powers to the grassroots level. Decentralization reforms had paved the way toward more expansion of secondary education due to its emphasis on local government and community participation in developing and managing secondary education. More expansion was also contributed by the pluralistic mode of governance, which allowed many actors to be involved to succeed in education issues (Masue, 2010).

The Secondary Education Development Program (SEDP) recognized as the major reform in secondary education, which has encouraged the practice of decentralization and community empowerment as well. The plan implemented in two phases where the first phase was 2004 - 2008 and the second phase was 2010 - 2015 (Maeda, 2015). The major aim of SEDP was to increase the expansion of secondary education, based on equity, access and quality. The essence of community participation was high in this plan as the community was involved in expanding secondary schools where the plan insists that every ward should have at least one secondary school built by community members. Here community members contribute in the building of the classrooms to the lintel level and the government takeover to complete the construction (Maeda, 2015). After completion the schools are maintained by Local government authorities, this plan was received well by the community and many schools have been built, the statistics show about 2,507 schools were built in the first phase of SEDP implementation 2004 - 2008 (URT, 2010).

The implementation of SEDP done through decentralization practice, which involves actors and institutions from central government, local government, community and non-governmental institutions (NGO's). In central government, SEDP was implemented under three ministries which, MoEST, PO-RALG and Ministry of Finance and Economic Affairs (MOFEA) (URT, 2010).

In the local government level, the SEDP plan was implemented by regional offices, district council and ward council and from the community level, the plan involve school boards who are appointed from the members of the community (Maeda, 2015).

Variables Associated with Dropout

Variables correlated with dropout are truancy, indiscipline, and academic performance (Rasmy et al., 2017), but a wide range of additional variables have been identified as being correlated with dropout, including factors from family support, engagement and student mobility (Mackey & Duncan, 2013).

Some scholars explains student dropout as results of educational policy/laws of a country. For example, in Africa laws and policies against pregnancy for students are divided into four. *First policies*, prevent pregnant student from continuing in education, this policy is practiced in countries such as Tanzania, Sierra Leona and Equatorial Guinea. *Second policies,* with national laws on pregnant girls and mothers' rights to education, this law is working in democratic republic of Congo, Nigeria and Benin. *Third policies,* with national laws on 'continuation with studies', are used in Rwanda, Gabon and Ivory coast and *fourth policies,* with national policies on 're-entry' that set out conditions for adolescent mothers to continues with study after birth. The policy is practiced in countries like Kenya, Malawi, Burundi and Botswana (Birchall, 2018).

Some countries use compulsory attendances laws to ensure all children under eighteen got equal chance of education. This has been found in countries like California which has community service (parents, child, or all), juvenile delinquency school, parent education, $1,000 fine (parents), Nevada has advisory board meeting, misdemeanor (parents), foster care (child), in New Mexico make restrictions in driver's license, provide social and rehabilitation service for a child, misdemeanor for (parents). However, in Tanzania, if a child is absent for consecutive 90 days, he/she will be expelled from school while parent, teacher and educational authoritative become innocent (Mackey & Duncan, 2013).

Researchers concluded that there is no single factor that can be held responsible for a student dropping out of school (Videnovic & Lazarevic, 2017). Therefore, this study aimed to identify various or combination of factors leading student dropout in secondary schools. This will enable the researchers to come up with appropriate solution to the problem.

Data Mining in Education Field

Since emerging of computer-assisted learning systems and automatic analysis of educational data, many efforts have been carried out by nations especially developed countries to enhance the learning experience for better outcome in education sector (Chatti et al., 2012). Learning analytics (LA) is considered as a great help to discover the hidden information and patterns from raw data collected from educational environments (Siemens, 2012). This is one of the reasons motivating researchers on raising awareness on LA, and stimulating the vital strengthening of its connections with data-driven research fields like Data Mining and Machine Learning for solving dropout problem of students in education sector.

Being able to predict if a student is at risk of dropout is potential for school administrations and educational authoritative to intervene and help those students to move forward. Prediction in data mining involves attributes in the dataset to find an unknown class of other attributes (Rosenthal, 2019).

A predictive system is a computer system that is constructed by using data mining techniques or artificial intelligence. There are various data mining techniques that have been developed and applied in different projects and systems, including classification, clustering, and association rules (Mitchell, 1997). This study employs classification algorithms in identifying models and features associated with student's dropout in secondary schools in Tabora region in Tanzania.

Classification in data mining refers as techniques of finding a set of models that describe and distinguish data classes on a given data set. It allocates items into target categories in a collection and then it puts the same set of features into a class. Therefore, classification algorithms is a special case of data mining that concerns with the process of predicting unknown attribute values from a given set of known attribute values (Mitchell, 1997; Larrañaga, Karshenas, Bielza, & Santana, 2013). The most popular classes of classification algorithms, include Bayes classifier, artificial neural networks, rule induction, decision trees and support vector machines, K-Nearest Neighbors, Genetic Algorithm and Random Forest are some of the classification methods used in data mining.

Random Forest builds a series, or "forest," of classification or regression trees that recursively partitions a group of explanatory variables in order to predict a categorical response such as dropout state by a student. It creates subset from the main dataset into training and testing set (Frank, 2005). The algorithm then form a tree starting with randomly selects a subset of predictors and searches for the predictor that best partitions the response variable in the training data set partitioning is based on identifying the predictor that minimizes either the within group variance (categorical response variable) or error when regressed against the response (continuous response variable) (Frank, 2005).

Boosting is a type of classification and regression algorithms that is most acceptable by researchers' due to their high predictive accuracy on a wide range of datasets. The idea of boosting came out of the impression of whether a weak learner can be modified to become better. Gradient boosting algorithm (GB) is the classification algorithm for developing predictive models (Sigrist, 2018). GB is made up of three elements which includes, a loss function, a weak learner to make predictions and an additive model to add weak learners to minimize the loss function. The importance of GB algorithm is act as boosting and generic algorithm, good for framework in differentiating loss function. (Aartsen et al.,2015).

This kind of classifiers involves around

a classic learning algorithm called k-Nearest-Neighbor (k-NN) which is based on the principle that the examples within a dataset will generally exist in close proximity with other examples that have similar properties. The main advantages of the k-NN-based classification method is its easiness and simplicity of implementation and the fact that it provides good generalization results during classification assigned to multiple categories (Sigrist, 2018).

In order to discover the root of dropout problem, the studies done by Seka (2012), Mosha (2014), Twaweza (2015), Rannveig (2016), Masamalo (2017b) and Birchall (2018) came up with recommendation based on treatment measures. Conversely, this study intends to come up with dropout prediction measures to reduce or completely remove the dropout problem in secondary schools since the magnitude of the problem to the particular student will be known in advance. The studies done by Frank (2005), Baker et al. (2010), Kemper (2018), Rosenthal (2019) focused on prediction of students dropout in higher schools, colleges and universities student. However, these studies lack predict time of student being at a point to drop school especially in ordinary secondary schools in Tanzania. Hence, the work of this paper is to deveop DPS_4SS that could identify time the student is likely to drop school given that student information was fed into the system since their first day to school.

RESEARCH METHODOLOGIES

Qualitative research aims to know a certain behaviors, opinions and expectations of the individuals in a population. It is experienced to answer questions such as what, how and why (Almeida, 2018). Quantitative research intends to assess and measure the behavior of the individuals of a certain group or population. It also attempts to investigate the answers to the questions starting with how many, how much, where, to what extent (Almalki, *et al,* 2016).

In this study, we use mixed method of data collection as we aimed to utilize the strengths of both methodologies (qualitative and quantitative) in finding deep insight about the cause of student dropout from schools. We employed an exploratory sequential mixed method to widely understand the causes of student dropout in secondary.

To achieve the objective of this study, ethnographic design as qualitative approach was used because it allows the researchers to get first-hand information about what people do and say in dropout problem in Tabora. The researchers arranged conversations with head of schools and educational leaders as well as read the documents produced by them. In this study, survey techniques were used to extract information from sampled students in Tabora, because the findings can be generalized to a whole population of Tabora region.

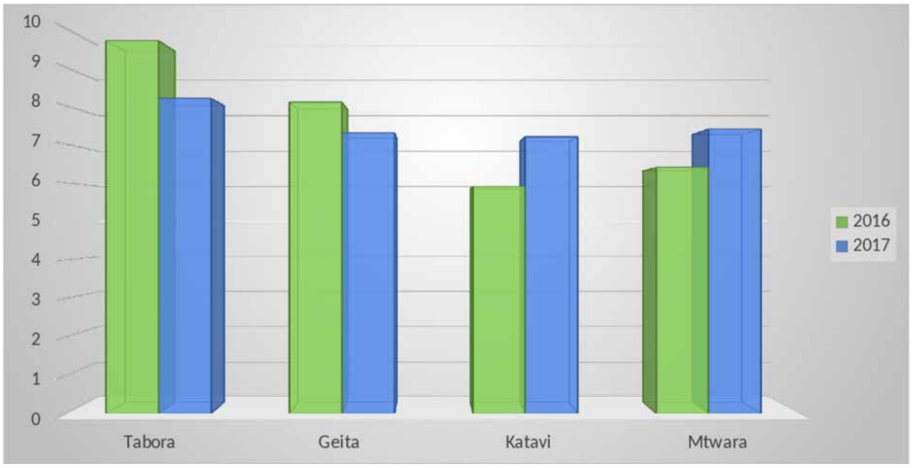
Area of the Study

There is unequal rate of student's dropout in secondary schools in Tanzania, they differ in districts, towns, and municipal as well as city councils. The report of BEST in two consecutive years of 2017 and 2018 shows that the middle - western zone made of Tabora, Katavi, and Geita had higher dropout rate compared to other zone in Tanzania. Tabora region also emerged to have more dropout rate in those two years as shown in Fig 3 This made the researchers to opt Tabora as case study.

Furthermore, BEST report shows the councils with high dropout rate in Tanzania includes Uyui, Nzega and Sikonge district Councils of Tabora region and Mbogwe councils of Geita region. This statistical data guides the researchers of this work to opt councils of Tabora. Accordingly, the researchers selected councils with high, middle and low dropout rate, which are Uyui district, Nzega district, Nzega town and Tabora municipal councils for data collection based on why most of students are leaving school before the intended time.

It has been reported by BEST that in 2017, there were 48,177 students in Tabora region (BEST, 2017). The sampled population were calculated using Yamane formula developed in 1967 (Singh, 2014), according to Yamane, for a 95% confidence level and sampling error 05, the required sample size, *n* can be calculated as

Figure 4. Regions with high dropout rate



$$n = \frac{N}{\left(1 + N \times (e)^2\right)}$$

Where:

N - The population size = 48,175 (students)
e - The acceptable sampling error = 0.05
* 95% confidence level = 0.05

Therefore:

$$n = \frac{48177}{\left(1 + 48177 \times (.05)^2\right)}$$

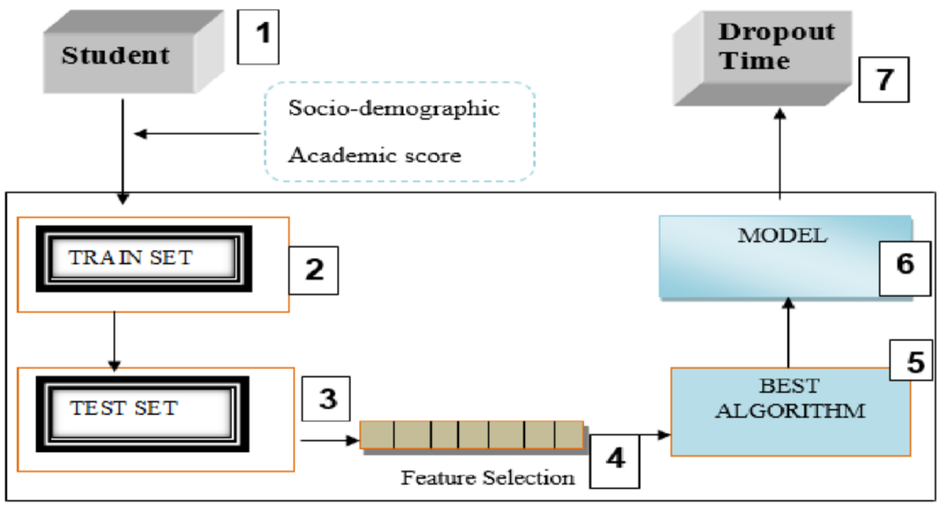
Where, level of precision is $\pm$5= 397
Therefore, the total sample size considered for the study was 397 students.

Data Source and Model Selection

The data were collected directly from the field of four councils in Tabora during the period of April to May 2019. The gathered information includes academic variables (average, English and mathematics scores) in annual test of standard four and six. Demographic variables (age, gender, class, parental education and parental job) and social variables (guardian, transport, distances, home, number of family members, dropout history in family, walking time to school). The data are then processed and analyzed as shown in the Figure 5.

Steps for Model Selection

Figure 5. Steps for model selection



The data entered into excel and loaded into python for analysis. The researchers were attempted to use data mining tools for data pre-processing analysis. The operations such as data cleaning, transformation of variables, data partitioning, and selection of attributes and re-balancing of data have been applied. Aimed to solve the problems of high dimensionality and imbalanced data that typically were present in the data sets. This process led the researchers to select the best features that contribute most output to the targeted class necessary for increasing the accuracy of the model. Advantages of feature selections is to improve accuracy, reducing over-fitting and reduce training time (Mitchell, 1997). In our work, we

Figure 6. Best 10 predictive features

	Specs	Score
2	Distances_to_school	53.466405
0	Time_used_to_school	46.501630
5	Math_score_std_IV	30.739154
6	English_score_std_IV	23.582178
8	Math_score_std_VI	21.927329
9	English_score_std_VI	17.514336
1	Guardian_living_with_student	15.733098
3	Student_resident	13.283254
4	Average_score_std_IV	11.901251
7	Average_score_std_VI	9.764064

Figure 7. Identified classifiers

	MODELS	F1 SCORE	SENSITIVITY	SPECIFICITY	BALANCE ACCURACY	FEATURES	STATUS
0	GradientBoosting Classifier	1.000	1.000	1.000	1.000	15	TRAIN
1	Random Forest	1.000	1.000	1.000	1.000	15	TRAIN
2	MLP Classifier	0.901	0.971	0.973	0.900	15	TRAIN
3	K-Nearest Neighbor	1.000	1.000	1.000	1.000	15	TRAIN
4	GaussianNB	0.772	0.971	0.929	0.776	15	TRAIN
5	Ensamble	1.000	1.000	1.000	1.000	15	TRAIN
6	GradientBoosting Classifier	0.879	1.000	1.000	0.826	15	TEST
7	Random Forest	0.855	1.000	0.833	0.855	15	TEST
8	MLP Classifier	0.780	0.900	0.833	0.741	15	TEST
9	K-Nearest Neighbor	0.840	1.000	1.000	0.781	15	TEST
10	GaussianNB	0.694	0.967	0.667	0.600	15	TEST
11	Ensamble	0.879	1.000	1.000	0.826	15	TEST

arranged the variables in ascending order to obtain the best features. The data was rearranged based on performance to the targeted variables as shown in Fig 6

We then set the baseline of 60% accuracy performance of algorithms in balance accuracy and F1_scores, hence those algorithms that had average below 60% were not considered any more as the results in Fig 7 shows.

Figure 8. Classifiers Accuracy Comparison

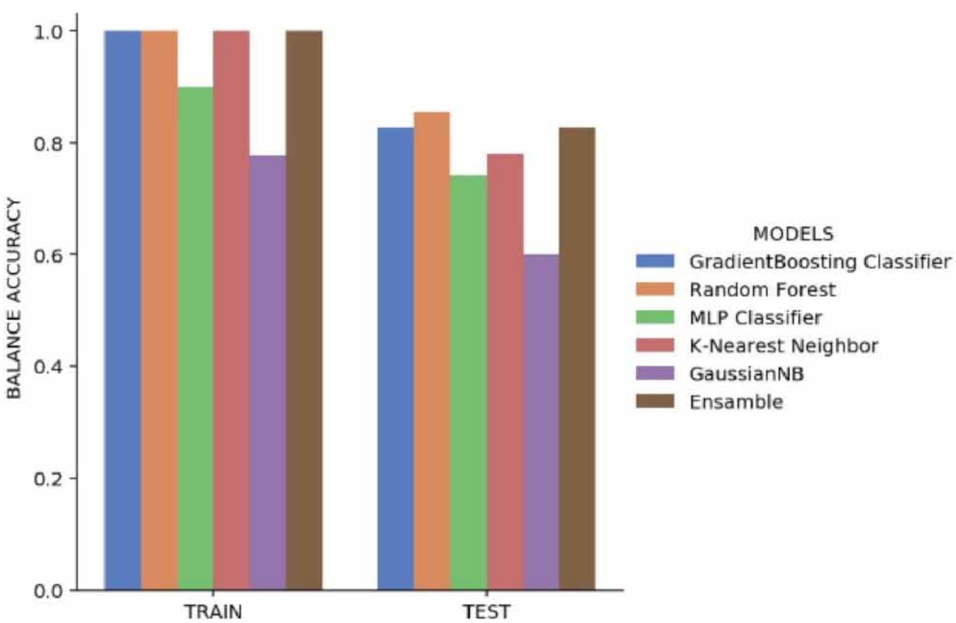


Figure 8 shows the performance results of algorithms by using balance accuracy and F1_scores. Random Forest appeared to have consistence results.

The comparisons of algorithms with 10 best features were made as presented in Fig 9 In this part, we concluded by saving RANDOM FOREST classifier as the best model for dropout prediction in secondary schools' students.

Web Development and System Installation

The DPS_4SS is built up by using Artificial Intelligent technology (AIT). The DPS_4SS contain user-interface, database and model. The mode fires the socio – demographic and academic data of students, and the results after execution are saved in database in which user can access through a computer at anytime and anywhere provided a web browser is available, as shown in Fig 9

Testing Results of the Tools in a Computer

The tools for our system include My SQL database, python 3, Microsoft office and web browser in server side and Microsoft excel and web browser for client side.

The DPS_4SS was tested by using student information which was entered into the excel file as shown in Fig 7 The file was saved as "*Testing*" and then loaded into the DPS_4SS as shown in Fig 8

Figure 9. Tested data for prediction

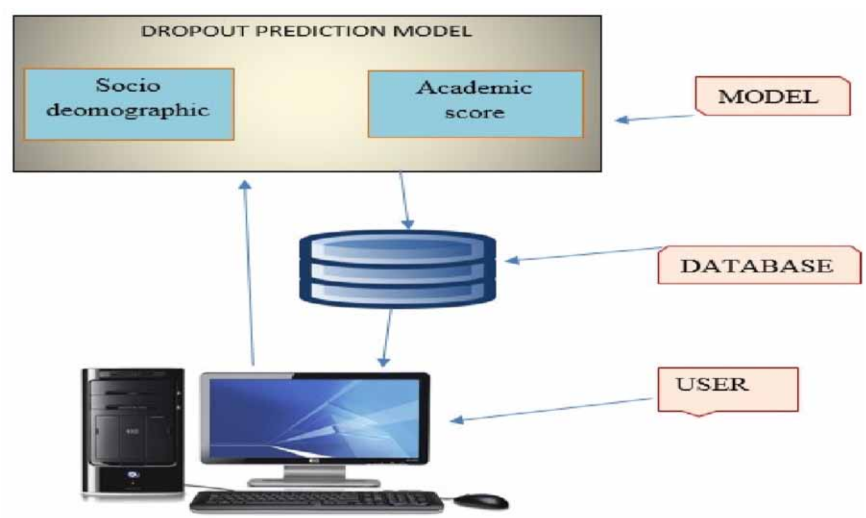


Fig 9 shows the uploaded file known as "Testing". The file is then submitted by clicking submit button in the right corner of the screen. The information first entered into the model after execution is saved into the database, in which the user can access the information at anytime and anywhere. The results of submitted file is as shown in fig 11 and 12.

Figure 10. Loaded page outlook

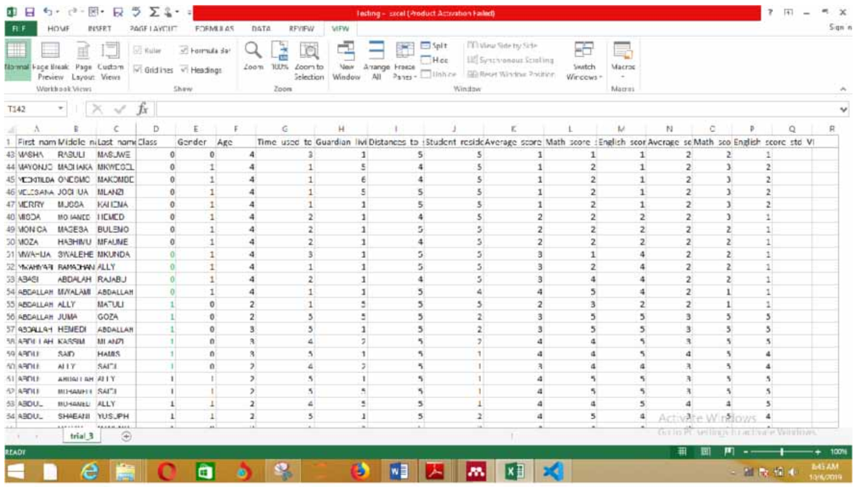


Fig 11 and 12 shows the results of the study as well as the results of the system. The system predicts

Figure 11. Top outlook of the DPS$_4$SS and its results after prediction

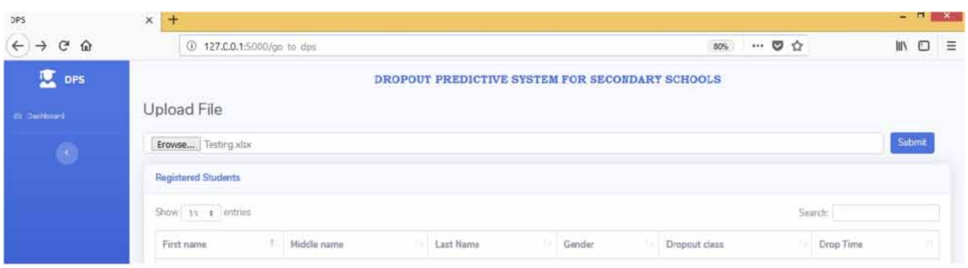
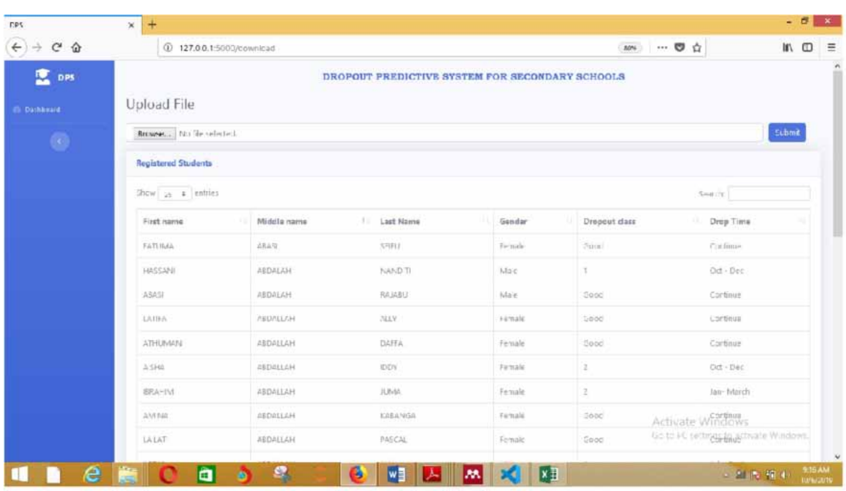


Figure 12. Bottom outlook of the DPS$_4$SS and its results after prediction



the time the student is likely to drop school by showing month in groups. It also shows as those students who are likely to complete school by indicating continue.

CONCLUSION

The study identified two factors leading student's dropout in secondary schools in Tabora, namely social and academic factors. Social factors are distance from home to school, time used by students to school, type of guardian living with students and student's residents. The academic factors include performance scores obtained by a student during their standard four and six in primary school. These factors are saved in a model that can be used to identify a new registered student.

The study identified Random Forest classifier as the best model for dropout prediction in secondary schools. We therefore, dropout predictive system for secondary schools (DPS_4SS) were developed using the Random Forest model. The core function of our system is to predict student's school dropout time so as appropriate measures may be taken to make a student continue with studies.

The developed dropout predictive system for secondary schools can help predict school dropout not only in Tanzania but also in other countries having similar geographical conditions to Tanzania.

From conversation with head of schools and education leaders in Tabora region, the researchers were observed disciplinary cases leading students with draw from schools. Such cases includes; absentees consecutive 90 days, pregnant and commitment letter wrote by students. The school administrative expel those students with such problems. The situations leading the researchers to review child rights and observed some of contradiction between school rules and rights of children.

RECOMMENDATIONS AND FUTURE WORK

The study *first* recommends the uses of dropout predictive system for secondary schools in Tanzania. *Secondly* the education authoritative in Tanzania should collaborate with other education stakeholders to review the school rules and rights of children to remove the existing legal disparity.

Since the findings were generated from only public secondary schools, future work may focus on private secondary schools dropout to see whether the same factors observed in public secondary schools apply to dropout rate in private schools.

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Chapter 23
Prison Education for Industrialisation:
Killing Two Birds With a Single Stone

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ABSTRACT

This qualitative study explores how prison education can provide necessary work skills to prisoners to enable them to become employable, and hence reduce recidivism rates. The chapter addresses two research questions: What is the link between prison education and industrialisation? and How relevant is prison education in reducing recidivism among the Tanzanian prisoners? The data were collected through documentary analysis. The findings suggest that there is a close relationship between prison education and industrialization. The chapter also suggests that prison education is a relevant approach in reducing recidivism rates among prisoners. This chapter argues that providing prisoners with relevant educational programmes might equip them with proper skills to become productive in society, and hence become employable after their release. Thus, giving prisoners a chance to education is like killing two birds with a single stone – developing a skilled labour force for industrial development and reducing recidivism rates.

INTRODUCTION

In legal terms, crimes are regarded as acts which are forbidden by law; hence a person can be imprisoned and/or fined for that act (Schiller, Black, & Murphy, 2012). Prisons (worldwide) have the aim to reduce crime. However, Recidivism remains the main challenge facing prison systems (worldwide). *Recidivism*, is a "subsequent offending by a person who has been convicted of a prior offence" (Carcach & Leverett, 1999, p. 2).

Criminology scholars have developed various theories which explain causes of crime and recidivism. The biological, psychological, and sociological perspectives have been the most quoted theories which

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describe causes of crime (Siegel, 2010, 2012). Since this is not a criminology chapter, it will explain only the socioeconomic causes of crime because they are more relevant to this project. This study explores prison education, and success in education is partly explained by the socioeconomic status among people. Also, most scholars (Thornberry & Farnworth, 1982; Weatherburn, 2001; Webster & Kingston, 2014) suggested that 'low socioeconomic status' was greatly associated with criminality.

Studies suggest that *low socio-economic* status of individuals is a leading cause of many reported crimes. Scholars link criminal behaviours with ethnicity, language, and social class (education and socioeconomic levels). It is assumed that social disparities among people contribute to criminal behaviours (Siegel, 2010, 2012; Weatherburn, 2001; Zahn, 1997). According to Msoroka (2018), "the likelihood of offending becomes higher when individuals are poor and feel that they have nothing to lose, especially the jobless and lowly educated individuals" (p. 41). Rivera (1995) maintains that "crime stems not only from individual failures, but also from social factors: a combination of poverty, economic underdevelopment, displaced unskilled workers, discrimination, and a host of other factors which cause despair and learned helplessness" (p. 159). Hence, it is argued here that socio-economic factors have great contribution in one's offending behaviour.

In most countries, government policies propose severe penalties with an assumption that it may help to reduce crime and recidivism (O'Connor, 2017; Whitaker, 2016). Consequently, longer sentences are found to be common in many countries as an effort to discourage crime (Faulkner, 2010; Nyoka, 2013). For instance, out of 16,503 convicted Tanzanian adult offenders, 9,632 have served to more than four years (The United Republic of Tanzania, 2017). However, studies suggest that longer sentences and hard labour in prisons are not the perfect tools to address criminality behaviour. Studies suggest that first-time offenders may meet with experienced offenders in prisons, who may teach them effective offending techniques and become more active when released (Cullen, Jonson, & Nagin, 2011). As stated earlier, most prisoners have low/no education and backgrounds of unemployment (Klein, Tolbert, Bugarin, Cataldi, & Tauschek, 2004; The United Nations Office on Drugs and Crime, 2012; The United Republic of Tanzania, 2014). Thus, long-term training from more experienced offenders may be used by first-time offenders as an opportunity to become professional offenders, hence reducing the possiblity of prisoner's rehabilitation.

Literature suggests that the above mentioned conditions (poor education and unemployment) are among the main sources of crime and recidivism. When ex-prisoners "return to their original offending environment, they are subjected to the same offending conditions, for instance, being jobless; consequently, they are more likely to end up in reoffending" (Msoroka, 2018, p. 44). The failure of punitive view of imprisonment is manifested by high recidivism rates in most countries. For instance, Langan and Levin (2002) have reported a recidivism rate of 67.5% in the USA. In Tanzania, there is no proper study that addressed the issue of recidivism, however, 47% is the most quoted reoffending rates in the country (Inmate Rehabilitation and Welfare Services Tanzania, 2014).

Studies hold that Tanzanian ex-prisoners are not different when it comes to unemployment; they are reported to face difficulties in obtaining legitimate employment (Shadrack, 2019). From this point of view, one can argue that prisons have failed to address crime and recidivism. Hence, the current paper argues, while most prisoners have low education with no work skills (UNESCO, 2007), the prison education can equip them with necessary skills for industrialisation, and hence, "break the offending cycle" (Msoroka, 2018, p. 42). It is believed that prison education can improve prisoner's opportunity for post-release employment (Callan & Gardner, 2007; Graffam & Hardcastle, 2007). Consequently, it can be a contributing factor to poverty reduction (Preece, 2006; Van der Veen & Preece, 2011). With prison education, prisoners may also be equipped with relevant community values and behaviour, which may be useful in their efforts to reintegrate into the community smoothly. Consequently, it may be a contributing factor to the reduction of criminality (Msoroka, 2018).

METHODOLOGY

This is a qualitative study, which has employed a discourse analysis approach. Discourse analysis is "an epistemology" (Phillips & Hardy, 2002, p. 3) that describes how a particular phenomenon is understood in a specific context, and between members of a particular group or individuals (Kamenarac, 2019). The discourse analysis is relevant to this study because the arguments which form this chapter are basically from document analysis. The main purpose of this study was to investigate how prison education could be beneficial to Tanzanians and the whole of African continent in this industrialisation era. As a result, the study addresses two key questions: (1) What is the link between prison education and industrialisation? (2) How relevant prison education is, in reducing recidivism among the Tanzanian prisoners?

Qualitative studies do not require a specific sample size or cases for representation; always, specific needs of a particular study determine the type of sample and sample size. The researcher usually makes a decision on suitable cases/participants who may provide relevant information (Creswell, 2007). Based on this argument, the researcher of this research project did not have a specific number of documents to review, instead, he collected relevant literature and reviewed them until he was satisfied. The literature included the documents related to prison education and those related to industrialisation, including national policies on industrialisation. The researcher prepared a checklist which helped to make sure that all the information that he needed was accessed. The researcher read the articles, policies, and any other related document; he recorded all relevant information that he thought could help in this study. The checklist assisted the researcher to remain focused. Eventually, a total of 65 documents, including the journal articles, theses, policies, research reports, and books, were reviewed. During the data analysis process, he conducted multiple readings of the raw data while making close examinations of the texts and interpreted them. The analysis process was guided by the research questions of this study, which helped the researcher to "maintain a critical lens when re-reading and analysing key pieces of data related to the central research phenomena" (Kamenarac, 2019, p. 108). Consequently, themes and subthemes which form headings and subheadings of this chapter organically emerged from the text (Creswell, 2003; McMillan & Schumacher, 1993).

THEORETICAL FRAMEWORK

This study was guided by the 'human capital perspectives' propounded by Theodore Schultz in 1960s (Schultz, 1971). According to human capital theory, the knowledge and skills that an individual acquires is a 'capital'. The human capital perspective believes that an education is a productive investment that profits individuals and the society as a whole (Forojalla, 1993; Schultz, 1961). Education can, improve learners' quality of life; it may also improve individual learner's skills and efficiency in production. This theory suggests that there is a relationship between the advancement of workers' education, an increase of workers' productivity, and earnings. The assumption is that education and training enables a person to gain work skills, attitudes, and knowledge, which in this case, are recognised as employee's assets s/he brings with in an organisation (Msoroka, 2018; Preece, 2006; Schultz, 1961). It is believed that "the higher the education a person gains, the more s/he becomes employable, and the more s/he earns (Msoroka, 2018, p. 47). Oranizations benefit from these skilled individuals by their ability to improve organizations' production.

This theory is not free from weaknesses. Scholars such as Forojalla (1993) have argued that human capital theory ignored other factors such as job satisfaction and reward structure which have equal contribution to worker's productivity as that of education. Some other scholars have also opined that education has been creating jobless people, instead of creating better job opportunities (Mlekwa, 1979), as currently, many graduates are in the streets looking for employment. Despite these weaknesses, the contribution of human capital theory in production cannot be ignored. For this reason, it is argued here that improving educational qualifications for prisoners may create a possibility of employment opportunities (for them), when they get released. This may subsequently result in poverty reducation and sustainable socioeconomic development of ex-prisoners and the community in general; it may help to reduce recidivism behaviour among prisoners; hence human capital theory becomes relevant to this study.

Industrialisation in Tanzania: The Policy Trends

Industrial development (worldwide) is usually guided by the policies of a particular country. With the Arusha Declaration (1967), Tanzania tried to develop a socialist country. As a result, private industries were nationalised to ensure all means of production were under the state (Darkoh, 1984; Ngowi, 2007); new public industries were introduced as well. Following the Structural Adjustment Policies (SAPs) and the economic depression in the 1980s, Tanzania moved to a liberal economy which supported private sector economy. Consequently, in the 1990s, most public industries were privatised. Currently, the Sustainable Industries Development Policy (SIDP), the Tanzania Development Vision 2025, the National Strategy for Growth and Reduction of Poverty (NSGRP), and the Tanzania Five Year Development Plan (NFYDP II) 2016/17 – 2020/21 guide the industrial sector in Tanzania (Ndalichako, n.d; The United Republic of Tanzania, 1996).

As an industrial sector policy, the SIDP articulates the importance of human resource development, suggesting the necessity of education for the industrial development (The United Republic of Tanzania, 1996). The Tanzania Vision 2025 explains the ambition of Tanzania to become an industrialised and middle-income country. This suggests the need to develop human resource of high-quality skills to sustain the industrial growth (Ndalichako, n.d). It is noteworthy that, whether industries are managed by the private sector or by the public, skilled labour force remains an engine for the maximum production and profit-making; this is a reflection of human capital perspectives in the industrial sector (Schultz, 1961). Hence, this chapter holds that the development of industrial sector is influenced by knowledge and skill development of the sorounding population.

Since the 5th phase Tanzanian government came into power (2015), industrial development became one of its main priorities. This was very clear in the President's speech when inaugurating the parliament, in 2015. The president insisted that the 5th phase government will prioritise on industrial development as a means to achieve a sustainable development. The intention is to develop Tanzania into a middle-income country by 2025, as proposed by Vision 2025 (The United Republic of Tanzania, 2015). Since then, a lot has been done to stimulate the industrial growth. For instance, the inauguration of Rufiji hydropower project, the extension of Kinyerezi power plant, the improvement of transportation infrastructures such as roads and the construction of standard gauge railway (SGR) indicate the seriousness of the government towards industrialisation and economic development. These infrastructures are like bloodversals for industrial development.

Also, it has been observed that several new industries have been introduced since 2015. Such industries include the Bakhresa Food Products Limited (Mkuranga), Mlale Milling (Songea), Galaxy Foods and Beverage, Kilimanjaro Fresh, Kilimanjaro Cement (Tanga), Prince Pharmaceutical (Mwanza), and the 21st Century Food and Packaging (Dar es Salaam). All these efforts are arguably the indicators that Tanzania, as a country, has been trying hard to invest in industrial development.

Education and Industrialisation

Literature argues that skilled labour force and the integration of science and technology are among the main drivers of industrial development (Martorano, Sanfilippo, & Haraguchi, 2017; Ndalichako, n.d). This argument suggests that there is a close link between education and industrialisation. This is due to the fact that education is the main engine in developing skilled labour force; it also enables one to develop and apply science and technology. The author of this chapter is aware that in Tanzania there are a few innovative individuals with low education. Such individuals include Mr John Fute (Mzee Pwagu) and Mr Jairos Ngairo (from Njombe) who have developed hydropower plants that produce electricity, which serve their villages. These people have primary school education level (Azamnews, 2018). However, this study notes that the two cases above are special; they cannot be used to justify irrelevance of education in innovation.

Reports suggest that industrial development in Tanzania faces the challenge of poor education. For a long time, the industrial sector in Tanzania is said to have a poor quality labour force with insufficient technical and managerial skills (The United Republic of Tanzania, 1996).

We are still constrained by limited capacity to provide the necessary inputs for an effective teaching and learning in our institutions. There is a need for an expansion and modernization of our training institutions to match with the requirements of the current technology. Equally important, there is an urgent need to re-balance both the number and skills relevance at all levels of education. (Ndalichako, n.d, p. 2)

It is reported that by 2017, at least 18% of the Tanzanian workforce was completely illiterate (Trading Economics, 2019). Recent data suggest that 40% of firms in Tanzania are having inadequate skilled labour force; this is one of the main constraints on productivity in many sectors, including the industrial sector (Ndalichako, n.d). Scholars with human capital perspective agree that the more the workers are educated and having higher working skills, the more productive they become (Lundgreen, 1975; Msoroka, 2011, 2018; Schultz, 1961). Arguably, this could be one of the reasons for the government's high investment in education for all levels – primary, secondary, and tertiary education. The government's "intention is to improve the quality of education at all levels, strengthen vocational and technical training and create employment, particularly through industrialisation" (Ndalichako, n.d, p. 1).

Prison Education in Tanzania: The context

Prison education, internationally, is embraced by the United Nations Standard Minimum Rules for the Treatment of Prisoners (the Nelson Mandela Rules) approved by the United Nations Congress in 1955. The rules were revised and accepted by the UN General Assembly in 2016 (UN, 2016). Rule Number 4(2) in the revised document states: "prison administrations and other competent authorities should offer education, vocational training, and work, as well as other forms of assistance that are appropriate"

(UN, 2016, p. 8). The Nelson Mandela Rules consider prison education as a means to reduce reoffending (UN, 2016), and calls for the integration of prison education into educational systems of the member countries (UN, 1977, 2016). Rule Number 104(2) in the current document states: "So far as practicable, the education of prisoners shall be integrated with the educational system of the country so that after their release they may continue with their education without difficulty" (UN, 2016, p. 30).

In Tanzania, the education for prisoners is not stated in the Prison Act, hence, it cannot be considered as aright to prisoners (The United Republic of Tanzania, 1967). The only available document that guides prison education in Tanzania is the Prison Education Guide (The United Republic of Tanzania, 2011). However, this study notes that the Prison Education Guide is not a legal document; it does not make prison education compulsory to prisoners. The document leaves a room for heads of prisons to decide the possibility of offering education to prisoners. Arguably, heads of prisons who allow their prisons to offer some kind of education to prisoners, do so on their own will. No one can question the heads of prisons who do not offer such an opportunity to prisoners. As a result, a few prisons (in Tanzania) offer prison education opportunities; only a small number of prisoners have an access to prison education (Msoroka, 2018).

Although the Nelson Mandela Rules call for prison education to be integrated with educational systems of the member countries, literature suggests that most educational programmes in Tanzanian prisons are not integrated with the educational systems of the country (Msoroka, 2018). Most programmes are disorganised (do not follow any recognised curriculum) and hence are not recognised by educational authorities. Consequently, most prisoners are not awarded recognised certificates (Msamada, 2013; Msoroka, 2018). Very few prisons offer educational programmes which lead to recognised certificates. Such prisons include the Youth Prison, where prisoners undertake primary school education and/or vocational training recognised by VETA (Msoroka, 2018), and Luanda prison, where some prisoners undertake vocational training recognised by VETA (Mboje, 2013). This study suggests that the situation of having a low chance to be awarded recognised certificates discourages some prisoners to undertake the available programmes, because most of them would like to justify and use their educational qualifications when they get released. With no such possibility, they find no reason to attend prison education classes (Msoroka, 2018).

Literature suggests that prisons which offer prison education mostly provide literacy education, vocational training, and general education (post-literacy education) (Mboje, 2013; Msamada, 2013; Msoroka, 2018). As discussed earlier, education and training are appropriate tools for industrial development (Ndalichako, n.d). In 2017 the United Nations Industrial Development Organization developed the skills policy instruments for industrial development in low and middle income countries. This policy considers vocational training as a "practical and cost effective way to meet the demand for industrial skills" (UNIDO, 2017, p. 15). The usefulness of vocational training for industial sector has also been mentioned by Okafor (2011) and Mboje (2013). Hence, this chapter holds that the education provided in some prisons as mentioned above, especially the vocational training, is more relevant in the industrial sector.

However, it is noted that institutions (prisons) which offer prison education in Tanzania are mainly facing a challenge of shortage of resources. Basically, prisons (in Tanzania) are regarded as punishment centres; prisoners are expected to be punished so that they can learn from their mistakes (Msoroka, 2018; Nyoka, 2013). This view ignores the fact that punitive approach to imprisonment has failed to address crime and recidivism (Cullen et al., 2011; Frederick & Roy, 2003; Kemp & Johnson, 2003; Scott & Flynn, 2014).

As a result of the punitive view to imprisonment, Tanzanian prisons are not allocated with sufficient funds for prison education. Consequently, there is a lot of complaints about the shortage of teaching and learning materials in prisons, which could support prisoners to undertake prison education. Prisoners lack writing materials (notebooks and pens), chalks, and books (Mboje, 2013; Msamada, 2013; Msoroka, 2018). Most prisons are reported to have no rooms for classes; learning activities are carried outside with no chairs and tables (learners sit on the ground). The learning spaces do not have roofs. Consequently, usually the sun and rain tend interfere the teaching and learning activities.

Except for the youth prison, most educational programmes in Tanzanian prisons are not taught by professionals; prisoners with higher qualifications tend to teach their fellow inmates (Msamada, 2013; Msoroka, 2018). Msoroka (2018) believes that the use of inmate-teachers in most prisons is triggered by the shortage resources to manage the prison education programmes. As suggested by the Prison Education Guide, the best way to deal with such challenges is to invite other stakeholders to assist the provision (The United Republic of Tanzania, 2011). This study holds that the learning institutions and Non-Governmental Organisations (NGOs) can contribute to these programmes if invited. However, one thing can be seen as an obstacle towards the involvement of other stakeholders from outside prison system; Tanzanian prisons seem to be *total institutions*[1] (Amundsen, Msoroka, & Findsen, 2017). Very little is known by the society about prison education in Tanzania. For being total institutions, outsiders may find it difficult to work with prisons.

Education, Industrialisation, and Recidivism: The Need to Improve Prison Education

This chapter has discussed the link between education and industrialisation, and a bit connection between education and crime/recidivism. This section brings together the three key concepts discussed throughout this chapter to show the importance of prison education for both industrialisation and addressing recidivism. Prison education, in this case, is referred to any activity that equips prisoners with specific knowledge/skills, regardless of whether it is a general or vocational form of (adult) education (Msoroka, 2018).

Criminology scholars agree that prisons serve "as punishment, as deterrence for the offender or other potential offenders, as a rehabilitative measure for incapacitated persons, and as a prevention from the commission of other crimes being committed by the offender" (Kemp & Johnson, 2003, p. 11). Before the 19th century, the 'conservative' philosophy was central to imprisonment. This philosophy assumed that people rationally choose to become criminals, hence, they deserve punishment. By making a prison life uncomfortable and painful, people are expected to avoid committing crimes (Pollock, 2014). With the conservative philosophy, prisons are geared to punish offenders in order to teach criminals and other members of the society the bitter side of crime (Kemp & Johnson, 2003; Stohr & Walsh, 2012). The assumption is that people would learn the consequences of crime and hence would avoid crime.

However, studies suggest that the 'conservative' approaches have failed to address crime and recidivism. Despite the existence of harsh punishments in prisons, criminality has been increasing worldwide (Chen & Shapiro, 2007). Recently, scholars and prison authorities have been using 'liberal' approaches to imprisonment (Pollock, 2014). These approaches use rehabilitation programmes to change prisoners' behaviours. Liberal approaches teach prisoners work skills, give prisoners an opportunity to education, and treat drug-addicted prisoners (Cullen et al., 2011; Kemp & Johnson, 2003; Pollock, 2014; The United Nations Office on Drugs and Crime, 2012).

Liberal approaches are expected to help prisoners break a reoffending cycle. Education and rehabilitation – as a function of prisons – is common and considered successful in liberal societies. Norway is an example of the successful countries; it has the lowest reoffending rates in the world (20%) (Butorac, Gracin, & Stanić, 2017). One of the reasons for Norway's success is their continuous efforts to provide all prisoners a chance to education (Manger, Eikeland, & Diseth, 2009). Though, it should be noted that many prisons, especially in developing countries, prefer conservative approaches to imprisonment. It is argued here that this preference for conservative approaches is influenced by society's attitude and lack of knowledge regarding the best approaches to rehabilitation (Msoroka, 2018). One may associate the Tanzanian high recidivism rates (47%) with a lack of relevant rehabilitation programmes in prisons.

In New Zealand, prisoners are given a chance to undertake educational programmes of their choice. They can climb educational ladder up to tertiary level (Department of Corrections, n.d.; Msoroka, 2018). Having the relevant knowledge and skills, prisoners are given a chance to work inside prisons – maintenance, cleaning, and cooking – and in different industries outside of prisons (Department of Corrections, 2001; Moses & Smith, 2007). With such opportunity to work, inmates "gain additional payment (apart from their normal subsistence allowance)" (Msoroka, 2018, p. 208). Arguably, this kind of opportunity is a bridge towards after-release employment, which is a key to the reduction of recidivism (Gillis, Motiuk, & Belcourt, 1998; Moses & Smith, 2007). At the same time, the industrial sector benefits by having skilled labour force, who can icrease labour production.

CONCLUSION AND RECOMMENDATIONS

The two birds discussed in this chapter, *prison education for industrialisation: killing two birds with a single stone*, are the industrial development and a reduction of recidivism rates. The study addressed two research questions: What is the link between prison education and industrialisation? (2) How relevant prison education is, in reducing recidivism among the Tanzanian prisoners? This study suggests that there is a close link between prison education and industrialization. It also suggests that the provision of prison education is a relevant approach in reducing recidivism rates.

With supporting evidence from the literature, it is argued (in this chapter) that education is key to two themes discussed in this chapter – industrial development and reduction of recidivism. It has been argued in this chapter that industrial development is supported by skilled labour force and innovative individuals, who work in the industrial sector. Without these people (skilled labour force and innovative individuals) the industrial development in Tanzania may not be as successful as we would like it to be. It is noteworthy that the skilled labour force and innovative individuals can be developed by the provision of relevant educational programmes. Hence, education, as a capital, is directly linked to the industrial development (Schultz, 1961).

One of the argument in this chapter is that the socioeconomic environment has a significant influence on prisoners' reoffending behaviour. Most prisoners are being repoted to having low education, no/low work skills, and poor (Msoroka, 2018; UNESCO, 2007). This study notes that the reduction of recidivism among prisoners may be influenced by prison education. Education to offenders may equip them with relevant knowledge and skills, which may be useful to them when rejoining society (after release). For instance, having the general knowledge and work skills gained in a prison, an ex-prisoner can be in a position to start self-project or find formal employment from a private sector, including in industries – a reflection of human capital perspective (Forojalla, 1993; Schultz, 1961). Prison education, at this point, also plays a social justice role in two ways: giving an access to education to prisoners, and offering the possibility for prisoners to be involved in the industrial economy of the country when they get released (Jost & Kay, 2010; Msoroka, 2018; Oduaran, 2006). It can be argued that ex-prisoners will add up a number of skilled labour force in the country. With such possibility, ex-prisoners will find something positive to engage in, rather than getting back into the crime cycle. For this reason, one can argue that prison education is among the ways to empower prisoners to fight against poverty and reduce recidivism (Msoroka, 2018; Preece, 2006; Van der Veen & Preece, 2011); this is arguably a death of two birds from a single stone.

As discussed previously, the Tanzanian prison context is not friendly for prison education; prisons do not have enough resources to manage prison education (Mboje, 2013; Msamada, 2013). Since prison education is regarded (by this research) as vital, this study urges Tanzanian and African prisons (in general) to provide inmates with educational opportunities and skills, which might help them to change. It is clear in this paper that, with the meagre ministerial budget set for the prison department (Msoroka, 2018), it is difficult for the Tanzanian prisons to offer an adequate prison education programmes. Perhaps, the same challenge is facing other African prisons (Sarkin, 2008). For this reason, this study calls for the Tanzania Prisons Service (TPS) and other African prisons to involve other stakeholders (be it educational institutions, NGOs, individuals, or other ministries and departments) in the provision of prison education.

FUTURE RESEARCH DIRECTIONS

This qualitative research explored how prison education can address two key issues, making offenders employable in industries and reducing recidivism rates. With such an approach and the focus of this study, this chapter suggests other potential areas to be explored. One possible research area is a trasser study to explore the employability of ex-offenders who went through the prison education while serving their prison sentences. This study will provide a broad understanding on the relevance of training courses offered in prisons, in the actual world, outside of prison walls. Also, a future quantitative study is needed to explore whether and how the current findings is a representation of prison education contexts within and beyond Tanzania.

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KEY TERMS AND DEFINITIONS

General Education: Educational programmes designed to improve prisoners' personal and general knowledge. It includes post-literacy courses offered in prisons, but excluding tertiary education and vocational training.

Literacy Education: Educational programmes which enable individual prisoners to gain the (3Rs) reading, writing, and counting (numeracy) skills in Kiswahili (the national language of Tanzania)

Prison Education: Any activity/training which intends to provide prisoners with specific knowledge/skills.

Recidivism: An act of repeating crimes.

Rehabilitation: Processes which enable offenders to readapt into society after serving their prison sentences.

Total Institution: Organisations which are closed in nature; they restrict outsiders' access and isolate their members from society.

Vocational Training: Programmes which train prisoners for a specific career or trade, but excluding professions related to academic.

ENDNOTE

1 Restricted institutions that isolate their members from the society, and restrict access to outsiders.

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