

Premier Reference Source

Innovative Strategic Planning and International Collaboration for the Mitigation of Global Crises



Gabriela Antošová

IGI Global
PUBLISHER OF TIMELY KNOWLEDGE

Innovative Strategic Planning and International Collaboration for the Mitigation of Global Crises

Gabriela Antořová
University College of Business in Prague, Czech Republic



A volume in the Practice, Progress, and
Proficiency in Sustainability (PPPS) Book Series

Published in the United States of America by

IGI Global
Information Science Reference (an imprint of IGI Global)
701 E. Chocolate Avenue
Hershey PA, USA 17033
Tel: 717-533-8845
Fax: 717-533-8661
E-mail: cust@igi-global.com
Web site: <http://www.igi-global.com>

Copyright © 2022 by IGI Global. All rights reserved. No part of this publication may be reproduced, stored or distributed in any form or by any means, electronic or mechanical, including photocopying, without written permission from the publisher. Product or company names used in this set are for identification purposes only. Inclusion of the names of the products or companies does not indicate a claim of ownership by IGI Global of the trademark or registered trademark.

Library of Congress Cataloging-in-Publication Data

Names: Antošová, Gabriela, 1983- editor.

Title: Innovative strategic planning and international collaboration for the mitigation of global crises / Gabriela Antošová, editor.

Description: Hershey, PA : Information Science Reference, [2022] | Includes bibliographical references and index. | Summary: "This book is for professionals and academic researchers findings in the field of international strategic management to improve their understanding of the innovative, strategic planning at different levels of the multidisciplinary context of globalization, internationalization, education, tourism, aviation, digitalization, regional economics and statistics, management and marketing, religion, public policy and society"-- Provided by publisher.

Identifiers: LCCN 2021031867 (print) | LCCN 2021031868 (ebook) | ISBN 9781799883395 (hardcover) | ISBN 9781799883401 (paperback) | ISBN 9781799883418 (ebook)

Subjects: LCSH: Crisis management. | Strategic planning.

Classification: LCC HD49 .I55 2022 (print) | LCC HD49 (ebook) | DDC 658.4/056--dc23

LC record available at <https://lccn.loc.gov/2021031867>

LC ebook record available at <https://lccn.loc.gov/2021031868>

This book is published in the IGI Global book series Practice, Progress, and Proficiency in Sustainability (PPPS) (ISSN: 2330-3271; eISSN: 2330-328X)

British Cataloguing in Publication Data

A Cataloguing in Publication record for this book is available from the British Library.

All work contributed to this book is new, previously-unpublished material. The views expressed in this book are those of the authors, but not necessarily of the publisher.

For electronic access to this publication, please contact: eresources@igi-global.com.



Practice, Progress, and Proficiency in Sustainability (PPPS) Book Series

Ayman Batisha
International Sustainability Institute, Egypt

ISSN:2330-3271
EISSN:2330-328X

MISSION

In a world where traditional business practices are reconsidered and economic activity is performed in a global context, new areas of economic developments are recognized as the key enablers of wealth and income production. This knowledge of information technologies provides infrastructures, systems, and services towards sustainable development.

The **Practices, Progress, and Proficiency in Sustainability (PPPS) Book Series** focuses on the local and global challenges, business opportunities, and societal needs surrounding international collaboration and sustainable development of technology. This series brings together academics, researchers, entrepreneurs, policy makers and government officers aiming to contribute to the progress and proficiency in sustainability.

COVERAGE

- Strategic Management of IT
- Global Content and Knowledge Repositories
- Environmental informatics
- Technological learning
- Socio-Economic
- Sustainable Development
- ICT and knowledge for development
- E-Development
- Green Technology
- Knowledge clusters

IGI Global is currently accepting manuscripts for publication within this series. To submit a proposal for a volume in this series, please contact our Acquisition Editors at Acquisitions@igi-global.com or visit: <http://www.igi-global.com/publish/>.

The Practice, Progress, and Proficiency in Sustainability (PPPS) Book Series (ISSN 2330-3271) is published by IGI Global, 701 E. Chocolate Avenue, Hershey, PA 17033-1240, USA, www.igi-global.com. This series is composed of titles available for purchase individually; each title is edited to be contextually exclusive from any other title within the series. For pricing and ordering information please visit <http://www.igi-global.com/book-series/practice-progress-proficiency-sustainability/73810>. Postmaster: Send all address changes to above address. Copyright © 2022 IGI Global. All rights, including translation in other languages reserved by the publisher. No part of this series may be reproduced or used in any form or by any means – graphics, electronic, or mechanical, including photocopying, recording, taping, or information and retrieval systems – without written permission from the publisher, except for non commercial, educational use, including classroom teaching purposes. The views expressed in this series are those of the authors, but not necessarily of IGI Global.

Titles in this Series

For a list of additional titles in this series, please visit: www.igi-global.com/book-series/practice-progress-proficiency-sustainability/73810

Handbook of Research on Sustainable Development Goals, Climate Change, and Digitalization

Rui Alexandre Castanho (WSB University, Poland)

Engineering Science Reference • © 2022 • 684pp • H/C (ISBN: 9781799884828) • US \$315.00

Sociological Perspectives on Sustainable Development and Poverty Reduction in Rural Populations

Ladislau M. Semali (Pennsylvania State University, USA)

Information Science Reference • © 2022 • 303pp • H/C (ISBN: 9781799846468) • US \$195.00

Handbook of Research on Novel Practices and Current Successes in Achieving the Sustainable Development Goals

Cristina Raluca Gh. Popescu (University of Bucharest, Romania & The Bucharest University of Economic Studies, Romania & University of Craiova, Romania & The National Institute for Research and Development in Environmental Protection (I.N.C.D.P.M.), Romania & National Research and Development Institute for Gas Turbines COMOTI, Romania)

Engineering Science Reference • © 2021 • 461pp • H/C (ISBN: 9781799884262) • US \$295.00

Advancements in Sustainable Architecture and Energy Efficiency

Roberto A. González-Lezcano (Universidad CEU San Pablo, Spain)

Engineering Science Reference • © 2021 • 337pp • H/C (ISBN: 9781799870234) • US \$195.00

Management and Conservation of Mediterranean Environments

Rui Alexandre Castanho (WSB University, Poland) and José Martín Gallardo (Universidad de Extremadura, Spain)

Engineering Science Reference • © 2021 • 336pp • H/C (ISBN: 9781799873914) • US \$195.00

Handbook of Research on Institution Development for Sustainable and Inclusive Economic Growth in Africa

Evans S. Osabuohien (Covenant University, Nigeria) Emmanuel A. Oduntan (Covenant University, Nigeria) Obindah Gershon (Covenant University, Nigeria) Olaronke Onanuga (Covenant University, Nigeria) and Oluyomi Ola-David (Covenant University, Nigeria)

Business Science Reference • © 2021 • 507pp • H/C (ISBN: 9781799848172) • US \$235.00

Digital Solutions and the Case for Africa's Sustainable Development

Albert Ong'uti Maake (University of Lay Adventist of Kigali, Rwanda) Benard Magara Maake (Kisii University, Kenya) and Fredrick Mzee Awuor (Kisii University, Kenya)

Information Science Reference • © 2021 • 200pp • H/C (ISBN: 9781799829676) • US \$195.00



701 East Chocolate Avenue, Hershey, PA 17033, USA

Tel: 717-533-8845 x100 • Fax: 717-533-8661

E-Mail: cust@igi-global.com • www.igi-global.com

This book is dedicated to University College of Business in Prague, endowment fund.

EDITORIAL ADVISORY BOARD

Helmuth Yesid Arias Gomez, *Czech Technical University, Czech Republic*
Michal Fabuš, *School of Economics and Management in Public Administration in Bratislava, Slovakia*
Debby Flickinger, *Union Institute and University, USA*
Iveta Hamarneh, *University College of Business in Prague, Czech Republic*
Marián Kováč, *School of Economics and Management in Public Administration in Bratislava, Slovakia*
Vladimír Krajčík, *University College of Business in Prague, Czech Republic*
Susan Siegel, *Union Institute and University, USA*
Ilona Švihlíková, *University College of Business in Prague, Czech Republic*
Jan Zýka, *University College of Business in Prague, Czech Republic*

LIST OF REVIEWERS

Marsha Alibrandi, *Fairfield University, USA*
Jefferson Enrique Arias Gomez, *University Minuto de Dios Bogota, Colombia*
Benedikt Badánik, *University of Zilina, Slovakia*
Silvia Barnová, *DTI University, Slovakia*
Nelson Iván Bedoya Gallego, *University Minuto de Dios Bogota, Colombia*
Stanislav Benčíč, *Pan-European University, Slovakia*
Astrida Blanařová, *AMBIS a.s., Czech Republic*
Josef Botlík, *Silesian University in Opava, Czech Republic*
Milena Botlíková, *Silesian University in Opava, Czech Republic*
Alexandra Chaparro, *Corporación Universitaria del Area Andina Bogotá, Colombia*
Petr Drulák, *Institute of International Relations Prague, Czech Republic*
Petr Houška, *University College of Business in Prague, Czech Republic*
Monika Klímová, *University College of Business in Prague, Czech Republic*
Tatiana Lekýrová, *Masaryk Institute of Advanced Studies, Czech Technical University, Czech Republic*
Renáta Machová, *J. Selye University, Slovakia*
Jiří Malý, *University of Economics in Prague, Czech Republic*
Silvia Matúšová, *School of Economics and Management in Public Administration in Bratislava, Slovakia*
Ivan Dario Medina Rojas, *University Minuto de Dios Bogota, Colombia*
Aleksandra Mirek-Rogowska, *Pontifical University of John Paul II, Krakow, Poland*

Lenka Nigrinová, *University College of Business in Prague, Czech Republic*
Hugo Alfredo Ordóñez Mantilla, *University Minuto de Dios Bogota, Colombia*
Zdenka Petrů, *University of Economics in Prague, Czech Republic*
Jan Pour, *University of Economics in Prague, Czech Republic*
Sebastjan Repnik, *Biotechnology and Tourism Centre, Slovenia*
Alona Rogale-Homika, *University of Applied Sciences, Latvia*
Gabriela Rozvadský-Gugová, *DTI University, Slovakia*
Mauricio Sabogal Salamanca, *University EAN, Colombia*
Ivan Enrique Sanabria Perez, *University of Distance Education in Colombia, Colombia*
Alena Novák Sedláčková, *University of Zilina, Slovakia*
Lasse Seppänen, *HAMK University, Finland*
Veronika Sušová-Salminen, *Institute of Philosophy, Czech Republic*
Hannes Thees, *Catholic University Eichstätt-Ingolstadt, Germany*
Federico Alberto Valdeblánquez Prieto, *University Minuto de Dios Bogota, Colombia*
Lucie Vosečková, *University College of Business in Prague, Czech Republic*

Table of Contents

Foreword	xvii
Preface	xviii
Acknowledgment	xxii
Chapter 1	
An Alternative to Socio-Economic Injustice: Perspectives for a Culture of Care Post COVID-19	1
<i>Susan E. Seigel, Union Institute and University, USA</i>	
<i>Debby E. Flickinger, Union Institute and University, USA</i>	
Chapter 2	
Human Digital Transformation Readiness: Integrate Data Into the Mindset and Decision-Making Processes	16
<i>Ota Novotný, Prague University of Economics and Business, Czech Republic</i>	
<i>Martin Potančok, Prague University of Economics and Business, Czech Republic</i>	
<i>Vladimír Krajčík, University College of Business in Prague, Czech Republic</i>	
Chapter 3	
The Challenges of the COVID-19 Infodemic: Consequences and Information Management.....	31
<i>Aleksandra E. Mirek-Rogowska, The Pontifical University of John Paul II in Krakow, Poland</i>	
<i>Krzysztof Gajdka, University of Entrepreneurship and Law, Prague, Czech Republic</i>	
Chapter 4	
Digital Competencies in Online Education: Challenges for Now.....	52
<i>Silvia Matúšová, Vysoká škola ekonomie a manažmentu verejnej správy, Slovakia</i>	
Chapter 5	
Strategic Planning for Teaching and Learning in Times of COVID: UNIMINUTO Bogotá – Presential Academic Programs Campus Case	75
<i>Jefferson E. Arias Gómez, Corporación Universitaria Minuto de Dios (UNIMINUTO), Colombia</i>	
<i>Silvia L. Espinosa Acevedo, Corporación Universitaria Minuto de Dios (UNIMINUTO), Colombia</i>	

Chapter 6	
GIS and Geo-Positioning Developments in Coping With the Pandemic.....	86
<i>Helmuth Yesid Arias-Gomez, Institute of Economic Studies, Masaryk Institute of Advanced Studies, Czech Technical University, Czech Republic</i>	
<i>Gabriela Antořová, Masaryk Institute of Advanced Studies, Czech Technical University, Czech Republic</i>	
Chapter 7	
GIS, Positioning, and Imagery Tools: Case Analysis in Tracking COVID -19.....	99
<i>Helmuth Yesid Arias-Gomez, Institute of Economic Studies, Masaryk Institute of Advanced Studies, Czech Technical University, Czech Republic</i>	
<i>Gabriela Antořová, Masaryk Institute of Advanced Studies, Czech Technical University, Czech Republic</i>	
Chapter 8	
Government Response Capacity to the COVID-19 Pandemic: Estimating the Impact of Lockdown Measures in Colombia	114
<i>Alvaro Chaves, Colombian School of Engineering, Colombia</i>	
Chapter 9	
Transformation of the Globalization Process: Pandemic as a Game Changer?.....	138
<i>Ilona Švihlíková, University College of Business in Prague, Czech Republic</i>	
Chapter 10	
Internationalization in Times of Uncertainty: Expanding From Europe Towards Asia	154
<i>Hannes Thees, Catholic University Eichstätt-Ingolstadt, Germany</i>	
Chapter 11	
The Impact of the Spread of COVID-19 on Globalization: The Future of Globalization.....	181
<i>Lenka Nigrinová, University College of Business in Prague, Czech Republic</i>	
Chapter 12	
International Cooperation in Mitigating Global Air Transport Crises: The Response of the Airports and Airlines to Critical Developments in the Industry.....	200
<i>Jan Zýka, Vysoká škola obchodní v Praze, Czech Republic</i>	
<i>Michal Červinka, Vysoká škola obchodní v Praze, Czech Republic</i>	
<i>Lucie Vosečková, Vysoká škola obchodní v Praze, Czech Republic</i>	
Chapter 13	
International Standardization in Tourism Services: Tool to Reduce and Restart Tourism in the Post-COVID-19 Time	212
<i>Petr Houska, University College of Business in Prague, Czech Republic</i>	
<i>Zdenka Petru, Prague University of Economics and Business, Czech Republic</i>	

Chapter 14	
Challenges and Opportunities in the Tourism Sector in the Post-COVID-19 Period.....	230
<i>Iveta Hamarneh, University College of Business in Prague, Czech Republic</i>	
Chapter 15	
Municipality Strategic Prospects in the Post-COVID Time	249
<i>Vladimíra Šilhánková, Czech Technical University in Prague, Czech Republic</i>	
<i>Martin Mašálka, Faculty of Economics and Administration, University of Pardubice, Czech Republic</i>	
Chapter 16	
Management of Quality, Satisfaction, and Loyalty of Rural Destinations.....	261
<i>Astrida Blanařová, Ambis a.s., Czech Republic</i>	
Compilation of References	284
About the Contributors	319
Index	324

Detailed Table of Contents

Foreword	xvii
Preface	xviii
Acknowledgment	xxii

Chapter 1

An Alternative to Socio-Economic Injustice: Perspectives for a Culture of Care Post COVID-19 1

Susan E. Seigel, Union Institute and University, USA

Debby E. Flickinger, Union Institute and University, USA

Individuals have responded with a variety of responses to crises such as war, natural disasters, famine, and pandemics. These are times when people have pulled together to overcome these challenges, or sometimes have divided themselves ideologically, politically, and behaviorally. This chapter addresses some of those characteristics within the United States affecting national and global relationships in the 21st century. The authors support the perception that there is a need for behavioral and cultural change—caring. Specifically, the authors propose an alternative paradigm: the development and sustainability of a “culture of care” as an interdisciplinary approach for national behaviors and international collaboration. The work of two American scholars, Nel Noddings and Jean Watson, center on the importance of the philosophy of care, caring theory, and practice in education and nursing. Going forward to more international crises such as climate change, the COVID-19 pandemic, and poverty and hunger, the authors look to a more equitable and collaborative means to address these problems.

Chapter 2

Human Digital Transformation Readiness: Integrate Data Into the Mindset and Decision-Making Processes 16

Ota Novotný, Prague University of Economics and Business, Czech Republic

Martin Potančok, Prague University of Economics and Business, Czech Republic

Vladimír Krajčák, University College of Business in Prague, Czech Republic

Digital transformation can effectively support innovative strategic planning. However, it is necessary to realise that the digital ecosystem produces enormous volumes of data and creates unique requirements for working with it. Due to this, data needs to be integrated into the mindset and decision-making processes properly. The proposed solution is based on an analysis of digital transformation readiness models, analyses of the status of data and data literacy in the models and their extensions, a definition of the levels of readiness that need to be achieved, and preparation of educational programs for the enhancement

of human digital transformation readiness from the mindset and skillset perspective. The main outputs of the chapter correspond to the problem and the suggested solution. They include the human digital transformation readiness index based on the capability maturity model (CMM), required mindset, and skillset, taking into account the digital and data literacy of the participants of innovation activities.

Chapter 3

The Challenges of the COVID-19 Infodemic: Consequences and Information Management..... 31

Aleksandra E. Mirek-Rogowska, The Pontifical University of John Paul II in Krakow, Poland

Krzysztof Gajdka, University of Entrepreneurship and Law, Prague, Czech Republic

The COVID-19 pandemic brings challenges not only to health systems and governments around the world, but also to the media. One of them is to provide the public with information about the virus, healthcare. However, if there is not enough knowledge regarding the virus it might be a good base for false information flowing all over the media. According to the World Health Organization (WHO), the COVID-19 pandemic should be called ‘infodemic’, which is as dangerous as the virus pandemic. In order to prevent the dangerous consequences of false information, wide collaboration between different groups of experts, authorities, media, and media users is required, as well as very good media and information management.

Chapter 4

Digital Competencies in Online Education: Challenges for Now..... 52

Silvia Matúšová, Vysoká škola ekonómie a manažmentu verejnej správy, Slovakia

The chapter will explore some aspects of online education such as digital skills, digital competences, and innovations in education, which the COVID-19 pandemic put into the foreground of the processes of learning and education at universities. The ability to apply digital skills and develop them into digital competencies is a basic prerequisite for learners and educators. The author analyses and evaluates the current state and challenges posed by online education, especially at colleges and universities. The concepts and terminology in the field of education in cyberspace, models of digital competencies of educators, scientific and educational policy documents defining the requirements for university teachers in online education were considered. The investigation was supported by the results of a questionnaire survey. The author points out the possibilities and ultimate requirements of online education at universities in terms of students, teachers, innovations, evaluation, advantages, and barriers in online education.

Chapter 5

Strategic Planning for Teaching and Learning in Times of COVID: UNIMINUTO Bogotá –
Presential Academic Programs Campus Case 75

*Jefferson E. Arias Gómez, Corporación Universitaria Minuto de Dios (UNIMINUTO),
Colombia*

*Silvia L. Espinosa Acevedo, Corporación Universitaria Minuto de Dios (UNIMINUTO),
Colombia*

The Corporación Universitaria Minuto de Dios UNIMINUTO has determined a series of objectives as levers for growth and development, which have prepared it to face great changes. In this sense, UNIMINUTO Bogotá - Presential Academic Programs Campus designed the Strategic Plan 20-25 “Bogotá and UNIMINUTO, a learning community,” with which it marked its evolutionary path for the next few years. Within this planning and management framework, and based on the attention of the

effects caused by COVID-19, this campus made adjustments to its processes and plans, with a series of effects that determined new learning in relation to accessibility and use of technologies in the teaching-learning process; redefinition of the mechanism for the appropriation and awareness of the strategic plan; development of activities requiring attendance, ensuring compliance with all biosafety measures; safe return of students through an alternation model and mechanisms to provide financial support to students and families to guarantee the continuity of the operation and institutional sustainability.

Chapter 6

GIS and Geo-Positioning Developments in Coping With the Pandemic..... 86

Helmuth Yesid Arias-Gomez, Institute of Economic Studies, Masaryk Institute of Advanced Studies, Czech Technical University, Czech Republic
Gabriela Antořová, Masaryk Institute of Advanced Studies, Czech Technical University, Czech Republic

This chapter deals with some technical aspects of the spatial strategy for overcoming the huge challenges posed by the pandemic. The focus of this chapter is to highlight the use of GIS tools and positioning technologies in diverse contexts to manage the threat of COVID-19. For this task, three stages of analysis are proposed. In a first preventive stage, some governments applied socioeconomic criteria drawn from existent statistical information to spatially identify the areas with a clear predisposition toward the accelerated spread of the contagion. In a second stage, when the pandemic fully reached a rapid pace of expansion and lockdown measures became necessary, the technologies helped to monitor the most affected areas and to establish a dashboard deployment for visualizing the severity of the catastrophe. In the third stage, after the establishment of control and mobility protocols, different governments resorted to mobile phone positioning as a resource for monitoring quarantine compliance and recognizing if social group behavior entailed any evident risk or spread.

Chapter 7

GIS, Positioning, and Imagery Tools: Case Analysis in Tracking COVID -19..... 99

Helmuth Yesid Arias-Gomez, Institute of Economic Studies, Masaryk Institute of Advanced Studies, Czech Technical University, Czech Republic
Gabriela Antořová, Masaryk Institute of Advanced Studies, Czech Technical University, Czech Republic

The catastrophic eruption in the world scenario of the breaking pandemic forced the application of all existent scientific knowledge, but also triggered the development of new technical tools and procedures. This chapter is focused on setting forth the practical technological efforts based on the spatial georeferencing by coordinate systems and on the treatment of satellite images as means for tracking the positive cases, for recognizing the spatial infection's behavior, and for identifying the real physical changes in the spatial landscape. The cases set forth here pertain to three techniques, namely the development of visual dashboards, the tracking resources developed, and the deployment of imagery captured by satellite perception.

Chapter 8

Government Response Capacity to the COVID-19 Pandemic: Estimating the Impact of Lockdown Measures in Colombia 114

Alvaro Chaves, Colombian School of Engineering, Colombia

This work estimates the impact of the preventive isolation measures adopted by national and regional authorities in Colombia to answer the following question: Where do the government's isolation measures effectively reduce the number of COVID 19 infections and deaths? Using official information reported by the Ministry of Health and constructing a panel data structure, a model of differences in differences suggested by Cerulli and Ventura is estimated. Estimates of the impact of containment measures show that the peak is delayed and the number of infections and deaths reduced. The government's response to the pandemic on diseases has a significant dynamic impact over time once implemented. The pre-treatment period was significantly affected by the current treatment.

Chapter 9

Transformation of the Globalization Process: Pandemic as a Game Changer? 138
Iлона Švihlíková, University College of Business in Prague, Czech Republic

This chapter focuses on the analysis of the globalization process as a phenomenon of the recent decades. The chapter starts with an analysis of the roots of globalization, which are a combination of economic policies and labour-saving technologies. Then the most powerful actor, the transnational company, is introduced, followed by the analysis of their position in the world division of labour. Special attention is given to the changes brought by financial crises, especially the Great Recession. The changing nature of globalization is demonstrated also via the challenges presented by the COVID-19 pandemic. At the end, the author presents possible future scenarios, applying them on the Czech Republic, as a country strongly connected with the world economy and placed in the position of a dependent economy.

Chapter 10

Internationalization in Times of Uncertainty: Expanding From Europe Towards Asia 154
Hannes Thees, Catholic University Eichstätt-Ingolstadt, Germany

This chapter aims to explore the uncertainties that the COVID-19 pandemic induced in internationalization. In this regard, the COVID-19 pandemic challenges companies worldwide as global value chains were interrupted and business models were contested. The theoretical background describes the internationalization processes and the specific role of foreign direct investments (FDI), but also the basics of uncertainty in doing business. Because of the scope of internationalization and the peculiarities of the COVID-19 pandemic, a descriptive analysis of secondary data from global databases was conducted. This includes macroeconomic data and also global research reports. With a focus on European-Asian relations, the results reveal an interruption in the flows of goods and services in Eurasia, but more importantly, also in FDI. Further on, there is a correlation between uncertainty and FDI flows. Finally, this chapter discusses future directions in internationalization, including resilience, regionalization, and the rise of China in global economics.

Chapter 11

The Impact of the Spread of COVID-19 on Globalization: The Future of Globalization 181
Lenka Nigrinová, University College of Business in Prague, Czech Republic

The text analyzes the changes in the process of globalization which have occurred in connection with the spread of COVID-19 and determines the possibilities for further development. It is based on the definition of globalization according to the OECD. Several years before the pandemic came, and globalization entered a phase of slowdown. It was called deglobalization. The main facts that caused this process were financial recession in 2008 and changes in USA and China economic relationship. The pandemic

has weakened economic growth in many countries, reduced trade and travel, and introduced restrictive measures. The effects of a pandemic for individual states depend on the extent to which the states are connected in global production and trade networks. Three scenarios and their impact on globalization, trade, and the world economy are introduced.

Chapter 12

International Cooperation in Mitigating Global Air Transport Crises: The Response of the Airports and Airlines to Critical Developments in the Industry 200

Jan Zýka, Vysoká škola obchodní v Praze, Czech Republic

Michal Červinka, Vysoká škola obchodní v Praze, Czech Republic

Lucie Vosečková, Vysoká škola obchodní v Praze, Czech Republic

The authors deal with the unprecedented effects of COVID-19 on the air transport sector and the reactions of selected segments to this situation. Air transport is a global industry, and this situation needs to be addressed through cooperation at an international level. The authors focus on the airport and airline sector, which, due to the nature of their business, chooses a different strategy. Despite the need for international cooperation, there are also efforts to use the crisis situation for its own expansion into vacant market segments, especially by selected low-cost air carriers. The strategic starting points of international organizations for individual sectors are given as well as examples of selected airport entities and airlines. The chapter is complemented by a common approach of airports and air carriers, which could significantly affect the cost of air transport, especially in the EU.

Chapter 13

International Standardization in Tourism Services: Tool to Reduce and Restart Tourism in the Post-COVID-19 Time 212

Petr Houska, University College of Business in Prague, Czech Republic

Zdenka Petru, Prague University of Economics and Business, Czech Republic

The aim of this chapter is to draw attention to the importance of international standardization in tourism services with a view to the elimination of barriers to free movement of tourism services and its importance for consumers: visitors in tourism, when the international standards encourage consumers responsibility, enforce their legitimate demands, expectations, safety, and security. This contribution also describes the basic guidelines to prevent the spread of coronavirus in the tourism industry. These measures will contribute to the recovery of the tourism sector and restore the confidence of the traveler. Furthermore, the measures emphasize the possibilities of greater acceptance of international standards for tourism services in the post-COVID-19 period. They will also contribute to faster renewal of individual sectors/ tourism services. At the same time, they contribute to reopening and engaging individual destination/ countries in international tourism.

Chapter 14

Challenges and Opportunities in the Tourism Sector in the Post-COVID-19 Period..... 230

Iveta Hamarneh, University College of Business in Prague, Czech Republic

The COVID-19 pandemic has not only a significant impact on public health but also severely affected the tourism sector, one of the drivers of the global economy. Although this situation crisis makes tourism highly vulnerable, the sector is also in a unique position to contribute to broader and just effective recovery plans and actions. This chapter considers the major significant impacts, behaviours, and experiences

that four major tourism stakeholders are experiencing during the COVID-19 period. Research on (1) tourism demand, (2) tourism supply, (3) destination management organizations, and (4) policy makers will identify the main challenges and opportunities in tourism sector in the post-COVID-19 period.

Chapter 15

Municipality Strategic Prospects in the Post-COVID Time 249

Vladimíra Šilhánková, Czech Technical University in Prague, Czech Republic

Martin Maštálka, Faculty of Economics and Administration, University of Pardubice, Czech Republic

The municipalities development planning consists of two main streams—the spacial planning and the strategic planning—intents, objectives, and tactics of which are coordinated with various successes and outputs. The strategic planning has been implemented into the East European municipalities’ management since the end of the 1990s. It had to respond to many oncoming circumstances. Economic, security, environmental, and other crises, both national and global, occurred. But the COVID-19 disease pandemic has brought wholly new challenges in the life management in the societies all over the world. The chapter intends to investigate how the value priorities within the municipalities strategic objectives changed during the pandemic, taking the Czech Republic (one of the European COVID-19 most affected countries) as an example.

Chapter 16

Management of Quality, Satisfaction, and Loyalty of Rural Destinations..... 261

Astrida Blanařová, Ambis a.s., Czech Republic

Tourism is a major global industry that, in its heyday, has become significantly concerned with quality and related themes, satisfaction and loyalty. This chapter aims to identify the factors that influence the quality of a rural destination and the associated visitor satisfaction and loyalty. These factors in turn have an impact on destination management, but also other stakeholders such as tourism entrepreneurs in the destination or residents. In 2020, tourism has undergone significant changes due to the pandemic caused by the SARS-CoV-2 virus. For instance, travel abroad was regulated through government regulations, which caused an increase in demand for rural tourism. As the author’s research has shown, some quality factors have undergone significant changes. Even the quality management to achieve visitor satisfaction and loyalty has proven to be very important, especially in the sense that by gaining loyalty at this specific time, it can ensure that visitor numbers are maintained even after the pandemic period when the return of and high growth in overseas travel is expected.

Compilation of References 284

About the Contributors 319

Index..... 324

Foreword

Strategy is one of the great differentiators in times of crisis and in the context of changing global trends and increasing competition. One of the great certainties of organizations is that everything is in permanent change, and in this scenario of continuous change, planning strategically and innovatively is often the only alternative so that companies, organizations and territories are not surprised and see their objectives being compromised. Anticipating the future and dealing with it in a strategic and innovative way has been one of the greatest strengths of organizations, acting in this way companies and communities seek to be prepared for what the market can bring as new, radical and often surprising.

The economic shocks of the pandemic are being observed across all industries and sectors worldwide and the resilience was recognized as a crisis management tool/strategy for businesses and places stability and adaptability to all types of risks, during natural disasters and emergencies. Now is crucial to incorporate a prospective way of thinking in the Post-COVID time ahead, and this necessarily includes a strong commitment to strategic innovation as a process of reinventing or redesigning the strategy to drive organizations growth, generate value, and create competitive advantage. This type of innovation is essential for organizations to adapt to the speed of technology change.

Considering the above, the book *Innovative Strategic Planning and International Collaboration for the Mitigation of Global Crises*, bringing together several compelling contributions under the admirable coordination of Professor Gabriela Antošová, is one that undoubtedly deserves to be commended. This book provides a widely useful compilation of ideas, cases, innovative approaches, and practical strategies for enhancing our knowledge and critical thinking. It is comprehensive in its reach and deals with important issues of our times: from problems linked to socio-economic injustice to digital transformation, digital competencies, GIS and Geo-positioning, internationalization processes, challenges of Covid-19, governance, and especially tourism-related matters – this industry have encountered unprecedented failures due to travel restrictions and social distancing, thereby finding it extremely difficult to survive the pandemic.

With a general grounding in the strategy literature including key references, it might even serve as a useful core text for researchers, students, managers and others with an interest in the field of innovation and strategic management.

João Paulo Jorge
CiTUR, Portugal & Polytechnic of Leiria, Portugal

Preface

This book *Innovative Strategic Planning and International Collaboration for the Mitigation of Global Crises* aims to provide relevant, theoretical frameworks and current empirical research findings in the field of international strategic management. It has been written by professionals and academic researchers to improve their understanding of the innovative, strategic planning at different levels of the multidisciplinary context of globalization, internationalization, education, tourism, aviation, digitalization, regional and local economics, management and marketing, public policy, technology and society.

In this vein, the book proposes an analysis and a set of strategies closely related to the planning exercise for overcoming the world threat represented by the COVID-19 pandemic. The sudden outbreak of this calamity changed all priorities of public policy and disrupted all exercises of budgetary planning, posing an exacting challenge to policymakers and experts. In some countries the surprise factor, the lack of institutional development and the fiscal precarity made room for the lethal expansion of COVID-19. Amid the perplexity, some countries failed to react timely to avoid deaths and contagions.

In this scenario, innovative strategic planning is currently a very important step towards achieving economic stability and global sustainability. This can best be achieved through effective, international cooperation and digitalization of activities. Society and global processes designed to address global crises and other threats call for the opportunity to use innovative, internationalization practices. Strategic approaches are still used using digital communication and international networking to achieve the competitiveness of the creative economy and eliminate regional disparities. Achieving innovation and technology transfer in an international context removes not only international barriers for collaboration, but also the global crisis and its negative effects. Such impacts caused by global change can be eliminated by developing technologies and further innovations in strategic planning.

In fact, one common feeling amid the invited experts is that despite the devastating effects in terms of lives, resources and economic production, the post pandemic era opens a challenging period for deploying innovative strategies and for touting the available technology and knowledge for overcoming the present risks and for envisioning the future with a more armored plan of growth. This effort demands the most innovative attitude and requires the efficient use of the opportunities posed by the science field. But most importantly, the new normality requires social arrangements and engagements more focused on social wellbeing, solidarity and the definition of a collective common goal.

This book collects a series of chapters assessing the ominous effects of the pandemic and proposing solutions to the challenging threat presently faced by humanity. The outbreak of the pandemic in 2019 changed radically the normal operation of the world and interrupted suddenly the economic and social interaction. It even altered the most basic routines that human beings were accustomed to. Here a multidisciplinary team from different countries joined forces with a clear vision inspired by a variety of scien-

Preface

tific fields. This rich set of approaches and ideas demonstrates irrefutably that we face a real worldwide pandemic and therefore, that the global connections in terms of trade, migrations, transportation, tourism, capital flows and factor mobility keep the world permanently in touch. Admittedly, the global solution requires a multilateral solution and international cooperation amid a crisis that affected all countries around the world, and that raged mostly against the elderly and patients suffering pre-existing diseases.

This international call received contributions from several countries with different levels of development, with different achievements in terms of vaccination and all of them facing the pandemic at a specific stage. This editorial effort is hosted by a University College of Business in Prague, Czech Republic but the contributions come from the USA, Colombia, Portugal, Poland, Slovakia and Germany, all of them setting forth particular aspects of the devastating effects of the outbreak and most importantly, their national strategies for overcoming the crisis.

TARGET AUDIENCE

The target audience of this book is composed of professionals and researchers working in the field of innovation and strategic management in various social science and technology disciplines. Moreover, this book provides insights and support to executives concerned with the strategic management of expertise, knowledge, innovation and global development in different types of academic communities and environments. The policymakers, lawmakers, officers and technical staff can find here any inspiration for implementing effective strategies applied elsewhere.

Browsing the content, it is possible to recognize the common challenge for the strategic planning but deployed in diverse fields: social choice and social justice, Media, Digital Society and Education, Globalization and Trade, Transportation, Tourism, regional and local implications, Technology, Devices and Empirical Techniques of Estimation. Undoubtedly, almost everyone can find a personal subject of interest represented within the 16 chapters:

Chapter 1 overviews the case of the deeply divided society in the United States, and efforts for convincing the population to fulfill the preventive measures. This chapter talks about the necessity of a social engagement for adopting care measures and new cultural attitudes overcoming the individualist approach entrenched in libertarians' prejudices. The authors' proposed "Culture of care" is a call for a social arrangement deeply rooted in the consciousness of individuals for adopting mindful practices aimed to preserve the social wellbeing, starting with the personal behavior of free and recognized individual citizens. This discussion reminds us of the compelling theories and practices in the frame of the Social Choice to make coherent the individual choice and the collective wellbeing..

Chapter 2 deals with digital transformation readiness and recognizes the practical omnipresence of technology across industries and companies, and highlights the complementary skills, technical arrangements and equipment. In the digital era, the management of data became an effective strategy for expanding the markets and demand. Precise data science and informatics promises to be the most used tool for targeting specific niches and for design tailored-customer products. The chapter overhauls four relevant organizational models for making the implementation of digital strategies into the companies. The authors propose three stages for preparing the organizational roles for triggering the digital strategy: understanding the outputs, to integrate in a collective change and finally govern on their own and lead proactively ongoing innovations.

Chapter 3 warns about the risk of receiving, spreading and interiorizing fake and unfounded information about pandemic, because amid this war of information there is a serious public health implication. The chapter describes psychological mechanisms leveraged by issuers of fake information for convincing the society about misguided prejudices and non-confirmed information. The lockdown and the upsurge of on-line connections and social networks enhance precisely the harmfulness of misguiding data and lies, finding an easy audience among easily manipulatable people. It is possible to say that the general backlash generated after the preventive measures during the pandemic was triggered by fake news. The proposed solutions combine self-criticism by governments, lawmakers and media stockholders leading to development of legal frameworks able to balance the right of free expression with the engagement of objective truth.

Chapter 4 considers an immediate solution implemented during lockdown and isolation measures: online education. People all over the world tap the mechanism to provide educational content at multiple levels via Teams, Zoom and CISCO technologies. Teachers, lecturers and instructors were required to adapt high quality standards to online education including personal development of digital skills and competences. The author researched the advantages, disadvantages and potentialities of online education. One important finding is the teacher's role in stimulating the interest of students using multidimensional strategies.

Chapter 5 articulates specific strategies applied by universities for adapting organizational culture to virtual interactions between students, teachers, staff and external stakeholders. The particular case of UNIMINUTO in Bogotá (Colombia) illustrates the radical changes required to implement a virtual schema without sizable disruptions to the educational and operative routines.

Chapter 6 is focused on the strategies enabled by geo-positioning technologies for prevention and management within pandemic affected areas. The authors analyze key trends rendered on maps and dashboards. This methodology allows for identification of vulnerable populations, the most affected areas and the monitoring of interventions.

Chapter 7 examines case studies of some countries and institutions using geo-positioning technologies to predict contagion by tracking social interactions. The authors describe mobile technologies for detecting risky behaviors based on the spatial proximity and for assessing the visualizations of satellite imagery.

Chapter 8 describes the effectiveness of Colombian isolation policies and lock downs for containing the spread of pandemics, running a dynamic econometric model. Using regional panel data, the author identifies specific idiosyncratic traits in the regional public policy and differentiated outcomes.

Chapter 9 discusses the implications of the pandemic disruptions on globalized supply chains, international transport and passenger travel. The author reviews the international process unleashed by neoliberalism and open-market reforms across the world, and the arguments for national reindustrialization bringing back some manufacturing processes.

Chapter 10 analyzes the international connections carried by globalization but focuses on the Europe-Asia economic interactions in terms of Foreign Direct Investment and Trade. This study quantifies the disruptive effect of the pandemic on the flows of capitals and merchandise between the two continents, and the severe drop in the economic exchanges supported by statistical information. The study also examines the effects of vaccination and post-pandemic recovery.

Chapter 11 considers a new course of globalization once the channels of trade, investment and supplies were out rightly affected during the pandemic. However, the author points out that, even prior to the pandemic; the trend to globalization was slowing due to international financial crises and geo-political rivalries.

Preface

Chapter 12 provides a quantitative measure of the severity of the pandemic disruption on global air transportation and proposes a set of creative public / private strategies for reshaping the air transport to ensure the industry survival in the years ahead.

Chapter 13 details the procedures of standardization according to international rules for defining international measures required to expedite the normal operation of international travel. The author focuses on harmonization and rigorous compliance with safety / hygienic protocols and the preservation of jobs through financial support, loans and public subsidies. Improvements to post-pandemic efficiencies are also considered.

Chapter 14 discusses strategies to recover tourism related industries such as transport companies, hotels, restaurants, attractions, travel agencies, tour operators and multisided platforms used for purchasing tourism services. The focus of this analysis is on undiversified tourism economies, both at the destination and country level. In the light of the diversity of people and jobs involved, the strategy for safely recouping the previous level of activity in the tourism industry is an imperative task.

Chapter 15 discusses priorities that illustrate the new exacting recovery challenges faced by local stakeholders. Based on survey responses of professionals and municipal representatives, the respondents focused on deployment of strategies for preserving public health, subordinating other items in the order of priorities.

Chapter 16 develops a set of innovations for quality aspect tourism services, the visits to rural destinations. This chapter based on the personal author's research proposes that the pandemic stage can be leveraged for qualifying the rural tourism supply and for implementing sectoral strategies for strengthening the customer loyalty.

It has been an amazing experience to assemble this book's content due to the diversity of disciplines represented. Most importantly, the chapters are of interest for policymakers and practitioners directly involved in coping with the pandemic, eager for knowing international approaches, and for consulting diverse effective measures for overcoming such a challenging global adversity.

Acknowledgment

We would like to express our sincerest gratitude to each author of the chapter, reviewer, Editorial Advisory Board members for their contribution to the book and collaboration during the unsafe time of pandemic. Our collaboration was interdisciplinary and online educative activity among several institutions. We sincerely thank to the group at IGI Global in Hershey PA, USA for their great support and this kind opportunity to publish this book and also for the collaborative activities of CITUR Leiria (Portugal) namely coordinator Luis Lima Santos and director of Master program in Tourism sustainable management João Paulo da Conceição Silva Jorge. We are very thankful to the event which also promote proposed activities during time for writing the book as an Erasmus+ webinar at University College in Business in Prague (Czech Republic) in cooperation with School of Economics and Management in Public Administration in Bratislava (Slovakia).

We acknowledge the most helpful suggestions:

Doc. Ing. Ilona Švihlíková, Ph.D. University College of Business in Prague (Czech Republic)

Mgr. Helmuth Yesid Arias Gomez, Ph.D., Institute of Economic Studies. Masaryk Institute of Advanced Studies, Czech Technical University

Susan Seigel, Ed.D. Affiliate Professor at Interdisciplinary Studies Program, Union Institute & University (USA)

Bro. Martin Azzopardi sdc, St. Margaret's College, Malta (Malta)

Carlos A. Vásquez Hernández, Director of International Affairs, UNIMINUTO, Colombia

Jefferson E. Arias Gómez, Ph.D., Rector of Campus Bogota, UNIMINUTO, Colombia

We also thank to each person who was in charge of the process of this book and possible opportunity to dedicate a time for editing who allowed me to work on the book doc. RNDr. Vladimír Krajčák, Ph.D, Rector and Statutory director of University College of Business in Prague (Czech Republic).

Gabriela Antošová
University College of Business in Prague, Czech Republic

Chapter 1

An Alternative to Socio– Economic Injustice: Perspectives for a Culture of Care Post COVID–19

Susan E. Seigel

Union Institute and University, USA

Debby E. Flickinger

Union Institute and University, USA

ABSTRACT

Individuals have responded with a variety of responses to crises such as war, natural disasters, famine, and pandemics. These are times when people have pulled together to overcome these challenges, or sometimes have divided themselves ideologically, politically, and behaviorally. This chapter addresses some of those characteristics within the United States affecting national and global relationships in the 21st century. The authors support the perception that there is a need for behavioral and cultural change—caring. Specifically, the authors propose an alternative paradigm: the development and sustainability of a “culture of care” as an interdisciplinary approach for national behaviors and international collaboration. The work of two American scholars, Nel Noddings and Jean Watson, center on the importance of the philosophy of care, caring theory, and practice in education and nursing. Going forward to more international crises such as climate change, the COVID-19 pandemic, and poverty and hunger, the authors look to a more equitable and collaborative means to address these problems.

INTRODUCTION

When French sociologist and political theorist Alexis de Tocqueville traveled to the United States in 1831 to study American prisons, he also learned about the cultural and political practices of the American people. In his book, *Democracy in America*, Tocqueville shaped 19th-century discussions of liberalism and equality, which were rediscovered in the 20th century as sociologists debated the causes and cures

DOI: 10.4018/978-1-7998-8339-5.ch001

of tyranny. *Democracy in America* remains widely read and even more widely quoted by politicians, philosophers, historians, and those seeking to understand the characteristics of American people.

Tocqueville believed that equality was the great political and social idea of his era, and he thought that the United States offered the most advanced example of equality in action. He admired American individualism but warned that a society of individuals can easily become atomized and paradoxically uniform when “every citizen, being assimilated to all the rest, is lost in the crowd” (History.com, para. 7). He believed a society of individuals lacking the intermediate social structures—such as those provided by traditional hierarchies—could mediate relations with the state. The result could be a democratic “tyranny of the majority” (History.com para.7) in which individual rights were compromised. Although Tocqueville was impressed by much of what he saw in American life, admiring the stability of its economy and marveling at the popularity of its many diverse religious institutions, he also noted the irony of the freedom-loving nation’s mistreatment of Native Americans and its embrace of slavery.

BACKGROUND

We the People

As the United States Constitution was being written in 1787, disparities existed among its citizens. The stage was already set for a future of social injustices: systemic racism, sexism, xenophobia, and potential violence amidst the freedoms and liberties for the American people. These characters attributes of a new, young nation have evolved to define what is an American in the 21st century.

Historically, Europeans often viewed their American allies as “rugged individualists.” First used in 1898, the term, *Rugged individualism* refers to “the practice or advocacy of individualism in social and economic relations emphasizing personal liberty and independence, self-reliance, resourcefulness, self-direction of the individual, and free competition in enterprise” (Merriam-Webster’s Dictionary. (n.d.). This concept applied within a capitalistic society—where competition is encouraged — has the potential to create communities that are self-consuming.

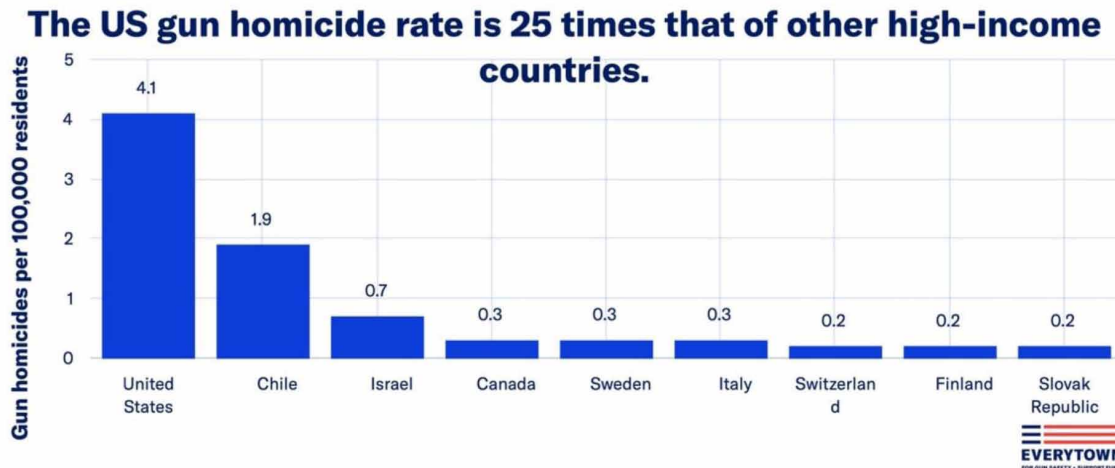
Rights and Liberties Verses Responsibilities and Civic Duties

Over the course of 234 years of “independence” Americans have tested their Constitutional rights and liberties many times over. While slavery was formally abolished in 1865 by the 13th Amendment to the U.S. Constitution, although only gave African Americans the rights of citizenship in 1868. Many black Americans did not have voting rights until the 1965 Voting Rights Act was passed. Women’s right to vote only came in 1919 when Congress passed the 19th Amendment. Although voting is the cornerstone of a democracy, voting rights are still being challenged today as state laws are once again limiting voting options and redistricting diverse populations to enhance partisan politics.

Undoubtedly the United States of America was founded on a revolution against the ruling (British) government. Moreover, many of our nation’s rights and liberties were secured though civil disobedience and protests. However, over time and into the 21st century, these protests and demonstrations have become more frequent and violent confronting individual rights and liberties. Under the *Second Amendment* of the U.S. Constitution, gun ownership, including AK-47 military assault rifles, has increased since 2019, thereby setting records for gun violence in the United States.

Figure 1.

Source: Erin Grinshteyn and David Hemenway, “Violent Death Rates in the US Compared to Those of the Other High-Income Countries, 2015.” (Updated Jan. 7, 2021)



Mass shootings have become commonplace in American culture. “According to the Gun Violence Archive there have been more than 370 mass shootings in the US... in 2019, with mass shooting defined as any incident in which four or more people, not including the shooter, were shot but not necessarily killed. That’s an average of about eight mass shootings a week.” (Lopez, 2019, para. 3). There is a correlation with ways the COVID-19 pandemic has influenced social and economic policy.

COVID-19 PANDEMIC INFLUENCES ON SOCIAL AND ECONOMIC POLICY

When the COVID-19 pandemic engulfed the population within the United States, economic, political, and social instability increased. As people were dying, Americans were told by the government administration that this disease was nothing more than a common flu and would be eradicated by April (2020). Moreover, the governmental disorganization and lack of central leadership created confusion, hardships, and deaths for healthcare workers and Americans in general. They panicked and started buying and hoarding items such as cleaning supplies, sanitizing solutions, and toilet paper, causing more anxiety in communities.

Policies and practices to contain the spread of the pandemic, such as business and school closures, mask wearing, and physical distancing took further stresses focused on racist and bigotry in the nation. The Black Lives Matter movement grew, and incidents involving police brutality became forefront when George Floyd died under the confines of Minneapolis police officers. The Trump administration blamed the Chinese for the spread of COVID-19, and as a result, Asian Americans were sought out and assaulted (Reinicke, 2021). This bigotry has created a policy in that variants of COVID-19 were now using the Greek alphabet to distinguish one variant from another without implying ethnic connections.

As American businesses and organizations closed, unemployment increased at alarming rates causing family trauma, loss of housing, hunger, domestic violence, and loss of medical insurance. These issues

were especially prevalent for people of color and for women. The Coronavirus Aid, Relief, and Economic Security Act, also known as the CARES Act of 2020, brought some relief to American families. However, it was not until 2021 that a new federal administration and the 117th U.S. Congress passed extended funding to business owners and families to help them manage financially, and when COVID vaccines were widely administered that those improvements were felt by most individuals.

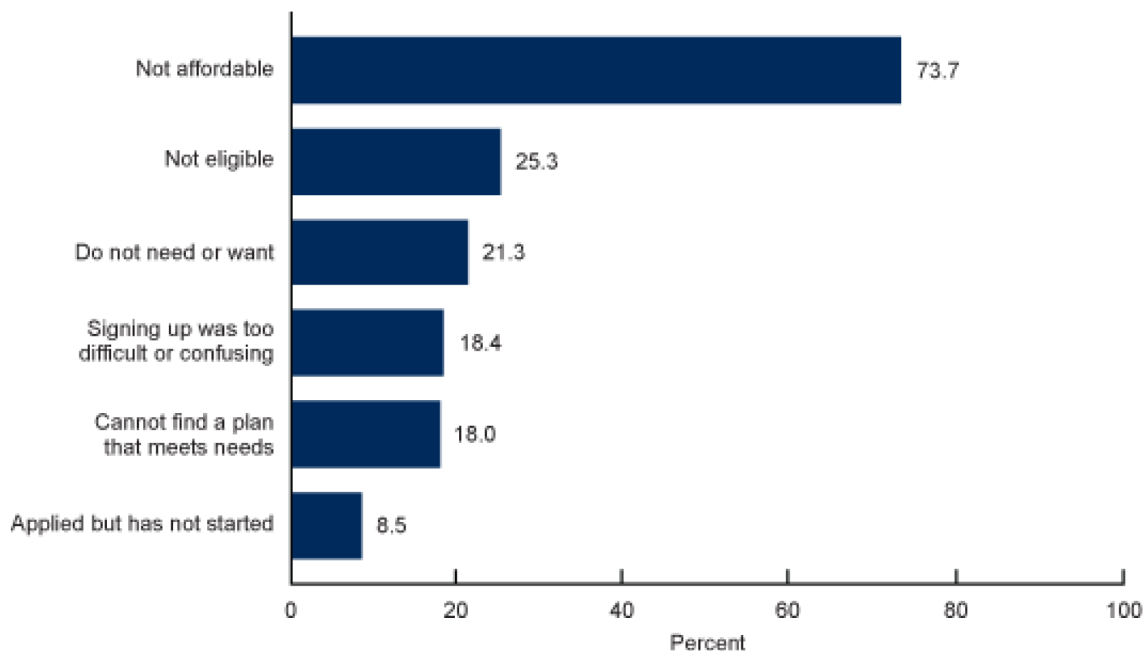
Vaccines are now in mass production, although in the United States and around the globe many inequities exist. Wealthier nations such as those in North America and across Europe have access to hospital equipment (oxygen tanks, ICU facilities) and COVID vaccines. Other low-income nations such as India and those in South America are not as fortunate. At the recent G7 international meeting in Brussels, President Biden has further offered to collaborate with other nations in providing aid to those where the COVID virus still is rampant among individuals.

Healthcare is critical as individuals continue to face COVID variants and “long-term” COVID symptoms. In the United States most people depend on health insurance, which comes either by employer-based, through the government, or insurance paid directly by individuals. To date, approximately 12% of Americans have no health insurance. In a recent study (Cha & Cohen, 2020) findings indicate that the most common reason (73.7%) that adults aged 18 to 62 were not insured was due to lack of affordability. Note that the data were collected prior to the COVID pandemic outbreak.

As businesses close and workers lose their jobs due to the COVID pandemic, more families suffer the consequences of a lack of healthcare. In recent years, there has been ongoing public interest and more advocacy to expand Medicare to all Americans. However, there is not universal agreement on how that system is designed. In addition, there is a strong backlash from independent health insurance companies.

Figure 2. Percentage of Adults aged 18–64 who Identified with Selected Reasons for Being Currently Uninsured: United States, 2019

Source: National Center for Health Statistics, National Health Interview Survey, 2019.



An Alternative to Socio-Economic Injustice

This leaves many inequalities for those individuals such as people of color, women, and those having low income who are not covered by health insurance.

The questions that remain are: How does a global society function in a post pandemic world? What government policies will direct our future in the United States where collaboration is key to a healthier existence? For example, what role does climate change play in managing global disasters (extreme heat, drought, flooding, fires)? What can the United States learn from other nations about providing a national healthcare system for individuals or childcare/eldercare for families? How will technology affect the business economy and our educational practices? One key question to achieving a positive outcome is: how can nations even begin to resolve these issues without caring for others' lives including our environment with living plants and animals? In this work the authors consider how a Culture of Care might reshape our world into a more humanitarian and collaborative entity.

WHAT IS A CULTURE OF CARE?

In this work the authors explored two professional disciplines (nursing and teaching) as examples of applying theory and practice to the topic of “caring.” Furthermore, the meaning of care has been expanded for a better understanding of what is caring and how we apply it to our daily lives. In a Culture of Care, the “other” as well as one’s “self” is the focus of our thoughts and actions, thereby behaving accordingly. This allows for more collaboration within our local and global communities.

A Caring Relation

Educator, feminist, and a pioneer of Care Theory, Nel Noddings makes the distinction between “caring for” (p. 17) and “caring about (p.17).” She writes, “Caring for is conditional on the establishment of relation... Therefore, is relational, needing at least two people—a *Carer* and a recipient of care or *Cared-for*” (Noddings, 2005 p.15). Indeed, individuals can and do care about *things* such as the weather, or which is a better road to take on a trip. However, *caring for*, in this context always has some connection with *individuals*’ (or living beings—animals, plants, living in the environment) welfare in a relationship.

According to Noddings, “Caring is a way of being in relation, not a set of specific behaviors” (2005, p. 17). Americans are now beginning to see in some media advertisements showing caring relations. For example, in one commercial, we see a dad and his young daughter preparing a meal for their neighbor. The daughter brings a plate of spaghetti to the neighbor’s door and then runs back to have dinner at home with her dad. In this example, the caring relation embraces three individuals: father, daughter, and neighbor.

By establishing a “culture of care” more humanistic, ethical, and collaborative behaviors might offer an alternative to the socio-economic injustices existing within the United States and internationally.

ETHICS AND MORAL EDUCATION

To better understand “caring” from a humanist perspective, the authors look to theorists and educators known for their work centered on ethical relationships and communities. Martin Buber (1965), an Austrian philosopher, is best known for his work on *dialogue* as a form of existentialism centered on the distinction between the “I-Thou” *spiritual* relationships. John Dewey (1963), whose ideas have been influential

in education and progressive social reform, was one of the most prominent American scholars in the first half of the 20th century. Committed to a theory of social justice, philosopher and educator Paulo Freire (1970), a Brazilian reformer, is best known for his work, *Pedagogy of the Oppressed*, creating the foundation of the critical pedagogy movement.

Noddings (2005) addresses the significance women played in the creation and development of a caring theory in her book, *Caring: A feminine approach to ethics and moral education* (1984). Women in many cultures have had the role of caregiver; hence, in modern society women filled the role of nurses and teachers of young children. Women such as Maxine Greene (1995), an American philosopher, teacher, and social activist, centered her lifelong work on applying the arts to promote social justice and democratic practice. In her book, *Releasing the Imagination*, she writes:

I still believe that the ground of a critical community can be opened in our teaching and in our schools. It is out of such thinking that public spaces may be regained. The challenge is to make the ground palpable and visible to our students, to make possible the interplay of multiple plurality of consciousnesses.... And, yes, it is to work for responsiveness to principles of equity, principles of equality, and principles of freedom, which still can be named within contexts of caring and concern. (1995, pp. 197-198)

Another significant social activist and feminist is Carol Gilligan (1982), who in her notable book, *In a Different Voice*, proposed an alternative approach to addressing moral issues. She described “morality” as a concept based on one’s recognition of needs, relation, and a response. Women’s voices are contextual, she contends, and speak from and to a situation, rather than focused on decision-making. Her work is credited with inspiring the passage of the U.S. Gender Equality in Education Act in 1993.

COMPONENTS OF MORAL EDUCATION FROM A PERSPECTIVE OF CARING

As education theory and practice maneuver through years of changes and reform, the notion of educating the whole person—as human individuals—once again returns our attention to recent efforts in curricula. Noddings writes, “The primary aim of every educational effort must be the maintenance of caring” (1984, p. 172). In her work, Noddings advanced a process in which an ethic of care might be fostered which contains four major components: modeling, dialogue, practice, and confirmation. (2005, pp. 22-26) These components can create a learning environment for understanding and applying caring principles for individuals within their communities. Where education is integral to its setting, and learning is part of daily life, such as schools, families, organizations, or business, the development of more caring relations can be achieved.

1. **Modeling** – It is important for leaders to show others how to care by modeling the behaviors in their own relationships with cared-fors. Classroom teachers, professors of education, and school administrators can and should be positive examples for how their students and teachers respond to students in their own classroom settings (Noddings, 2005a, 2005b; Seigel, 1997).
2. **Dialogue** – This is the second component in Noddings’ caring process. In this context, dialogue is applied as defined by Paulo Freire (1970) meaning that it is not mere conversation, but open-ended in an equitable discussion where no decision has already been made. Moreover,

dialogue “provides us with knowledge of each other that forms a foundation for response in caring” (Noddings, 2005, p. 23).

3. **Practice** – This is the third component of moral education. Practice is essential in providing opportunities for individuals to gain skills in caregiving through a variety of settings. Some education settings have established community service learning within the curriculum to engage students with caring recognition (through needs) and practice (through service) (Seigel & Rockwell, 1993).
4. **Confirmation** – This is the last component within the process of moral education from a caring perspective. This is an act of affirming the best in others (Buber, 1965) ... requiring attribution of the best possible motive consonant with reality. Therefore, confirmation of our deeds provides us with a vision of oneself as a better person.

CARING SCIENCE THEORY

To appreciate Caring Science Theory, one must understand Jean Watson’s seminal work, which spans from the 1970s to the present. It is important to note that while many religious doctrines uphold caring behaviors, Watson’s work is not based on any one religion, but rather on a spiritual, mindful path. As a practicing Buddhist, Watson shapes her Caring Science Theory from a mindfulness point of view to help nurses better understand that they have the capacity to care for their patients with compassion and empathy. Watson (2005) created the *Caritas Processes* to guide nurses through a series of affirmations that aid them in establishing a space in which to truly listen to, and speak to, the emotional, physical, spiritual, and mental needs, of their patients. Caring Science Theory, which led to the creation of an international Holistic Nurses Association, grew out of what Watson saw as a need to shift nursing from a strictly linear way of knowing into one that is mindful of the patients’ deeper needs.

The Caring Science Theory is a holistic approach to the reconnection of self to others. Through caring science, humankind allows for the infinite nature of belonging and being (Watson, 2005). Originally based on the values and nursing practices of Florence Nightingale in the 19th century, Watson reminds us that, “Caring Science has its roots in a moral and ethical commitment to preserve the dignity of self and other with a commitment to caring and healing” (2012, p. 2). In other words, this theory focuses on caring for self, compassion for others, and establishing a lifelong practice of self-care that sustains and replenishes one’s spirit. Moreover, it is centered on recognizing and restoring the connections between person-environment-nature, and the connection between the physical and metaphysical (Watson, 2005). The recognition and restoration of these connections are the foundation of *caring literacy*.

In her book, *The Philosophy and Science of Caring*, Jean Watson (2008) suggests caring literacy is the moral and ethical competencies, that when applied may better prepare one for a new beginning in which to create better skills. Such skills may include the evolving of self, such as cultivating caring consciousness, the ability to center, to be present, and to authentically listen. She proclaimed, “This basic need is associated with nourishing body, mind, emotions, and spirit with food, both symbolically and literally, whereby with this need we are drinking in love, friendship, companionship, support, trust, warmth, and security” (p. 152). The *Caritas Processes* are embedded in Caring Science Theory as factors in creating a sustainable, peaceful world. Together or individually, the processes can serve as affirmations for *caring moments*.

Within a caring moment is a pause or a breath that allows one the opportunity to step into that moment and shape the experience from a space of compassion and empathy. Watson writes, “...even though

teaching and the imparting of health information, self-caring approaches, and so forth are mainstream, the dialectic, transpersonal aspect of teaching—learning and the importance of the caring relationship as context are often overlooked” (Watson, 2008, p. 125). This is to say the art of transpersonal caring is a human activity consists of non-verbal expressions, intentionality, heart-centered loving, and a healing presence. One passes on to others, feelings she has lived through realized or learned through experience (Watson, 2008). It is the transpersonal that make Watson’s work stand out and that distinguishes it from wide practices and ways of knowing. Although Watson created the Caring Science Theory and the *Caritas Processes* for nurses, they are now moving into other arenas in practice and knowing.

Watson, (2008) defines the Latin word *Caritas* as “cherish [and] love” (p. 39). It frames the desire to infuse compassion and empathy into all that humankind does. The *Caritas Processes* are individually numbered affirmations that were originally created for nurses, but have the capacity to develop an alternative paradigm for building communities and national behaviors that support international collaboration. Watson, (2008) states her 10 processes as:

THE CARITAS PROCESSES

1. Embrace altruistic values and practice loving kindness with self and others.

This is to say that the practice of loving-kindness is rooted in an intentional and ethical caring consciousness. Moreover, it opens the door for community building and onward to international collaboration.

2. Install faith and hope and honor others.

This means, in effect, that a philosophy of care requires one to be fully present in the moment and recognize a deep belief in the sustainability of a Culture of Care.

3. Be sensitive to self and others by nurturing individual beliefs and practices.

This leads to the conclusion that in cultivating a culture of care, one’s own spiritual practices will form an interconnectedness that goes beyond oneself to nurture community building.

4. Develop helping-trusting-caring relationships.

In other words, one is invited to develop, sustain, help, and trust genuine caring moments as a reflection of the joining of self and other.

5. Promote and accept positive and negative feelings as you authentically listen to another’s story.

From this it is clear that one can practice a caring behavior that embraces being fully present in the moment and accepting, without blame or judgment, the expressions of positive and negative feelings arising in the self and others. Knowing that with empathy for all these feelings, they represent a whole and can lead to the sustainability of the international community.

6. Use creative scientific problem-solving methods for caring decision making.

This discovery strengthens the potential for solving global issues. Not only does it imply an interdisciplinary approach, but also it demonstrates the need for the integral thinking of mind, body, and spirit.

7. Share teaching and learning that addresses the individual needs and comprehension styles.

Here, one can see that by engaging in sincere teaching-learning experiences, which ascend from an appreciation of interconnectedness, there is the capacity to raise the educational experience to one that is sustainable and that values cultural exchange.

8. Create a healing environment for the physical and spiritual self, which respects human dignity.

This speaks to both self and other. It is necessary to create and sustain a healing setting at the physical/readily visible levels as well as the nonphysical, subtle energy, and consciousness levels, in-order-to maintain a sense wholeness, beauty, comfort, dignity, and peace.

9. Assist with basic physical, emotional, and spiritual human needs.

To address global issues, the balance of economics and the distribution of wealth must be examined. Humankind must be willing to create an environment that cares for the many and not the few. Education and the construct of a new alternative paradigm, as well as addressing the basics aspects of human existence, is required to build a world in which a culture of care can flourish.

10. Open to mystery and allow miracles to enter. (Watson, 2008, p.40).

When individuals enter in to a harmonious “alliance with the universe, they can view the world with an enriching sense of hope and inspiration” (Flickinger, 2019, p. 107). If one is to alter perception, there must be a philosophy of care. Caring Science Theory lends itself to just such a philosophy. If you step into a caring moment, miracles can enter.

Miracles and mysteries, whether you believe in something greater than yourself, happen. Watson believes that miracles are important to her work with Caring Science Theory and the *Caritas Processes* (Watson, 2008).

Watson’s work was shaped by that of Florence Nightingale, Maxine Greene, Thich Nhat Hanh, Friedrich Nietzsche, Pierre Teilhard de Chardin, and a host of others. Her goal was to bring the mindfulness of Eastern philosophies and caring into the Western field of nursing, uniting both transpersonal philosophy and psychology within the conversation on Caring Science Theory. As we move further into the digital world, caring consciousness (Sitzman & Watson, 2017) is necessary to expand the web of life (Capra, 1996).

Over the years, the concept of caring has expanded into the digital world. Sitzman and Watson (2017) believe that Caring Science Theory can play a role in creating a more caring and holistic way of being, as people become more dependent upon computers and digital knowing. Mindfulness is a key factor in developing successful digital relationships. One must remain in the moment, keenly aware of the other.

This means that one must show up and be fully present, speak with truth and meaning, but without placing blame or judgment (Angeles, 1993).

Caring Science Theory continues to grow and be shaped and reshaped by Jean Watson, her colleagues, and students. It is the beginning of a spiral that moves to the center, and then carries its knowledge back out into the world. As one travels to the center of the spiral, a glimpse of the many possibilities for a new alternative paradigm may arise as it combines with Caring Science Theory and the *Caritas Processes*.

THE INTERSECTIONALITY OF SUSTAINABILITY, SUSTAINABILITY EDUCATION, AND CARING SUSTAINABILITY

This section will explore the genealogy of sustainability, sustainability education, and caring sustainability for a culture of care. It is important to understand the history or genealogy of sustainability to better understand the intersectionality of all four concepts. Although, the term “sustainability” has come into the mainstream dialogue about the survival of the planet in recent years, it was introduced in the 1700s.

Genealogy and Development of Sustainability

Hans Carl Von Carlowitz, a German tax accountant and mining administrator, was the first to use the word “sustainability” in *Sylvicultura Oeconomica* in 1713 (Pfenninger, 2013, para. 6). According to the World Ocean Review (2015), at the time, this word meant, “using natural resources mindfully so that the supply never runs out” (para. 1). His reason for penning this literature was that Europe’s population had grown vastly. Von Carlowitz wanted to raise concern about wood consumption and wanted to keep the number of “timber” sustainable (World Ocean Review, 2015, para. 4).

There has been a barrage of events in history that have raised concerns about environmental issues. Rachel Carson (1962) was an activist, and she had a voice that could not be reckoned with. Carson’s most renowned work, *Silent Spring*, documents the dangers of pesticides, and the one to mention is the chemical DDT. This chemical was used as a pesticide to kill insects, but it was killing the livestock and ruining the land for farming. Carson emphasized:

One of the most sinister features of DDT and related chemicals is the way they are passed on from one organism to another through all the links of the food chains. For example, fields of alfalfa are dusted with DDT; meal is later prepared from the alfalfa and fed to hens; the hens lay eggs, which contain DDT, or the hay, containing residues of seven to eight parts per million, may be fed to cows. The DDT will turn up in the milk in the amount of about three parts per million, but in butter made from this milk the concentration may run to 65 parts per million. Through such a process of transfer, what started out as a very small amount of DDT may end as a heavy concentration. Farmers nowadays find it difficult to obtain uncontaminated fodder for their milk cows, though the Food and Drug Administration forbids the presence of insecticide residues in milk shipped in interstate commerce (pp. 22–23).

Not only was Carson advocating for a sustainable environment, but other organizations rallied around the fate of the global environment and humankind:

An Alternative to Socio-Economic Injustice

Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and consequently bears a solemn responsibility to protect and improve the environment for present and future generations (United Nations, 1972, p. 4).

The United Nations Environment Program (UNEP) would be established to implement a policy that would be reflected in this statement, and in 1987, the related United Nations World Commission on Environment and Development (The Brundtland Commission) would first define sustainable development. This would form the crux of this Commission's worldview and was described as "development that meets the needs of the present without compromising the ability of future generations to meet 21 their own needs" (United Nations World Commission on Environment and Development, 1987, p. 16; International Institute of Sustainable Development, 1992). To engage in a conversation about sustainability, one must understand the definitions.

Sustainability Definitions

The working definition of sustainability for a culture of care means finding equilibrium between self, society, and nature. Adding the concepts of caring and ethics to sustainability education can deepen educational tools for improving and growing community.

The following definitions of sustainability are from seminal works of ecology, which offer an enhanced and refined viewpoint. Wells (2013) defined sustainability as "improving the quality of human life while living within the carrying capacity of supporting ecosystems" (p. 151). By improving our wellbeing, this author suggested that one becomes connected to self and the environment (Wells, 2013). Edwards (2015) further reasoned it is the current obligation to achieve a sustainable way of life that can be perpetuated by future generations. Moreover, Ehrenfeld (2008) stated that sustainability is "the possibility that humans and other life will flourish on the earth forever" (p. 49). Teaching sustainability will be imperative to ensure that humankind, as well as many generations yet to come, will thrive. The concept of sustainable development in the scientific literature is defined as "re-use capacity management... maintained in the form of natural resources" (Walker & Salt, 2012, p. 31). Referring to a Culture of Care, it becomes necessary to expand the academic definition of sustainability to one that encompasses a deeper and more human aspect.

Sustainability Education

Sustainability is the act of living with respect for all humanity in harmony and balance with healthy lifestyles, relationships, the environment, the political arena, and social justice. To this end, it illustrates the need to strengthen one's connections with one's self, to others, and to the planet at large. This concept relates to *caring sustainability* and *education* as it meets the demands of a multidisciplinary approach that invites educational teams to add knowledge and skills, through collaboration, that best intersect with the needs of schools and students (Gibbs, 2015; Hargreaves & Goodson, 2006; Montuori, 2005; Walker, 2012).

Education for a sustainable community in the 21st century and beyond (Jones, et al., 2010) is a model that adds caring to sustainability education. This, in turn, seeks to broaden original thinking and shifts the existing paradigm to an alternative one. Understanding these definitions provides a valuable centerpiece in which to explore caring in a more profound way.

CARING SUSTAINABILITY

Caring sustainability is a caring consciousness dedicated to the reconnection of self, others, and nature, with a desired outcome of balance and harmony. *Caring sustainability* is creative and dedicated to environmental developments such as community building, fostering a sustainable future, and leading to social and economic improvements. It actively nurtures community relationships that contribute to social and environmental health. *Caring sustainability* has the capacity to engage, challenge, and transform (Flickinger, 2018).

This concept reflects a larger sense of caring and encourages respect for the natural world, including a more sympathetic understanding of environmental stewardship (Watson, 1979, p. 86). In this manner, ecological concerns can be tied to the sympathetic considerations of people who live in human communities, and shows that the ethical impetus behind human collaboration and sympathy can be extended to people's relationship with their environment. *Caring sustainability* for the environment must come from a place of trust, which means, it must come from an understanding that the natural environment is unable to withstand the force of human social and industrial whim.

The intersectionality of sustainability, sustainability education, and *caring sustainability* has the potential to create a Culture of Care. All three aspects are required for the survival of the planet. One must understand the genealogy and development of sustainability from its roots from 1713 forward; the value of sustainability education through collaboration; and the importance of *caring sustainability* in conversations about the future of humankind and the earth.

A culture of caring is a circle that begins with care and ends with care. Caring is a key factor for building stronger community relationships, for more robust educational pedagogies, and collaboration, as well as more effective public policy. Supporting the needs of others through caring practices connects leaders, no matter how small the group, with those who follow, and deepens their understanding of one another. A culture of caring opens the door for thriving collaboration.

CONCLUSION

The purpose of this work is to provide a framework for fostering deeper collective societal relationships, locally, nationally, and globally, by creating what the authors have defined as a Culture of Care. The COVID-19 pandemic has made evident that our lives, in both social and economic spheres, are indeed not only fragile, but also interconnected. The authors have examined this interconnectedness through the lens of social construct in the United States to demonstrate that resolution of our collective wellbeing depends upon the collaboration between disparate groups (nations, communities, etc.), which ultimately depends on recognition of shared values, education, and communication.

At its outset, this chapter deconstructs American democracy, while providing inspiration for self-governance around the world, is infused with systemic racism, sexism, oppression of marginalized communities, poverty, and social-economic inequality. Furthermore, in America today, hate crimes and violence within our communities and mass shootings are far too commonplace. There is a need for change; an improvement toward American relations with others both home and abroad. The authors focus their work on the principles of ethics and moral education, and on an interdisciplinary approach to theory and practice of caring through the nursing and education disciplines, as they apply to a Culture

An Alternative to Socio-Economic Injustice

of Care. A pedagogy for embracing caring behavior and social justice is necessary for social change, and a *Caring Science Theory* further documents the human value of a caring society.

The chapter maintains that care relations through *caring sustainability* (Flickinger, 2018) are vital to achieve long-lasting, collaborative relations throughout the world in future endeavors. A Culture of Care welcomes the openness to miracles and mysteries. It allows one to create a sense of anticipation for what might and can happen.

Finally, through their vision of social justice, equality, human rights, and responsibilities, the authors explored ways to potentially create a Culture of Care through behavioral and cultural change. The introduction to this chapter began with Tocqueville identifying Americans in the 19th century as “rugged individualists” who are focused on their independence and personal freedoms. This chapter suggests that perhaps more thought and caring actions could be directed towards the welfare and livelihoods of others in their communities at large.

Why is it that in the United States with enough vaccines, face masks, and medicine for all citizens, the federal government has to mandate businesses and individuals to protect themselves and *others* from spreading the COVID variants? Furthermore, many witness many low income nations where people need assistance and would be more amenable for such medical supplies. It is the aspiration of the authors that individuals turn our humanitarian behaviors towards improving local and global communities by collaborating within a more caring, alternative paradigm.

REFERENCES

- Angeles, A. (1993). *The four-fold way: Walking the paths of the warrior, teacher, healer, and visionary*. Harper.
- Buber, M. (1965). *Between man and man* (R. G. Smith, Trans.). Macmillan.
- Capra, F. (1996). *The web of life: A new scientific understanding of living systems*. Anchor.
- Carson, R. (1962). *Silent spring—III*. Academic Press.
- Cha, A. E., & Cohen, R. A. (2020). Reasons for being uninsured among adults aged 18–64 in the United States, 2019. NCHS Data Brief, no 382. Hyattsville, MD: National Center for Health Statistics.
- Dewey, J. (1963). *Experience and Education*. Macmillan. (Original work published 1938)
- Edwards, A. R. (2015). *The heart of sustainability: Restoring ecological balance from the inside out*. New Society Publishers.
- Ehrenfeld, J. R. (2008). *Sustainability by design: A subversive strategy for transforming our consumer culture*. Yale University Press.
- Freire, P. (1970). Pedagogy of the oppressed (M. B. Ramos, Trans.). *Continuum*, 72, 43–70.
- Flickinger, D. (2018). Learning with hearts in the trees (Transformation, Reflective, Education, Enlightenment, Sustainability): A Transdisciplinary Inquiry Into Teaching Caring Sustainability to Children. California Institute of Integral Studies: 10844964.
- Flickinger, D. (2019). Debby’s miracle. In J. Watson (Ed.), *Miracles and mysteries witnessed by nurses* (pp. 103–111). Lotus Library.

Gibbs, P. (Ed.). (2015). *Transdisciplinary professional learning and practice*. Springer International., doi:10.1007/978-3-319-11590-0

Gilligan, C. (1982). *In a different voice*. Harvard University Press.

Greene, M. (1995). *Releasing the imagination: Essays on education, the arts, and social change*. Jossey-Bass.

Hargreaves, A., & Goodson, I. (2006). Educational change over time? The sustainability and non-sustainability of three decades of secondary school change and continuity. *Educational Administration Quarterly*, 42(1), 3–41. doi:10.1177/0013161X05277975

History.com (Ed.). (2009, November 9). *Alexis de Tocqueville*. <https://www.history.com/topics/france/alexis-de-tocqueville>

International Institute for Sustainable Development, Deloitte, Touche, & Business Council for Sustainable Development. (1992). *Business Strategy for Sustainable Development: Leadership and Accountability for the '90s*. International Institute for Sustainable Development.

Sterling, S. (2010). *Sustainability education: Perspectives and practice across higher education*. Taylor & Francis. doi:10.4324/9781849776516

Lopez, G. (2019, November 18). The Walmart shooting is part of a typical week in America. *Vox*. <https://www.vox.com/2019/11/18/20970841/duncan-oklahoma-walmart-shooting-gun-violence>

Merriam-Webster's Dictionary. (n.d.). Rugged individualism. *Merriam-Webster.com*. Retrieved June 20, 2021, from <https://www.merriam-webster.com/dictionary/rugged%20individualism>

Montuori, A. (2005). Gregory Bateson and the promise of transdisciplinarity. *Cybernetics & Human Knowing*, 12(1–2), 147–158. <https://pdfs.semanticscholar.org/af57/4ea4faa818c61c8db8a1fe7a4ed61987845c.pdf>

Noddings, N. (1984). *Caring: A feminine approach to ethics and moral education*. University of California Press.

Noddings, N. (2005a). The challenge to care in schools: An alternative approach to education. *Advances in Contemporary Educational Thought*, 8.

Noddings, N. (Ed.). (2005b). *Educating citizens for global awareness*. Teachers College Press.

Noddings, N. (2013). *Education and Democracy in the 21st Century*. Teachers College Press.

Pfenninger, S. (2013, March 19). *The discovery of sustainability* [blog post]. <https://www.pfenninger.org/posts/the-discovery-ofsustainability>

Reinicke, C. (2021, June 2). How the pandemic and a rise in targeted hate crimes has shifted spending for Asian Americans. *NBC*. <https://www.nbcnews.com/news/asian-america/pandemic-rise-targeted-hate-crimes-shifted-spending-asian-americans-rcna1097>

Seigel, S., & Rockwell, V. (1993). Democratic education, student empowerment, and community service: Theory and practice. *Equity & Excellence in Education*, 26(2), 65–70. doi:10.1080/1066568930260215

An Alternative to Socio-Economic Injustice

Seigel, S. (1997). Teachers of service-learning. In R. Wade (Ed.), *Community service-learning: A guide to including service in the public school curriculum* (pp. 197–213). Academic Press.

Sitzman, K., & Watson, J. (2017). *Watson's caring in the digital world: A guide for caring when interacting, teaching, and learning in cyberspace*. Springer.

United Nations. (1972, June) *Declaration of the United Nations conference of the human environment*. United Nations. Retrieved from <http://www.un-documents.net/aconf48-14r1.pdf>

United Nations. (1987, March). *Report of the United Nations conference on environment and development: Our common future*. United Nations. Retrieved from <http://www.un-documents.net/ourcommon-future.pdf>

Walker, S. (2012). *Sustainability by design: Explorations in theory and practice*. Routledge. doi:10.4324/9781849772747

Walker, B., & Salt, D. (2012). *Resilience thinking: Sustaining ecosystems and people in a changing world*. Island Press.

Watson, J. (1979). Nursing: The philosophy and science of caring. *Nursing Administration Quarterly*, 3(4), 86–87. doi:10.1097/00006216-197900340-00010

Watson, J. (2005). *Caring science as sacred science*. F. A. Davis Company.

Watson, J. (2008). *The philosophy and science of caring* (Rev. ed.). University Press of Colorado.

Wells, J. (2013). *Complexity and sustainability*. Routledge.

World Ocean Review. (2015). *What is sustainability? Concepts for a better world*. <https://worldocean-review.com/en/wor-4/concepts-for-a-better-world/what-is-sustainability/>

KEY TERMS AND DEFINITIONS

Altruistic: The behavior that one believes is humane and helpful to others.

Caregiver: An individual who cares *for* the needs of another.

Caring-For: The act of an individual or individuals who consciously provide and support the needs of others.

Caritas: A Greek word meaning cherish and love.

Community: A collective of individuals who agree to shared values, behaviors, and make those an established practice as a group.

Confirmation: The practice of approving and giving validation confirmation towards one's behavior.

Culture: The values, traditions, and behaviors that are found within a given society.

Dialogue: A practice of communication through spoken language, writing, or other means that is open-ended and whose main purpose is to better understand others' perspectives.

Modeling: A way of showing or displaying behaviors in shaping a practice.

Sustainability: Is the enduring or maintaining a desired practice or system of lifestyle or praxis.

Chapter 2

Human Digital Transformation Readiness: Integrate Data Into the Mindset and Decision–Making Processes

Ota Novotný

Prague University of Economics and Business, Czech Republic

Martin Potančok

Prague University of Economics and Business, Czech Republic

Vladimír Krajčík

University College of Business in Prague, Czech Republic

ABSTRACT

Digital transformation can effectively support innovative strategic planning. However, it is necessary to realise that the digital ecosystem produces enormous volumes of data and creates unique requirements for working with it. Due to this, data needs to be integrated into the mindset and decision-making processes properly. The proposed solution is based on an analysis of digital transformation readiness models, analyses of the status of data and data literacy in the models and their extensions, a definition of the levels of readiness that need to be achieved, and preparation of educational programs for the enhancement of human digital transformation readiness from the mindset and skillset perspective. The main outputs of the chapter correspond to the problem and the suggested solution. They include the human digital transformation readiness index based on the capability maturity model (CMM), required mindset, and skillset, taking into account the digital and data literacy of the participants of innovation activities.

INTRODUCTION

Innovative strategic planning promotes economic stability and global sustainability in companies (Carllock & Ward, 2001; Baumgartner, 2014; Kozhevina et al., 2020). Rachinger et al. (2019) stated that innovative strategic planning may be enhanced by digital transformation. Digital transformation (DT) represents a “*process where digital technologies play a central role in the creation and reinforcement of*

DOI: 10.4018/978-1-7998-8339-5.ch002

Human Digital Transformation Readiness

disruptions taking place at the society and industry levels. These disruptions trigger strategic responses from the parts of organisations, which occupy a central place in DT literature. Organisations use digital technologies to alter the value creation paths they have previously relied upon to remain competitive” (Vial, 2019). In the digital form, technologies generate vast volumes of data, which can double every two years (Weber, 2020).

Gartner recognises data as the new core capability of business, people, processes, and technology (Logan, 2018). Grillenberger & Romeike (2018) argue that *“knowing about the possibilities offered by data and data analysis plays an increasing role for developing an understanding of the world.”* We manipulate data in everyday processes regardless of the sector or domain. That supports Ridsdale et al.’s (2015) statement that *“it is an essential ability required in the knowledge-based economy.”* Data is becoming a significant (sometimes even essential) part of the decision-making process; on the other hand, intuition is still necessary, and it is not possible to say we are approaching a state where data takes the lead, rendering human intuition obsolete (Potancok, 2019).

Data analytics and digitisation will undoubtedly reshape the labour market and lead to the creation of new work opportunities (Loebbecke & Picot, 2015). This will cause a shift in the competencies required from the workforce, creating a *“digital workforce”* – and to a certain extent, it has already caused this. These competencies can be regarded as skillsets needed to utilise digital technologies to manipulate data, solve problems, or create products (Colbert et al., 2016).

There are currently many frameworks and models of readiness for digital transformation; the following examples include both academic and commercial ones. Lezina et al. (2019) have analysed them from a usability point of view.

- § Five Digital Business Aptitude Domains (KPMG, 2015)
- § Digital Maturity Model 4.0 (Gill & VanBoskirk, 2016)
- § Digital Maturity to Drive Superior Performance (BCG, 2021)
- § Industry 4.0 Maturity Model (Schumacher et al., 2016)
- § Digital Readiness Assessment Maturity Model (De Carolis et al., 2017)
- § Digital Services Capability Model (Wulf et al., 2017)
- § Organisations Digital Readiness Framework (Sanchez & Zuntini, 2018)
- § Interrelationship between the Digital Transformation, Strategy
§ and Organizational Capability (Schumann & Tittmann, 2015)
- § Digital Transformation Framework (Matt et al., 2015)

Our initial analysis of the existing readiness frameworks/models shows that people’s data, mindset, and knowledge are covered only implicitly or neglected altogether. This fact is in line with the results from digitalisation and its influence on business model innovation, *“Moreover, the organisational capacities and employee competences were identified as future challenges that will be faced.”* (Rachinger et al., 2019)

Despite that, a few digital transformation frameworks have covered – either directly or indirectly – the concept of digital literacy. Digital literacy can be defined as *“the ability to understand, evaluate, and integrate information that exists in a variety of formats and from a wide range of sources, having the information is presented through a computer”* (Gilster, 1997; cited in Pool, 1997). The framework introduced by Corver & Elkhuisen (2014) essentially divides the phenomenon of digital transformation

into several components. One such component is called “*digital skills & virtual workforce*” and can undoubtedly be linked to digital literacy. Other digital transformation frameworks directly include the concept of digital literacy as their integral part (IQUII, 2017).

The discussion about digital skills is often narrowed only to the essential skills needed to operate hardware and software. However, there are several other types of skills needed to use digital technologies efficiently. Van Dijk (2013) identified six different types of digital skills: operational, formal, information, communication, strategic, and content-creation skills. The skills needed to operate hardware and software are represented by operational skills. Formal skills allow users to handle the formal structures of the medium. Information skills relate to the ability to search, select, and evaluate information in digital media. Communication skills involve mailing, contacting, creating online identities, drawing attention, and giving opinions. Strategic skills are necessary for using the digital medium as a means for achieving specific goals. Last but not least, content-creation skills relate to the ability to make contributions to a particular plan or design.

Following up on the types of digital skills introduced by Van Dijk (2013), Van Laar et al. (2017) conducted a systematic literature review to examine 21st century digital skills and subsequently divided the skills into the following categories: technical, information, communication, collaboration, critical thinking, creativity, and problem-solving skills.

Rahman & Aziz (2021) introduced a digital competency framework encompassing 21 digital competencies organised into five key competency areas. The identified competency areas were information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving.

Digital transformation has to be based on the mindset and skill set necessary for the workforce, taking into account innovation, entrepreneurship, data literacy, and Human Digital Transformation Readiness. We believe that in order to improve anyone’s mindset and skillset, it is necessary to determine what the start line is and what we want to achieve. This chapter aims to define and verify the Human Digital Transformation Readiness Index to measure it as a level of maturity. Therefore, creating a model based on the Capability Maturity Model (CMM) methodology is essential. The chapter will have the following structure.

1. Analysis of Digital Transformation Readiness frameworks and models
2. Analysis of data and the status of data literacy in the frameworks and models and their extensions
3. Levels of readiness to be achieved
4. Educational programs for enhancing the Human Digital Transformation Readiness from the mindset and skillset perspective

This chapter has used the case study method, the qualitative research method, and qualitative content analysis (Myers, 2013), due to the need to fully understand and verify the defined levels of readiness that is to be achieved.

The research design and the case study procedures are based on initial analysis of digital transformation readiness frameworks and models, as well as the position of data and data literacy in the models, and personal interviews with stakeholders to validate the outputs.

Validation and authorisation by responsible persons are based on the research design used by Vital & Aubert (2002). They presented their authorisation framework to managers and incorporated any comments received as part of the feedback into the framework. When using the method of validation

Human Digital Transformation Readiness

and authorisation by responsible persons, the model is not tested in real practice but responsible persons assess it. However, it may suffice if the model is validated and authorised by persons from several companies (also in connection with the qualitative research used). This was the most significant reason for choosing this research design.

The stakeholders of this study include randomly selected managers of small and medium-sized enterprises in production and finance. In the course of the case study, interviews were conducted at the beginning of 2021. During the case study, five interviews were conducted. The interviews' length in average was 60 min, and all were done online due to the pandemic. The beginning of each interview was unstructured to get as much information and as many opinions as possible, followed by a semi-structured part with questions drawing on the basic levels of readiness to be achieved within the Human Digital Transformation Readiness Index.

Upon peer review validation, the results will serve business professionals in the field of innovation and strategic management. Based on the outlined approaches, professionals will be able to determine better digital transformation strategies. They will then be able to include two additional dimensions (the Human Digital Transformation Readiness Index and the necessary mindset and skillset taking into account participants' digital and data literacy) into their innovation activities. This ability will give them a more holistic view to streamline their decisions.

ANALYSIS OF DIGITAL TRANSFORMATION READINESS FRAMEWORKS AND MODELS, AS WELL AS THE POSITION OF DATA AND DATA LITERACY IN THE MODELS

Based on the analysis of the frameworks mentioned above and models, we selected those most focused on people's data, mindset, and knowledge, specifically from the perspective of the position of data and data literacy in the frameworks and models. These are the following:

- § Five Digital Business Aptitude Domains (KPMG, 2015)
- § Digital Maturity Model 4.0 (Gill & VanBoskirk, 2016)
- § Industry 4.0 Maturity Model (Schumacher et al., 2016)
- § Digital Services Capability Model (Wulf et al., 2017)

Five Digital Business Aptitude Domains (KPMG, 2015)

The KPMG report consists of five domains describing essential methods and capabilities aligned with an organisation's ability to transform into a digital business successfully.

Digital Maturity Model 4.0 (Gill & VanBoskirk, 2016)

Digital maturity is a trend that has emerged alongside the Digital Economy and Industry 4.0. At the moment, there is no standard definition and understanding of this process, so there is much scope for study and research on this topic.

Table 1. Five Digital Business Aptitude Domains

Element	Description
Vision & strategy domain	<p>Vision – the management outlines its vision for the role of digital technology in the business, which includes realistic goals for the upcoming year.</p> <p>Strategy – a digital strategy to address the opportunities for connecting with our customers, workers, and business partners.</p> <p>Leadership – senior executives understand the threats and opportunities posed by the digital barrier and are committed to our digital strategy.</p> <p>Culture – building strategy by empowering employees through a rich set of digital and mobile technologies.</p>
Digital talent	<p>Talent acquisition – actively recruit digital talent using traditional and innovative methods such as meet-ups and coding competitions.</p> <p>Talent Development – training programmes support digital strategy and technology investments, including a programme to develop our internal digital IQ.</p> <p>Skills optimisation – taking advantage of existing digital talent and supporting digital initiatives in the organisation, such as the Centre of Excellence.</p> <p>Talent pools – accelerate digital initiatives when needed by leveraging internal talent with specific external resources and collaboration tools.</p>
Digital First Processes Domain	<p>User experience design – when designing digital experiences, use behavioural and racial insights to design high-quality digital interactions that drive behaviour.</p> <p>Development – when necessary, employ flexible, iterative, and agile development to develop competitive digital products and adapt to rapidly changing technologies.</p> <p>Optimised platforms – optimised apps for browsers, Android, iOS, and other mobile platforms to support the latest design and development frameworks.</p> <p>Measurement & analytics – collection of relevant data to enable meaningful analysis of the implementation, use, effectiveness, and business outcomes of digital applications and sites.</p>
Sourcing and Infrastructure	<p>Strategic Partner relationships - sourcing strategy design should help organisations innovate and deliver digital solutions by partnering with leading digital technology companies or design agencies.</p> <p>Mobile - understand and effectively address the unique features of various major mobile platforms in our plans, applications, and policies.</p> <p>Mobile engagement - engage with customers, workers, and business partners.</p> <p>Social Media - efficiently use social media and measure the results using fit-for-purpose social media analytics and listening tools.</p> <p>Infrastructure - use public, private, and hybrid cloud infrastructure for scalability and availability based on real-time demand.</p> <p>Agile architecture - digital solution platforms are designed for agility</p>
Governance	<p>Engagement – digital project sponsors include business and technology leaders to make joint decisions about project focus, funding, resources, costs, and timing.</p> <p>Architectural Discipline – documented standards, methods, guidelines, evaluation, and approval processes for digital development and the introduction of new digital technologies.</p> <p>Digital Governance – a governing body that actively monitors changing approaches to destructive technologies and their effects on technical policies, architectures, and standards.</p> <p>Calibrated Risk Management – risk management practices are based on a holistic and balanced approach to identifying and evaluating potential privacy and security issues associated with evolving digital technologies and significantly contribute to updating policies and standards.</p>

Source: adjusted based on (KPMG, 2015)

Industry 4.0 Maturity Model (Schumacher et al., 2016)

The model divides 62 maturity items into nine dimensions: strategy, leadership, customers, products, operations, culture, people, governance, and technology. In the case of this model, the full article only contained the following explanation (Schumacher et al., 2016).

Digital Services Capability Model (Wulf et al., 2017)

The model focuses on the assessment of capabilities and the definition of gaps within companies. Based on this, areas in need of urgent improvement may be identified.

Other frameworks and models focus more on the individual levels, maturity levels, business processes, and similar aspects. Therefore, they do not directly include the knowledge component.

Human Digital Transformation Readiness

Table 2. Digital Maturity Model 4.0

Element	Description
Strategy	The presence of a digital transformation strategy for the organisation, its integration into the organisation's development strategy. A list of specific and clear actions that are necessary to achieve a high level of digital maturity. At the same time, the digital transformation strategy must not "reverse" the existing strategy in the organisation but must be integrated and organically enriched, introducing the changes, technologies, and resources necessary to develop and improve the organisation's efficiency.
Organisation	The most important component for achieving a high level of digital maturity is the change in organisational culture, the restructuring of the business process and the preparation of management for improving their management skills.
People	The successful implementation of the strategy requires the employees' consent and awareness of the upcoming changes. People's commitment, motivation, and participation in strategic change within an organisation are critical for success.
Technologies	Technology is the primary driver of digital conversion. A high level of digital maturity means a high level of digital capability for the employees involved in the digital transformation process.
Data	Good data use and management is the foundation of digitisation, which includes creating and generating data and other related processes. To increase the volume and quality of data, companies need to pay attention. Correctly managed, consistent, and reliable data is not only the basis of all financial processes but also the basic need for digitisation.

Source: adjusted based on (Gill & VanBoskirk, 2016)

Table 3. Industry 4.0 Maturity Model

Element	Description
Strategy	Implementation roadmap, available resources for realisation, adoption of business model
Leadership	The willingness of leaders, management competences
Customer	Utilisation of customer data, digitalisation of sales/services, the customer's digital media competence
Products	Individualisation of products, digitalisation of products, product integration into other systems
Operations	Decentralisation of processes, modelling and simulation, interdisciplinary, interdepartmental collaboration
Culture	Knowledge sharing, open-innovation and cross-company collaboration, the value of ICT in the company
People	ICT competencies of employees, the openness of employees to new technology, the autonomy of employees
Governance	Labour regulation, suitable technology standards, protection of intellectual property
Technology	Existence of modern ICT, utilisation of mobile devices, utilisation of machine-to-machine communication

Source: adjusted based on (Schumacher et al., 2016)

Our analysis of the readiness frameworks/models (Five Digital Business Aptitude Domains (KPMG, 2015); Digital Maturity Model 4.0 (Gill & VanBoskirk, 2016); Industry 4.0 Maturity Model (Schumacher et al., 2016); Digital Services Capability Model (Wulf et al., 2017) shows that they focus on essential methods and capabilities for the digital transformation of companies. They also aim to align the organisation's ability and transformation into a digital business successfully. In some cases, the frameworks/models focus on assessing capabilities and defining gaps within companies. Therefore, the findings of the analysis confirm that existing readiness frameworks/models show that people's data, mindset, and knowledge are covered only implicitly or neglected altogether.

Table 4. Digital Services Capability Model

Element	Description
Consumers	Consumers reach the ultimate recipient of a digital service and encompass the organisation’s ability to understand how services are consumed (customer focus) and capture and respond to customer demands (customer flexibility).
Services	Services feature prominent design features of a user-oriented value proposition and include the ability to align value propositions with customer demands (personal nature) and to monitor service performance (business orientation).
Processes and Activities	Processes and activities address formal and informal service delivery activities, enhance value creation activities based on digital technology (process restructuring), and protect customer information through digital service communications. Includes the (privacy) function.
Organisation	The organisation covers various aspects of organisational design that determine how work is coordinated in digital service systems and includes designing key roles (roles and responsibilities), promoting collaboration within the organisation (collaboration), and managing competencies (competencies management).
Information	The information describes the data management approach, methods, and tools on which a digital service is built. This includes the ability to continuously assess the business potential of available data (data mining) and manage the quality and accessibility of consumer data (data management).
Technologies and Infrastructure	Technologies and infrastructures address the IT-related aspects of service design and include the ability to integrate channels (channel integration) and manage analytical systems (Analytical Systems).
Strategies	Strategies deal with the competitive positioning of the service system and include the company’s ability to align digital service goals and coordinate service programs (service coordination) with the corporate strategy (digital strategy).
Environment	The environment examines how a service in the system relates to the institutional, competitive, and regulatory environment for service delivery. It covers the organisation’s ability to manage partnerships and strategic alliances (partnership strategy) and the early detection of potential strategic market changes (market orientation).

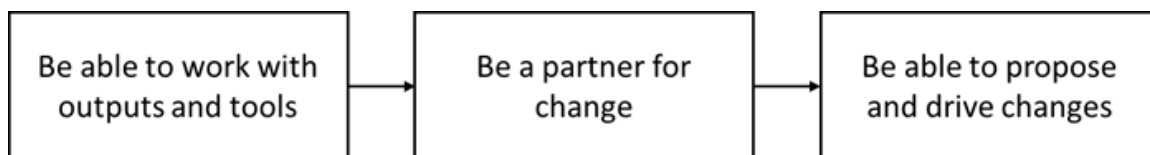
Source: adjusted based on (Wulf et al., 2017)

LEVELS OF READINESS TO BE ACHIEVED

For digital transformation to take place in companies, it is essential to prepare team members appropriately. Their mindset and skillset must include innovation, entrepreneurship, data literacy, and human digital transformation readiness. In terms of the levels of readiness, we distinguish three levels (as shown in Fig. 1.) which represent the levels of the Human Digital Readiness Index: 1) Be able to work with outputs and tools – this is an entry level necessary for all team members using digital transformation outputs; 2) Be a partner for change – the second level, which is necessary for team members to make changes; 3) Be able to propose and drive changes – the third and highest level for drivers of change. The levels and Human Digital Transformation Readiness Index designed this way serves as a baseline to understand the current position and possible paths for improvement.

Figure 1. Levels of the readiness index

Source: authors



Human Digital Transformation Readiness

- Be able to work with outputs and tools

§ Data literacy

- The ability to understand the role of data (in society, in business) – *Understanding the importance of data for organisations, which means making informed decisions and taking informed actions, backing up arguments and decisions, and finding solutions to problems (determining the causes of a problem)*
- The ability to understand fundamental characteristics of data – *The ability to understand the difference between data and information, the ability to understand data categories, and the ability to understand key data concepts.*
- The ability to understand basic concepts of data management – *Being familiar with phases of the data lifecycle, concepts of data storage and data sources, the knowledge of basic data security and data privacy concepts, the knowledge of basic data quality principles, the knowledge of business metadata.*
- Awareness of data ethics principles and legal limitations – *Responsible and sustainable use of data, awareness of ownership, transaction transparency, consent, privacy, currency, openness, and regulation.*
- Knowledge of basic approach to problem-solving with data – *Understanding the purpose of analysing data, the data analysis process (problem-plan-data-analysis-conclusion)*
- The ability to recognise elementary visualisation techniques – *Knowing what visualisation to use for which purpose and knowing basic visualisation principles for quantitative data (distracting colours etc.)*
- The ability to identify relevant data sources for a given problem – *Understanding the business problem is a prerequisite, along with understanding business metadata.*
- The ability to apply basic analytical methods – *The ability to apply the data analysis process and measurement techniques for a given business problem and assess the analytical outcomes; the ability to analyse and assess KPIs for a given business problem.*
- The ability to apply elementary visualisation methods – *The ability to use a proper visualisation for a given problem and build it within a reasonable time without external help.*
- The ability to interpret basic graphs and tables – *The ability to identify issues based on data, understand the story behind the data, and recognise trends.*
- The ability to adapt the communication of data to the business problem and the expected audience – *The ability to assess the audience type and plan an appropriate presentation type, select meaningful tables/graphs to communicate data, and select a suitable sharing platform.*
- The ability to clearly and coherently present arguments and analytical outcomes – *The ability to clearly express the reasons for derived analytical conclusions, to support analytical outcomes with data.*
- The ability to create insights – *The ability to prioritise information from data and convert data into actionable information.*
- The ability to make decisions based on data – *The ability to prioritise objective facts and data over subjective intuition for making decisions, interpret and use data for making decisions about a given problem / in a given context.*
- The ability to adhere to data ethics and legal limitations – *The ability to apply data ethics principles in practice (in the context of a given business problem)*

§ Good data use and management is the foundation of digitisation, which includes the creation and generation of data, as well as other related processes and data transparency.

§ Allocate time for individual employees so that they can engage in transformation.

§ Digital literacy

- Operational (Van Dijk, 2013), technical (Ng, 2012; Van Laar, et al., 2017) skills – *“The skills to use (mobile) devices and applications to accomplish practical tasks and recognise specific online environments to navigate and maintain orientation.”* (Van Laar et al., 2017)
- Formal skills – The skills to *“handle the formal structures of the medium.”* (Van Dijk, 2013)
- Information skills (Siddiq et al., 2016; Van Dijk, 2013; Van Laar et al., 2017) – *“The skills to use ICT to efficiently search, select, organise information to make informed decisions about the most suitable sources of information for a given task.”* (Van Laar et al., 2017)
- Communication skills (Siddiq et al., 2016; Van Dijk, 2013, Van Laar et al., 2017) – *“The skills to use ICT to transmit information to others, ensuring that the meaning is expressed effectively.”* (Van Laar et al., 2017)
- Collaboration skills (Choy et al., 2016; Van Laar et al., 2017) – *“The skills to use ICT to develop a social network and work in a team to exchange information, negotiate agreements, and make decisions with mutual respect for each other towards achieving a common goal.”* (Van Laar et al., 2017)
- Critical thinking skills (Greene et al., 2014; Van Laar et al., 2017) – *“The skills to use ICT to make informed judgements and choices about obtained information and communication using reflective reasoning and sufficient evidence to support the claims.”* (Van Laar et al., 2017)
- Problem-solving skills (Greiff et al., 2013; Van Laar et al., 2017) – *“The skills to use ICT to cognitively process and understand a problem situation in combination with the active use of knowledge to find a solution to a problem.”* (Van Laar et al., 2017)
- Be a partner for change
 - § Consent and awareness of the changes to come (Gill & VanBoskirk, 2016) – *“Collaborators are better at data quality and operations than they are at creative, building brand awareness, and applying analytics. Differentiators, however, emphasise competency in and integration of creative strategy and analytics”* (Gill & VanBoskirk, 2016)
 - § Content-creation (Van Dijk, 2013), creativity (Van Laar et al., 2017) skills – *“The skills to use ICT to generate new or previously unknown ideas, or treat familiar ideas in a new way and transform such ideas into a product, service or process that is recognised as novel within a particular domain.”* (Van Laar et al., 2017)
 - § Strategic skills – The skills to *“use the digital medium as a means to achieve particular professional and personal goals.”* (Van Dijk, 2013)
 - § Scale skills (Sidhu, 2019) – *“Skills of people in the search phase”* (Sidhu, 2019)
 - § Like plans, avoid unknowns (Sidhu, 2019) – *“Characteristics of people in the search phase”* (Sidhu, 2019)
 - § Customer focus (Sidhu, 2019) – *“The culture of the organisation is to always focus on the customer first”* (Sidhu, 2019)

Human Digital Transformation Readiness

- § Collaborate with mutual partners (Nadeem et al., 2018) – *“collaborations within a network of actors (e.g., customers and firms’ employees) through exchange of experiences and specialised competences and evolution of aggregated knowledge”* (Nadeem et al., 2018)
- 3) Be able to propose and drive changes
- § Experimentation, adoption, learning customer and technology (Sidhu, 2019) – *“Skills of people in the search phase”* (Sidhu, 2019)
- § Change the world motivation (Sidhu, 2019) – *“Motivation of people in the search phase”* (Sidhu, 2019)
- § Comfortable with unknowns (Sidhu, 2019) – *“Characteristics of people in the search phase”* (Sidhu, 2019)
- § Recognise the need for digital investments and create a roadmap for improvement (Ha, 2019) – *“Management recognises the need for digital investment and a roadmap is designed for improvement. Processes are in the early phases of digitisation”* (Ha, 2019)

We have discussed the levels above and their structure with representatives of small and medium-sized enterprises in production and finance. Overall, their representatives understood the proposed structure and gave positive feedback on the possibilities of its applicability for their companies. In addition to the above, especially for levels 2 and 3, they suggested combining this with the DNA knowledge of their company, which is essential for the support of digital transformation at these levels. Another issue related to the limited capacity of employees engaged in digital transformation.

SOLUTIONS AND RECOMMENDATIONS

As part of our analysis, we found that companies’ readiness for digital transformation in terms of specific knowledge and skills of employees is not sufficiently prioritised in the analysed digital transformation models. Nevertheless, even based on our interviews with business stakeholders, it is a key prerequisite for the success of such a transformation.

Likewise, not enough attention is paid to the combination of digital transformation projects and the employees’ daily work routine, limiting employees’ time to engage in digital transformation. This is especially true for smaller companies.

Therefore, before starting a digital transformation project using any methodological approach, we also recommend monitoring the employee readiness – for example, through the Human Digital Transformation Readiness approach, which we have defined in this text. When used, we expect a positive impact on the process of the digital transformation and its results. Such a transformation will use the full potential of the company’s employees. It should be noted that the structure of the Digital Transformation Readiness approach and analysis of its results are the subject of further research (see details below).

FUTURE RESEARCH DIRECTIONS

The conclusions of our initial research identified a gap allowing for further analysis in this area, especially a more in-depth design of the structure of the Digital Transformation Readiness approach. In such research, it would be ideal to focus on the form of the Human Digital Transformation Readiness Index

and an interconnected methodology of its measurement for the company and its employees to apply to all companies preparing to implement digital transformation.

ACKNOWLEDGEMENT

This chapter was written thanks to the long-term institutional support of research activities by the Faculty of Informatics and Statistics, Prague University of Economics and Business (IP40040).

We are grateful for the support of all the participating organisations. We also would like to thank Ms. Markéta Smolníková, Mr. Karel Maršálek and Mr. Shkelzen Tarja for their support.

REFERENCES

- Ackoff, R. L. (1989). From data to wisdom. *Journal of Applied Systems Analysis*, 16(1), 3–9.
- Baumgartner, R. J. (2014). Managing corporate sustainability and CSR: A conceptual framework combining values, strategies and instruments contributing to sustainable development. *Corporate Social Responsibility and Environmental Management*, 21(5), 258–271. doi:10.1002/csr.1336
- BCG. (2021). Digital Maturity Consulting and Strategy. *BCG*. <https://www.bcg.com/capabilities/digital-technology-data/digital-maturity>
- Carlock, R. S., & Ward, J. L. (2001). *Strategic planning for the family business: Parallel planning to unify the family and business*. Palgrave. doi:10.1057/9780230508750
- Choy, D., Deng, F., Chai, C. S., Koh, H. L. J., & Tsai, P. S. (2016). Singapore primary and secondary students' motivated approaches for learning: A validation study. *Learning and Individual Differences*, 45, 282–290. doi:10.1016/j.lindif.2015.11.019
- Colbert, A., Yee, N., & George, G. (2016). The Digital Workforce and the Workplace of the Future. *Academy of Management Journal*, 59(3), 731–739. doi:10.5465/amj.2016.4003
- Corver, Q., & Elkhuisen, G. (2014). A Framework for Digital Business Transformation. *Cognizant Business Consulting Benelux*. <https://www.cognizant.com/InsightsWhitepapers/a-framework-for-digital-business-transformation-codex-1048.pdf>
- De Carolis, A., Macchi, M., Negri, E., & Terzi, S. (2017). Guiding manufacturing companies towards digitalisation a methodology for supporting manufacturing companies in defining their digitalisation roadmap. In *2017 International Conference on Engineering, Technology and Innovation (ICE/ITMC)* (pp. 487-495). IEEE. 10.1109/ICE.2017.8279925
- Gill, M., & VanBoskirk, S. (2016). *The digital maturity model 4.0. Benchmarks: digital transformation playbook*. https://dixital.cec.es/wp-content/uploads/presentacions/presentacion_06.pdf
- Gilster, P. (1997). *Digital Literacy*. Wiley.
- Greene, J. A., Seung, B. Y., & Copeland, D. Z. (2014). Measuring critical components of digital literacy and their relationships with learning. *Computers & Education*, 76, 55–69. doi:10.1016/j.compedu.2014.03.008

Human Digital Transformation Readiness

- Greiff, S., Wüstenberg, S., Holt, D. V., Goldhammer, F., & Funke, J. (2013). Computer-based assessment of complex problem solving: Concept, implementation, and application. *Educational Technology Research and Development*, 61(3), 407–421. doi:10.1007/11423-013-9301-x
- Grillenberger, A., & Romeike, R. (2018). Developing a theoretically founded data literacy competency model. In *Proceedings of the 13th Workshop in Primary and Secondary Computing Education* (pp. 1-10). 10.1145/3265757.3265766
- Ha, T. (2019). *Digital Acceleration Index Background*. <https://form.gov.sg/5d9c5ac>
- IQUII. (2017). The evolution of the Digital Transformation between System Integration and Omnicanality. *Medium*. <https://medium.com/iquii/the-evolution-of-the-digital-transformation-between-system-integration-and-omnicanality-95744ef960a8>
- Kozhevina, O. V., Trifonov, P. V., Ksenofontov, A. A., & Perednikh, L. V. (2020). The strategic management of sustainable industrial development in transition to Industry 4.0. In *Growth Poles of the Global Economy: Emergence, Changes and Future Perspectives* (pp. 1295-1304). Springer. doi:10.1007/978-3-030-15160-7_132
- KPMG. (2015). *Are You Ready for Digital Transformation? Measuring Your Digital Business Aptitude*. <https://assets.kpmg/content/dam/kpmg/pdf/2016/04/measuring-digital-business-aptitude.pdf>
- Lezina, T., Stoianova, O., Ivanova, V., & Gadasina, L. (2019). Assessment the Company's Readiness for Digital Transformation: Clarifying the Issue. In *International Conference on Digital Economy* (pp. 3-14). Springer. 10.1007/978-3-030-30874-2_1
- Loebbecke, C., & Picot, A. (2015). Reflections on societal and business model transformation arising from digitisation and big data analytics: A research agenda. *The Journal of Strategic Information Systems*, 24(3), 149–157. doi:10.1016/j.jsis.2015.08.002
- Logan, V. (2018). *Fostering data literacy and information as a second language: A Gartner trend insight report*. <https://www.gartner.com/en/doc/3860965-fostering-data-literacy-and-information-as-a-second-language-a-gartner-trend-insight-report>
- Mandinach, E. B., & Gummer, E. S. (2013). A Systemic View of Implementing Data Literacy in Educator Preparation. *Educational Researcher*, 42(1), 30–37. doi:10.3102/0013189X12459803
- Matt, C., Hess, T., & Benlian, A. (2015). Digital transformation strategies. *Business & Information Systems Engineering*, 57(5), 339–343. doi:10.1007/12599-015-0401-5
- Nadeem, A., Abedin, B., Cerpa, N., & Chew, E. (2018). *Digital transformation & digital business strategy in electronic commerce-the role of organisational capabilities*. doi:10.4067/S0718-18762018000200101
- Ng, W. (2012). Can we teach digital natives digital literacy? *Computers & Education*, 59(3). doi:10.1016/j.compedu.2012.04.016
- Pool, C. R. (1997). A new digital literacy: A conversation with Paul Gilster. *Educational Leadership*, 55(3), 6–11.

- Potancok, M. (2019). Role of data and intuition in decision making processes. *Journal of Systems Integration*, 10(3), 31–34. doi:10.20470/jsi.v10i3.377
- Rachinger, M., Rauter, R., Müller, C., Vorraber, W., & Schirgi, E. (2019). Digitalisation and its influence on business model innovation. *Journal of Manufacturing Technology Management*, 30(8), 1143–1160. Advance online publication. doi:10.1108/JMTM-01-2018-0020
- Rahman, T., & Aziz, A. A. Z. (2021). From Digital Literacy to Digital Intelligence. In *4th International Conference on Sustainable Innovation 2020–Social, Humanity, and Education (ICoSIHESS 2020)* (pp. 154-159). Atlantis Press.
- Ridsdale, C., Rothwell, J., Smit, M., Ali-Hassan, H., Bliemel, M., Irvine, D., Kelley, D., Matwin, S., & Wuetherick, B. (2015). *Strategies and best practices for data literacy education: Knowledge synthesis report*. <https://dalspace.library.dal.ca/bitstream/handle/10222/64578/Strategies%20and%20Best%20Practices%20for%20Data%20Literacy%20Education.pdf>
- Sanchez, M. A., & Zuntini, J. I. (2018). Organizational readiness for the digital transformation: A case study research. *Revista Gestão & Tecnologia*, 18(2), 70–99. doi:10.20397/2177-6652/2018.v18i2.1316
- Schumacher, A., Erol, S., & Sihm, W. (2016). A maturity model for assessing Industry 4.0 readiness and maturity of manufacturing enterprises. *Procedia CIRP*, 52, 161–166. doi:10.1016/j.procir.2016.07.040
- Schumann, C. A., & Tittmann, C. (2015). Digital business transformation in the context of knowledge management. In *European Conference on Knowledge Management* (p. 671). Academic Conferences International Limited.
- Siddiq, F., Scherer, R., & Tondeur, J. (2016). Teachers' emphasis on developing students' digital information and communication skills (TEDDICS): A new construct in 21st century education. *Computers & Education*, 92, 1–14. doi:10.1016/j.compedu.2015.10.006
- Sidhu, I. (2019). *Innovation Engineering: A Practical Guide to Creating Anything New*, Sidhu. Ikhlaq.
- Van Dijk, J. A. G. M. (2013). A theory of the digital divide. In *The Digital Divide: The Internet and Social Inequality in International Perspective* (pp. 29–51). Routledge.
- Van Laar, E., Van Deursen, A. J., Van Dijk, J. A., & De Haan, J. (2017). The relation between 21st-century skills and digital skills: A systematic literature review. *Computers in Human Behavior*, 72, 577–588. doi:10.1016/j.chb.2017.03.010
- Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems*, 28(2), 118–144. doi:10.1016/j.jsis.2019.01.003
- Weber, A. (2020). *Digitalisation for Value Creation*. Springer., doi:10.1007/978-3-030-36229-4
- Wulf, J., Mettler, T., & Brenner, W. (2017). Using a digital services capability model to assess readiness for the digital consumer. *MIS Quarterly Executive*, 16(3), 171–195.

ADDITIONAL READINGS

- Ahmed, M., & Pathan, A. S. K. (Eds.). (2018). *Data analytics: concepts, techniques, and applications*. CRC Press.
- Croll, A., & Yoskovitz, B. (2013). *Lean analytics: Use data to build a better startup faster*. O'Reilly Media, Inc.
- Dagnino, A. (2021). *Data Analytics in the Era of the Industrial Internet of Things*. Springer.
- Das, P. K., Tripathy, H. K., & Yusof, S. A. M. (2021). *Privacy and Security Issues in Big Data: An Analytical View on Business Intelligence*. Springer.
- Huang, S., & Deng, H. (2021). *Data Analytics: A Small Data Approach*. CRC Press.
- Jackson, S. (2015). *Cult of analytics: Data analytics for marketing*. Routledge.
- Kapur, P. K., Singh, G., Klochkov, Y. S., & Kumar, U. (2020). *Decision Analytics Applications in Industry*. Springer.
- Liebowitz, J. (Ed.). (2020). *Data Analytics and AI*. CRC Press.
- Sedkaoui, S., Khelifaoui, M., & Kadi, N. (Eds.). (2021). *Big Data Analytics: Harnessing Data for New Business Models*. CRC Press.
- Slánský, D. (2018). *Data and Analytics for the 21st Century: Architecture and Governance*. Professional Publishing.
- Verhoef, P., Kooge, E., & Walk, N. (2016). *Creating value with big data analytics: Making smarter marketing decisions*. Routledge.

KEY TERMS AND DEFINITIONS

Analysis: A procedure whose output is a logical model of the created system.

Data Literacy: “The ability to understand and use data effectively to inform decisions.” (Mandinach & Gummer, 2013)

Data: “Data are defined as symbols that represent properties of objects, events and their environment. They are the products of observation. But are of no use until they are in a useable (i.e., relevant) form. The difference between data and information is functional, not structural.” (Ackoff, 1989)

Digital literacy: “The ability to understand, evaluate, and integrate information that exists in a variety of formats and from a wide range of sources, having the information is presented through a computer.” (Gilster, 1997; cited in Pool, 1997).

Digital transformation (DT): “Process where digital technologies play a central role in the creation as well as the reinforcement of disruptions taking place at the society and industry levels. These disruptions trigger strategic responses from the part of organisations, which occupy a central place in DT literature. Organisations use digital technologies to alter the value creation paths they have previously relied upon to remain competitive.” (Vial, 2019)

Key Performance Indicator (KPI): Performance metrics of individual components of the process (activity duration, volume of processed documents, % use of service desk operator time).

Metadata: Data information (table names, attribute names, data types, primary keys, relationships, comments).

Chapter 3

The Challenges of the COVID-19 Infodemic: Consequences and Information Management

Aleksandra E. Mirek-Rogowska

 <https://orcid.org/0000-0001-9094-9540>

The Pontifical University of John Paul II in Krakow, Poland

Krzysztof Gajdka

University of Entrepreneurship and Law, Prague, Czech Republic

ABSTRACT

The COVID-19 pandemic brings challenges not only to health systems and governments around the world, but also to the media. One of them is to provide the public with information about the virus, healthcare. However, if there is not enough knowledge regarding the virus it might be a good base for false information flowing all over the media. According to the World Health Organization (WHO), the COVID-19 pandemic should be called 'infodemic', which is as dangerous as the virus pandemic. In order to prevent the dangerous consequences of false information, wide collaboration between different groups of experts, authorities, media, and media users is required, as well as very good media and information management.

INTRODUCTION

The COVID-19 pandemic presents multifaceted challenges not only for health care systems and governments in the world, but also for the media. One of those challenges concerns delivering information about the virus, and health care to the public. This task is even harder because of false information that appear in media, especially on social platforms. The World Health Organization (WHO) refers to the problem of providing a communication environment with an excess of conflicting and often inaccurate information

DOI: 10.4018/978-1-7998-8339-5.ch003

by individuals or groups in online media. This is described as ‘infodemic’, which is “an overabundance of information – some accurate and some not – that makes it hard for people to find trustworthy sources and reliable guidance when they need it” (World Health Organization [WHO], 2020a).

The COVID-19 outbreak has highlighted the necessity for the development of a comprehensive online communication strategy to counter false information and their consequences. As the director general of the WHO Tedros Adhanom Ghebreyesus stated, “We’re not just fighting an epidemic; we’re fighting an infodemic. Fake news spreads faster and more easily than the virus, and is just as dangerous” (Naughton, 2020). A pandemic having false information, which contains misinformation, disinformation and malinformation can lead to lack of trust, panic, and health hazards or even death. As a result of the Internet, mobile phones, social media, and different information platforms and systems, unreliable information is spreading rapidly across the globe, which could be seen during the COVID-19 pandemic. The aim of this article is to reflect on the challenges of false information about COVID-19 and how to manage and dispute them. The research stated four hypotheses related to the aim of the article. What kind of challenges has been raised during pandemic? What are the consequences of infodemic? How do we deal with mis- and dis-information? What are future research agendas in context of false information and information management? In this paper, the research method is based on a critical analysis of available literature and desk research of Reuters Institute at the University of Oxford (Newman et al., 2020), Prague Institute of Security Studies (PSSI) (Syrovátka et al., 2020) and published in the *American Journal of Tropical Medicine and Hygiene* (Islam et al., 2020).

BACKGROUND

Information can be defined as “the characteristics of the output of a process, these being informative about the process and the input” (Losee, 1997, p. 189). This is a broad enough definition that it can be applied to various fields of study, such as philosophy, physics and media studies or management science. During the pandemic the rule of information is to limit the spread of disease, make the public aware of the danger, avoid panic, maintain public trust and influence people behavior. However, the situation of coronavirus crisis showed that the information part of the Internet had begun to develop in the alarming direction of misinformation and disinformation.

Mis-, dis-, and mal- information

The increasing role of media and their influence on people knowledge, opinions and perception of the world has been known worldwide for many years. The global phenomenon of the COVID-19 pandemic posed a number of multifaceted challenges for authorities in the area of information management in digital media. It shows that the virus about which too little was, and still is, known encourages the development of communication based on untrue, unverified information. Moreover, the information the public expects is much more complicated in terms of content and form of the information package. The result of underdeveloped, unreliable information is the appearance of false information, which can be divided into: misinformation, disinformation and malinformation.

Misinformation is unintentionally false information (Pennycook et al., 2020; Garrett, 2020; Mian & Khan, 2020), for example information that Dettol products are proven against human coronavirus. This was broadly disseminated on different social platforms, specifically on Facebook. This false information

The Challenges of the COVID-19 Infodemic

was probably unintentional because this product did have some effectiveness against previous strain of coronavirus, which was believed to be similar as COVID-19 (Sharma, 2020).

Disinformation is intentionally misleading information (French & Monahan, 2020; McCloskey & Heymann, 2020) that can be spread for financial or political reason. The example of this kind of information can be a statement that COVID-19 is caused by 5G. It was circulated broadly via news and social platforms channels. The message comes from an apprentice doctor who had been charging for consultation in alternative medicine. The 5G claim may be a deliberate deception to convince patients to distrust mainstream medical practice.

Malinformation means true information that is shared with an intent to cause harm or genuine content that is reframed in a new and misleading ways (Wardle, 2019, p. 9). As an example, it can be a used statement that appeared as part of a Facebook post showing a picture of empty supermarket shelves with left unbought vegan food in the middle of it (Brennen et al., 2020). The information was: “Even with the corona virus panic buying, no one wants to eat vegan food”. The overall message was misleading because the image came from 2017, just ahead of Hurricane Harvey. According to Brennen et al. (2020), the used picture was ‘repurposed’ so that a truth from one context, in this case of Hurricane Harvey, was used to deceive in another – COVID-19. However, Brennen et al, (2020) described malinformation as sub-type of misinformation.

According to Reuters Institute’s research, much of the false information involves various forms of reconfiguration where existing and often true information is recontextualized or reworked (Brennen et al., 2020). This kind of content shows higher engagement than content that was entirely fabricated. They recognized three different sub-types of misinformation that reconfigured existing information. The most common form was ‘misleading content’ that contained some true information, but the details were changed, selected or used in different context. As a result, the information misled recipients (for example information that exposing yourself to the sun or temperatures higher than 25°C protects from COVID-19, while heat can kill the virus but this temperature is not high enough for it). A second common form of misinformation (in some studies called ‘malinformation’) includes images or videos used (described or labeled) in a non-factual context.

Based on the above examples, it can be seen that it is not easy to clearly distinguish which false information is called mis-, mal-, disinformation. because it is hard to guess if the misleading message was distributed intentionally or unintentionally. Moreover, there are different approaches to defining types of false information. Despite this, all categories of false data can have a dangerous impact on their recipients. It is important for governments, academics and digital platforms to work together fighting the infodemic.

Reasons why people believe fake news

False information has a negative impact on a person’s emotions, reasoning, and behavior by creating a false picture of reality (Bastick, 2021; Wright & Wright, 2019). Creators of false information use certain imperfections of the human brain, influence mechanisms and other phenomena described in psychology to achieve different goals such as political or financial gain, etc. In order to prevent spreading misinformation and disinformation it is equally important to understand the psychological aspects of how fake news affects people.

First of all, social influence, which is defined as the process by which person’s attitudes, beliefs, opinions or behavior are modified by the presence, pressure or actions of others (Heinzen, 2018). It is a

natural tendency that results from a need to be accepted by others or a desire to belong to a group. For example, the consequence is acceptance of information that is inconsistent with one's own beliefs or changing previous opinions because of the fear of disapproval from others. This attitude may result from the fear of rejection, stigmatization, or exclusion from the community. It has similar effect to "spiral of silence", which is that the awareness of having the support of public opinion encourages the expression of views consistent with it, and in the opposite case, people remain silent or propagate against themselves opinions with which they disagree (Noelle-Neumann, 1993). There is a spiral process of silencing some opinions and strengthening others, which is also related to the fear of exclusion, or a lack of acceptance by others. On the other hand, a person can succumb to social influence in uncertain or unfamiliar situations (Heinzen, 2018), where an individual does not have enough knowledge to make a decision or is not convinced of the reliability of the information they have – as in the beginning of COVID-19 pandemic. A manifestation of social influence in such a situation is a kind of imitation and treating other people's activity as a source of information. According to Dolinski (2002), the tendency to repeat or adopt other people's behaviors and views is one of the most characteristic human properties.

Second, an example of social influence on the Internet is the unreflective sharing of false news by users of social networking sites regarding vaccine, just because previously it was done by well-known people or authorities in the field. Spreading false information can as well be the result of peer group, family, and online community influence. False information affects a number of mental activities called cognitive processes that enable a person to perceive environmental stimuli, remember, infer, communicate, make decisions, and ultimately behave. This type of content manipulates the recipients' cognitive processes, causing real changes in their perception of reality, attitude formation, and decision-making process. For example, the negative impact of fake news is the activity of the anti-vaccine movement, whose representatives spread information about a causal link between the occurrence of autism and certain vaccinations. In context of the pandemic information was spread that the COVID vaccine leads to infertility. Although the study presented by the anti-vaccine movement (Herrera-Peco et al., 2021; Kołtątaj et al., 2020; Kołtątaj et al., 2020) has been verified and found to be false or based on unverified information, many people still believe them.

Third, the effect of the influence of false news on memory and decision-making is noticeable even when the recipient realizes that the information, they previously believed to be true is false (Ecker et al., 2017). This phenomenon is known in psychology as the continued-influence effect (CIE) and is based on the assumption that long-term memory stores information regardless of whether it is true or not (Lewandowsky et al., 2012). According to Van Damme and Smets (2014) the research confirms that memory is a kind of mental process of (re)constructing memories vulnerable to distortion. This means that memories of certain events can be altered as a result of dis- or mis- information that comes from rumors, conspiracy theories, propaganda, or fake news directly relating to the events stored in memory. Furthermore, there are also emotions associated with memory that affect it. Fake news that arouses feelings of anger, fear, or even empathy in recipients, may intensify their belief in a false message and are better remembered as well as more likely to be shared online (Vosoughi et al., 2018).

Finally, causes of belief in fake news are information stress difficulty in recognizing fake news and motivated reasoning. We live in a society that experiences a specific form of internal discomfort referred to as "information stress". The excess of information that we are unable to process (including false information) creates a state of mental confusion and a sense of frustration. With the increasing amount of fake information on the Internet, the process of perceiving and processing it requires even more cognitive effort. Many Internet users are unwilling to take the time to identify fake news or do not have suf-

The Challenges of the COVID-19 Infodemic

ficiently developed cognitive skills to do so. A natural tendency of the human mind is cognitive sparing (Gigerenzer & Goldstein, 1996; Ermer et al., 2008). This strategy usually works when there is a lack of availability or an excess of information that is beyond the capacity of the mind[brain?] to analyze. For example, a person who saw on his friend's social networking profile information indicated that being able to hold your breath for 10 seconds or more without coughing or feeling discomfort meant you were free from COVID-19. The Internet user wants to verify this message. After typing key words into the search engine, he immediately receives many results, which may come from both reliable and unreliable sources. Despite the fact that the information is false, its very presence in search results, on internet forums or social networks reassures the Internet user in a belief that the information is or may be true.

Moreover, many humans do not have a well-developed ability to detect false information or lies. This means that the average person is able to identify at least 5 out of 10 fake news stories (Rubin, 2010). So nearly half of fake news remains unrecognized and can be further disseminated and influences subsequent audiences. The human mind has a tendency to quickly process information received from the environment and almost automatically consider it to be true; only at a more advanced stage of analysis, by making a cognitive effort, does it decide whether a given piece of information is true or false (Gilbert et al., 1993). Some people cleverly use this feature of the mind and create fake news, which are deceptively similar to press releases. This apparent similarity to reliable materials and references to authentic events are displayed often enough to make Internet users believe that a given piece of information is true.

Another factor that causes people to believe false information is motivated reasoning, which leads to accepting and seeking information that confirms previous beliefs while ignoring alternative explanations (Tayler, 2010). The consequences of this mechanism in the context of fake news, for example, are selective processing and remembering of information, reinforcement of biases, and polarization of views.

For example, a person who believes that coronavirus does not exist and accepts only information that confirms that belief may also reject any other information that is indicative of its existence. In addition, such a person may question reliable scientific research, accusing its authors of bias, incompetence, corruption or ill will, encouraging people to who believe in conspiracy theories about COVID-19. Underlying this tendency is the mind's natural need to receive information that harmonizes with already existing views and beliefs. Preconceptions about the content of false information have a significant impact on how the information is processed. Considering false news as truth has negative and often disastrous consequences for decision making and daily life.

By looking at these aspects we can see how difficult it is to manage information, struggling with false information. In our current situation, the COVID-19 pandemic and government-managed lockdown –contributed to the reinforcement of a “culture of fear” and, due to the large number of unknowns, has likewise contributed to the vast spread of false information.

Information Management

In order to show the importance of a management system in the context of the problem of false information during a pandemic, it is necessary to start by defining the term information management. In the literature there are many definitions of this subject. One of the most popular is presented by Choo (1995) characterize it as a “cycle of processes that support the organization's learning activities: identifying information needs, acquiring information, organizing and storing information, developing information products and services, distributing information, and using information” (Choo, 1995, pp. 81-99). The main goal is to use an organization's information resources and capabilities to allow the organization to learn

and adapt to a changing environment (Choo, 1995, pp. 81-99). On the other hand, according to Wilson (2002) “information management” can be defined as synonym for information technology management (e.g., computer sciences, business science, management science, etc.) or as data management. Stabryła (2018) stated that information management is a discipline of enterprise activity aimed at providing information to users with specific needs. It consists of identification, diagnostic and decision-making functions, as well as specific functions such as planning information needs and resources, information supervision, controlling information technology processes, and coordinating the work of task teams. In the context of information sciences, information management has a broader meaning, which is related to the importance of information to the user and to issues related to that information search (Wilson, 2002).

It is important for good information management to consider the social and situational contexts of information use. It requires a specialized and organized information system which includes, among others: continuous updating and completion of information to help the enterprise respond quickly to changing realities inside and outside the organization; providing useful information to recipients in an immediately usable form; include technological progress (e.g., the possibility of computerizing the methods of collecting, processing, storing and distributing information); monitoring of the process in order to guarantee the validity, completeness, sorting of data with the purpose of its effective use of information; and securing information (Czekaj, 2012, p. 38). In the context of information management during a pandemic, emphasis should be placed on the security and authenticity of information, which in the aspect of disinformation should be extremely protected.

Furthermore, it is noteworthy that in addition to the authenticity of information, the public expects the media to recommend how to behave and what not to do not to expose themselves and others to possible infection. Therefore, information about the course of a pandemic should be treated as a high-quality media product, which should be carefully worked on beforehand (e.g. simulation-tested). Moreover, information management also requires professionalism and an evolutionary approach. However, during the coronavirus pandemic it could be seen that people responsible for the “frontline” of the fight against the virus, focused their attention on media showmanship presenting to the public uncoordinated, usually unprepared or even extremely unspecific information and sometimes false information.

MISLEADING INFORMATION - FAIRY TALE OR REAL THREAT?

Social and Health Consequences

The increasing role of media and their influence on people’s knowledge, opinions and perception of the world around us have been known for decades. Media impact is often prevailing during any crisis - pandemic, social, economic crises, natural disasters and more. The reason is that crisis is always accompanied by anxiety and fear of the unknown, which creates very fitting conditions for spreading false information. It can as well be used as a diversion from real issues, such as failure of governance, economic problems, political scandals, or the fact that there is still no cure for the disease (Datta & Litt, 2020). As the COVID-19 pandemic unfolded, lockdown decisions were taken, which contributed to growth in media consumption especially digital media (We are social, 2021)? People were using different media platforms to get COVID-19-related information. However, some of those sources provided were far from factual; instead of being the sources of reliable information it has become a tool of propaganda and sensationalism. Some news channels have seen a conspiracy in the spread of COVID-19 and presented

The Challenges of the COVID-19 Infodemic

news for their sensational value. Apparently, the true situation initially would not have gained so much attention in the first place, if not for what the low-level news broadcasters have done by the journalists and social media coverage (Datta & Litt, 2020). The COVID-19 infodemic is a serious threat to the nation.

Health implications

Some of the rumors that concerned prevention or treating the infection may have serious health implications (Table 1), especially if they were prioritized before any evidence-based guidelines. For example, information that consumption of methanol, ethanol, bleach or highly concentrated alcohol could disinfect

Table 1 False information and its factual corrections about COVID-19

False information	Fact
5G mobile networks spread COVID-19	5G mobile networks do not spread COVID-19, because Viruses cannot travel on radio waves/mobile networks. COVID-19 is spreading in many countries that do not have 5G mobile networks.
Drinking alcohol, methanol, ethanol or bleach can protect against COVID-19	Drinking these substances does not prevent COVID-19, but can be extremely dangerous and harmful for health. They may further lead to disability or death.
Antibiotics can prevent or treat COVID-19	Antibiotics work only against bacteria, not viruses
Drugs can prevent or treat COVID-19	There are currently no drugs licensed for the prevention of this virus, although some therapeutic drugs known as monoclonal and antiviral medicines are currently under trial to treat the symptoms for COVID-19.
Ultra-violet (UV) lamps should be used to disinfect hands or other areas of your skin	UV should not be used to disinfect your body, because it can cause skin irritation and damage eyes.
Exposing yourself to the sun or temperatures higher than 25°C protects from COVID-19	It is possible to catch COVID-19, no matter how hot or sunny the weather is. Countries with such weather have reported cases of COVID-19.
Taking hot baths prevents COVID-19	There is no evidence that hot baths prevent the virus, as well as no tests have been done. On the other hand, they might be dangerous, because of the high possibility of burning.
Being able to hold your breath for 10 seconds or more without coughing or feeling discomfort means you are free from COVID-19	COVID-19 infection cannot be confirmed by this breathing exercise, which might be also dangerous.
Eating garlic or adding pepper to meals prevents COVID-19	There is no evidence that they can protect people from the new coronavirus.
Hand dryers are effective in killing COVID-19 virus	Hand dryers are not effective in killing the coronavirus.
Hydroxychloroquine or chloroquine can prevent and treat COVID-19	Hydroxychloroquine or chloroquine, among others a treatment for malaria, has been under study as a possible treatment for COVID-19. However, current data shows that they do not reduce deaths among hospitalized COVID-19 patients, nor help people with moderate disease.
Vaccines against pneumonia protect against COVID-19 virus	These vaccines do not provide protection against the new coronavirus.
COVID-19 vaccines cause infertility	There is no evidence that COVID-19 vaccines approved for use in countries such as Australia or the United States will affect fertility.
Vaccines contain "microchips"	This information has been popular on social media and has been marked as false. Some of them were promoted online by social media platform bots and trolls (e.g. on Facebook and Twitter)
MMR vaccine can be dangerous and can have an impact on human DNA	

Source: Own processing (based on: AAP FactCheck, 2021; Broniatowski, et al., 2018; Burki, 2019; Datta & Litt, 2020; European External Action Service, 2020; WHO, 2020b).

the body and kill the virus was circulating in different parts of the world has led to approximately 800 people who have died, whereas 5,876 have been hospitalized and 60 have developed complete blindness after drinking methanol as a cure of coronavirus (Islam et al., 2020). Moreover, similar rumors have been the reported the cause of 30 deaths in Turkey (CNN Türk, 2020). In Qatar, two healthy South Asian men consumed surface disinfectant or alcohol-based hand sanitizer after exposures to COVID-19 patients (Siddiqui et al., 2020). In Qatar, two healthy South Asian men consumed surface disinfectant or alcohol-based hand sanitizer after exposures to COVID-19 patients (Siddiqui et al., 2020). In India, five children and seven adults became sick after drinking liquor made from the toxic seed, *Datura* as a cure to coronavirus disease, after watching a video with information that *Datura* seeds give immunity against COVID-19 on social media (Staff Reporter, 2020). Using ultra-violet (UV) lamps or bleach to disinfect the body do not protect against COVID-19, rather they can be extremely harmful (World Health Organization [WHO], 2020b).

Conspiracy Theories

Further consequences of misleading information were the creation of panic and conspiracy theories contributing to a loss of trust in the government, researchers, and health services. Conspiracy theories, which can be characterized as “attempts to explain the ultimate cause of an event ... as a secret plot by a covert alliance of powerful individuals or organizations, rather than as an overt activity or natural occurrence” (Douglas & Sutton, 2008, pp. 210-211). It can be difficult to provide convincing evidence to abolish such types of ideas since experts are often seen as part of the conspiracy, and every new evidence can be rationalized into an existing narrative (Jaiswal et al., 2020). For example, several conspiracy theories had been circulating in China, the United States, Russia, and some of those were spread globally. These theories suggested that COVID-19 was a bioweapon and had been engineered by international agencies or Chinese, USA laboratories (European External Action Service, 2020; Sardarizadeh & Robinson, 2020). For example, President Trump has publicly promoted the theory that SARS-CoV-2 was deliberately developed in a laboratory in Wuhan institutional legitimacy (Brewster, 2020; Marcus, 2020), despite scientific consensus (Andersen et al., 2020; Lu et al., 2020) and the consensus of the U.S Intelligence services that SARS-CoV-2 is not human-made (Jaiswal et al., 2020). This strategic disinformation has served several purposes such as casting doubt on evidence presented by Dr. Anthony Fauci, the Director of the National Institute of Allergy and Infectious Diseases and member of the White House Coronavirus Task Force, to confirm and reinforce previous xenophobia and racism (Markel & Stern, 2020) and to distract attention from the inappropriate and delayed White House response to COVID-19 (Jaiswal et al., 2020).

Conspiracy theories have also concerned the development of a COVID-19 vaccine or therapeutic drug. For example, in the Middle East, a few government officials described the pandemic as a conspiracy against honor of some religious cities (Radio Farda, 2020). Furthermore, there were theories that were circulating in social media that concerned a population control scheme and or the pandemic was a cover for a Bill Gates' plan to implant trackable microchips via a vaccine.

An unlimited foundation for the development of conspiracy theories was made because of conflicting information and changing messages from experts and governments, contributing to a loss of trust in their statements. Furthermore, during the public health crises, people often concentrate more on rumors and hoaxes than on science. Moreover, conspiracy theories that have been popular on social media and were used to counter official narratives about the virus might also become a weapon of information warfare (Sederholm et al., 2021).

Stigmatization and Discrimination

The mistrust is not only a consequence of false information that was spread during the COVID-19 pandemic. Stigmatization and discrimination were equally very dangerous and common problems.

In several countries, people were physically bullied, insulted and intimidated, or faced discrimination from their landlords and neighbors because of their race. According to a doctor's interview in *The Guardian*, there were situations where doctors have decided to spend time "in the restrooms of hospitals because they have lost their apartments or could not get into the apartments because of the hostility from the people of their community" (Islam et al., 2020). Moreover, there were situations as in Australia where a medical health worker with Chinese heritage faced stigmatization in the hospital (Vrajlal, 2020).

As the virus spread to different countries, more reports stories about people of Asian origin experiencing stigmatization and blame were published (Cheah et al., 2020; Chopra & Arora, 2020; Islam et al., 2020; Yu et al., 2020). In addition, the narration used by high-profile people, who referred to the virus as the "Chinese virus" or "Wuhan virus" has contributed to grater discrimination and stigmatization of Asian people. The media also were responsible for this situation. For example, the *Wall Street Journal* published an opinion column with a heading "China Is the Real Sick Man of Asia" (Mead, 2020) while other newspapers have released inappropriate headlines about Chinese students who have had to stay away from school (Islam et al., 2020) was an incentive for one Australian paper, which published a story with a headline "China kids stay home" (Bhaya, 2020). It created miscommunication among the public. This type of narration stigmatized the children with Chinese heritage and may cause a potential risk of further discrimination at school.

Stigmatization not only affected people of Asian origins but also people who were quarantined or were evacuated from Wuhan. For example, according to (Islam et al., 2020), there were cases related to violence in Ukraine, where local people blocked the road and hurled stones at the buses that carried passengers evacuated from Wuhan, or in the case of America citizens, who experienced accusing of transferring the virus to the country (Islam et al., 2020). Hatred of foreigners (xenophobia) is on the rise both on the Internet and live in the streets; anti-Semitic conspiracy theories and attacks on Muslims, and people of Asian origins have emerged and have become are linked to the coronavirus pandemic. Likewise, migrants and refugees are now being portrayed as the source of infection (Goban-Klas, 2020, p. 729). Additionally, suggesting they are the most redundant people in our society, the elderly, who are most at risk for infection and death, incited the Internet to be flooded with memes and misinformation.

During pandemic of COVID-19 there were also reports of self-stigma-associated death. For example, a man in India killed himself because he felt guilty and ashamed of unconsciously passing the virus to family members, dying with an impression of how his community would react to this situation. Stigmatized people were vulnerable to social avoidance or rejection, poor health-seeking behavior, and physical violence. The stigma attached to COVID-19 patients, primarily related to the fear of contagion, has led resulted in discrimination and violence against healthcare workers, healthcare facilities, quarantined and many people around the globe.

Economic Consequences

Misleading information related to lockdowns and the overall pandemic of COVID-19 additionally created social panic. Moreover, a high volume of mixed messages, their ambiguity, and the influence of social media with imagery (e.g., empty shelves in supermarkets) caused people to behave irrationally (Billore

& Anisimova, 2021). For example, the information of complete lockdown in several countries over the world led to panic buying. This situation drove up prices and caused the buy-out of cleaning or hygiene products, especially such as hand sanitizers, toilet papers, or even products such as disinfectants or face masks, which were unavailable for many people. Because of the extreme shortage of the supply of face masks and hand sanitizers, panic buying may have contributed to an increase of hospital and home transmission of COVID-19 in several countries of the world. On the other hand, the pandemic situation became a viable opportunity for scams seeking to take advantage of the crisis and therefore producing fake products as remedies for the virus and pandemic (Piranty, 2020).

Taking advantage of consumer fear and anxiety, scammers have also propagated deceptive and scientifically unsupported claims that certain products can prevent or treat COVID-19. The authorities such as US Federal Trade Commission, US Food and Drug Administration, The Consumer Affairs Agency, Canada's Competition Bureau, and the WHO contacted companies in relation to misleading claims about products including homeopathic drugs, essential oils, traditional Chinese medicine, salt therapy, and vitamin immune boosters. They also requested businesses to rectify false or misleading claims related to products such as air cleaners and sanitizers or products such as facemasks, ventilation, air purification products. Both fake products and manufacture's claims such as they "sells out fast" are misleading, and may reinforce consumer anxiety and panic buying. Both of these situations often result in price gouging. Therefore, some companies attempted to maximize their profits from increased demand for certain products (e.g., facemasks, hand sanitizer, food, disinfectants, etc.) by rapid price increases (Organisation for Economic Co-operation and Develop, 2020). Economic false information has negative consequences of domestic and global economies, such as popularity of fake products resulting in lack of trust in some markets or business, damages of the corporate and industry images, and also may have harmful effects on human health.

SOLUTIONS AND RECOMMENDATIONS

The SARS-CoV-2 pandemic, has revealed a serious direct and indirect impact of false information on both the individual and society. On one hand, it threatens people's basic desires and rights to life, health, dignity, and a sense of security; on the other hand, there is the undermining of public health initiatives (ex. vaccination campaigns or mandates to wear masks), due to a lack of trust in scientific organizations and public authorities, as well as racist and stigmatizing behavior. The coronavirus pandemic has shown that good information management is important in order to protect human health and life as well as the national and global economy. Dealing effectively with general misleading communication regarding the COVID-19 virus requires wide collaboration between different groups of experts, authorities, media and media users.

Public trust in institutions that are perceived to be providing reliable information is important in times of crisis (Jaiswal et al., 2020). That is why for advising and decision-making agencies to be trusted, governments, politicians, experts need to be transparent about what is known and what is unknown. They should use a variety of online and offline channels to provide scientific data and public health information about the virus. Media offers opportunities for both experts and the general public to spread information to large amount of people. So, they might be used to not only provide reliable information, but also they might be used to quickly contradict false data.

The Challenges of the COVID-19 Infodemic

The authorities, may also use online channels to provide reliable sources regarding COVID-19 in order for people to make their own searches by offering them links to trusted healthcare providers or authentic studies about the virus (Malecki et al., 2020). For example, Council of the European Union (2020) provided readings and references regarding disinformation and COVID-19, as well as share access to resources and knowledge base of the Council libraries (European Council, 2020). Organizations such as UNESCO and WHO prepared a publication offering critical insights into the fast-growing COVID-19-related disinformation that is impeding access to trustworthy sources and reliable information and collaboration in sharing relevant information about the virus (United Nations Educational Scientific and Cultural Organization [UNESCO], 2020; World Health Organization [WHO], 2020c). In addition to international activities, campaigns by international organizations, such as a campaign launched by United Nations (Manzi, 2020), it is important that every country design a risk communication plan and an epidemic control plan, which can be prepared based on the WHO Risk Communication and Community Engagement (RCCE) Action Plan (World Health Organization [WHO], 2020e; 2020d). Depending on the stage of the crisis, the main goals and strategies can be different (Vaezi & Javanmard, 2020).

Furthermore, technology companies and media organizations, especially social media platforms should be responsible for disseminating coherent, consistent and reliable information to ensure clarity and awareness and eliminating confusion and panic. Transparency around COVID-19 is essential. According to Reuters Institute's research social media (such as Facebook – 29%, YouTube and Twitter – below 10%) and messaging apps (like WhatsApp) were the biggest sources of concern about false information (40% - social media and 14% apps) (Newman et al., 2020). In order to fight the infodemic, some of social platforms tried to provide specific tools or have changed their policy on accuracy of on line data. For example, a Facebook Preventive Health tool provides guidelines about preventive health recommendations (Abrusci et al., 2020), YouTube added banner redirecting users to the WHO web portal on all videos that concerns coronavirus, and WhatsApp has worked with WHO to create a Health Alert system which provided reliable and official information worldwide in several languages (Abrusci et al., 2020). Instagram provides posts that may be related to COVID-19 links to relevant, official and true information about pandemic.

Media platforms have modified their policies regarding advertising (also related to targeted advertising) and content moderation (Maréchal et al., 2020). For example, Twitter allows governmental health authorities to advertise links to trustworthy information and also change definition of harm and what constitutes harmful content in order to make a more effective fact-checker process and remove misleading content. Similar approach has been taken by Facebook (Abrusci et al., 2020). Moreover, technology companies are collaborating with social platforms in order to develop new algorithms to counter the spread of harmful and deceitful information across social networks (García & Ragione, 2020). However, it also exposes the problem that concerns accuracy of the algorithm.

Social media community standards are difficult because of their satiric or humoristic characters, which can be treated as misleading information. It shows that the fight against the infodemic should also be undertaken by media users themselves. For example, users can counteract by carefully verifying, not sharing media, and reporting false information that appears on the Internet. In other words, the users shall read, watch or listen the full information carefully and with understanding, not just pay attention to the title and lead. When looking for news, pay attention to where it appears - whether the website is reliable and whether the news itself is possible to confirm. The official websites or fact-checking websites (e.g. FactCheck.org, AAP FactCheck – which is tool of Australian Associated Press agency or The International Fact-Checking Network – that provide database that gathers the falsehoods that have

been detected) might serve this purpose. Before the finale information is provided, they investigate the issues by focusing on different sources or other sides of an argument. They use traditional as well as digital fact-checking methods in order to provide truth. Moreover, case studies of research institution like Prague Security Studies Institute (PSSI), which by monitoring the websites known to be spreading false information and other contested content identified main narratives, authors and patterns of spreading various messages (Srovátka et al., 2020) can be useful.

In the fight against false information is important to be able to think critically and receive media with comprehension. On the other hand, it is equally important to keep information consumption in moderation. The concept of the information diet, proposed by Johnson (2012), explained and interpreted by Ashrafi-Rizi and Kazempour (2020), which might be an essential strategy in reducing the level of public health anxiety, confusion as well as mental illnesses related to crises similar to COVID-19 pandemic.

The second biggest sources of concern about false information (20%) were news platforms (Newman et al., 2020). They are responsible for creation and distribution of information and usually they are one of the first sources people go to when they want to find answers to questions that trouble them. Journalists creating their content should avoid using sensationalist language, emotional phrases such as “no end in sight” or “catastrophe”. Also they could avoid speculating about worst-case scenarios that increases panic, which epidemiologists and virologists find exactly the opposite of the calm need in crisis situations. Finally, they should be mindful about imagery, because it may result in negative social behavior. For example, using photo of an Asian person in context of COVID-19 can feed stereotypes and results in stigmatization or racists behaviors. In order to prevent the spread of false information journalists creating their content should as well direct readers to official sources of information, provide readers with specific actions they can take and be cautious about the research used to inform their recipients (Kwan et al., 2020). Furthermore, it can also build up trust in health organizations and health professionals as well as governments. Media should help to fight false information by exposing it and focusing on facts included in headlines, posts - because they are the first one to be read and as keywords, which make them easier to find. The content should be easy to process which can help people to focus on the facts and to give concrete advice about steps they can take.

In Newman et al. (2020) report politicians have been referred as most responsible for false and misleading information online (domestic politicians - 40%, foreign governments – 10%), followed by political activists (14%). It shows that the rhetoric and behavior of national politicians is considered as very big problem and illustrate arguments of scientists that disinformation often comes from the top and not from ordinary people (Newman et al., 2020). Governments should help to create consist and coherent system for sharing and publicizing information in crisis situations, such as pandemics, especially among politi-

Table 2. Proportion of responsibility for the spread of false information based on Reuters Institute research

Responsible for the spread of false information	Percentage
Domestic politicians	40
Political activists	14
Journalists	13
Ordinary people	13
Foreign governments	10

Source: Own processing (based on: Newman et al., 2020)

The Challenges of the COVID-19 Infodemic

cians and political activists. During the coronavirus pandemic, information management should be done by indirect methods, mainly through evolutionary construction of law and control of data disclosure. For example, first, authorities use the most recent data for their purposes such as verification and analysis then allow hospitals, organizations to publish it perhaps within a two day time limit. Here media can be seen as an efficient verification mechanism whether government information reported two days ago was true. In addition, a potential solution could be enabling local government to establish local media laws, which allow for testing of “legal prototypes” in order to select the most successful implementation, and then to implement it globally.

FUTURE RESEARCH DIRECTIONS

The coronavirus pandemic has shown that not only the virus can be dangerous, but above all false information, which rapidly spread contributed to the creation of an infodemic. The fight against it is very difficult and long-lasting, but with the developed actions related to the skillful management of information can contribute to the development of mechanisms and strategies for the future. During the pandemic creating an efficient legal system for information management, and mechanisms for cooperation at local, national and global levels is an important and extensive topic which requires more in-depth studies. It also applies to cooperation between politicians, governments with respect to the right to freedom of expression, media, scientists, health and technology organizations, as well as many other parties who have an impact on the dissemination of information. Moreover, new policies regarding content moderation creates another challenge related to human rights posed by approaches to counter misinformation. It refers to overly broad content removal processes, the adoption of dedicated anti-disinformation laws and the extension of the criminal law to deal with misinformation, which require further research. This article is an invitation for further research in this area.

CONCLUSION

The COVID-19 pandemic has illustrated the serious impact that misinformation can have on individuals and society, both directly and indirectly. It has influenced society by threatening the basic human rights to health, life, dignity or feeling of safety for those who believe false information and act upon it. Indirect influence consisting of undermining public health initiatives, mistrust or pushing people into racist and stigmatizing behavior. Moreover, it could be observed serious negative consequences for domestic and global economies that could be felt long after the pandemic is over.

The approaches adopted by states, technology companies and media underline the constant need for human rights-compliant approaches to dealing with false information. This is an ongoing challenge because many approaches are necessary but insufficient. As the critical importance of access to media pluralism and accurate and reliable information as a baseline for addressing misleading information has been highlighted by authorities and different organizations, some of social media platforms have improved content quality. Furthermore, states and experts tried to use the potential of the Internet in order to provide people with access to accurate and reliable information. However, some of the approaches among others regarding the removing the information marked as misleading by system or Internet users may have serious consequences for human rights, especially right to freedom of speech and expression.

It requires identifying measures which are compatible with international human rights laws, so that false data can be addressed without a risk to human rights in the process. These actions require collaboration of different entities and further research.

In general, the challenges faced during the coronavirus pandemic in connection with the rapid spread of false information, shows the significance of skillful information and media management. It also presents the importance of cooperation at the beginning and during the whole pandemic situation of the particular entities in order to fight for truth, health, trust and preventing violence, discrimination or stigmatization. However, any action taken against false information should be carefully planned. This battle might be very difficult but can help to not only prevent infodemic and the spread of false information during the ongoing pandemic, but it can as well contribute to developing mechanisms and strategies for the future. Moreover, the issue of false information is not only linked to COVID-19 pandemic, but is a longer-term problem around the world and therefore should be analyzed in a broader context.

ACKNOWLEDGMENT

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

REFERENCES

- AAP FactCheck. (2021, January 29). *No, COVID-19 vaccines don't cause infertility*. <https://www.aap.com.au/no-covid-19-vaccines-dont-cause-sterility/>
- Abrusci, E., Dubberley, S., & McGregor, L. (2020). An 'Infodemic'. In *The Pandemic: Human Rights And Covid-19 Misinformation*. In C. Ferstman, & A. Fagan (Eds.), *Covid-19, Law And Human Rights: Essex Dialogues. A Project Of The School Of Law And Human Rights Centre* (pp. 287–296). University of Essex.
- Ahmed Siddiqui, M. Y., Mushtaq, K., Mohamed, M. F., Al Soub, H., Hussein Mohamedali, M. G., & Yousaf, Z. (2020). "Social Media Misinformation"—An Epidemic within the COVID-19 Pandemic. *The American Journal of Tropical Medicine and Hygiene*, *103*(2), 920–921. doi:10.4269/ajtmh.20-0592 PMID:32534600
- Andersen, K. G., Rambaut, A., Lipkin, W. I., Holmes, E. C., & Garry, R. F. (2020). The proximal origin of SARS-CoV-2. *Nature Medicine*, *26*(4), 450–452. doi:10.103841591-020-0820-9 PMID:32284615
- Ashrafi-Rizi, H., & Kazempour, Z. (2020). Information Diet in Covid-19 Crisis; a Commentary. *Archives of Academic Emergency Medicine*, *8*(1), e30. <https://pubmed.ncbi.nlm.nih.gov/32232215/> PMID:32232215
- Bastick, Z. (2021). Would you notice if fake news changed your behavior? An experiment on the unconscious effects of disinformation. *Computers in Human Behavior*, *116*, 106633. doi:10.1016/j.chb.2020.106633
- Bhaya, A. G. (2020, February 24). *Racist COVID-19 headlines torment Chinese diaspora, says study*. <https://news.cgtn.com/news/2020-02-24/-Racist-COVID-19-headlines-torment-Chinese-diaspora-says-study-Ok2x5vPt6w/index.html>

The Challenges of the COVID-19 Infodemic

- Billore, S., & Anisimova, T. (2021). Panic buying research: A systematic literature review and future research agenda. *International Journal of Consumer Studies*, 45(Special Issue), 777–804. Advance online publication. doi:10.1111/ijcs.12669
- Brennen, J. S., Simon, F., Howard, P. N., & Nielsen, R. K. (2020, April 7). *Types, Sources, And Claims Of Covid-19 Misinformation*. <https://reutersinstitute.politics.ox.ac.uk/types-sources-and-claims-covid-19-misinformation>
- Brewster, J. (2020, May 10). *A Timeline Of The Covid-19 Wuhan Lab Origin Theory*. <https://www.forbes.com/sites/jackbrewster/2020/05/10/a-timeline-of-the-covid-19-wuhanlab-origin-theory/#25420a935aba>
- Broniatowski, D. A., Jamison, A. M., Qi, S., AlKulaib, L., Chen, T., Benton, A., Quinn, S. C., & Dredze, M. (2018). Weaponized Health Communication: Twitter Bots and Russian Trolls Amplify the Vaccine Debate. *American Journal of Public Health*, 108(10), 1378–1384. doi:10.2105/AJPH.2018.304567 PMID:30138075
- Burki, T. (2019). Vaccine misinformation and social media. *Lancet*, 1(6), 258–e259. doi:10.1016/S2589-7500(19)30136-0
- Cheah, C. S., Wang, C., Ren, H., Zong, X., Cho, H., & Xue, X. (2020). COVID-19 Racism and Mental Health in Chinese American Families. *Pediatrics*, 146(5), e2020021816. doi:10.1542/peds.2020-021816 PMID:32873719
- Choo, C. W. (1995). *Information Management for the Intelligent Organization: Roles and Implications for the Information Professions*. National Computer Board of Singapore. <http://choo.fis.utoronto.ca/fis/respub/dlc95.html>
- Chopra, K. K., & Arora, V. K. (2020). Covid-19 and social stigma: Role of scientific community. *The Indian Journal of Tuberculosis*, 67(3), 284–285. doi:10.1016/j.ijtb.2020.07.012 PMID:32825854
- Council of the European Union. (2020). *Reading References: Council Library - Disinformation and COVID-19*. <https://www.consilium.europa.eu/media/45180/reading-list-covid-19-disinformation-20200717.pdf>
- Czekaj, J. (2012). *Podstawy zarządzania informacją* [Fundamentals of Information Management]. Wydawnictwo Uniwersytetu Ekonomicznego.
- Datta, R., & Litt, T. D. (2020). Infodemic With Misinformation And Disinformation In Pandemic Covid-19 Situation: A Global Case Study. *International Journal of Advance Research and Innovative Ideas in Education*, 6(4), 1732–1743. doi:16.0415/IJARIIE-12532
- Doliński, D. (2002). Wpływ społeczny a jakość życia [Social influence and quality of life]. *Psychologia Jakości Życia*, 1(1), 35–52. <https://depot.ceon.pl/handle/123456789/1910>
- Douglas, K. M., & Sutton, R. M. (2008). The Hidden Impact of Conspiracy Theories: Perceived and Actual Influence of Theories Surrounding the Death of Princess Diana. *The Journal of Social Psychology*, 148(2), 210–222. doi:10.3200/SOCP.148.2.210-222 PMID:18512419
- Ecker, U. K., Hogan, J. L., & Lewandowsky, S. (2017). Reminders and repetition of misinformation: Helping or hindering its retraction? *Journal of Applied Research in Memory and Cognition*, 6(2), 185–192. doi:10.1016/j.jarmac.2017.01.014

Ermer, E., Cosmides, L., & Tooby, J. (2008). Relative status regulates risky decision making about resources in men: Evidence for the co-evolution of motivation and cognition. *Evolution and Human Behavior*, 29(2), 106–118. doi:10.1016/j.evolhumbehav.2007.11.002 PMID:19255605

European Council. (2020). *Eureka*. Retrieved from https://consilium-eureka.hosted.exlibrisgroup.com/primo-explore/search?vid=32CEU_VU1

European External Action Service. (2020, May 20). *EEAS Special Report Update: Short Assessment of Narratives and Disinformation Around The Covid-19 Pandemic*. <https://euvsdisinfo.eu/eeas-special-report-update-short-assessment-of-narratives-and-disinformation-around-the-covid19-pandemic-updated-23-april-18-may/>

French, M., & Monahan, T. (2020). Dis-Ease Surveillance: How Might Surveillance Studies Address Covid-19? *Surveillance & Society*, 18(1), 1–11. <https://ojs.library.queensu.ca/index.php/surveillance-and-society/article/view/13985/9169>. doi:10.24908s.v18i1.13985

García, I. F., & Ragione, S. D. (2020, May 15). *The effect of COVID-19 disinformation across Europe. A case study on Italy and Spain*. <https://www.thenewfederalist.eu/the-effect-of-covid-19-disinformation-across-europe?lang=fr>

Garrett, L. (2020). Covid-19: The Medium Is The Message. *Lancet*, 395(10228), 942–943. doi:10.1016/S0140-6736(20)30600-0 PMID:32171075

Gigerenzer, G., & Goldstein, D. (1996). Reasoning the fast and frugal way: Models of bounded rationality. *Psychological Review*, 103(4), 650–669. doi:10.1037/0033-295X.103.4.650 PMID:8888650

Gilbert, D. T., Tafarodi, R. W., & Malone, P. S. (1993). You can't not believe everything you read. *Journal of Personality and Social Psychology*, 65(2), 221–233. doi:10.1037/0022-3514.65.2.221 PMID:8366418

Goban-Klas, T. (2020). The Media in the “Liquid” Coronavirus Pandemic of 2020. Communication During Lockdown: Separate but Together. *Studia Medioznawcze*, 21(4), 718–733. doi:10.33077/uw.24511617.ms.2020.4.288

Heinzen, T. (2018). Social Influence: Conformity, Social Roles, and Obedience. In T. Heinzen & W. Goodfriend (Eds.), *Social Psychology* (pp. 1-32). SAGE Publication. https://us.sagepub.com/sites/default/files/07_heinzen_social_influence_0.pdf

Herrera-Peco, I., Jiménez-Gómez, B., Romero Magdalena, C. S., Deudero, J. J., García-Puente, M., Benítez De Gracia, E., & Ruiz Núñez, C. (2021). Antivaccine Movement and COVID-19 Negationism: A Content Analysis of Spanish-Written Messages on Twitter. *Vaccines*, 9(6), 656. doi:10.3390/vaccines9060656 PMID:34203946

Islam, M. S., Sarkar, T., Khan, S. H., Mostofa Kamal, A. H., Hasan, S., Kabir, A., Yeasmin, D., Islam, M. A., Amin Chowdhury, K. I., Anwar, K. S., Chughtai, A. A., & Seale, H. (2020). COVID-19–Related Infodemic and Its Impact on Public Health: A Global Social Media Analysis. *The American Journal of Tropical Medicine and Hygiene*, 103(4), 1621–1629. doi:10.4269/ajtmh.20-0812 PMID:32783794

The Challenges of the COVID-19 Infodemic

Jaiswal, J., Loschiavo, C., & Perlman, D. C. (2020). Disinformation, Misinformation and Inequality-Driven Mistrust in the Time of COVID-19: Lessons Unlearned from AIDS Denialism. *AIDS and Behavior*, 24(10), 2776–2780. doi:10.1007/10461-020-02925-y PMID:32440972

Johnson, C. A. (2012). *The Information Diet: A Case for Conscious Consumption*. O'Reilly Media.

Koźłataj, B. M., Koźłataj, W. P., Karwat, I. D., Sobieszczanski, J., & Panasiuk, L. (2020). Anti-vaccine movements – health care, ignorance or a diversion aimed at destabilizing the health situation? Part 2. Contemporary conditions for the functioning and development of anti-vaccination movements. *Annals of Agricultural and Environmental Medicine*, 27(4), 553–561. doi:10.26444/aaem/126014 PMID:33356060

Koźłataj, W. P., Koźłataj, B., Panasiuk, L., Sobieszczanski, J., & Karwat, I. D. (2020). Anti-vaccine movements – a form of social activity for health care, ignorance or diversion aimed at destabilizing the health situation? Part 1. Epidemiological safety. Vaccinations – pros and cons. *Annals of Agricultural and Environmental Medicine*, 27(4), 544–552. doi:10.26444/aaem/126013 PMID:33356059

Kwan, V., Wardle, C., & Webb, M. (2020, March 10). *Tips for reporting on Covid-19 and slowing the spread of misinformation*. <https://firstdraftnews.org/articles/tips-for-reporting-on-covid-19-coronavirus-and-slowing-the-spread-of-misinformation/>

Lewandowsky, S., Ecker, U. K., Seifert, C. M., Schwarz, N., & Cook, J. (2012). Misinformation and its correction: Continued influence and successful debiasing. *Psychological Science in the Public Interest*, 13(3), 106–131. doi:10.1177/1529100612451018 PMID:26173286

Losee, R. M. (1997). A discipline independent definition of information [Abstract]. *Journal of the American Society for Information Science*, 48(3), 254–269. doi:10.1002/(SICI)1097-4571(199703)48:3<254::AID-ASI6>3.0.CO;2-W

Lu, R., Zhao, X., Li, J., Niu, P., Yang, B., Wu, H., Wang, W., Song, H., Huang, B., Zhu, N., Bi, Y., Ma, X., Zhan, F., Wang, L., Hu, T., Zhou, H., Hu, Z., Zhou, W., Zhao, L., ... Tan, W. (2020). Genomic characterisation and epidemiology of 2019 novel coronavirus: Implications for virus origins and receptor binding. *Lancet*, 395(10224), 565–574. doi:10.1016/S0140-6736(20)30251-8 PMID:32007145

Malecki, K. M., Keating, J. A., & Safdar, N. (2020). Crisis Communication and Public Perception of COVID-19 Risk in the Era of Social Media. *Clinical Infectious Diseases*, 72(4), 697–702. doi:10.1093/cid/ciaa758 PMID:32544242

Manzi, L. (2020). *The disinformation escalation during the pandemic and how to contain it*. <https://rosanjose.iom.int/site/en/blog/disinformation-escalation-during-pandemic-and-how-contain-it>

Marcus, J. (2020, May 1). *Coronavirus: Trump stands by China lab origin theory for virus*. <https://www.bbc.com/news/world-us-canada-52496098>

Maréchal, N., MacKinnon, R., & Dheere, J. (2020). *Getting to the Source of Infodemics: It's the Business Model. A Report from Ranking Digital Rights*. <https://www.newamerica.org/oti/reports/getting-to-the-source-of-infodemics-its-the-business-model/>

- Markel, H., & Stern, A. M. (2020). The Foreignness of Germs: The Persistent Association of Immigrants and Disease in American Society. *The Milbank Quarterly*, 80(4), 757–788. doi:10.1111/1468-0009.00030 PMID:12532646
- Mccloskey, B., & Heymann, D. L. (2020). SARS to novel coronavirus - old lessons and new lessons. *Epidemiology and Infection*, 148, E22. doi:10.1017/S0950268820000254 PMID:32019614
- Mead, W. R. (2020, February 3). *China Is the Real Sick Man of Asia*. <https://www.wsj.com/articles/china-is-the-real-sick-man-of-asia-11580773677>
- Mian, A., & Khan, S. (2020). Coronavirus: The spread of misinformation. *BMC Medicine*, 10(1), 1–2. doi:10.1186/12916-020-01556-3 PMID:32188445
- Naughton, J. (2020, March 14). *Fake News About Covid-19 Can Be As Dangerous As The Virus*. <https://www.theguardian.com/commentisfree/2020/mar/14/fake-news-about-covid-19-can-be-as-dangerous-as-the-virus>
- Newman, N., Fletcher, R., Schulz, A., Andi, S., & Nielsen, R. K. (2020). *Reuters Institute Digital News Report 2020*. Reuters Institute for the Study of Journalism. Retrieved from https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2020-06/DNR_2020_FINAL.pdf
- Noelle-Neumann, E. (1993). *The Spiral of Silence: Public Opinion - Our Social Skin*. Chicago: The University of Chicago Press.
- Organisation for Economic Co-operation and Develop. (2020, April 28). *Protecting online consumers during the COVID-19 crisis*. https://read.oecd-ilibrary.org/view/?ref=130_130819-ay45n5rn74&title=Protecting-online-consumers-during-the-COVID-19-crisis
- Pennycook, G., Mcphetres, J., Zhang, Y., Lu, J. G., & Rand, D. G. (2020). Fighting Covid-19 Misinformation On Social Media: Experimental Evidence For A Scalable Accuracy-Nudge Intervention. *Psychological Science*, 31(7), 770–780. doi:10.1177/0956797620939054 PMID:32603243
- Piranty, S. (2020, April 9). *Coronavirus fuels a surge in fake medicines*. <https://www.bbc.com/news/health-52201077>
- Radio Farda. (2020, February 22). *Iran Cleric Blames Trump For Coronavirus Outbreak In Religious City*. <https://en.radiofarda.com/a/iran-cleric-blames-trump-for-coronavirus-outbreak-in-religious-city/30449087.html>
- Rubin, V. L. (2010). On deception and deception detection: Content analysis of computer-mediated stated beliefs. *ASIS&T '10: Proceedings of the 73rd ASIS&T Annual Meeting on Navigating Streams in an Information Ecosystem*, 47, 1–10. <https://dl.acm.org/doi/10.5555/1920331.1920377>
- Sardarizadeh, S., & Robinson, O. (2020, April 26). *Coronavirus: US and China trade conspiracy theories*. <https://www.bbc.com/news/world-52224331>
- Sederholm, T., Jääskeläinen, P., & Huhtinen, A.-M. (2021). Coronavirus as a Rhizome: The Pandemic of Disinformation. *International Journal of Cyber Warfare & Terrorism*, 11(2), 43–55. doi:10.4018/IJCWT.2021040104

The Challenges of the COVID-19 Infodemic

Sharma, R. (2020, March 2). *Coronavirus Conspiracy Theories: Why There's So Much Misinformation Around Covid-19, And Why The Fake News Is So Damaging*. <https://inews.co.uk/news/coronavirus-conspiracy-theories-covid-19-outbreak-misinformati-403916>

Siddiqui, M. Y., Mushtaq, K., Mohamed, M. F., Soub, H. A., Mohamedali, M. G., & Yousaf, Z. (2020). "Social Media Misinformation"—An Epidemic within the COVID-19 Pandemic. *The American Journal of Tropical Medicine and Hygiene*, 103(2), 920–921. doi:10.4269/ajtmh.20-0592 PMID:32534600

Stabryła, A. (2018). Podstawy organizacji i zarządzania. Podejścia i koncepcje badawcze [Fundamentals of organization and management. Research approaches and concepts]. In J. Niałkiewicz, B. Bińczycki, & T. Małkus (Eds.), *Zarządzanie w warunkach globalizacji* [Management in the conditions of globalization] (pp. 404–416). Wydawnictwo Uniwersytetu Ekonomicznego w Krakowie.

Staff Reporter. (2020, April 7). *Twelve Taken Ill After Consuming 'Coronavirus Shaped' Datura Seeds*. <https://www.thehindu.com/news/national/andhra-pradesh/twelve-taken-ill-after-consuming-coronavirus-shaped-datura-seeds/article31282688.ece>

Syrovátka, J., Pinkas, Š., Novák, A., & Urhová, D. (2020). *Infodemic: Coronavirus and Conspiracies in the Czech Republic*. Praga: Prague Institute of Security Studies (PSSI). <https://www.pssi.cz/publications/11-new-case-study-of-disinformation-related-to-coronavirus>

Tayler, W. (2010). The balanced scorecard as a strategy-evaluation tool: The effects of implementation involvement and a causal-chain focus. *The Accounting Review*, 85(3), 1095–1117. doi:10.2308/accr.2010.85.3.1095

Türk, C. N. N. (2020, March 25). *9 Kişi Daha Saf Alkolden Öldü* [9 More People Died From Pre Alcohol]. <https://www.cnnturk.com/video/turkiye/9-kisi-daha-saf-alkolden-oldu>

United Nations Educational Scientific and Cultural Organization (UNESCO). (2020). *Combating the disinfodemic: Working for truth in the time of COVID-19*. <https://en.unesco.org/covid19/disinfodemic>

Vaezi, A., & Javanmard, S. H. (2020). Infodemic and Risk Communication in the Era of CoV-19. *Advanced Biomedical Research*, 9(1), 10. doi:10.4103/abr.abr_47_20 PMID:32309248

Van Damme, I., & Smets, K. (2014). The power of emotion versus the power of suggestion: Memory for emotional events in the misinformation paradigm. *Emotion (Washington, D.C.)*, 14(2), 310–320. doi:10.1037/a0034629 PMID:24219394

Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science*, 359(6380), 1146–1151. doi:10.1126/science.aap9559 PMID:29590045

Vrajlal, A. (2020, January 31). *Chinese-Australians Facing Racism After Coronavirus Outbreak*. https://www.huffingtonpost.com.au/entry/coronavirus-australia-racism_au_5e33a522c5b6f2623326d72b

Wardle, C. (2019). *First Draft's 'Essential Guide to Understanding Information Disorder*. [firstdraftnews.org/wp-content/uploads/2019/10/Information_Disorder_Digital_AW.pdf?x76701](https://www.firstdraftnews.org/wp-content/uploads/2019/10/Information_Disorder_Digital_AW.pdf?x76701).

We are social. (2021). *Digital 2021 Global Overview Report*. <https://wearesocial.com/digital-2021>

- Wilson, T. (2002). The nonsense of ‘knowledge management. *Information Research*, 8(1). <http://informationr.net/ir/8-1/paper144.html>
- World Health Organization. (2020e, March 16). *Risk Communication and Community Engagement (RCCE) Action Plan Guidance COVID-19 Preparedness and Response*. [https://www.who.int/publications/i/item/risk-communication-and-community-engagement-\(rcce\)-action-plan-guidance](https://www.who.int/publications/i/item/risk-communication-and-community-engagement-(rcce)-action-plan-guidance)
- World Health Organization (WHO). (2020a). *Munich Security Conference*. <https://www.who.int/director-general/speeches/detail/munich-security-conference>
- World Health Organization (WHO). (2020b). *Coronavirus Disease (Covid-19) Advice For The Public: Mythbusters*. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters#thermal-scanners>
- World Health Organization (WHO). (2020c, May 18). *Resolution WHA73/CONF./I Rev.1*. https://apps.who.int/gb/ebwha/pdf_files/WHA73/A73_CONF1Rev1-en.pdf
- World Health Organization (WHO). (2020d, January). *Risk communication and community engagement readiness and initial response for novel coronaviruses (nCoV). Interim guidance*. <https://apps.who.int/iris/bitstream/handle/10665/330377/WHO-2019-nCoV-RCCE-v2020.1-eng.pdf>
- Wright, V. (Interviewer), & Wright, C. (Interviewee). (2019). *Bonus Episode – Fake News and Why It Matters* [Interview transcript]. <https://www.apa.org/research/action/speaking-of-psychology/fake-news>
- Yu, N., Pan, S., Yang, C.-C., & Tsai, J.-Y. (2020). Exploring the Role of Media Sources on COVID-19–Related Discrimination Experiences and Concerns Among Asian People in the United States: Cross-Sectional Survey Study. *Journal of Medical Internet Research*, 22(11), e21684. doi:10.2196/21684 PMID:33108307

ADDITIONAL READING

- Baines, D., & Elliott, R. J. R. (2020). *Defining misinformation, disinformation and malinformation: An urgent need for clarity during the COVID-19 infodemic* [Discussion Papers]. Department of Economics, University of Birmingham. <https://ideas.repec.org/p/bir/birmec/20-06.html>
- Larson, H. J. (2020). Blocking information on Covid-19 can fuel the spread of misinformation. *Nature*, 58(7803), 306. doi:10.1038/d41586-020-00920-w PMID:32231320
- Lovari, A. (2020). Spreading (Dis)Trust: Covid-19 Misinformation and Government Intervention in Italy. *Media and Communication*, 8(2), 458–461. doi:10.17645/mac.v8i2.3219
- Marchal, N., Au, H., & Howard, P. N. (2020). *Coronavirus News and Information on YouTube: A Content Analysis of Popular Search Terms*. <https://demtech.oii.ox.ac.uk/wp-content/uploads/sites/93/2020/04/YouTube-Memo-COVID-19-FINAL.pdf>
- Rathore, F. A., & Farooq, F. (2020). Information Overload and Infodemic in the COVID-19 Pandemic. *J Pak Med Assoc. Suppl*, 3(5), S162–S165. doi:10.5455/JPMA.38 PMID:32515403

The Challenges of the COVID-19 Infodemic

Rovetta, A., & Bhagavathula, A. S. (2020). Global Infodemiology of COVID-19: Analysis of Google Web Searches and Instagram Hashtags. *Journal of Medical Internet Research*, 22(8), e20673. doi:10.2196/20673 PMID:32748790

Singh, S., & Bagchi, K. (2020). *How Internet Platforms Are Combating Disinformation and Misinformation in the Age of COVID-19*. <https://www.newamerica.org/oti/reports/how-internet-platforms-are-combating-disinformation-and-misinformation-age-covid-19/>

Wen, J., Aston, J., Liu, X., & Ying, T. (2020). Effects of misleading media coverage on public health crisis: A case of the 2019 novel coronavirus outbreak in China. *Anatolia. An International Journal of Tourism and Hospitality Research*, 31(2), 331–336. doi:10.1080/13032917.2020.1730621

Yu, M., Li, Z., Yu, Z., He, J., & Zhou, J. (2020). Communication related health crisis on social media: A case of COVID-19 outbreak. *Current Issues in Tourism*. Advance online publication. doi:10.1080/13683500.2020.1752632

KEY TERMS AND DEFINITIONS

Disinformation: An intentionally misleading information.

Fake News: A false information, stories that appear to be news, spread using different traditional and digital media. They are usually created to influence public opinion.

Information: Any factor that humans, living organisms, or automatic devices can use for more specific purposeful action. A message from sender to receiver, who interpretes it as the sender intends. Facts provided or learned about something or someone.

Information Management: A processes that support the organization learning activities. A discipline of enterprise activity aimed at providing information to users with specific needs. It consists of functions such as identification, diagnostic and decision-making, planning information needs and resources, information supervision, controlling information technology processes, etc.

Malinformation: A reframed, recontextualized true information, which is misleading.

Management: A way to accomplish tasks and achieve goals. A process that consists of activities such as planning, organizing, controlling, directing, staffing in order to determine and accomplish stated objectives with the use of different resources.

Misinformation: An unintentionally false, wrong information.

Chapter 4

Digital Competencies in Online Education: Challenges for Now

Silvia Matúšová

 <https://orcid.org/0000-0002-3471-850X>

Vysoká škola ekonómie a manažmentu verejnej správy, Slovakia

ABSTRACT

The chapter will explore some aspects of online education such as digital skills, digital competences, and innovations in education, which the COVID-19 pandemic put into the foreground of the processes of learning and education at universities. The ability to apply digital skills and develop them into digital competencies is a basic prerequisite for learners and educators. The author analyses and evaluates the current state and challenges posed by online education, especially at colleges and universities. The concepts and terminology in the field of education in cyberspace, models of digital competencies of educators, scientific and educational policy documents defining the requirements for university teachers in online education were considered. The investigation was supported by the results of a questionnaire survey. The author points out the possibilities and ultimate requirements of online education at universities in terms of students, teachers, innovations, evaluation, advantages, and barriers in online education.

INTRODUCTION: A PANDEMIC EFFECTS EDUCATION

The pandemic of the new coronavirus COVID -19 broke out at the end of 2019 and has led to widespread, complete closure of schools, universities, and colleges. According to UNESCO (2020) estimates, a total of nearly 1.6 billion worldwide students have been affected by the closures of educational institutions in 2020. This accounted for 91,3% of the world's total learning community, with a total of 193 countries providing full nationwide remote teaching (Kristóf, Z., 2020).

UNESCO has proposed distance learning programs, open educational applications and platforms that have enabled schools and teachers to teach their students remotely and make online education easier (UNESCO, 2020).

DOI: 10.4018/978-1-7998-8339-5.ch004

Digital Competencies in Online Education

A good starting point for the effective use of digital technologies in education was the sufficient knowledge and experience gained by learners before the pandemic, on social networks in their free time, through e-learning courses at universities, higher education and further education institutions, as pointed by UNESCO (2011).

The practical use of technology in education, work and leisure has significantly preceded the theories and recommendations of education experts (Frk, B. 2010). The advent of the Internet in the 1990s accelerated the use of information and communication technologies in education. The availability of technological means and mobile technologies, access and quality of the Internet, and the expectations of generations growing up on technologies from birth, are likely to have a significant impact on new educational paradigms. The real era of virtualization of education has begun and is becoming part of the learning, work and leisure.

A significant part of the world's population has mastered accessible, easy-to-use and interactive technologies before the theory of learning has been able to respond comprehensively, with the exception of some theoretical concepts. The use of information and communication technology has coined theories as constructivism, connectivism, heutagogy, cybergogy.

Constructivism enables learners construct or make their own knowledge that is determined by their experience and previous knowledge. Connectivism is a teaching-learning theory in the digital age based on the belief that the goal of teaching is to learn to think, which takes precedence over the acquisition of knowledge. Heutagogy is a student-centred instructional strategy that emphasizes the development of autonomy, capability, and capacity. Cybergogy allows learning through cognitive, emotive, and social aspects (Černý, M., 2018).

Based on the analysis, comparison and evaluation of selected information obtained by searching scientific publications and journals, the focus of this paper aims at the current framework of digital competencies, applied in university online education, professional development of university teachers in terms of technical skills and pedagogical skills, the educational content in online education and the virtual learning environment.

Terminology in the Pandemic COVID-19

Online education requires a gradual transition to adaptation and improvement of professional and pedagogical skills of university teachers, gradual modification of educational processes, and the transformation of forms and methods of education, as stressed by UNESCO (2011).

In pandemic, research topics proved to be multidisciplinary and related to education, psychical health, nursing care, management, soft communication skills and impact of media covering COVID information. For instance, at the 3rd International Online Webinar on Physical Health, Nursing Care and COVID-19 Management in 2021 in UK, the authors from Central and Eastern Europe, such as Petrenko, Benčič, Koretskaya, Denisov, and Pitoňáková described and analysed educational approaches that seek to sustain the “unsustainable”, identified the problems of lecturer-student interaction in the midst of the mass transition to distance learning and tried to find ways to solve them (Denisov et al., 2021). Some authors provided context of situation about pandemics in the media (Pitoňáková, 2020, p. 58).

During the COVID-19 pandemic, teachers and students gradually, albeit sometimes overcoming obstacles, adapted to new possibilities for the use of digital technologies in teaching and learning. Many virtual platforms such as Zoom, Google Meet, Microsoft Teams have found applications in teaching at primary and secondary schools, Webex and Discord at universities.

The challenge for teachers was to create and update their own educational e-content, and get feedback from participants. Some educators used the Internet to transmit audio and video to students, however, they persisted in traditional “board and chalk” teaching.

In pedagogical practice at all levels of education, contact teaching (direct contact of teachers with learners) has been replaced by teaching in a virtual environment.

New terminology and terms, such as e-learning, online education, offline education, distant learning, remote learning, E-learning, etc. have started to be used to a much greater extent. They are directly connected to present digital technologies.

However, as Hozák (2019) pointed out, the world will be facing the “avalanche” of new technologies.

PREREQUISITES FOR THE USE OF ICT AND KEY DIGITAL COMPETENCES

The digital transformation of teaching and learning at universities requires the capacity building of teachers’ professional capacities, interlinked to new skills and competences, especially to key competences to work with digital technologies.

The definition of key competences in the European Union took place in 2006, when the Council and the European Parliament adopted a Key Competences Document for Lifelong Learning, recommending that the EU Member States “develop key competences for all as part of lifelong learning strategies.”

The main objectives of the Key Competences Document included:

- (a) to identify and define the key competences needed for personal satisfaction, active citizenship, social cohesion and employability in the knowledge society;
- (b) to support the work of Member States in ensuring that young people at the end of initial education and training have developed key competences to the extent that they equip them for adult life and that they are the basis for further education and professional growth;
- (c) to provide a European reference tool for policy-makers and educators, employers and learners to support efforts (at national and European levels) towards commonly agreed goals.

After completion and approval by the European Parliament and the Council of the EU, the original document was issued as a Recommendation on Key Competences for Lifelong Learning (the European Reference Framework).

The document defined the competence to work with digital technologies as follows:

Competence to work with digital technologies means a certain and critical use of information and communication technologies at work, in leisure time and in communication. The prerequisite is a basic knowledge of information and communication technologies, the use of computers to obtain, evaluate, store, generate and exchange information and to communicate and cooperate within the network via the Internet.

The competence to use tools interactively is demonstrated in the ability of active dialogue between the individual and the environment, which opens up new possibilities for understanding and communicating with the world. The competence to use technology interactively requires an understanding of the new ways in which an individual can use and apply technology in everyday life to achieve life and learning goals.

Digital Competencies in Online Education

The Council Recommendation of 22 May 2018 on Key Competences for Lifelong Learning noted that digital technologies have an impact on education, training and learning, as they develop more flexible learning environments adapted to the needs of an extremely mobile society. The need to link the development of key competences to the professional and pedagogical readiness of teachers and pedagogical staff is formulated as follows:

The development of key competences should be supported by introducing best practices to better support pedagogical staff in carrying out their tasks and improve their education.

The Council Recommendation listed eight key competences and, compared to the 2006 European Reference Framework, modified their titles:

1. literacy as reading and writing skills and a sufficient understanding of written information;
2. multilingualism as the ability to use different languages for appropriate and effective communication;
3. mathematical competence, and competence in science, technology and engineering, where mathematical competence includes at various levels the ability and willingness to use mathematical models of thinking and presentation - formulas, models, diagrams, graphs, tables, and competence in science, technology and engineering includes understanding change caused by human activity and the responsibility of a citizen as an individual;
4. digital competence includes a self-confident, critical and responsible use of digital technologies for education, work and participation in society, and interaction with digital technologies;
5. personal and social competence and the ability to learn is the ability to think about one's own personality, to manage time and information effectively, to cooperate constructively with others, to maintain resilience and to manage one's own education and career;
6. civic competence is the ability to act as a responsible citizen and to participate fully in civic and social life, based on knowledge of social, economic, legal and political concepts and structures, as well as an understanding of global development and sustainability;
7. entrepreneurial competence is the ability to seize opportunities and ideas and turn them into values for others, the ability to work together to plan and manage projects of cultural, social or financial value;
8. competence in cultural awareness and expression includes understanding and respect for how ideas and meaning are creatively expressed and disseminated in different cultures and through different types of art and other cultural forms.

Digital competences are built gradually, usually on digital skills and digital literacy. Digital skills focus on what and how. Digital literacy focuses on why, when, who, and for whom.

Digital Competence was included as one of the eight essential skills, in the Recommendation on Key Competences for Lifelong Learning (2010), and defined as a set of skills, knowledge and attitudes that enable self-confident, critical and responsible use of technologies and systems.

The complex of digital competences is referred to as digital literacy. However, digital competence is a broader and more universal concept. The EU Council Recommendation (2018) states that digital competence includes components such as information and data literacy, communication and collaboration,

media literacy, digital content creation (including programming), security (including digital well-being and cyber security), intellectual property issues, problem solving and critical thinking.

With respect to digital competence, individuals should demonstrate that they:

1. understand how digital technologies can contribute to communication, creativity and innovation, and should know the opportunities, constraints, impacts and risks they present;
2. b) understand the general principles, mechanisms and logic of evolving digital technologies and know the basic functions and uses of various devices, software and networks;
3. c) have a critical approach to the validity, reliability and impact of the information and data available through digital means and know the legal and ethical principles related to work with digital technologies;
4. (d) are able to use digital technologies to promote their active citizenship and social inclusion, cooperation with others and creativity in pursuing personal, social or business goals.

Digital skills include the ability to:

1. access, use, filter, evaluate, create, program and share digital content, and
2. manage and protect information, content, data and digital identities, as well as recognize and work effectively with software, devices, artificial intelligence or robots.

Acquiring skills is a lifelong process, beginning at an early age and developing through life. Apart from the right skills for a particular profession, employers are increasingly demanding transferable skills, such as the ability to work in a team, creative thinking and problem solving.

Europe is facing a basic skills challenge at present. People need a minimum level of basic skills, including mathematical literacy, literacy and basic digital skills, in order to have access to good jobs and to participate fully in society. Skills are building blocks for further education and career development.

The rapid digital transformation with the impact upon the economy means that almost all jobs require a certain degree of digital skills, as does participation in society in general. Integration of technology in education continues to receive special attention, particularly in COVID-19 pandemic. There are differences between various groups of students and teachers in their attitudes towards the integration of ICT in teaching and learning (Ali, 2020, p. 17).

The Role of University Teachers in Online Education

The role of university teachers is above all to understand the essence of digital competence as an important aspect of life, including education. The underlying idea of the concept of digital competence is that digital competence can be learned. Universities have a responsibility to support the development of digital competence for both students AND lecturers.

University teachers have to consider that the majority of students have been growing up with technology. Those born in 1997 started to apply:

- iPod from age 6 (2003);
- MySpace and Youtube since they were 8 (2005),

Digital Competencies in Online Education

- Twitter from age 9 (2006);
- Facebook from age 10 (2007);
- iPhone from age 10 (2007);
- iPad – touchscreen tablets from age 13 (2010).

Teachers should understand that young adults are immersed in technology since birth. They are the generation who cannot remember life before digital technology. Their social life may be more online than face to face. Many of them own lots of technology. The key question, however, is the following: How does all this impact their learning at universities?

Students attending universities are members of virtual generation, called net generation, digital natives or millennials, born into digital era (Ali, 2020). They can be characterized by a permanent access to information of various quality and extremely attached to digital technologies. Their educational needs and expectations differ from those of the previous generation (i. e. their parents and teachers). Therefore “universities and university faculty should adjust the methods and practices they use, make them more attractive for students, and be open to innovations in the field of education and digital technologies” (Barnová et. al., 2019).

The connectedness helps to create communities and changes the character of social interaction and relationships. Connectedness changes communication into interaction (Barnová et al., 2019). However, it would be wrong to consider the “virtual generation” to be a homogenous group, as not all of them are digital learners and do not possess the appropriate set of competences, skills, and attitudes.

Students rarely use technology for advanced knowledge-related activities or problem-solving unless they have been required to do so by their course or tutor. In contrast to the myth of the ‘Digital Native’ and the ubiquity of Facebook use, students’ digital identities are predominantly social, with their online activity beyond Facebook limited to being social media consumers rather than producers (Cochrane & Antonczak, 2015).

In students, digital competence (Jisc, 2013) is understood as

the ability that equips an individual to live, learn and work in a digital society, e.g. use digital tools to carry out academic research, work creation and critical thinking ... creating, sharing and critically evaluating information.

Beetham and Sharpe (2014) believe that “digital literacy is higher than functional IT skills and represents a richer spectrum of digital behaviours, practices and identities.”

Students have significantly less experience with activities through which they develop their cognitive skills (advance knowledge-related activities). Sharpe and Beetham (2010) state that students rarely use technologies to support activities that acquire a higher level of knowledge, unless they solve problems, required by the teacher or focus on the content, tasks and assignments.

Digital competence includes well-established (self-confident) and critical use of information society technologies, while relying on basic information and communication skills such as using computers to recover, acquire, store, produce, present and exchange information, communicate and participate in Internet collaborative networks. The student should be prepared to work with a personal computer and other means of information technology, use adequate sources of information and work effectively with information.

Digital competence requires proper knowledge and understanding of the nature of the roles and opportunities of using the information and communication technologies in everyday contexts. It includes mastering basic computer applications (word processor and spreadsheet, databases, storing and managing information, understanding the opportunities and potential risks of working with the Internet when sharing information (phishing), understanding the ethical principles and principles of networking and using information to support creative and innovative processing.

Digital competence also includes the ability to search for, collect and process information, use it in a critical and systematic way, assess relevant information and recognize its links. An individual is able to use digital tools to create, present and understand complex information, search and use services on the Internet. A critical and thoughtful attitude towards available information and the responsible use of interactive media is clearly required.

The development of digital competence supports membership in virtual communities and networks for cultural, social and professional purposes.

In the case of digital competence, we can specifically put aside information competence, which is directly related to the flow of information, information literacy and computer literacy. Digital competence strengthens knowledge of information and technology at a professional level.

Digital competences are transferable and widely used in a study across individual subjects. At work, they represent the ability to use knowledge and skills in work activities that are not directly related to a specific job, qualification or task, but are widely transferable across departments as well as in private life.

Digital Competencies of University Teacher and Educators

The digital society requires digitally competent citizens. A digitally competent person uses digital technologies in a knowledgeable and secure way for various purposes such as work, job search, learning, online shopping, obtaining health information, participation in social life, entertainment and the like.

Learners of all ages need excellent educators to develop the wide range of skills and attitudes they need to live and work. Differences in education and training outcomes depend mainly on individual characteristics and family background. Teachers and educators play a key role in introducing new methods of teaching and learning, in stimulating creativity and innovation, in overcoming bias and maximizing the potential in increasingly heterogeneous classrooms.

The development of the competences of teaching staff is a current and increasingly urgent priority of the European Union and its Member States which should pay attention to innovations in pedagogy. The need to innovate teaching at universities with the support of digital technologies is linked to the forecast that by 2025 the half of all EU job vacancies will require higher education qualifications which are usually obtained at the tertiary level of education.

The digital competences of university teachers have been the subject of independent research led by the Joint Research Center (JRC) of the European Commission, which resulted in the European Framework of Digital Competences for Educators (DigComp) in 2013, revised in 2016 and 2017.

As teachers and educators face new challenges, they increasingly need broader and more sophisticated sets of digital competences. The ubiquitous digital tools and the role of teachers in helping students to become digitally competent require teachers to develop their own digital competencies.

The DigComp is a scientifically sound framework for the development of teachers' digital competences, using an agreed common language and approach. It is intended for teachers of all levels and types of schools, including teachers of kindergartens and primary schools, teachers of secondary general

Digital Competencies in Online Education

and vocational education and training, teachers of special schools, teachers of universities and in adult education institutions, as well as those in non-formal education.

The aim of the above DigComp framework is to provide a general model of digital competences for the creators of specific models in the EU Member States, which should be used in the preparatory training and in-service training of teachers and pedagogical staff.

Digital competence is divided into five areas, which are information and data literacy, communication and collaboration, digital content creation, digital security and problem solving. In total, they contain up to 22 sub-competencies (Table 1).

Teachers' digital competencies cover six areas:

1. Professional engagement refers to the use of digital technologies in a wider professional environment, e.g. in communication with colleagues, students, parents and other parties.
2. Digital resources are subject to search, creation and modification, management, protection and sharing.
3. Teaching and learning refer to teaching, guidance, collaborative learning and self-directed learning.
4. Assessment refers to the use of evaluation strategies, evidence analysis, feedback and further planning.
5. Strengthening learners refers to the accessibility of education and the inclusion of learners, differentiated and personalized teaching, the activation of learners.
6. Facilitation refers to the formation and development of digital competences of learners.

Table 1. Digital competence and its areas

Areas of digital competence	Skills in this area
Information and data literacy	<ul style="list-style-type: none"> - browse the Internet, search and filter data, information and digital content, - evaluate data, information and digital content, - manage data, information and digital content;
Communication and cooperation	<ul style="list-style-type: none"> - interact with digital technologies, - share information through digital technologies, - civic engagement through digital technologies, - cooperate through digital technologies, - master the label of interaction through digital technologies (so-called netiquette), - manage your own digital identity;
Digital content creation	<ul style="list-style-type: none"> - development of digital content, - integration and processing of digital content, - copyright and licenses, - programming;
Safety	<ul style="list-style-type: none"> - protective equipment (protection tools), - protection of personal data and privacy, - protection of health and well-being, - protection of the environment (and the environment);
Problem solution	<ul style="list-style-type: none"> - solution of technical problems, - identification of needs and technological solutions (answers), - creative use of digital technologies, - identification of gaps in digital competences.

Source: European Framework of Digital Competences for Educators (DigComp), 2017.

The first and second areas represent the professional competencies of a teacher. The third, fourth and fifth areas represent the pedagogical competencies of a teacher. The sixth area represents the competencies of a learner. Janssen et. al. (2013) described and explained the teachers’ digital competency (TDC) framework based on the competence rooted in digital literacy and developed into digital competence. The TDC framework is composed of 12 competencies, with each demonstrating the knowledge and understanding of a specific area (Table 2).

Levels of Teacher Proficiency in the Use of Digital Technologies

The progression model focusing on the development and progress in teacher performance monitors individual levels of teacher performance in the use of digital technologies. The first level A1 is described as awareness, which is accompanied by curiosity and willingness to learn about new technology. It results in the second level. The second level A2 is referred to as an exploration characterized by the meaningful use of diverse digital technologies. It shifts to the third level. The third level B1 is described as integration, in which there is a shift towards the implementation of strategies and diversification of teaching. The fourth level B2 is characterised by expertise, accompanied by reflection and sharing of ideas, which results in the fifth level. The fifth level C1 demonstrates a leadership level, characterized by a critical attitude, innovation and renewal in pedagogical performance, which moves the teacher to the sixth level. At the sixth level C2, the teacher applies innovation and becomes a pioneer. Individual levels were named: novice (A1), explorer (A2), integrator (B1), expert (B2), leader (C1) and pioneer (C2). An overview of the levels and areas of performance in teachers’ digital competences is given in Table 3.

Table 2. Janssen’s areas of teachers’ digital competence (2013)

Competency	Knowledge and understanding of
Functional	terminology, use of digital technologies for basic purposes
Integrative	effective integration of digital technologies into everyday life
Specialised	optimising digital technology use for work and creative purposes
Communication and collaboration	digitally-supported networking for collaborative knowledge development
Information management	using digital technologies to access, organise, analyse and judge the relevance and accuracy of digital information
Privacy and security	measures to protect one’s personal identity, data, and security
Legal and ethical	socially appropriate behaviours in digital environments, including legal and ethical factors associated with the use of digital technologies and content
Technology and society	the context and use of digital technologies, and the impacts of these on people and society
Learning with and about technology	emerging digital technologies, and how they can be used to support learning across the lifespan
Informed decision making	critical selection of digital technologies suited to needs and purpose
Coherence/self-efficacy	using digital technologies to improve personal and professional performance
Dispositional	the importance of maintaining an objective and balanced perspective on digital innovations, and being confident to explore and exploit their potential as opportunities arise

Source: Janssen et. al. (2013) From digital literacy do digital competence: the teacher digital competency (TDC) framework.

Digital Competencies in Online Education

Table 3. Levels and areas of performance of teachers' digital competences

Pioneer (C2)	Innovates professional practice	Supports the use of digital resources	Innovates teaching	Innovates assessment	Innovates ways of involving students	Uses innovative formats to support students' digital competencies
Leader (C1)	Discusses and renews professional practice	Deliberately uses developed strategies and resources	Strategically and purposefully renews teaching practice	Critically evaluates digital assessment strategies	Strengthens students in a holistic way	Comprehensively and critically supports students' digital competencies
Expert (B2)	Strengthens professional practice	Strategically uses interactive resources	Strengthens activities in education and learning	Strategically and effectively uses digital assessment	Strategically uses a set of tools to strengthen students	Strategically supports students' digital competencies
Integrator (B1)	Expands their professional practice	Appropriately integrates digital resources into the context of learning	Meaningfully integrates digital technologies	Strengthens traditional assessment approaches	Empowering students is targeted	Implements activities to support students' digital competence
Explorer (A2)	Exploring digital possibilities	Exploring digital resources	Exploring strategies in digital teaching and learning	Exploring digital assessment strategies	Exploring student-centred strategies	Encourages students to use digital technologies
Novice (A1)	Awareness, uncertainty, basics of use	Awareness, uncertainty, basics of use	Awareness, uncertainty, basics of use	Awareness, uncertainty, basics of use	Awareness, uncertainty, basics of use	Awareness, uncertainty, basics of use
Levels of performance	Professional engagement	Digital resources	Teaching and learning	Assessment	Student empowerment	Facilitation

Source: European Framework for Digital Competence of Educators, JRC EK 2017, p. 31.

Novices (A1)

Novices are aware of the potential of digital technologies to increase their pedagogical and professional practice. However, they have very little experience with digital technologies and use them mainly for lesson preparation, administration or organizational communication. Newcomers need guidance and support to expand their repertoire and apply their existing digital competences in pedagogy.

Explorers (A2)

Explorers are aware of the potential of digital technologies and are interested in exploring them in order to improve pedagogical and professional practice. They began to use digital technologies in some areas of digital competence, but a comprehensive or consistent approach is not visible. Explorers need encouragement, insight and inspiration, e. g. through example and guidance from colleagues as part of the exchange of experiences in cooperation.

Integrators (B1)

Integrators experiment with digital technologies in different contexts and for different purposes and integrate them into many of their practices. They use digital technologies creatively to enhance various aspects of their professional engagement. Integrators want to expand their own repertoire of procedures. However, they are still testing to understand which tools work best in specific situations, and try to adapt digital technologies to pedagogical strategies and methods. Integrators still need a little more time to experiment and think. They need complementary collaborative support and knowledge exchange in order to become experts.

Experts (B2)

Experts use a wide range of digital technologies confidently, creatively and critically to improve their professional activities. They purposefully select digital technologies for specific situations and try to understand the advantages and disadvantages of different digital strategies. They are curious and open to new ideas because they know that there are many things they have not yet tried. They use experiments as a means to expand, structure and consolidate their own repertoire of strategies. When it comes to innovative practices, the experts are the backbone of any educational organization.

Leaders (C1)

Leaders have a consistent and comprehensive approach to using digital technologies in order to improve their pedagogical and professional practices. They rely on a wide repertoire of digital strategies from which they can choose the most suitable for each given situation. They are constantly reflecting on and further developing their practices. By exchanging knowledge with colleagues, they are constantly informed about new developments and ideas. They are a source of inspiration for others to whom they pass on their expertise.

Pioneers (C2)

Pioneers question the adequacy of current digital technologies and pedagogical practices, of which they themselves are leaders. The limitations or disadvantages of these practices are of concern to them, and at the same time they are an impetus that leads them to further innovation in education. Pioneers are experimenting with highly innovative and complex digital technologies and / or developing new pedagogical approaches. Pioneers are a unique and rare species. They lead innovations and are a role model for younger teachers.

The individual levels (from A1 to C2) differ in the use of digital technologies in individual areas of pedagogical activity. Teachers are able to carry out self-assessment through appropriately formulated questions. For example, in the area of student assessment strategies, teachers can perform self-assessment through relevant statements (Table 4).

Digital Competencies in Online Education

Table 4. Performance levels and statements for teacher's self-assessment

Performance level development	Level description	Teacher self-assessment statement
Novice (A1)	Few uses digital technologies to assess students.	I use very little or no digital methods (formats) when evaluating.
Explorer (A2)	Integrates digital technologies into assessment strategies.	I use digital technology to create assessment tasks, which I submit on paper. I plan to use digital technologies in student evaluation, e.g. when evaluating the assignment.
Integrator (B1)	Uses and modifies existing digital tools and evaluation methods.	I use existing digital technologies in formative (continuous) and summative (final) evaluation, e. g. digital quiz, e-portfolio, games. I adapt digital evaluation tools to achieve specific evaluation objectives, e.g. I create tests and a digital testing system.
Expert (B2)	Strategically and fully uses digital assessment methods.	I use a variety of e-assessment software, tools and approaches for formative assessment during and after class. I propose digital assessments that are valid and reliable.
Leader (C1)	Comprehensively and critically selects, creates and adapts digital assessment tools.	I use a variety of digital and non-digital assessment formats, linked to content and technical standards, and I am aware of their advantages and disadvantages. I can critically assess the use of digital technologies in evaluation and adapt my strategies accordingly.
Pioneer (C2)	Develops innovative methods of evaluation using digital technologies.	I am developing new assessment approaches that reflect innovative pedagogical approaches and enable the assessment of cross-cutting skills.

Source: European Framework for Digital Competence of Educators, JRC EK 2017, p. 63.

Factors Effecting Integration of ICT into Education

Since the beginning of the pandemic, many teachers have been harshly required to adapt to the new situation. Challenges requiring adaption by educators can be divided into the categories of solvable challenges, difficult challenges and wicked challenges. Solvable challenges are those that we understand and know how to solve (such as blended formal and informal learning, improving digital literacy). Difficult challenges are those we understand but for which solutions are elusive (such as personalizing learning, teaching complex thinking). Wicked challenges are those that are complex to even define, much less address such as competing models of education, rewarding teaching (to receive a feeling of reward).

Teachers' areas of expertise include the abilities to become adaptive, reflective, critical and responsive to professional challenges and improvement. They need *adaptive expertise*—the ability to adapt plans and practices to meet students' learning needs (Hatano & Oura, 2003; Vogt & Rogalla, 2009). They also require *reflective practice* that is systematic assessment of professional knowledge and action against criteria from practice, theory and research (Hagger & McIntyre, 2006). Finally, they should have *critical responsive attitudes to innovation and professional improvement* (Hagger & McIntyre, 2006).

Innovations in education are of particular importance as education plays a crucial role in creating a sustainable future. Innovation is to be regarded as an instrument of necessary and positive change. The author, however, differentiates between creativity and innovation. Creativity is thinking up new things. Innovation is doing new things. Innovation in education is understood as “the *successful* introduction of a new thing or method.”

In education, innovation can appear as a new pedagogic theory, methodological approach, teaching technique, instructional tool, learning process, or institutional structure that, when implemented, produces a significant change in teaching and learning, which leads to better student learning (Serdyukov, 2017). Creative professionals learn innovative thinking through training that is very different from the traditional academic classroom as innovative thinking means possessing real-world skills, high standards and professional values, and a particular way of thinking about problems and justifying solutions (OECD, 2014).

During the pandemic 2020-2021, innovations in education, especially in online education could be seen:

- in the adjustment or upgrading of the teaching process;
- in the modification of the teaching process (applying innovation that significantly alters the process, performance, or quality of an existing product);
- in the transformation of the system of teaching (dramatic conversion related to the start of online education, networked, and mobile learning).

As Serdyukov (2017) pointed out:

When analysing innovations of our time, we cannot fail to see that an overwhelming majority of them are tangible, being either technology tools (laptops, iPads, smart phones) or technology-based learning systems and materials, e.g., learning management system (LMS), educational software, and web-based resources.

Further, Serdyukov (2017) enumerates, that:

Today we are excited about online learning, mobile learning, social networking learning, massive open online courses, virtual reality, virtual and remote laboratories, 3D and 4D printing, and gamification

However, the author’s ultimate research interest is associated with learning and the question: “But can we say all this is helping to produce better learning?” Even, when mentioning the substance of technologies in education, Serdyukov (2017) emphasises:

These are all useful, tangible things, but where are the intangible innovations, such as theoretical foundation, particularly pedagogy, psychology, and instructional methodology that are a true underpinning of teaching and learning?

Barriers Preventing Integration of ICT into Education

For educators, a non-negligible impact has a negative socio-cultural impact on education: a) mercantilism, which is destroying the ultimate purpose of education; b) consumerism which is degrading institutions of higher education; c) monetization of education, entitlement, instant gratification, and egotism,

Digital Competencies in Online Education

which destroy education in general and the development of creativity and innovative spirit of students in particular. A growing trend in higher education is a market approach wherein the main goal is set for “meeting the demands of the student population that is learning.”

A particular barrier that prevents educators from using ICT in their teaching associates with the readiness, including confidence, competence, time and effective training. The lack of confidence is manifested as “fear of failure”. It is related to teacher’s competence in integrating ICT into pedagogical practice. Even if they have competence and confidence in using computers, they still make little use of technologies because they do not have enough time (BECTA, 2004). The lack of effective training in the use of ICT is combined with the lack of training in digital literacy, lack of pedagogic and didactic training in how to use ICT in the classroom.

Educational competencies cover the competencies for teaching and education, personal competencies (communication skills, creativity, flexibility, empathy, etc.) and developing competencies (adaptive, information, research, self-reflexive, auto-regulatory competencies).

At present, educators need to develop educational competencies and subject-matter knowledge, pedagogical skills AND digital competence in personalized online education. In conditions of pandemic, educators have to deliver courses efficiently, using innovative methods and technologies that are required for effective presentation, processing, skill development, and real-life applications.

Recommendations for Online Education

With regard to online education, the educators at universities, colleges and higher education institutes need to adopt, develop and apply the following recommendations:

1. learner-centred approach (what educators do, they do it on behalf of a learner!);
2. specific structures and organization of the course and its content for consistent, “whole” student experience with the focus on the interconnection of theory and practice, e. g. learners/students elaborate texts and presentations, focusing on the application of theories, discuss the presented assignments and provide peer review to each other);
3. effective content presentation in various formats and modalities;
4. immediate application of new knowledge in authentic situations in the class and real life, in order to gain practical outcomes of the course;
5. iterative process of knowledge construction and skills development.

Online education requires to stick to key principles which cover (Serdyukov, 2017) following aspects:

1. situated learning that uses real-life situations as the basis of learning activities and, especially, in developing professional competence;
2. ICT tools in online teaching support active communication, collaboration, and cooperation among students, e.g. in various small- and big-group activities;
3. motivation should be developed and supported through emotional involvement of each student in team work and learning process;
4. educator’s suggestive, supportive, and efficient teaching style incorporating incessant involvement with the class; immediate, objective, and stimulating feedback; continuous student support;

5. systemic use of ICT in classroom and homework, both for information (content) acquisition and skill development, for communication and collaboration, and for maintaining students' high level of cognitive, physical, and emotional state.

There are however pertinent challenges of online education. The human element, particularly the learner and teacher, remains problematic. So, while taking advantage of effective educational technologies, we must situate those modern tools within a wider context of human education in order to preserve its humanistic, developmental purpose and, thus, make more effective use of them (Serdyukov, 2017).

The teacher – learner relationship needs to be promoted, as: “Students learn from their teachers, not from electronic gadgets.”

Empirical Survey Focused on Students in Higher Education Institution

With the aim to find out the knowledge and attitudes to online education, we carried out a questionnaire survey focused on online education from the aspect of students, teachers, contents of education and technical platforms. The survey was carried out in March – April 2021 during the lockdown caused by a pandemic COVID 19. The sample included 118 respondents, the students of the 2nd grade of master study, external study (age range from 22 to 40) at the School of Economics and Management in Bratislava, Slovak Republic. The survey focused on appropriateness of online instruction. The questionnaire contained 20 questions, in which the respondents could mark 1 answer or more answers. The 5-points Likert scale was applied.

The research questions included:

- How do students perceive and characterize online education? What do they consider to be the biggest advantage and the biggest disadvantage of online education?
- How do students perceive and assess the new requirements that online education imposed on teachers? Do teachers require special prerequisites and special training for online instruction?
- How do students assess the delivery of the educational content in online instruction? Is the educational content presented to them as clearly and effectively as in full-time study?
- Which are the biggest problems of students in online education?
- How do students evaluate the technical platform in online education and online tutoring?

The survey brought several key results:

1. Respondents were able to understand and characterize online education as online teaching through a technology platform based on information and communication technologies (WEBEX, teams, zoom, skype, etc.), using technical means and methodological procedures, which enable a teacher to present the educational content and assess students' achievements. Respondents viewed online education as a pedagogical innovation in higher education.
2. The majority of respondents expressed the opinion that the educational content presented to students in online education is presented as clearly and effectively as in full-time education. A certain group of respondents however perceived the difference between online education and full-time education, and expressed their criticism towards online education.

Digital Competencies in Online Education

3. The biggest advantage of online education included the possibility to study at home, save time and not move to university premises, to study online and achieve equally recognized study results. Respondents appreciated the rapid decision of the university management to replace full-time study by online education since the start of lockdown in the academic year 2020 – 2021. It was confirmed by a significant number of respondents what Serdyukov (2017) states, “so, accessibility and, especially, convenience, enhanced by flexibility of the study schedule and comfortable learning environment of one’s office or bedroom are evidently the key factors of its popularity among students. The motto of online education, “Any time, any place, any pace” is extremely seductive.”
4. Respondents identified the biggest disadvantages of online education, which included restricted communication with the teacher about the content delivered via online education, lack of suggestions and answers of classmates, little interaction among classmates, and excessive social isolation and restricted opportunity to work with classmates. Respondents emphasized that during online instruction, many students are afraid to formulate questions and put them to a teacher as they do not perceive the verbal or non-verbal support of classmates that is characteristic in full-time education.
5. The positive assessment of online education prevailed, however, a significantly smaller share of respondents described online education as an excellent tool for education. This suggests that, in its current form, online education has certain shortcomings and reservations.
6. As regards the readiness of a university teacher for online teaching, respondents expect and require technical skills from a teacher in working with a given technical platform. They also require linkage and interconnectedness between explanation and exposition of online presentations, supplemented with current information on the presented topic. The use of motivational incentives, continuous assessment of students and the ability to assess students’ online assignments “on the spot” were required.
7. Respondents had very clear expectations regarding teachers’ pedagogical skills, which ought to be complemented by technical skills and the ability to work with a technical platform, suitable for online instruction delivery. They also expected to enjoy all teacher’s activities that are more typical of full-time education, such as questions and answers, group communication and information exchange, student assessment of problems, application of experiences, problem solving and use of imagination – what would happen, if.
8. Respondents indicated that during online education they were able to observe the teacher’s activities (such as attention fluctuation), assess the complexity of the curriculum and the need to master the technical side of online teaching which put special demands on the teacher.
9. The above findings confirmed that respondents do expect a smooth mastery of the role of the teacher in online education, especially in mastering the technical platform of online education. They clearly require from teachers to be specifically trained for this task. This should be considered as an incentive for academic growth and development of comprehensive pedagogical skills of educators and lecturers.

SOLUTIONS AND RECOMMENDATIONS

Based on the results of the survey, it can be generalised that the most important aspects of the teacher’s performance include the ability to explain the theory and supplement it with practical examples, to use non-verbal keys (incl. voice) in teaching, while sticking to the set of educational cognitive goals.

Professionalism of educators remains the most important aspect of online instruction, both in terms of content and ways of presenting the curriculum, cooperation with students and assessment of assignments in public.

Respondents mostly evaluated teachers' performance in online teaching, the ability to keep a dialogue with students, the focus on performance, the ability to activate students with questions, examples and cases and avoid possible disruptive influences.

Respondents confirmed they can understand and properly address the issue of online education. They are sensitive to the differences between a form of full-time study and online education. They are aware of significant advantages and disadvantages of online education.

The scoring of respondents is of considerable significance and can lead to some recommendations:

Firstly, online teaching requires teachers to be precisely trained and innovated in the ways they present the educational content in online learning environment.

Secondly, under the pandemic, pedagogical innovations in online education have rapidly transformed from the adjustment and upgrading of the teaching process, through innovations altering the process, performance and quality of the ways of teaching. Current pedagogical innovations aim at the transformation of the system that represents dramatic conversion (Ali, 2020).

Thirdly, university teachers applying technical platforms for online education are judged soberly. Students appreciate their preparation for online education, the way of presenting the educational content, clear and eloquent communication with students, facilitating interaction among students, the possibility of presenting assignments via technology platforms to classmates.

Fourthly, respondents were well aware of the new requirements imposed on teachers in online education, relating to mastering the topic, ways of presentation, dialogue and activation questions, linkage between theory and practice.

Respondents highly appreciated the teacher's ability to work with the technical platform in online instruction, synchronized connection of the image (presentation) and the explanation and interpretation. Therefore, university teachers need to continuously improve their pedagogical and technical skills and face to and cope with new challenges associated with online education.

FUTURE RESEARCH DIRECTIONS

Barnová et al. (2020) carried out research in secondary school classes. The notion of distance learning in sense of online education was investigated. The authors assume that distance learning can be beneficial for motivated and independent learners able to take responsibility for their learning. They also emphasized the social dimension, saying that "nothing can replace face-to-face contact between teachers and students." The teachers' preparedness (readiness) for online education, including teachers' digital competencies, interest in the application of digital technologies and the attitudes towards online teaching were marked as the most decisive factors of success and effectiveness of the online educational process. Secondary school students were able to consider the pros of learning online as follows: a) comfort of the home environment; b) continuity of education; c) digital technologies of learning; d) positive learning climate; e) maintaining social contact with peers (in the time of quarantine).

The inspiration for further research regarding teachers' innovations (Matúšová, 2021) was the finding in the research of Barnová et al. (2020, p. 6723), concerning the advantages of online teaching perceived by teachers as follows: a) new opportunities for development and innovation; b) contact with students

Digital Competencies in Online Education

during the school closure; c) promotion of students' independence; d) flexibility and effectiveness of online teaching; e) continuity of education; f) individualized approach.

Digital technologies as integrated into education require combining the latest knowledge from pedagogy and informatics. The level of teachers' digital literacy can be decisive with regard to the success of both teaching and learning activities. Digital literacy is made up of eight inter-related components or dimensions: functional skills, creativity, critical thinking and evaluation, cultural and social understanding, collaboration, the ability to find and select information, effective communication, and e-safety (Barnová et al., 2020b).

At present, universities world-wide are moving more and more toward online learning or E-learning (Ali, 2020, p. 20). Apart from the resources, staff readiness, confidence, student accessibility and motivation play important function in ICT integrated learning.

It is necessary to be cautious in generalization of the outcomes of research that is still scattered. The World Bank (2020) believe that little research attention has been paid to the documentation and analysis of attempts how swiftly and at scale education systems move to provide online learning when schools and universities are closed (Ali, 2020, p. 19).

According to UNESCO (2020) "transitioning to online learning at scale is a very difficult and highly complex undertaking for education systems, even in the best circumstances but it has become a necessity" (Ali, 2020, p. 18).

In recent years, it has become common in universities and higher education institutions to provide online education to supplement traditional teaching methods. The schools and universities, that started going online, did it in different ways. Nonetheless, there can be found some common elements unifying the approach to the deployment of digital technologies in education.

University decision makers carefully considered the replacement of full-time study by online education. In long-term intents of universities development, the application of digital technologies and online education were incorporated. The necessity to develop digital and information literacy both in students and faculty were acknowledged. The forms of university education were enriched and widened by various forms of online learning (e-learning, blended learning, e-tutoring, e-mentoring etc.), innovative methods and the deployment of numerous digital technologies in education. Various learning environment platforms started to be applied. According to Barnová et al. (2019, p. 11149), the activities of the university were oriented to the fulfilment of the following objectives:

- Enhancement of the academic information system efficiency (including the platforms for online learning);
- Enhancement of the security and accessibility of the university computer network and the quality of services provided;
- Modernization of digital technologies utilised by students, faculty and visitors.

It should be noted that technological advances often outpace the ability of decision makers to keep up, considering cost and infrastructure support (World Bank, 2020b).

Regarding the concept of online teaching and learning, attention should be paid to educational contents, enhanced by multimedia, thus creating the multimedia-enhanced contents. According to Ali (2020, p. 20), multimedia contents are digital instruction materials that combine text, graphics, audio and animations. They are used by educators to better demonstrate and explain difficult concepts and help to improve students' understanding of instructional materials.

Staff readiness relates to teachers' preparedness to work with ICT in online teaching. The World Bank (2020 b) stressed that staff working online should be trained and supported. They warned that the staff who do not have access to sufficient broadband and a connected device at home will obviously not be able to support students learning online. They also urge that the staff need to be supported technically, socially and morally so that the staff can effectively deliver online classes (Ali, 2020, p. 20).

The teaching staff are the key players of in the effective implementation of ICT integrated learning. Therefore, it is pivotal that they have the right attitude and perception about ICT integrated in teaching.

The World Bank emphasized a number of challenges associated with online teaching and learning:

- Transitioning to online learning is a very difficult and highly complex undertaking for education systems, even in best circumstances.
- Moving to online learning raises profound equity concerns.
- Highly motivated learners are the most likely to take the most advantage of online education system.
- Organizing digital education content can be critical from the aspect to ensure that the learning opportunities correspond to broader educational objectives within an education system.
- Making content available on a wide variety of devices and mobile friendly is critical.
- Staff teaching online need to be supported.
- Providing a supplemental guidance and support on how to use and access remote and online learning content can be critical.
- Some academic subjects are easier to move online than others (World Bank, 2020b).

According to several surveys, university students representing the digital generation tend to have a strong bonding with ICT (Ali, 2018). Since childhood, they are exposed to a technological gadget such as mobile phones and tablets. The majority of students have access to mobile phones which they use for texting, contacting with social media and applications, apart from talking. They are assumed to display a high degree of acceptance and sensibility of receptiveness (Jesse, 2015).

There may be many paradoxes and delusions as considering the belief that the net generation knows all about ICT. It may be a fatal misconception. They may be technology canny, but they may lack the theoretical knowledge base and may show limitations in their use of technology and real knowledge of computer skills. Moreover, the World Bank (2020b) reiterate that many students have difficulty accessing online learning because of poor Internet access and numerous disadvantages (of social and economic substance).

CONCLUSION

The study of academic literature reveals that pedagogical and andragogical textbooks, dictionaries, lexicons and other sources will need to incorporate new perspectives on education, which takes place in virtual conditions.

We find that some terms and terms are not included in source materials. Even in books published recently the new concepts and approaches to education are not entirely clearly explained. This affects the whole broad framework of educational goals, organizational forms and educational methods. A special topic is the new virtual environment where educational activities take place.

Digital Competencies in Online Education

Concepts such as online education, off-line education, e-learning, key competences, as well as digital skills and digital competences, innovation in education need to be clarified.

In online education practice at universities, experience was gradually gained. Requirements imposed on university teachers in conditions of a sudden transition from full-time education to online education need to be specified. Acquired experience connected to the theory and practice of education at universities must be evaluated and interpreted.

Theories constructed for decades, proven forms and methods of education need radical innovation, or even a new beginning. Persistent scientific and professional concepts do not seem to be enough for the rapid pace of constant change in virtual space. The question arises as to whether traditional approaches to the preparation and implementation of education are applicable in such a dynamic and changing environment as cyberspace.

ACKNOWLEDGMENT

This research was supported by the Vysoká škola ekonómie a manažmentu in Bratislava, Slovak Republic [grant number 3/2021-M].

REFERENCES

- Ali, W. (2020). *Online and Remote Learning in Higher Education Institutes: A Necessity in Light of COVID-19 Pandemic*. Higher Education Studies. doi:10.5539/hes.v10n3p19
- Barnová, S., Krásna, S., & Čepelová, S. (2020b). Digital Technologies as a Means of Teachers' Professional Development. *Online Journal for Research and Education*, 18, 11-17.
- Barnová, S., Krásna, S., & Gabrhelová, G. (2019). Application of digital technologies as a factor influencing university students' academic satisfaction. *Proceedings of ICERI2019 Conference*, 11146-11151. 10.21125/iceri.2019.2752
- Barnová, S., Krásna, S., Gabrhelová, G., & Čepelová, S. (2020a). Live-streaming lessons in secondary education during COVID-19 pandemics - challenges and new opportunities. *Proceedings of ICERI2020 Conference*, 6720-6724. 10.21125/iceri.2020.1428
- Beetham, H., & Sharpe, R. (2014). *Developing Digital Literacies*. <http://www.jisc.ac.uk/fullguide/18655>
- British Educational Communications and Technology Agency (BECTA). (2004). *A Review of Research Literature on Barriers on the Uptake of ICT by Teachers*. <https://www.becta.org.uk>
- Černý, M. (2018). *Pedagogicko-psychologické otázky online vzdelávání [Pedagogico-psychological aspects of online education]*. Brno: Masarykova univerzita.
- Cochrane, T., & Antonczak, L. (2015). *Developing students' professional digital identity*. Paper presented at 11th International Conference on Mobile Learning, Madeira, Portugal.

Denisov, I., Petrenko, Y., Koretskaya, I., & Benčič, S. (2021). The gameover in universities education management during the pandemic covid-19: Challenges to sustainable development in a digitalized environment. *Sustainability*, 13(7398), 1-23.

European Commission. (2010). *Digital Literacy Review*. https://ec.europa.eu/information_society/europe/i2010/docs/digital_literacy/digital_literacy_review.pdf

European Commission - Joint Research Centre. (2017). *The European Framework of Digital Competences of Teachers*. Academic Press.

Fallon, G. (2020). From digital literacy to digital competence: The teacher Digital competency (TDC) framework. *Educational Technology Research and Development*, 2020(68), 2449–2472. doi:10.1007/1423-020-09767-4

Frk, B. (2010). E-learning a online vzdelávanie dospelých [E-learning and online education of adults]. *PEDAGOGIKA SK 2010*, 1(3), 107-122. <https://www.casopispedagogika.sk/studie/e-learning-a-online-vzdelavanie-dospelych.html>

Hagger, H., & McIntyre, D. (2006). *Learning Teaching From Teachers: Realising The Potential Of School-Based Teacher Education*. McGraw-Hill Education.

Hatano, G., & Oura, Y. (2003). Commentary: Reconceptualizing school learning using insight from expertise. *Educational Researcher*, 32(8), 26–29. doi:10.3102/0013189X032008026

Hozák, R. (2019). *Vzdelávanie budúcnosti. Metodika "Integrované digitálne technológie"* [Education will be Virtues. Methodology "Integrated digital technologies"]. Book & Book.

Huang, R. H., Liu, D. J., Tlili, A., Zang, J. F., & Wang, H. H. (2020). *Handbook on Facilitating Flexible Learning During Educational Disruption: The Chinese Experience in Maintaining Undisrupted Learning in Covid-19 Outbreak*. Smart Learning Institute of Beijing Normal University.

Janssen, J., Stoyanov, S., Ferrari, A., Punie, Y., Pannekeet, K., & Sloep, P. (2013). Experts' views on digital competence: Commonalities and differences. *Computers & Education*, 68, 473–481. doi:10.1016/j.compedu.2013.06.008

Jesse, G. R. (2015). *Smartphone and App Usage Among College Students: Using Smartphones Effectively for Social and Educational Needs*. <http://proc.iscap.info/2015/pdf/3424/pdf>

JISC. (2013). *Digital Literacy*. <https://www.jisc.ac.uk/rd/projects/digital-literacies>

Kristóf, Z. (2020). International Trends of Remote Teaching Ordered in Light of the Coronavirus (COVID-19) and its Most Popular Video Conferencing Applications that Implement Communication. *Central European Journal of Educational Research*, 2(2), 84–92. doi:10.37441/CEJER/2020/2/2/7917

Matúšová, S. (2021). *Managerial Competencies and Innovations in Education in Post-Covid 19*. Bratislava: Vysoká škola ekonómie a manažmentu verejnej správy, International Project 3/2021 – M.

OECD. (2014). *Measuring Innovation in Education: A New Perspective*. OECD Publishing. doi:10.1787/9789264215696-

Digital Competencies in Online Education

Pitoňáková, S. (2020). Slovak media in the time of corona crisis – pandemics in the media and the media in pandemics. *Dot.comm*, 8(2), 55-67.

Redecker, C. (2017). *European Framework of Digital competence of Educators: DigCompEdu*. Publications Office of the European Union. doi:10.2760/159770

Serdyukov, P. (2017). Innovation in education: what works, what doesn't, and what to do about it? *Journal of Research in Innovative Teaching & Learning*, 10(1), 4-33.

Sharpe, R. J., & Beetham, H. (2010). *Understanding students' uses of technology for learning: Towards creative appropriation*. <https://radar.brookes.ac.uk/radar/items/4887c90b-adc6-db4f-397f-ea61e53739e0/1/>

Strenáčiková, M. (2020). Vzdelávanie v čase pandémie. *Equilibria* 2020.

The Council of the EU. (2006). *Document on Key Competences for Lifelong Learning*. Author.

The Council of the EU. (2018). *The Council Recommendation of 22 May 2018 on key competences for lifelong learning*. Official Journal. 2018 (2018 / C 189/01).

UNESCO. (2011). *ICT competency standards for teachers (version 2)*. Paris: UNESCO.

UNESCO. (2020). *COVID-19 Educational Disruption and Response*. <https://en.unesco.org/covid19/educationresponse>

Vogt, F., & Rogalla, M. (2009). Developing Adaptive Teaching Competency through coaching. *Teaching and Teacher Education*, 25(8), 1051–1060. doi:10.1016/j.tate.2009.04.002

Wang, M. J. (2008). Cybergogy for engaged learning. *Journal of Open and Distance Education in China*, 14(2), 14–22.

World Bank. (2020a). *Guidance Note: Remote Learning & COVID-19*. Retrieved from: <http://documents.worldbank.org>

World Bank. (2020b). *Remote Learning and COVID-19. The use of educational technologies at scale across and education system as a result of massive school closings in response to the COVID-19 pandemic to enable distance education and online learning*. Author.

KEY TERMS AND DEFINITIONS

Distance Learning: A learning process, where a learner cannot be present at the education in standard conditions, and regular contact with a teacher takes place mainly through ICT. Online education can be assessed as one of the options for the implementation of distant learning.

E-Learning (Electronic Learning): Teaching and learning in a virtual environment using the Internet, leading to relatively permanent changes in the knowledge, experience, behaviour and performance of a learner. It does not preclude the physical presence of a student in class, although it does not require it.

Offline Training: The training does not take place in the physical absence of participants in a common space, and not via the Internet. The most common means are media such as television broadcasting, radio broadcasting, communication by telephone or e-mail, CD, etc.

Online Education: The process of the teacher acting on learners in a virtual space, where the explanation of the curriculum, giving instructions, discussion, providing feedback and evaluation are carried out exclusively through the (two-way) transmission of information over the Internet. Study materials are published through network communication means.

Remote Learning: A process of teaching a student who, for various reasons, must not be present in a traditional educational environment (school).

Chapter 5

Strategic Planning for Teaching and Learning in Times of COVID: UNIMINUTO Bogotá – Presential Academic Programs Campus Case

Jefferson E. Arias Gómez

Corporación Universitaria Minuto de Dios (UNIMINUTO), Colombia

Silvia L. Espinosa Acevedo

Corporación Universitaria Minuto de Dios (UNIMINUTO), Colombia

ABSTRACT

The Corporación Universitaria Minuto de Dios UNIMINUTO has determined a series of objectives as levers for growth and development, which have prepared it to face great changes. In this sense, UNIMINUTO Bogotá - Presential Academic Programs Campus designed the Strategic Plan 20-25 “Bogotá and UNIMINUTO, a learning community,” with which it marked its evolutionary path for the next few years. Within this planning and management framework, and based on the attention of the effects caused by COVID-19, this campus made adjustments to its processes and plans, with a series of effects that determined new learning in relation to accessibility and use of technologies in the teaching-learning process; redefinition of the mechanism for the appropriation and awareness of the strategic plan; development of activities requiring attendance, ensuring compliance with all biosafety measures; safe return of students through an alternation model and mechanisms to provide financial support to students and families to guarantee the continuity of the operation and institutional sustainability.

DOI: 10.4018/978-1-7998-8339-5.ch005

INTRODUCTION AND PRELIMINARIES

The Corporación Universitaria Minuto de Dios – UNIMINUTO, was founded by Father Rafael García Herreros in 1992 within the so-called “Obra Minuto de Dios – OMD”, which designs and implements initiatives and actions that promote sustainable integral development for people, communities and territories, and integrates 8 institutions of the social sector that, from different perspectives and capacities, establish services in various areas linked to the needs and expectations of human beings and communities (Arias, 2007, págs. 18-19), as Figure 1 shows:

Figure 1. Services Areas of OMD
Source: UNIMINUTO - Chairmanship OMD



Strategic Planning for Teaching and Learning in Times of COVID

Since planning is a process in which various actions are established that have future consequences, which cannot exist if it is not based on one or more objectives (Aceves, 2004, p. 4), UNIMINUTO has determined a series of planned objectives. and adjusted over time, as growth and development levers: i) Access and coverage, ii) Financial benefits for students, iii) Comprehensive quality, iv) Relationships and alliances, and v) Effective management.

These elements develop and evolve, according to Richardson B. and Richardson R., as generic development strategies, based on being designed, implemented and evaluated to accompany different stages of the evolution of an organization (1996, pp. 74-75). In this sense, for UNIMINUTO, being able to diversify its offer, having the possibility of bringing higher education to more Colombians in different parts of the country and strengthening its academic and management model has had, over time, a lever through the processes of planning and evaluation deployed in a conscious way and within the framework of a vision of the future that has implicit, an action to anticipate the changes that can occur in economic, political, social terms, among others; that guides decision-making for the medium and long term with greater certainty (1996, p. 53).

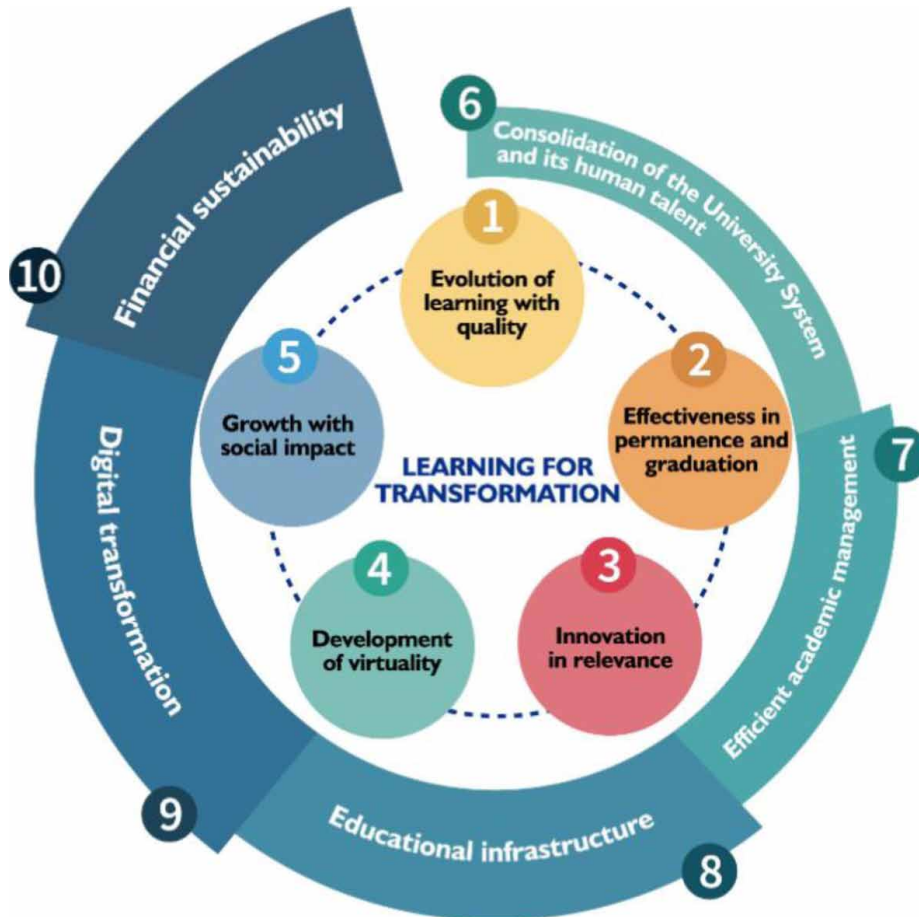
With these references, UNIMINUTO Bogotá - Presential Academic Programs Campus, has routed its future through a series of strategic plans that have marked its development path. In this sense, the 2013-2019 plan raised, as one of its strategic challenges, the consolidation of an “Innovative Ecosystem and Social Entrepreneur” that generated, for the institution, two large management units: the Social Innovation Science Park created as a meeting space that promotes the relationship between actors to analyze social problems and co-create effective solutions to them (Arias, 2016, p. 265) and the Progresía Center as a unit for the management of professional internship, first job, entrepreneurship and employability ; integrating these two centers as a support network characterized by the flow of action and knowledge (Arias & Chaparro, 2018, p. 20).

THE STRATEGIC PLAN OF UNIMINUTO BOGOTÁ - PRESENTIAL ACADEMIC PROGRAMS CAMPUS

For the period 2020-2025, UNIMINUTO as National University System, is designed as a general framework Development Plan “Learning for transformation” and aims, through its component lines, establish mechanisms for UNIMINUTO to get ready to face big changes. In the words of the General Rector Father Harold Castilla Devoz “because the future has already arrived, and we hardly realize the challenges that this avalanche of changes supposes and will suppose for humanity; in particular, for higher education”. Later, he points out that it becomes a framework for action and a reference for the plans in each campus and are challenges that need to be faced holistically by UNIMINUTO in the framework of the Fourth Industrial Revolution and later, by the COVID-19 pandemic, (UNIMINUTO, 2020, p. 11). These strategic lines are evidenced in the Figure 2.

Based on this epistemic, political and managerial stance, the UNIMINUTO Bogotá - Presential Academic Programs Campus designs the Strategic Plan 20-25 “Bogotá and UNIMINUTO, a learning community”, which marks the evolutionary path of the campus that, not only is the oldest and most mature of the UNIMINUTO System, but also the largest (Espinosa, 2021, p. 2) measured from the number of academic programs, national and international high quality programs recognition, students enrolled and income received per year which represent, on average, 29% of the goals of the university system; as a reference, the following campus contributes 13% of the income from on-site academic programs.

Figure 2. UNIMINUTO University System Development Plan Lines
 Source: UNIMINUTO - Development Plan 20-25



Within this planning and management framework and in the context that was generated by the pandemic, the work team designed and implemented two major instruments for management, monitoring, and decision-making: i) Strategic Plan 20-25, its indicators and control panel, and ii) 360° Analysis, an administrative tool that, with a 5-year window, evaluates the behavior of financial, academic and market variables, to make a diagnosis and define relevant strategies for the proper functioning of academic programs and the headquarters (Espinosa, 2021, p. 3).

The strategic plan is structured through a mesh of 5 stakes out, 19 actions, 35 facts and 42 indicators, objectives designed under the SMART¹ methodology, as shown in the Table 1.

To support the Strategic Plan, a consolidated information mechanism called 360° Analysis is created, which allows the situation for each program of this campus, to be fully and comprehensively visible, support operational and strategic decision-making, and strengthen the risk prediction and management exercises during planning processes (Espinosa, 2021, p. 3).

In this way, the UNIMINUTO Bogotá - Presential Academic Programs Campus, intends to position itself as an institution of higher education that contributes to the social and territorial development in the

Strategic Planning for Teaching and Learning in Times of COVID

Table 1. Structure of UNIMINUTO Bogotá - Presential Academic Programs Campus Strategic Plan

Stakes out	Strategic actions	Facts	Indicators
Learning to close gaps	Ensuring the conditions for success in university life and the strengthening of the life project	8	11
	Redesign curriculum with emphasis on the first year and the end of the degree		
	Postgraduate and continuing education to close labor gaps		
	Innovation in the relationship with graduates		
Sustainable development model for Bogotá	Management of university social responsibility	6	6
	Construction of communities and peaceful coexistence based on the presence of the UNIMINUTO Bogotá Centers		
	Articulation of UNIMINUTO Bogotá with different actors in the localities		
Research System Strengthening	Consolidation of the Research, Development and Innovation System - UNIMINUTO Bogotá	9	11
	Improvement of research capacities in the academic community		
	Research-Society Articulation		
	Capacity for external cooperation to ensure synergies		
Value generation for companies, organizations and State	Promotion of professional and pedagogical practice as a projection tool towards working life	6	6
	UNIMINUTO's relationship with companies, organizations and the State		
	Entrepreneurship of students and graduates		
Institutional Sustainability supported by operational excellence and a culture of service	Expansion of quality coverage to promote access to higher education	6	8
	Strategic communication at the service of identity and missionary purpose UNIMINUTO		
	Strengthening the income generation model		
	Efficient and effective management of educational and administrative processes to improve the experience of stakeholders		
	Consolidate UNIMINUTO Subsystem - Bogotá Campus		
Total	19	35	42

Source: UNIMINUTO - Development Plan 20-25

Capital of Colombia, in a sustainable way; since, as Porter establish, a generic strategy is not conducive to outstanding performance if it cannot be sustained (1987, pág. 49).

STRATEGIC PLANNING FOR TEACHING AND LEARNING IN TIMES OF COVID-19

The global pandemic caused by the Coronavirus SARS-CoV-2 (COVID-19) was detected in Colombia at the beginning of 2020 and generated a series of government policies that affected the lives and daily life of individuals, organizations and society. Among them is the so-called collective isolation, which sought to control the spread of the virus by reducing its ability to spread between people.

UNIMINUTO was no stranger to this reality and experienced a strong influence on the management model because, as suggested Taleb, we say that a person is under pressure when you have no choice but

to do something, and it quickly, despite the costs may suppose (2013, p. 340), with a series of effects, adjustments in processes and plans, determining some learnings:

Teaching – Learning Process

A first adjustment was the leap into the void from an on-site methodology in a coincident geographical and temporal space, to a methodology mediated by information and communication technologies (ICT) that required the parties (teachers, students, administrators, and families) the resignification of their role, responsibilities and commitments with the teaching - learning process, based on a new reality that included the implementation and adjustment of methodological and evaluation designs. As Father Harold Castilla indicates, “it became necessary to make substantial changes in the teaching-learning dynamics, in the verification of the achievement of the expected learning through transformed evaluation models, as well as in the environments, means and resources required, and in pedagogical and didactic practices associated with this new reality” (UNIMINUTO, 2020, p. 18).

In order to reduce the inequality gap between those who have the privilege of accessing information and communication technologies and those who are at a disadvantage if they do not, and to prevent this from affecting the quality of learning (Haythornthwaite & Andrews, 2013), from the institutionalism, the process was supported for students and teachers, not only in the accessibility and use of technologies, but also in tenure, based on solidarity exercises through the loan or donation of equipment such as PCs, cell phones, tablets, among others.

Strategic Plan

According to D’Alessio’s approach, through the strategic control process, organizations must seek to close the gap between what is planned and what is executed, that is how, they must develop external and internal review actions, performance evaluation and corrective actions (2008, pág. 461). In this sense, Strategic Plan 20-25, which began its implementation and unfolding process, required a redefinition of the appropriation and awareness mechanism as an additional challenge. It was necessary to redesign some of the indicators and adjust part of the goals proposed in the plan. One of them is the number of students at Headquarters, which, in the second semester of 2020, decreased by 21% compared to the first, which immediately impacted three key management indicators: i) teacher allocation and redistribution of teaching hours based on other required actions, ii) expected income level, and iii) financial results.

Access to Higher Education and Dropout Rates

Several universities and organizations turned to work at home to continue providing their services and to maintain the CORE of the business. UNIMINUTO Bogotá - Presential Academic Programs Campus adapted its traditional training model to a model mediated by ICT; This reality, experienced since the third week of March 2020, generated a negative impact on the enrollment levels of new students who require personalized advice to accompany their decision-making process; and in regular students, due to the lack of motivation at face the change the way they develop their training process. However, both without distinction, experienced sensations and feelings that influenced the decision to enroll like: fear of contagion, lack of trust in government institutions, social pressure, cost-benefit measurement assum-

Strategic Planning for Teaching and Learning in Times of COVID

ing that a virtual training model should be more economic than the one developed in on-site model, among others.

d. Alternation Model

A hybrid model was implemented that combines the best of learning mediated by information and communication technologies, and the needs of in-situ practice of students, as a way to improve and accelerate learning (Fullan, 2020), is as well as, was developed the alternation model that assumed the guidelines of the Capital District that allowed, with prior authorization, the reactivation of tasks, including academic ones, in spaces related to specialized courses and laboratory practices. To achieve this milestone, it was necessary: i) to develop biosafety protocols, ii) to adapt the facilities, iii) to design the academic programming under the GPS return logic (Gradual, Progressive and Safe) with a capacity of 35%, iv) to enroll the physical spaces to be used, in the official government registry, and v) to develop, for teachers, an intensive between-semester training program in virtual mediation of learning and Web tools for managing digital content.

Graduation Ceremonies

In addition to the academic events and socialization of knowledge, UNIMINUTO Bogotá - Presential Academic Programs Campus had planned and assigned the resources for the development of the graduation ceremonies, these being a very special event for UNIMINUTO, considering that in many cases, they are the first professionals of his family and are our mark on society. Since the beginning of the pandemic, permanent communication was maintained with the graduates to inform them about the dynamics and evolution of the process, according to the conditions presented by the situation and government regulations, however, it is unavoidable to mention that the pandemic led the Institution to planning and executing a series of measures that would allow the carrying out of graduation ceremonies that comply with the special provisions on the subject and guarantee biosafety conditions; In this sense, the following actions were taken: i) the e-mail was sent to each graduate of the Diploma and Degree Certificate, ii) the graduate certificate was issued and sent to each one, iii) a dialogue was held with professional councils to establish the mechanisms for the recognition of said digital documents within the process of applying for a professional card, and iv) a model was designed that guaranteed the celebration of the ceremonies in person and virtually with the assistance of the graduates physically and their families live, through digital platforms; which allowed - as stipulated by the local government in the face of biosecurity measures - to deliver the diploma and degree certificate to the graduates in person.

In this way, during the pandemic, we decided not to leave our graduates without that special moment and long awaited by them, by their families and by the Institution. And it is thus that in this term, UNIMINUTO Bogotá - Presential Academic Programs Campus graduated 5.537 students in 165 presential ceremonies; complying with a strict security protocol, which is replicable today in other campuses of UNIMINUTO.

Contingency Management

As part of the Integral Risk Management as a National University System, UNIMINUTO worked on the identification of the strategic risks associated with the COVID-19 pandemic at each campus in

accordance with regional contexts, and action plans were implemented such as targeted treatments to guarantee continuity in service delivery (UNIMINUTO, 2020, p. 197).

UNIMINUTO determined key actions to face the pandemic, based on the policies and guidelines generated by the national and district governments, including: i) teachers and administrative staff work from home, for which, UNIMINUTO facilitated the necessary physical and technological means, ii) implementation of the contingency committees, iii) design of work routes according to the needs and evolution of the COVID-19 situation that recalls the approach of Taleb on the rare event that equates to uncertainty. It may seem like a categorical statement –that we must study mainly rare and extreme events in order to understand the usual ones– (2011, pág. 32), iv) pandemic data and information management, v) monitoring the learning process and difficulties faced by students and teachers, vi) effective development of administrative activities, vii) preparation and monitoring of the risk map in a pandemic context.

The key to effective operational risk mitigation is to establish a cross-functional rapid response team that will address and resolve any emerging operational risk issues (Lam, 2003), that's why, in the framework of this action, the rector of the campus was assigned the role of strategist responsible for directing and monitoring and 3 additional levels were established: i) strategic level in charge of accompanying the units, generation of a specific regulatory framework, training according to the needs, validation of the restructuring of work plans, assurance of logistical supplies, attention to interest groups and humanitarian assistance; ii) level of support to those who were assigned the role of monitoring and assurance, marketing and continuity of students, diffusion, communication, awareness, monitoring and assurance of activities related to teaching, research, social projection and administrative management.

This collaborative work allowed us to analyze 13 processes, work in 29 action units, impact 168 activities, consider 220 risks and implement 236 contingency actions. As suggested Lam, assessing and measuring risk is important, but it does not make sense unless it is directed towards better management of operational risk, improving and controlling key risk factors (2003, p. 223).

Financial Relief Plan and Marketing

To finalize this systematization of actions and learning generated based on the prevention and attention of the effects caused by the Coronavirus SARS-CoV-2 (COVID-19), UNIMINUTO established a financial plan relief that allowed to provide support to students and families based on a reduction in the value of tuition and other pecuniary rights.

To define the level of financial relief, the Council of Founders of UNIMINUTO made an analysis of the rectories and their particular contexts and established criteria for assigning discount percentages according to the impact of COVID in the various territories, the decrease in productive capacity, the loss of jobs, among others; and classified the rectories at various levels to which he assigned different discount levels.

Likewise, the marketing plan that had been designed and approved for the 2020 period was adjusted, prioritizing digital marketing activities, management and dynamization of social networks and, use of community radio and television where content was shared that, in addition to disseminating the academic offer, supported local training processes with diverse themes that touched on aspects related to physical and mental care, cultural, economic and business management issues, among others.

REFERENCES

- Aceves, V. D. (2004). *Dirección estratégica*. McGraw-Hill Interamericana.
- Arias, J. (2007). *Experiencias solidarias en la Corporación Universitaria Minuto de Dios - Colombia; reflejo del pensamiento económico de su fundador padre Rafael García-Herreros*. Tesis doctoral no publicada, Mondragón Unibertsitatea, Oñati.
- Arias, J. (2016). Innovación social, concepto ligado a la praxis; caso Parque Científico de Innovación Social de UNIMINUTO - Colombia. In D. Domanski, N. Monge, G. Quitiaquez, & D. Rocha (Eds.), *Innovación Social en Latinoamérica* (pp. 255–297). Corporación Universitaria Minuto de Dios - UNIMINUTO.
- Arias, J., & Chaparro, L. (2018). Apropiar socialmente el conocimiento, el verdadero reto. In R. Ríos (Ed.), *Gerencia e Innovación* (Vol. 1, pp. 1–30). Corporación Universitaria Minuto de Dios - UNIMINUTO - Grupo Editorial Nueva Legislación S.A.S.
- D'Alessio, F. (2008). *El proceso estratégico: Un enfoque de gerencia*. Pearson Educación de México S.A. De C.V.
- Espinosa, S. (2021). Propuesta de un modelo para el análisis de programas académicos y la toma de decisiones en la Corporación Universitaria Minuto de Dios – UNIMINUTO. Tesis de Maestría no publicada, Università degli Studi di Bari Aldo Moro, Bari - Italia.
- Fullan, M. Q. (2020). *Reinventar la educación: el futuro del aprendizaje*. Informe de situación colaborativo entre New Pedagogies for Deep Learning y Microsoft Education. Retrieved from <http://aka.ms/HybridLearningPaper>
- Haythornthwaite, C., & Andrews, R. (2013). *E-Learning - Theory and Practice*. SAGE Publications Ltd.
- Lam, J. (2003). *Enterprise Risk Management: From Incentives to Controls*. John Wiley & Sons.
- Porter, M. (1987). *Ventaja competitiva, creación y sostenibilidad de un rendimiento superior*. Ediciones Pirámide.
- Porter, M. (1987). *Ventaja competitiva, creación y sostenibilidad de un rendimiento superior*. Ediciones Pirámide.
- Richardson, B., & Richardson, R. (1996). *Planeacion de Negocios: Un Enfoque de Administracion Estrategica* (R. Iniestra, Trans.). CECSA.
- Taleb, N. N. (2011). *El Cisne negro*. Editorial Nomos S.A.
- Taleb, N. N. (2013). *Antifrágil, las cosas que se benefician del desorden*. Barcelona: Espasa Libros, S.L.U.
- UNIMINUTO. (2020). *Informe de Gestión UNIMINUTO 2020*. Corporación Universitaria Minuto de Dios.
- UNIMINUTO. (2020). *Plan de Desarrollo UNIMINUTO 20 - 25, Aprendizajes para la transformación*. Corporación Universitaria Minuto de Dios - UNIMINUTO.

KEY TERMS AND DEFINITIONS

Alternation Model: Hybrid approach that combines physical help and technological mediation in the development of classes and that is part of the strategy of progressive and safe return.

Biosafety Protocol: A set of standards, procedures and measures that allow to mitigate the spread and treat risk factors to prevent harmful effects, which in this case, can generate the COVID-19 pandemic in people.

Capital District (Bogotá): The territorial jurisdiction of Bogotá as the national capital of Colombia. It has a planning and budgetary meaning.

Contingency Actions: Steps and measures generated as part of a plan or method to minimize the impact of eventualities generated by a series of variables, exogenous or endogenous, and to guarantee continuity in service delivery.

Gradual, Progressive, and Safe Return: Phased return to the classroom presence, prior design, planning and implementation of biosafety protocols and the adaptation of the facilities to meet the most allowed capacity.

National University System, UNIMINUTO: This is the national system implemented for run the diversity of campuses settled around the Colombian geography. After the initial inception in the capital city Bogotá, the UNIMINUTO started the regional expansion towards other Colombian departments. Nowadays, UNIMUTO provides presential and virtual university education in the following Colombian spots: Bogotá Campus, Regional Center in Girardot (Cundinamarca), Campus Bello (Antioquia), CERES Chinchiná (Caldas), Regional Center Pereira (Risaralda), Regional Vice rector Llanos, Regional Center Bucaramanga (Santander), Regional Center Soacha (Cundinamarca), Regional Center Cúcuta (Northern Santander), Regional Center Barranquilla (Atlántico), Regional Center Ibagué (Tolima), Regional Center Neiva (Huila), Regional Center Zipaquirá (Cundinamarca), Regional Center Pasto (Nariño) and Regional Center Madrid (Cundinamarca).

Planning Gap: In terms of strategic Planning can be defined as the mismatch between the planned goals and the effectively attained objectives.

Reactivation: It is understood as the stages of return and recovery of social and economic activities after the recession generated by the COVID-19 pandemic, as part of responsible behavior by the society and established health security conditions by regulatory entities.

Service-Orientated Culture: A set of shared values and principles that guide workers and organizational units to the customer satisfaction, even those areas that are not related to them.

Social Innovation Science Park: It is the UNIMINUTO's scientific park intended to generate specific knowledge for the promotion of the communities and the most vulnerable population. This scientific park operates as a research center and was built mainly with international cooperation resources.

Stake Out: Institutional effort that is developed as part of a medium or long-term plan, and that is approached through a strategic vision and action.

Teaching-Learning Process: Form of relationship between the actors of an educational community through which knowledge is shared, students are motivated, and curiosity aroused. It is a process that contributes to the development of new skills, where information is assimilated, and knowledge is applied correctly, according to the intentionality, models, and training methodologies.

UNIMINUTO: The Minuto de Dios University in Bogotá Colombia, started its inception in 1992. Operates as a private University but basically has a social-promotion and community purpose.

Strategic Planning for Teaching and Learning in Times of COVID

UNIMINUTO Council of Founders: The University highest level council integrated by a tripartite of institutions that originally participated in the University foundation. The members are: The Minuto de Dios Corporation, The Community of Eudist Fathers and the Charismatic Center Minuto de Dios.

Virtual Mediation: Incorporation of information and communication technologies into the teaching-learning processes through their articulation of the curricular structures, and that goes with didactic innovations and changes in the ways of interacting of the actors involved in the educational process.

ENDNOTE

- ¹ By its acronym in English: specific, measurable, agreed, challenging, and plotted in time.

Chapter 6

GIS and Geo-Positioning Developments in Coping With the Pandemic

Helmuth Yesid Arias-Gomez

*Institute of Economic Studies, Masaryk Institute of Advanced Studies, Czech Technical University,
Czech Republic*

Gabriela Antošová

 <https://orcid.org/0000-0001-5330-679X>

Masaryk Institute of Advanced Studies, Czech Technical University, Czech Republic

ABSTRACT

This chapter deals with some technical aspects of the spatial strategy for overcoming the huge challenges posed by the pandemic. The focus of this chapter is to highlight the use of GIS tools and positioning technologies in diverse contexts to manage the threat of COVID-19. For this task, three stages of analysis are proposed. In a first preventive stage, some governments applied socioeconomic criteria drawn from existent statistical information to spatially identify the areas with a clear predisposition toward the accelerated spread of the contagion. In a second stage, when the pandemic fully reached a rapid pace of expansion and lockdown measures became necessary, the technologies helped to monitor the most affected areas and to establish a dashboard deployment for visualizing the severity of the catastrophe. In the third stage, after the establishment of control and mobility protocols, different governments resorted to mobile phone positioning as a resource for monitoring quarantine compliance and recognizing if social group behavior entailed any evident risk or spread.

INTRODUCTION

The unexpected outbreak of the COVID-19 pandemic apparently seemed bounded to the provincial borders of Wuhan in the Chinese province of Hubei, with an identified focus in the wet market where arguably, occurred the leap of infection from animals to humans. Later, with the national displacements and tourist international movements, the infection disseminated elsewhere and the originally local infection, became a global pandemic with a dangerous capacity of reproduction. The virulence and the pace

DOI: 10.4018/978-1-7998-8339-5.ch006

of spread surprised the authorities and put under pressure the health system around the world. Once the first wave was faced, the first immediate measure was proceeding to lift lockdown measures and severe restriction to mobility with an enormous harm for the economy and the social welfare. On the sake of resuming at any extent the normal life, in the first step were implemented general home office and home-schooling strategies. Only with the generalization of the massive vaccination, the economic activities and business restarted certain activities after a severe economic disruption originated in the lockdown and the shutdown of business and factories.

The timely collected information can be used as an input in models for assessing the pertinence of easing some restrictions. The mobility information and deployment of hotspots can calibrate the timely implementation of lifting and reestablishing some restrictions according to the social behavior and can contribute to calibrate the right combination of stringent restrictions and economic openness (Oliver et al., 2020).

But throughout the ominous evolution of the pandemic, the private sector and the governments strived to provide innovative solutions and proposals intended to cope with the multiple dimensions of a global overwhelming challenge. One technical possibility facing the health threats coming from the COVID-19 was the design and application of spatial tools based on geo positioning and spatial analysis, having as a final result the assessment of information rendered in dashboards, geoportals and computer screens.

The objective of this chapter is to describe a set of techniques and procedures based on the GIS and positioning technologies that have been implemented for recognizing, analyzing and assessing the evolution of the pandemic.

BACKGROUND

Ever since John Snow's initial mapping of the emergence of Cholera in 19th Century, spatial referencing has been used to identify specific areas which are more affected by pandemics and diseases. Nevertheless, the incorporation of space in the tracking the health condition dates from the Italy struggle against plagues in 1694 and some evidence exists of its applications in tracking diseases such as yellow fever, cholera and influenza in 1918 (Boulos & Geraghty, 2020).

The breaking threat coming from the COVID-19 pandemic has overwhelmed the provisions and the capacity of response in practically all countries. The number of fatalities and the saturation of medical facilities challenged the health systems in the advanced world, and in the poor countries, the pandemic confirmed the precarity of physical resources and skills. Facing an ominous landscape, the world turned to the possible solutions emerged from the innovations and technologies. Particularly in terms of GIS technologies the advantages of having accurate positioning of individuals and their displacements, using coordinate systems are worthy when the social distancing and isolations can determine the interruption in the spread of the pandemics. Besides, the overlapping of layers allows combining the visual information of a diversity of socio economic and public health variables.

The rendering tools are crucial in the GIS approaches, but simultaneously the feeding of the attribute tables is the backbone for implementing the data update and for feed the system in real time. There can be entered the values of variables that finally are deployed for visualization and analysis. On the other hand, the tracking technologies can be used as a key assessment tool of restrictive measures, because the cause-and-effect procedure can ascribe spatially localized specific results to a set of policy measures previously implemented.

Although, the geosciences are not the unique field of rapid development facing the breaking pandemic. In a more general view of the human scientific possibilities, Xiao & Fan (2020) make a review of the set of technological devices and strategies applied in diverse dimensions. The online shopping and the robot deliveries based on the online marketplace platforms strongly rely on a very well arranged and coordinated logistic system. Even in China e-commerce, the players implemented a system of robot deliveries, but even in such case the challenge is represented by the preservation and sanitation of delivered goods to the consumer.

Some technologies applied also algorithms of artificial intelligence for interpreting the data for predicting the fast expansion of the pandemics in specific groups of population and in localized areas. The source of data is the application of computerized tomography detecting sudden changes in the corporal temperature through wearable sensors (Kritikos, 2020).

In the systems of payment, the holding and use of cash dropped severally and the card and e-wallets are the less risky instruments of payment. Other technological resource resorted around the world has been the home office based on virtual private network, voice over internet protocols, virtual meeting, cloud technology and work collaboration tools. In this vein, the distance learning was forcefully implemented everywhere, reinforcing the virtual trend already observed in the educational sector. In the health realm, the termed telehealth technology has been applied for basic medical consults supported by IoT devices and chatbots processing basic diagnoses informed by the patients themselves (Xiao & Fan, 2020).

In other aspects, the use of drones and robots has been implemented in a sector strongly dependent on the human interactions. For cleaning tasks in critical spaces as hospitals, laboratories and stores the disinfection process is performed by robots. Other fields of application of these devices are: the drug delivery, the transportation of medical devices, waste removal and temperature checking tasks (Kritikos, 2020).

In this vein, different governments and authorities resorted to the digital technology from the scratch of the pandemics for mitigating the devastator effects and with the challenging fact of minimizing the personal contact (Whitelaw et al. 2020). Upon confirming the origin of outbreak in the Chinese area of Wuhan, Taiwan proceeded to cross automatically the information of travelers consulting the immigration records and the health insurance database, with the clear purpose of implementing a tracking system and a testing protocol. The corporal temperature data was used to provide information for identifying hot spots and clusters of infection as well. This technology allows to identify the suspicious cases through the detection of unusual high corporal temperature in places as airports, schools, workplaces and transport. In order to meet the big challenge of identifying the asymptotically infected individuals the screening technology of corporal temperature was tested already in Taiwan and Singapore (Whitelaw et al., 2020).

Nowadays, the GIS technologies and the tracking strategies have had a broad use in the scientific realm but also in the implementation of policies related to public health, and security. The tools of visualization have been applied to map the outbreak of pandemics and to pinpoint the most affected areas. With breaking technologies and complex algorithms and scripts, the modern systems receive the raw data, process them and deploy a clear-cut visualization using mainly a set of deployment and rendering tools. The John Hopkins dashboard tool reached an enormous number of request a day, and ended up in a multilayered dashboard rendering supplementary graphics and additional analysis (Milner, 2020). In this vein other institutions and international organizations arranged systems to follow up the evolution of cases and infections. The Pan-American Health Organization built a dashboard frequently updated with official information coming from the governments of the hemisphere (PAHO, 2021).

GIS and Geo-Positioning Developments in Coping With the Pandemic

The set of applications supported in localization criteria spans from on-line simultaneous mapping of cases, predicting social behavior based on the travel movements of people and mapping the trajectories describing the social interaction (Boulos & Geraghty, 2020).

After a fast spread of cases and deaths in China and Europe, on March 11th 2020 the World Health Organization formally recognized the dissemination of COVID 19 as a pandemic. The application of tracking technologies is fairly widespread. Finding patterns in spatial movements, surveilling the compliance of confinement regulation, supporting the isolated people and prompting strategies to overcome the breaking crisis (Dumbrava, 2020).

The tracking process and surveillance enforcement are generally based on GPS satellite base radio navigation systems, being promptly processed by a GPS receiver regardless of the localization and the distance. The combination of GIS technology and Artificial Intelligence has been already used for purposes of public health (Wang et al., 2020). Once the outbreak boosted, Google elaborated collective patterns of mobility based on the localization history of users, who willingly activate their platforms personal location. Likewise, Facebook performed forecasts using the maps plotted by user's location information data. In this context, Google and Apple are striving to consolidate a stronger interoperability that allows tracking this kind of personal proximities (Dumbrava, 2020). This joint system is a Bluetooth-based proximity design that can be implemented across IOS and Android smartphones (Oliver et al. 2020). In these cases, the voluntary character of the smart-phones methods is confirmed because the very user agrees to download and to install the application (Szocska et al., 2021). The strategy can also rely on Bluetooth technology as long as two Mobil devices are in close proximity, and eventually one positive individual interacts at a short distance with others (Dumbrava, 2020).

On the other hand, GIS technology which properly uses the overlapping of layers is not the unique available tool. Satellite imagery supplements the analysis provided by the geographical layers. The use of imagery is more real and provides an almost identical satellite picture of the surfaces captured. Applying the satellite visualization, the impressive evidence of the environmental effects caused by human behavior is clearly noticeable. The processing of imagery and aerial photos makes more accurate the geographical approach of research and allows to transform the geographic data into raster formats and is able to process vectorial data. The visualization can be rendered in 2D or 3D applied in GIS but also in tele detection and in photogrammetric techniques.

In the frame of the breaking pandemic analysis, the satellite imagery rendered a strong reduction in the air pollution during the lock down periods and as result of the curfew measures. This detailed tracking was performed thanks to the clear-cut visualization of medical facilities, roads, public transport hubs and water infrastructure. Other devices have been proved to be effective as well. In China, a previously existent frame of drones used for agricultural purposes has been implemented as an aerial disinfectant spraying system with a high spatial precision (EURISY, 2020).

The rapid advent of the subsequent waves of the infection and the political and institutional reactions for coping with several troublesome stages in the pandemic forced the design and implementation of different emergency frameworks and some urgent technological solution. The early stage was comprised of detecting the infected and recording the contact for any situation that required strict quarantine, surveillance and testing measures. The information about contacts and interaction was captured using mobile apps, interviews or surveys. Later, when the transmission rate of the infection increased rapidly, the set of measures included severe restrictions to social contact and to mobility.

Accordingly, the mobile phone data is used for tracking the mobility between municipalities. Finally, when the pandemic receded and the peak of infection is passed, some restrictions was removed. Although

facing the eventuality of new waves, the surveillance strategy was maintained. During this stage, real-time data and the application of hotspot analysis contributed to design a strategy for lifting and reimplementing restriction measures in a timely manner, with the possibility of resuming some economic activities.

The strategy of tracking has applied origin-destination matrices in order to detect the human behavior in the effort to follow the trends in movements of people geographically. The mobile phone network served as source to quantify the number of individuals changing the spatial area, taking as a reference spatial unit as zip codes, municipalities, provinces or regions. These human flows can be compared with determined reference period to assess the effectiveness of restriction measures, pinpointing specific zones where the restrictions and lock down measures have not been complied (Oliver et al., 2020)

RECENT DEVELOPMENTS IN THE SPATIAL FIELD

The Preventive Stage: Identifying Socioeconomic Propensity to the Pandemic

In medical terms, some factors predispose people to a higher risk of being infected as: diabetes and vascular and heart diseases. This kind of medical morbidities can serve as key information for detecting personal propensities to be infected. In this regard, not only in medical terms it is possible to surmise some health conditions as risk factors, but also there is also a set of socioeconomic factors that can propitiate the infection and the spread of COVID-19.

In light of the direct influence of such socioeconomic and demographical conditions, some countries have implemented a mapping of areas with a higher vulnerability according the behavior of diverse indicators based on previously collected statistics. This preventive approach can be illuminating for making decisions because some startling conclusions can be drawn from the direct impact of pandemics in the most vulnerable social strata. When this analysis is applied and the dashboard focuses in predisposition factors as age, ethnicity and unemployment an ominous bias against the black population can be identified (Milner, 2020). It can suggest that theoretically, overcoming the social inequality in specific population group can make the pandemic preventable. The social predisposition has also been identified amid elderly (Europe) and in low-income social context with precarious care facilities (Ferreti et al., 2020).

The Colombian Statistical Office (DANE) implemented an Index of Vulnerability with a very spatially accurately indicator at a block level, focused mainly to the urban areas for all the municipalities (Figure 1). The source of the thematic information is the Census 2018, consulting also administrative records for identifying the specific cluster of population. In this database, the information is arranged by block and each one has the related demographical variables drawn from the Census. The information included come from identification files, the health insurance database and the personal medical records. At the end the population affected by comorbidity was accurately localized. The index elaboration applied a method of K means for clustering the blocks taking into account the demographic information and comorbidities. In the next step, the indicator is calculated using the data of the centroids of the clusters according the different levels of vulnerability. At once, the process of visualization can be deployed using filters for choosing the pertaining region (departamentos) and municipality. As said before, the information is currently available only for the urban sectors.

In Mexico the federal government and CONACYT (the office for promoting the sciences and technology) developed a similar preventive dashboard for identifying the most vulnerable regions as can be observed in the Figure 2.

GIS and Geo-Positioning Developments in Coping With the Pandemic

Figure 1. Colombian Dashboard of Vulnerability

Source: DANE, 2021. <https://coronaviruscolombia.gov.co/Covid19/estadisticas-covid-19/mapa-vulnerabilidad.html>

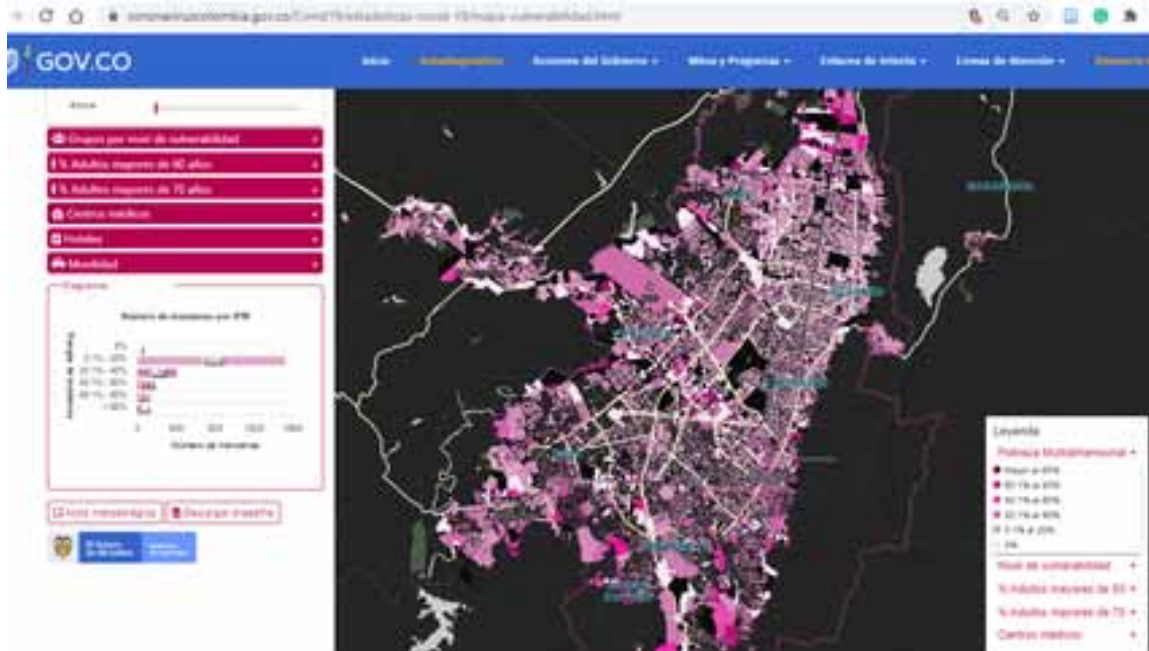


Figure 2. Mexican Dashboard of Vulnerability

Source: CONACYT, 2021. <http://sigcovid.geoint.mx/public>



The Mexican tool is focused on three geographical levels: regional and municipal, but an additional scale of analysis are the metropolitan areas particularly relevant for defining clusters of dissemination of the infection. Theoretically, if some municipalities are labor and economically dependent, a higher human interaction and more risk of spreading can be expected. It is perfectly clear in the case of big cities and their hinterlands.

In implementing the dashboard focused on the vulnerability, the Mexican approach incorporated a multidimensional strategy putting together the social and demographic variables, but also the infrastructure information and the physical assets that endow one specific geographical unity. Thus, a comprehensive analysis can combine in one rendering tool the social risk factors, the comorbidities but also the local endowments in terms of hospital infrastructures and health facilities.

Other spatial resources have been developed elsewhere. Paying attention to the propensity of social conditions to the infection, some strategies of analysis support the identification of vulnerable groups. Dwelling estimates and hotspots can detect an unusual concentration of population in one specific space as a circumstance encouraging the dissemination, and the procedure starts dividing the city or the focus area into grids (Oliver et al., 2020).

Visual Strategies to Monitor the Spread of Pandemics

The most striking visual development in facing the COVID 19 pandemic has been the worldwide implementation of online dashboard, mainly for following the evolution of contagions, deaths and recoveries with a clear spatial emphasis. In the comprehensive tool of analysis, several stages must be fulfilled: the pooling of basic data, the processing and rendering on the dashboards and the spatial analysis.

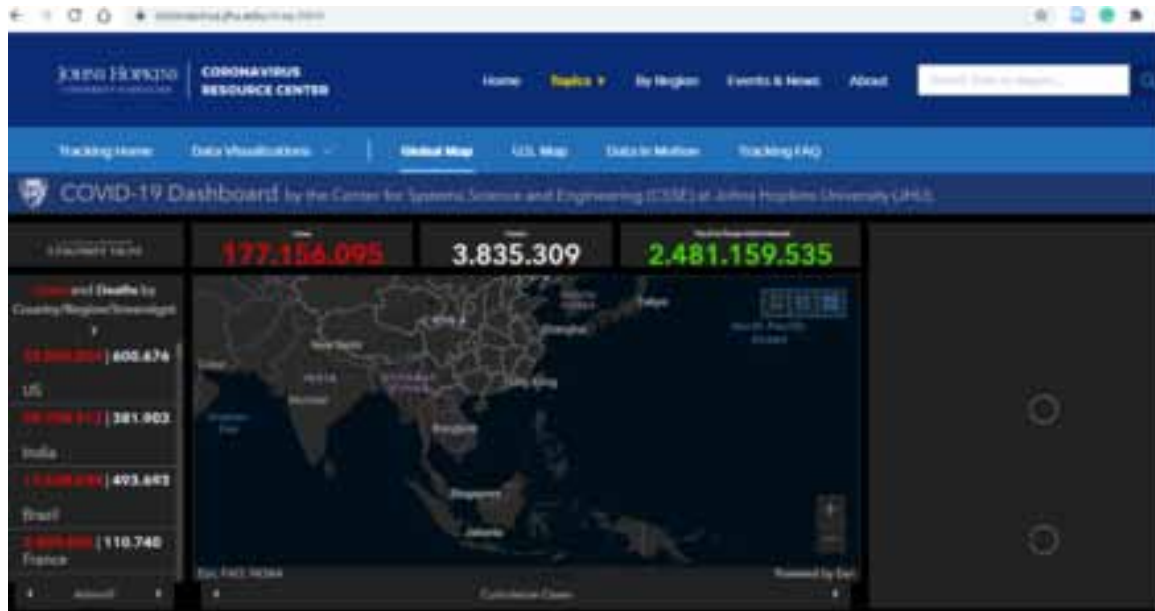
So far, the most famous and comprehensive dashboard, consulted and promptly developed was the Johns Hopkins University's Center for System Science and Engineering Dashboard, first published in January 2020. This technical effort aims to provide real-time information for government and people with the highest transparency for making the best decisions. This dashboard was not without predecessor and was endorsed by a previous project focused on the measles pandemics. During the initial stages of implementation, getting ready and trials, the designers tested the raw information and looked for efficient options for rendering the incidences of the pandemic. The chosen representation was the plot of multi-size red dots over a dark background, pointing out the most affected regions according to the number of COVID-19 cases (Milner, 2020).

However, other additional recognized dashboards have been implemented all around the world. The WHO, the US Centers for Disease Control and Prevention, the Chinese National Health Commission, the European Centre for Disease Prevention and Control and the Chinese online medical resource, are some of the most recognized frameworks for following the pandemics (Boulos & Geraghty 2020). In the case of John Hopkins dashboard, the number of requests picked up to 3 to 4.5 million a day (Milner 2020). Other media and companies as the New York Times, Google and ESRI launched their own dashboard as a tool for keeping up (Gagliardi, 2020).

Nevertheless, the Johns Hopkins dashboard lacks some storing tools for following the previous days information and lacks any tool for retrieve and deploy map snapshots to appreciate the evolution of pandemic (Boulos & Geraghty, 2020). During January 2020, the starting point of analysis in the most initial stages of the dashboard was the analysis of the Chinese city of Taiyuan, but gradually the focus of analysis was expanding towards a worldwide far-reaching tool. In addition, at the beginning, the upload of data was made manually twice a day, but in February 2020, with the support of a larger team, the

Figure 3. John Hopkins University Dashboard

Source: John Hopkins University, 2021. <https://coronavirus.jhu.edu/map.html>



process of importing data was automatized and by mid-March all US counties were incorporated on the dashboard (Milner, 2020).

Surveillance Strategies

The third challenge that the authorities had to meet was the necessity to track the geo positioning of individuals given the virulence of the infection and the high risk of contagions by the physical contact. In this third stage an effective strategy included the spatial identification of infected people, their routes and contacts, but also the recorded geolocation of asymptotically infected people, to be confirmed as positive cases afterwards. Once the pandemic reached an apparent uncontrolled proliferation, the unique effective measures, at least transitory, was the lockdown, the curfew and the quarantine.

In this stage of the evolution of this pandemic, the compliance of quarantines and the strict respect for the social distancing became the most effective behavioral procedure for reducing the R indicator. In the case of enforcement measures for social distancing, digital technologies and geo-positioning schemes have been applied previously in countries such as Israel for counter-terrorism purposes. The necessity to ensure the compliance of the isolation measures required to track the geographical positions of positive cases through the use of technologies of proximity as (Bluetooth), mobile phone positioning, drones, inter alia. In fact, the implementation of GIS and positioning technologies as web-based tools, extended data usage and real-time information have demonstrated a set of advantages to pinpoint accurately risk areas (Boulos & Geraghty, 2020).

The effective use of surveillance procedures duly handled, can contribute toward reducing the stubborn dilemma between preserving the public health and the attainment of a full economic normality. In fact, in the sake of a freer economic activity, a trustworthy system of identification and tracking of

dissemination patterns can furnish information about areas with a low incidence, in order to proceed with more open economic activity. For instance, Taiwan implemented a system providing the individuals with mobile phones prepared to be tracked and enabled to send messages in case of trespass digital fences or to levy fines (Whithelaw et al., 2020).

In fact, the standard operations of mobile networks usually store the data about geo positioning and displacement of the users. As Szocska et al. (2021) explain, this kind of technologies quoted as Call Detail Record (CDR) usually process mass-produced data pooled from mobile phone communication and has been applied to focused advertising campaigns. Even during the breaking pandemic, the Chinese government enforced severe procedures of surveillance that can be criticized under the western countries' standards. This government proceeded to install CCTV cameras and deployed drone surveillance systems for people forced to be in quarantine (Kharpal, 2020). In addition, other devices have proven to be effective. In Germany a smartwatch application detects a set of corporal signs as pulse, temperature, and sleep data, and later the information is processed for being deployed on an interactive map providing information about COVID-19 infection evolution (Whitelaw et al. 2020).

The use of mobile network data can face also the reluctance of mobile companies for providing the government with information. Technically, the strategy involves serious concerns about privacy, but also any sort of distrust can arise to the extent of the data usually used for business and advertising purposes (Oliver et al., 2020).

The design of systems of surveillance that can be implemented respecting the social distancing and with minimal physical contact, are effective technical supports for stopping the dissemination and for providing valuable information to the health authorities and international organizations. In spite of its amazing technological capacity, not all cases can be fully surveilled. Some flaws can arise when the social interaction come about off-line, and when the service of internet is intermittent (Dumbrava, 2020).

In South Korea, an integral application has been designed tracking the movements of citizens throughout, including cameras footage, facial recognition, bankcard records and GPS positioning of vehicles and phones for tracing the routes accustomed by people. Based on this system, the individuals can receive a SMS warning about new cases in the region, and in the case of previous interaction with infected people, a set of self-isolation instructions are provided (Whitelaw et al., 2020).

The disparate kind of communications established through mobile devices are stored in Call Detailed Records (CDR) mastered by mobile companies, and this record involves calls, SMS communications or transfer sessions in the case of internet connection. In the recording process there exists and a cellular base station where the transmission request is processed and the closer technical mast with the best signal proceed to process the call (Szocska et al., 2021).

In order to accurately geolocate the position of a call, a dense net of towers must be set up. In general terms the radius scope of one individual tower can reach 35 kms, but in urban areas due to the massive use of service, network masts tend to be more densely clustered to facilitate more demanding simultaneous call incidence, while in rural areas the masts tend to be more spaced (Szocska et al. 2021).

One serious risk in spreading the pandemics is the real situation of asymptotically infected people who potentially could affect other close relatives and friends in their surroundings. In these cases, the surveillance tracking can demonstrate their efficacy allowing the singling out of individuals more susceptible to quarantine submission. (Wang et al. 2020). Once the individuals are tested positive, a retrospective can be performed localizing the previous movements and social interactions. Tracking these movements history can identify the potential newly infected people when the positive test is known (Dumbrava, 2020).

Figure 4. Diagram of tracking systems

Source: Dumbrava (2020)



This kind of technology has been improved by MIT which developed a personal doctor coordinate kit, available to download for Android systems 8.0 and above, which warns about the possible interaction with coronavirus patients. In the case of serious risk, the encrypted information can be shared with the personal doctor reporting the symptoms and the individual health condition (Tracy Cozzens, 2020). This strategy is termed as Safe Paths and operates as an open-source and privacy-first technology that imparts information about spatial proximity with infected individuals through the Global Positioning System (GPS) and Bluetooth data.

As it is rolled out by Szocska et al. (2021) two technological options can be used for supporting the surveillance and tracking efforts namely: the proximity smartphone technology and the so-called CDR technology.

First, the smartphone -generated, satellite-based-location data is able to generate geo-location for individuals with a high spatial resolution, as in the technology applied in the Google procedure. This high degree of accuracy is not achieved by the CDR technology. However, some flaws can arise taking into account the limited number of users of Android and even more, the required procedure of activating the geo-location.

On the other hand, an almost universal coverage can be attained using the CDR technology because the system records all activities performed by the users. However, the CDR flaws emerge from the use of the device itself. In fact, the geo-location can be detected if any use is made: calls, SMS or data access. In addition, CDR technology ascribes the communication activity to the starting position, a situation that can lead to inaccurate data if the individual changes the position during a long conversation. Anecdotally, if the call is performed using WhatsApp the change in the geographical position can be pinpointed since this app splits the communication into a set of sessions.

It means that the two technologies can be combined efficiently according to the pursued purpose. In the sake of identifying general patterns of a broad group of people, the CDR technology allows the detection of an enormous number of people 's behavior. In contrast, an effort for pinpointing accurately

the behavior of people in quarantine or for monitoring a clear social group the smartphone-based technology can be more efficient due to the requirement for a high precision focus (Szocska et al., 2021)

A surveillance system can be developed using the location data of users resorting to a diversity of sources: mobile operating systems, search engines and social media platforms. Some countries encourage the downloading of apps, specifically designed to capture information from the citizens who willingly inform about their health condition and can interact with the system supported by the app itself. This surveillance strategy can be implemented at a collective level for the sake of preserving the confidentiality, or at an individual level when the user reports its personal movements, including also updates and some images (Dumbrava 2020). In China a “close contact detector” app has been developed for collapsing information about travel movements, case reports and geo-location of users singled out as suspicious cases due to contact with infected individuals. In South Korea a similar app has become available to monitor quarantine (Szocska et al. 2021).

RECOMMENDATIONS

The application of specialized devices and wise strategies for their usage generally require skill intensive technologies implementation and accordingly, the most advantageous regions and countries which are able to successfully tackle this technical effort can leverage fully the positive effects of innovations. In some cases, mainly in developing countries, the government and the society lack the human teams, the technical knowledge and the digital mindset for processing the information and for implementing the specialized equipment, that usually require the intervention of a set of multidisciplinary skills. In addition, the flow of information and the evolution of events is so fast that the capacities to cope with a multidimensional trouble usually are overwhelmed. These flaws are more evident at the local level where the available skills are scarcer, the requirements are more immediate and the resources are insufficient (Oliver et al. 2020).

The enormous set of technological resources for overcoming the huge challenge posed by the pandemic conveys also important drawbacks. The generalization of home office has arisen serious worries about the privacy rights of users. In terms of the use of on-line payments, important worries rise from the scarce penetration of bank technologies in rural contexts and poor urban areas (Xiao & Fan 2020).

The tracking strategy using the mobile phone or the Bluetooth systems can involve several pitfalls. The information can become inaccurate in the detected individuals respected measures of self-protection or walls or broad structures separate them, or even worst, some risky cases can be overlooked if people do not hold the personal devices of communication. On the other hand, the self-reported symptoms recorded through surveys can effectively be controlled if the individuals report the symptoms accurately (Whitelaw et al. 2020).

Definitely, an international and interregional strategy of cooperation must be implemented urgently. The advanced countries and regions cannot feel very safe if simultaneously there is an uncontrolled spread of cases in developing countries, or the access to vaccination in the third world remains constrained to the higher strata of population. The digital and technological gap must be closed for an effective strategy of global safety. Some technical plans for overcoming the regional precariousness include the implementation of applications or devices based on technologies that do not require a permanent network access (Whitelaw et al. 2020).

GIS and Geo-Positioning Developments in Coping With the Pandemic

Even for the assessment and following up tasks the developing countries have precarious conditions for implementing an efficient procedure for collecting statistical cases, making hard a global effort to update the world process of assessment in the framework of the International Health Regulation of WHO (Kritikos 2020). But everywhere it is clearly more cost effective to afford money in detecting and stopping the transmission of infection by technological means than spend resources in the treatment of infected patients. A preventive strategy will be worthy anywhere and everywhen (Wang et al. 2020).

Once the vaccination efforts become massive, mainly in developed countries, the digital technologies and GIS applications maintain their validity as tools for struggling against the virus. The dashboards can facilitate the assessment of new cases, and new strains and can pinpoint the countries and regions where more harmful strains are emerging. Keeping the surveillance is a worthy strategy as the virus rages against younger groups of population.

REFERENCES

Boulos, K., & Geraghty, E. (2020). Geographical tracking and mapping of coronavirus disease COVID-19/severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) epidemic and associated events around the world: How 21st century GIS technologies are supporting the global fight against outbreaks and epidemics. *International Journal of Health Geographics*, 19(1), 8. doi:10.1186/12942-020-00202-8 PMID:32160889

DANE. (2021). *Map of vulnerability Colombia Coronavirus*. <https://coronaviruscolombia.gov.co/Covid19/estadisticas-covid-19/mapa-vulnerabilidad.html>

DANE. (2021) *Nota metodológica Índice de vulnerabilidad por manzana*. Departamento Administrativo Nacional de Estadística. https://www.dane.gov.co/files/comunicados/Nota_metodologica_indice_de_vulnerabilidad.pdf

Dumbrava, C. (2020). *Tracking mobile devices to fight coronavirus*. Briefing European Parliamentary Research Service. [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/649384/EPRS_BRI\(2020\)649384_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/649384/EPRS_BRI(2020)649384_EN.pdf)

EURISY. (2020). *What we can learn from the Coronavirus crisis with satellite data*. https://www.eurisy.eu/what-we-can-learn-from-the-corona-crisis-with-satellite-data_46/

Ferretti, L., Wymant, C., Kendall, M., Zhao, L., Nurtay, A., Abeler-Dörner, L., Parker, M., Bonsall, D., & Fraser, C. (2020). *Quantifying SARS-CoV-2 transmission suggests epidemic control with digital contact tracing*. <https://science.sciencemag.org/content/368/6491/eabb6936>

Gagliardi, N. (2020). *COVID data tracking: best dashboards and other tools parsing cases, hospitalizations, and more*. <https://www.zdnet.com/article/covid-data-tracking-best-dashboards-and-other-tools-parsing-cases-hospitalizations-and-more/>

Kharpal, A. (2020) *Use of surveillance to fight coronavirus raises concerns about government power after pandemic ends*. CNBS. <https://www.cnbcs.com/2020/03/27/coronavirus-surveillance-used-by-governments-to-fight-pandemic-privacy-concerns.html>

Kritikos, M. (2020). *Ten technologies to fight coronavirus*. European Parliamentary Research Service. [https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/641543/EPRS_IDA\(2020\)641543_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/641543/EPRS_IDA(2020)641543_EN.pdf)

Milner, G. (2020). *Creating the Dashboard for the Pandemic*. ESRI. <https://www.esri.com/about/newsroom/arcuser/johns-hopkins-covid-19-dashboard/>

PAHO. (2021). *Geo-Hub COVID-19 - Information System for the Region of the Americas*. <https://paho-covid19-response-who.hub.arcgis.com/>

Szocska, M., Pollner, P., Schiszler, I., Tamas, J., Tamas, P., McKee, M., Asztalos, A., Bencze, L., Kapronczay, M., Petrecz, P., Toth, B., Szabo, A., Weninger, A., Ader, K., Bacskai, P., Karaszi, P., Terplan, G., Tuboly, G., Sohonyai, A., ... Gaal, P. (2021). Countrywide population movement monitoring using mobile devices generated (big) data during the COVID-19 crisis. *Scientific Reports*, *11*(1), 5943. doi:10.1038/41598-021-81873-6 PMID:33723282

Wang, S., Shuizi, D., & Li, X. (2020, June). A New System for Surveillance and Digital Contact Tracing for COVID-19: Spatiotemporal Reporting Over Network and GPS. *JMIR mHealth and uHealth*, *8*(6), e19457. doi:10.2196/19457 PMID:32499212

Whitelaw, S., Mamas, A., Topol, E., & Van Spall, H. (2020). Applications of digital technology in COVID-19 pandemic. *The Lancet. Digital Health*, *2*(8), e435–e440. doi:10.1016/S2589-7500(20)30142-4 PMID:32835201

Xiao, Y., & Fan, Z. (2020). *10 Technology Trends to Watch in the COVID 19 Pandemic*. World Economic Forum. <https://www.weforum.org/agenda/2020/04/10-technology-trends-coronavirus-covid19-pandemic-robotics-telehealth/>

KEY TERMS AND DEFINITIONS

Curfew: Is the mandatory order to remain indoors with the clear prohibition to stay in the street for public convenience.

Dashboard: A configurable web app with full visualization and handling of layers, charts, figures, statistics, time series and so on, intended to follow up the evolution of COVID-19 pandemics, either at a local level and for some cases, at a global level.

GIS (Geographic Information System): An informatic and conceptual framework for rendering a diversity of human, social, environmental, and natural phenomena by means of overlapped maps arranged as layers.

Imagery: The set of captured images by means of orthographic process or satellite image procedure.

Lockdown: The mandatory restriction to the outdoor displacements and commutation for preventing the direct contact with non-familiar people.

Rendering: The noticeable visualization of a GIS process in terms of maps, layers, or images.

Tracking: The set of strategies for tracing the route described by individuals in their spatial displacements.

Chapter 7

GIS, Positioning, and Imagery Tools: Case Analysis in Tracking COVID –19

Helmuth Yesid Arias-Gomez

*Institute of Economic Studies, Masaryk Institute of Advanced Studies, Czech Technical University,
Czech Republic*

Gabriela Antořová

 <https://orcid.org/0000-0001-5330-679X>

Masaryk Institute of Advanced Studies, Czech Technical University, Czech Republic

ABSTRACT

The catastrophic eruption in the world scenario of the breaking pandemic forced the application of all existent scientific knowledge, but also triggered the development of new technical tools and procedures. This chapter is focused on setting forth the practical technological efforts based on the spatial georeferencing by coordinate systems and on the treatment of satellite images as means for tracking the positive cases, for recognizing the spatial infection's behavior, and for identifying the real physical changes in the spatial landscape. The cases set forth here pertain to three techniques, namely the development of visual dashboards, the tracking resources developed, and the deployment of imagery captured by satellite perception.

INTRODUCTION

In this chapter the main analytical effort aims to overhaul relevant cases of visualization, tracking and analysis of the bulk of the data drawn from official statistics provided by governments and international organizations.

Technically, the analysis of the space, the capture of images and the rendering of maps gave rise to a key opportunity for observe, process the data and concentrate spatially on the fight against the COVID-19. Here the emphasis is posed in highlighting the set of cartographic, positioning and visual techniques

DOI: 10.4018/978-1-7998-8339-5.ch007

used in diversity of countries and by some organizations when the assessment and observation of the public health condition is required.

In general and where minimal technological levels have been attained, the widespread implementation of national dashboards intended to track the dissemination and the spatial expansion of the infection is the core of the visual strategy for recognizing the pandemic. This technology-based strategy promises to be very efficient to curtail the dissemination of the virus and for tapping the results and the statistics as a reference for making decisions at global and local levels.

But these implemented technologies are skilled-labour and high-tech intensive, a real fact recognized from the outbreak of the crisis. In the U.S. during the early 2020, the nationwide disease intervention specialists federally funded and intended for tracing infectious diseases amounted only 2000 employees, then such scarcity forced the hiring of more people and later the number of people with a diversity of profiles amounted to 40000 (Ollove and Vestal, 2020). In spite of the basic tasks to be implemented, the staff integrated for tracing purposes must be minimally trained. Facing the severity of the situation, in some regions the tracing efforts are supported by students, off-work airline staff and volunteers that have been increased as the virus expanded (Lewis, 2020).

The control of the pandemic virulence depends on the implementation of effective procedures of tracing and tracking the infected people and on the identification of the highest. of the highest possible number of cases. Typically, and mainly during the first waves of the virus, people did not know that they got the virus or delayed the PCR or antigens tests, and in turn, not all positive cases obeyed the isolation rules. Besides, when people were identified and interviewed frequently, they omitted details about their contacts and in turn, such the process of identifying a second order of contacts was hardly found (Lewis, 2020). In the table 1 of this chapter (conclusions) a list of implemented apps in Europe can be consulted.

BACKGROUND

Once the pandemic boosted, some summarized reviews were made for setting forth a myriad of publications and research works dealing with GIS strategies and spatial analysis intended to understand the behaviour of the infection and to define feasible contributions for overcoming such an enormous public health crisis. In Ahasan et al. (2020) a review about the set of approaches applied in the GIS realm to visualize and analyze the pandemic.

The application of the imagery treatment had a broad development in disparate fields from environment to military purposes. The set of techniques are based on the definition of partial sampling and the consolidation of neural networks to elucidate spatial objects to be identified (Minetto et al., 2020). In other research a set of spatial features are processed for be interpreted, having a basic source aerial photographs which are digitized onto orthophoto and can be handled as an independent polygon theme (US Geological Survey, 2006). The interpretation of satellite images can be used profusely in the classification of vehicles, the tracking of new medical infrastructures and for detecting the movements of planes, ships and locomotives. The analysis of imagery has demonstrated to be pertinent for assessing the effects of other catastrophes for identifying destroyed buildings, blocked roads and for implementing logistic operatives for help. The complete evolution of the situation can be compared by means of the juxtaposition of pre- and post- disaster photos (Minetto et al., 2020).

GIS, Positioning, and Imagery Tools

Regarding Public Health issues, a set of previous health emergencies predisposed some procedures for meeting this kind of virulent pandemics. The Ebola in Africa and the Middle East respiratory syndrome are two clear examples (Lewis, 2020).

On the other hand the strategies for tracking individuals for specific purposes, have been applied by Israeli security forces for preventing terrorist events through the filtering of cell phones in Israel and the West bank. From 1995 with the burst of the mobile communication the government is allowed to access the databases by security reasons, but this process of collecting cell phone metadata dates from 2002 for different purposes, although it has not been disclosed what kind of information is stored, how it is safeguarded or when it will be deleted (Halbfinger et al., 2020).

THE FIGHT AGAINST THE COVID-19 TAPPING THE SPATIAL CONTEXT

Dashboards

In fact, the most relevant health organizations and all countries with the available technology have implemented a set of dashboards as a visual instrument for assessing the pandemic evolution. This is a friendly screen intended to combine updated information and set forth in maps, figures, trends, using the internal attribute table for nurturing the daily new information.

The Pan American Health organization is another institution that in close communication with the hemispheric governments, manages the institutional dashboard. The process of updating information is performed through a GeoHUB and the individual countries send the local statistics on a daily basis, the platform available to technicians for entering the information is enabled in 4 languages widely spoken through the hemisphere (54 countries). The web app includes the visualization of maps, charts and tables with the statistics, and the HUB allows inserting other kinds of reports with more elaborated data. The visualization can be tailored according to the user interest and can be arranged by sub-regional approach: North America, Central America, South America and Caribbean and Atlantic Ocean Islands (see figure 1).

At a global level, the World Health Organization (WHO) also released its own dashboard as can be seen in the figure 2. The source of data is the regular and official information touted by governments around the world, and the dashboard is updated in real time as the screen is refreshed frequently. The WHO is the international organization intended to coordinate the worldwide efforts for fighting against the COVID-19, and is the normal competent institution to channel the technical medical help to the poor countries.

The tool allows the consult of a disparate of topics namely: global and local statistics around the world, the option to dive in depth the national statistics by clicking the particular country, interaction with interactive visualizations showing the accumulate cases, consult of the evolution and changes in the statistics about infections and deaths and a comparison of variables to visualize the interaction of multidimensional factors influencing the pandemic's evolution.

Application of Devices for Tracking the Risk of Contagion

The virulence and dangerousness of the pandemic forced a closer control of social behavior and individual movements. For these purposes, some technologies based on Bluetooth and Mobile devices positioning assess the level of risk conveyed by the spatial proximity. South Korea developed a smart system for track-

Figure 1. PAHO Dashboard

Source: <https://paho-covid19-response-who.hub.arcgis.com/>



Figure 2. WHO Dashboard

Source: <https://paho-covid19-response-who.hub.arcgis.com/>



ing the individual movements using camera footage and the record of card system payments, along with the delivery of alerts via SMS and apps informing about the number of positive cases (EURISY, 2020).

In previous pandemics such as Ebola in 2014 the tracing process was a key procedure for containing the crisis, and countries tried to implement the same strategy currently. In doing so, the wealthiest western

countries contracted teams of tracers intended to keep up the transmission of the infection. However, the task faces big troubles to be successful. The troubles span from the difficulty to get in touch with people identified as positive, and the reluctance of interviewed people to furnish information about their previous contacts. The tracing teams also met the distrust of the population of the technical strategies deployed and of the authorities themselves (Lewis, 2020).

In 2021 Israeli government implemented an electronic bracelet furnished to the incoming passengers at the airport and that allows the people to comply with the quarantine at home. Otherwise, if people arrive from overseas or already had COVID 19 infection, they have been isolated in a paid hotel during two weeks (Chaturvedi, 2021).

When people willingly concede to download and to enable the COVID-19-developed apps, and inform the personal health condition through symptom-tracking, they contribute to free up a determined number of contact-tracers, who can be intended to focus on new cases (Lewis, 2020).

The tracing of infected people and suspicious cases is like looking for a needle in a haystack. The manual procedure of tracing the potential cases and their contacts is troublesome and the technological procedure of tracking the cases is a heavily technical process, and in both cases the fiscal cost is extremely high, and frequently possible to afford only in rich countries, and the two procedures face unsurmountable pitfalls. Normally the process is composed by the test-trace-isolate sequence.

In the manual process the tracing strategy can be defined forward-looking or backward-looking according to the approach followed. The contact-tracer interviews this individual for determining the contacts while infected, even before the symptoms appear. Detecting the direct previous contact is crucial, because the tracers must contact all those contacts for urging quarantine. The backward approach assumes that a new case came from a cluster rather than from other individual cases (Lewis, 2020).

Israel implemented a COVID app named “the shield” as a tool of contact tracing used for sending to quarantine individuals who have been exposed to risk in the days before the confirmation of positive cases. The system is endowed with Bluetooth technology and detects the app installed by each other to make the recognition more accurate.

The record of people who download the app is tracked through the GPS positioning and is crossed with the established data of confirmed COVID-19 cases, with the purpose of cutting off the virus dissemination (see figure 3). As long as it is a civilian app, it was implemented as an opt-in system (Sokol & Staff, 2020).

A complete overhaul of Latin American apps developed for tracking the possible positive case appears in IAPP (2021).

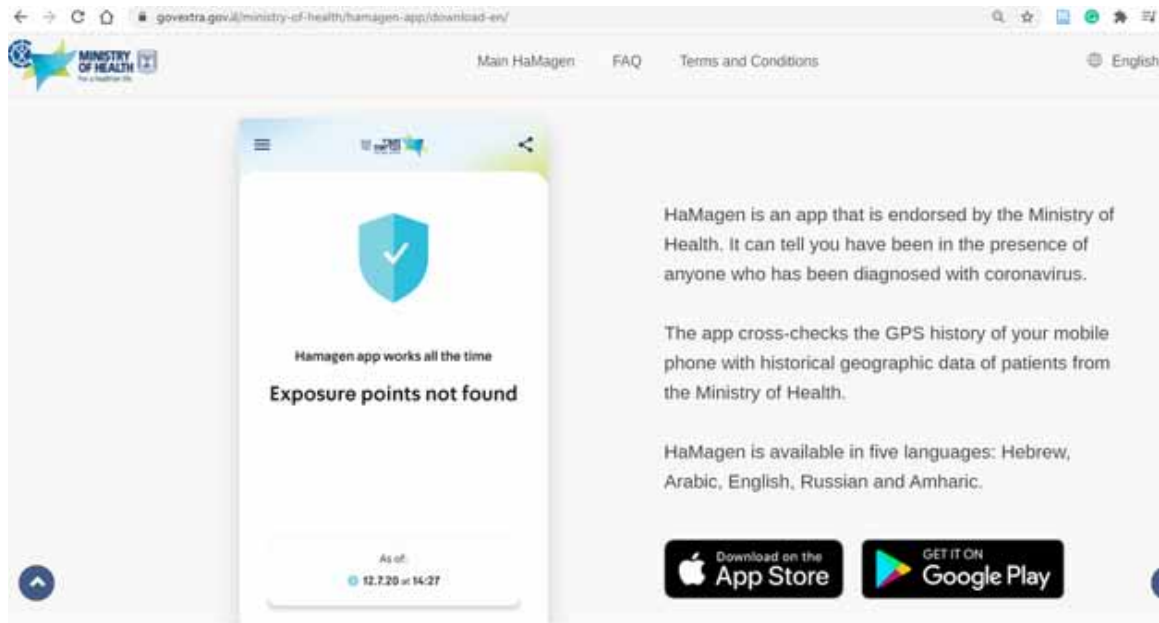
Perú developed an app termed as “Perú en tus Manos”, which touts a set of services as digital triage for performing a self-assessment about the personal risk exposures, consult of the map with the most affected zones, warnings about possible contacts with infected people and access to statistics.

Argentina launched the CUIDAR app intended to capture the individual information about the personal health condition, pregnancy but also previous diseases such as diabetes, respiratory or heart disease. Eventually, in case of suspicious symptoms, the individual has to report the authority and to test. Once the negative result is released, it must be replicated after 48 hours. For downloading the app, the basic information required is the national document number, the postal address and the mobile phone number.

In April 2021 the Chilean government rolled out its CoronApp with the purpose to be downloaded voluntarily by the population. The system allows to report and to self-assess the systems experienced, to monitor the symptoms of other 8 relatives or friends, who are unable to use the app, to get statistical information and to proceed to denounce dangerous social behaviors as quarantine breaches. The app

Figure 3. Israel app site

Source: <https://govextra.gov.il/ministry-of-health/hamagen-app/download-en/>



collects the personal information, the record of pre-existent diseases, medicines required and the information about previous risky travels.

In Mexico was implemented the COVID-19MX app intended to gather information about the current health condition, to monitor regularly the symptoms, to provide preventive recommendations, to establish a prompt line of communication and for statistical purposes. The app can collect information about the individual and third parties about medical background, diabetes, obesity, hypertension, respiratory disease and about pregnancy.

The Colombian government designed a nationwide app “CoronApp” as a massive tool for monitoring the evolution of the virus. The app was launched with informative purposes and with the option of reporting the individual’s health condition but the close relatives’ conditions as well. The system touts news, regional and local statistics for recognizing the close risks, the location of close health facilities and preventive tips. The app is endowed with an application for performing a self-diagnosis to verify the personal health signs and with some recommendations for preserving mental health as well. The system collects information about previous travels abroad and the suspicious contacts previously held.

Once the app reaches a massive use, the authorities pursue to identify the most affected strata of the population, implement a geo-located system of estimations and analysis, identify the profile of the most affected population and bolster the logistics for tout health assistance (see figure 4).

As other fields in the breaking technological era, the network externalities play a key role in the effectiveness of the digital interactions and in the efficiency of digital markets. As Tirole (2014) defines, the digital apps and multisided-markets rely on the quantity of users accessing the touted services. In this context, as long as the number of users is larger, the algorithms perform better. Generally, the users tend to access the app that the friends and relatives usually connect to. The governments and the tracking systems designers can leverage this kind of net externality for spanning a larger part of the population

Figure 4. Colombian app site

Source: <https://coronaviruscolombia.gov.co/Covid19/aislamiento-saludable/coronapp.html>



willing to share the required information for making the processes of detection and tracking really useful and relevant for defeating the virus.

In turn, in the Czech Republic the Ministry of Health launched a downloadable app designed to inform timely the users about their risk and the risky interactions and encounters that preserves the user's confidentiality through the assignation of personal and anonymous identifier avoiding the personal identification. The app operates under the Bluetooth technology with the capacity to be in effect even in buildings, the metro system or underground parking. In any case the application refrains from establishing the localization of individuals.

When the users met another user that is later confirmed as a positive case, they are warned about this situation for proceeding to test themselves. If properly the user becomes infected, the application sends the user a SMS code in order to notice other apps users. Upon evaluating the risk, the algorithm notices other users if eventually the interactions and encounters entailed a risk. The purpose is to warn other users that clearly ends up to be unknown people, but who can be exposed to risk.

The Capture and Analysis of Images

This technology is based on the treatment of multispectral images captured by means of satellite technology and orthophotography. This technique is illuminating when making decisions because it imparts information about the real condition of spatial objects timely. The imagery thus generated have been useful for several purposes in the European fight against COVID-19 namely: detection of traffic jams

Figure 5. Czech app site
Source: <https://erouska.cz/en>

I protect both you and me

You can help stop the spread of COVID-19 with eRouška. It notifies its users of risky encounters with infected individuals quickly and anonymously.

The application protects your privacy to the max. It does not collect your personal data or location.

Download the app today, for free. Join the fight against COVID-19.

Download for Android Download for iOS

The smartphone screen shows the eRouška app interface with the following text:

- 11:47
- Sdílet aplikaci
- eRouška
- ✓ eRouška je aktivní
- Aplikace aktuálně pracuje na pozadí a monitoruje okolí. Nechte zapnuté Bluetooth a s telefonem pracujte jako obvykle.
- Pozastavit
- Za posledních 14 dní žádné rizikové setkání
- Poslední aktualizace 10. 11. 2020 6:39
- Aktualizace probíhá jednou za 24 hodin.

blocking the seamless transport of supplies, recognition of the existing medical facilities and hospitals and assessing the social distancing in compliance with social distancing regulations (Minetto et al., 2020).

The figures 6, 7, 8 and 9 demonstrate the practical consequences of the set of restrictions mandatory during the different waves of the pandemic. The prolonged lockdown, the mandatory shutdown of the business activity and the prohibition of commercial flights ended up in stubborn changes in the urban landscape. The figures show the empty parking lot spaces and the full use of airport slots due to the shutdown in the aerial operations.

However, the row visualization is only the basic procedure for handling the satellite information. As Minetto et al. (2020) rollout, the Algorithms of Artificial Intelligence contribute to automate the identification of the spatial objects and the extraction of images, but a spatial rescaling process allows zooming out the approach and the procedure can be replicated around the world.

A further process in the satellite images deals with the modelling field. In the public health realm Ford et al. (2009) roll out the results of different modelling strategies in fighting against tropical diseases. The procedures rely on the observation and quantification of the behavior of environmental triggering factors associated with some pandemics. A set of natural phenomena can be observed anticipatedly for preventing the fatal effects of cholera, typhoid, hepatitis and leptospirosis. The assessment in the evolution of sea levels and the strong intensification of flooding catastrophes can make decisions in advance to potential mortal events. The awareness about a potential outbreak can guide the public health workers

GIS, Positioning, and Imagery Tools

Figure 6. Wuhan toll plaza before and after outbreak of the COVID-19

Source: WEF. 2020. Photo credit: SATELLITE IMAGE 2020 MAXAR TECHNOLOGIES. Open Data Program.



Figure 7. Airport before and after the outbreak of COVID-19

Source: Minetto et al., 2020. Photo credit: SATELLITE IMAGE 2020 MAXAR TECHNOLOGIES. Open Data Program.



for implementing basic hygiene and sanitation procedures such as aspersion of sari cloth as a strategy for reducing the local impact of cholera.

In the case of respiratory infections, a strong seasonal pattern is recurrent. For instance, the Meningococcal meningitis in Africa is a typically dry season disease affecting Senegal and Ethiopia that normally stops with the advent of the rainy season. Besides, the influenza is properly a wintertime disease, but elsewhere shows particular peaks both during winter and summer in subtropical and tropical regions. The close dependence of this kind of public health challenges on the climatic conditions touts the justification for a technical and scientific assessment in order to avoid preventable human disgraces (Ford et al., 2009).

Figure 8. Great Mosque and Kaaba in Mecca, Saudi Arabia. The left image was collected on Feb. 14, 2020. The middle image was collected on March 3, 2020. The right image was collected on March 9, 2020. Photo credit: MAXAR TECHNOLOGIES. Open Data Program.



Figure 9. Tiananmen Square, Beijing, China before and after the outbreak of COVID-19 WEF. 2020. Photo credit: SATELLITE IMAGE 2020 MAXAR TECHNOLOGIES. Open Data Program.



SOLUTIONS AND RECOMMENDATIONS

Perhaps, a more effective strategy for controlling the spread of the virus can combine the set of strategies here set forth. Besides a massive vaccination campaign, when new variants emerge, a manual tracing set of interviews for identifying backward contacts can be combined with forward contacts, detecting the first round of interactions, but also the second order round of physical contacts.

GIS, Positioning, and Imagery Tools

The manual tracing and the automatized tracking perform fairly well when combined, due to depuration purposes as well for avoiding to incur in the statistical type I and type II errors. The smart data-management can ease the burden posed over the tracer and automatically can detect duplicities, for instance when suspected people contacted multiple positive cases.

The combination of current technology allows a thorough stock of data spatially-referenced. The mobile-phone sources, the geo-referenced GIS layers and the satellite imagery tout the set of data of analysis. The strategy of prevention must also include a stage of modelling using and blending the field -differential results to be interpreted and compared. The lethal initial effect of COVID-19 was related with the unexpected upsurge of spatially localized outbreaks and the unpreparedness of all global authorities and governments.

In all stages of the pandemic evolution, the engagement of the public opinion is crucial for curtailing the expansion of the COVID-19. The compliance of quarantine in confirmed cases and the social distancing can contribute to stop suddenly the local expansion in specific areas. Even after the full attainment of vaccination goals, the minimal rules of self-care must be kept as sanitizing the hands and social distancing, contributing to reduce the incidence of the virus.

On the other hand, the forward challenges for the next stages span the technical adjustment of the systems and the overcoming of the growing concerns in terms of privacy emerged everywhere. In previous stages some technical mishaps sent false positives due to defective performance of apps and wrong calls for observing quarantine (Sokol & Staff, 2020). Typically, the diffusion of apps amid the population and the surveillance devices are more extensive in societies where the government exerts an important influence on the privacy regulations (China), and simultaneously, the massive use of this kind of positioning-based systems is more troublesome in areas where the population is highly sensible to the personal data regulations (Dumbrava, 2020). In a constantly threatened country such as Israel, the courts authorized the Shin Bet agency to track individuals who blatantly refuse to cooperate with the details about their contacts.

The effectiveness of the surveillance tasks for ensuring the quarantine compliance and the effective tracking of positive cases relies strongly on the network externalities; it means the willingness of people to download the tracking-intended apps. The reliance of people on the system depends on the pristine management of the personal data and the obedience to the privacy rights. Otherwise, if the tracking apps do not attain a substantial level of coverage amid the population, the tracking strategy can fail or cast irrelevant results.

FUTURE RESEARCH DIRECTIONS

The modern technology provides a wide range of procedures for facing this breaking crisis, remote sensing, satellite communication and global navigation satellite systems have been applied in a disparate setoff application including monitoring, diagnosis, screening, cleaning operations and transport (EURISY, 2020).

So far, the set of developed tools tote useful and timely resources for solving the urgent necessities derived from a catastrophic expansion of the infection. However, the implementation of all modern technologies poses a set of technical challenges as well and the drawbacks affect all devices and tools so far discussed. The Smartphone-based strategies fail to include all models and operating systems and the GPS signals can be interfered by the weather and walls. The imagery processing faces serious mishaps. The frequent captures of images are fairly expensive and the capture of clear-cut images can

be made efficiently only with the daylight and can be impaired by the weather conditions (Minetto et al. 2020). In the end, a research methodology based on the combination of imagery, GIS tools, mobile phone positioning and GPS spatial referencing can make up an effective strategy for tracking the effects of COVID-19 and for diminishing its deleterious impacts.

At the end the process of tracing contacts through direct interviews and phone calls are combined with geo-positioning tracking techniques in order to reach a more effective identification of possible contacts. This blended procedure has been applied in Vietnam, South Korea, Israel, Armenia, Russia, Ecuador and Taiwan. The handling of data is crucial and any additional effort here is scarce. When an epidemiological core is identified, the tracing process must be done in the first round of contacts, but in turn, in the second order of contacts as well (Lewis, 2020).

In producing more accurate and real local information the participation of trained communities is crucial for collecting pinpointed information at a small spatial scale. Some experiences demonstrated that by filling out digital surveys and in specific quarters and towns the neighbors can inform about the particular necessities in terms of food and medicines, mainly in periods of lockdown and when individuals are in quarantine rules. Based on this information municipal authorities are enabled to pinpoint the positioning of the cases and to map an efficient network of help.

An effort based on a scientific approach and modelling could identify in advance unusual spatial behaviors and predict potential future dangerous developments. The spatial dimension totes a broad possibility of modelling including spatial analysis, spatial econometrics and satellite modelling. The identification of spatial patterns and changes in the natural and human landscape can be the first insight for inquiring about the evolution of several pandemics.

CONCLUSION

The severity of the virus and its virulent occurrence forced a sudden response to such a public health challenge. In general, diverse scientific fields developed and touted a set of solutions at different stages of the pandemics.

The Geo-spatial and the GIS disciplines have been developing a set of tools and methodologies that suited properly in the plans for facing the spread of the virus. In all cases analyzed, the key role played by space emerges as an important determinant in the development of new techniques and strategies. Along the disparate stages of the pandemic that the world faced previously, the spatial and positioning strategies have been conveniently applied with a diversity of success.

During the faster dissemination of the virus the maps and dashboards touted visualization and statistical information for making decisions in real time, observing specific spots and local incidences. The tracking procedures using positioning information allowed monitoring the compliance and the effectiveness of quarantine and lockdown measures. The analysis of changes in the physical landscape through imagery allowed us to detect specific anomalies in the social behavior and geographic changes in the human surroundings.

Looking forward, the combination of positioning tools and GIS procedures will make up an effective strategy for preventing future threats and for recognizing abnormalities in the environment, the physical landscape and the social interaction that could entail any risk for human safety and public health.

The technological gap at international scale is fairly stunning and can be observed clearly in all the stages of the pandemic evolution. The slow pace of vaccination and the precariousness in the public health systems contribute to the ineffectiveness of the fight against the COVID-19 in poor countries and regions. Likewise,

GIS, Positioning, and Imagery Tools

Table 1. List of Mobile tracing apps

APP	COUNTRY	INTEROPERABILITY
APPStopp Corona App	Austria	Yes
cORONALERT	Belgium	Yes
Stop COVID-19	Croatia	Yes
CovTracer-EN	Cyprus	Yes
eRouška	Czech Republic	Yes
SMITTESTOP	Denmark	Yes
HOIA	Estonia	Yes
Koronavilkku	Finland	Yes
TousAntiCovid	France	No
Corona-Warn-App	Germany	Yes
VirusRadar	Hungary	No
COVID Tracker	Ireland	Yes
Immuni	Italy	Yes
Apturi Covid	Latvia	Yes
Korona Stop LT	Lithuania	Yes
COVIDAlert	Malta	Yes
CoronaMelder	Netherlands	Yes
Smittestopp	Norway	Yes
ProteGO Safe	Poland	Yes
StayAway COVID	Portugal	Yes
#OstaniZdrav	Slovenia	Yes
Radar Covid	Spain	Yes

Source: European Commission, 2021

the technical tools and scientific achievements here described, normally are developed and supported in the rich countries and the preventive advantages derived from them, can be mainly leveraged in the advanced regions of the world. In this point, the transference of technology in all scientific fields is a required process for spurring the catching up process of the lagged regions of the world. The entire world cannot be healthy until all countries around the world achieve minimal conditions of health and biological safety.

REFERENCES

- Ahasan, R., & Shaharier, M. (2020). Applications of GIS and geospatial analyses in COVID-19 research: A systematic review. *F1000 Research*, 9, 1379. doi:10.12688/f1000research.27544.1
- Costica, D. (2020). *Tracking mobile devices to fight coronavirus*. Briefing European Parliamentary Research Service. [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/649384/EPRS_BRI\(2020\)649384_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/649384/EPRS_BRI(2020)649384_EN.pdf)

Dumbrava, C. (2020). *Tracking mobile devices to fight coronavirus*. Briefing European Parliamentary Research Service. [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/649384/EPRS_BRI\(2020\)649384_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/649384/EPRS_BRI(2020)649384_EN.pdf)

Chaturvedi, A. (2021). Israel launches Covid-19 tracking bracelet for travellers: All you need to know. *Hindustan Times*. <https://www.hindustantimes.com/world-news/israel-launches-covid-19-tracking-bracelet-for-travellers-101614678460371.html>

EURISY. (2020). *What we can learn from the Coronavirus crisis with satellite data*. https://www.eurisy.eu/what-we-can-learn-from-the-corona-crisis-with-satellite-data_46/

European Commission. (2021). *Mobile contact tracing apps in EU Member States*. https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/travel-during-coronavirus-pandemic/mobile-contact-tracing-apps-eu-member-states_en

Ford, T., Colwell, R., Rose, J., Morse, S., Rogers, D., & Yates, T. (2009). *Using Satellite Images of Environmental Changes to Predict Infectious Disease Outbreaks*. *Emerging Infectious Diseases*. www.cdc.gov/eid

Halbfinger, A., Kershner, I., & Bergman, R. (2021). To Track Coronavirus, Israel Moves to Tap Secret Trove of Cellphone Data. *The New York Times*. <https://www.nytimes.com/2020/03/16/world/middleeast/israel-coronavirus-cellphone-tracking.html>

IAPP-International Association of Privacy Professionals. (2021). *Algunas aplicaciones que están siendo utilizadas en América Latina para tratar de controlar la propagación del COVID-19*. <https://iapp.org/news/a/algunas-aplicaciones-que-estan-siendo-utilizadas-en-america-latina-para-tratar-de-controlar-la-propagacion-del-covid-19/>

Lewis, D. (2020). Why many countries failed at COVID contact-tracing — but some got it right. *Nature*. <https://www.nature.com/articles/d41586-020-03518-4#:~:text=The%20reasons%20for%20the%20failures,proved%20ill%20Dequipped%20to%20respond.&text=And%20overstretched%20contact%2Dtracers%20have,deployed%20to%20fight%20the%20pandemic>

Minetto, R., Pamplona, M., Rotich, G., & Sudeep, S. (2020). Measuring Human and Economic Activity from Satellite Imagery to Support City-Scale Decision-Making during COVID-19 Pandemic. *IEEE Transactions on Big Data*. <https://arxiv.org/abs/2004.07438>

Milner, G. (2020). *Creating the Dashboard for the Pandemic*. ESRI. <https://www.esri.com/about/newsroom/arcuser/johns-hopkins-covid-19-dashboard/>

Olove, M., & Vestal, C. (2020). *Contact Tracing Hampered by Testing Delays, Unanswered Phone Calls — and Lack of Trust*. <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2020/07/16/contact-tracing-hampered-by-testing-delays-unanswered-phone-calls-and-lack-of-trust>

Sokol, S., & Staff, T. (2020). Health Ministry Launches Revamped COVID-19 Tracking App. *The Times of Israel*. <https://www.timesofisrael.com/health-ministry-launches-revamped-covid-19-tracking-app/>

GIS, Positioning, and Imagery Tools

Staff, T. (2021). *High Court limits Shin Bet coronavirus surveillance to those who won't cooperate*. <https://www.timesofisrael.com/high-court-limits-shin-bet-coronavirus-surveillance-to-those-who-wont-cooperate/>

Tirole, J. (2014). *Market Failures and Public Policy* [Paper presentation]. Nobel Prize Lecture, Stockholm, Sweden.

US Geological Survey. (2006). *Rates, Trends, Causes, and Consequences of Urban Land-Use Change in the United States*. Professional Paper 1726.

World Economic Forum. (2020). *These satellite pictures show the impact of the Coronavirus*. <https://www.weforum.org/agenda/2020/03/coronavirus-before-and-after>

KEY TERMS AND DEFINITIONS

Curfew: Is the mandatory order to remain indoors with the clear prohibition to stay in the street for public convenience.

Dashboard: A configurable web app with full visualization and handling of layers, charts, figures, statistics, time series and so on, intended to follow up the evolution of COVID19 pandemics, either at a local level and for some cases, at a global level.

GIS (Geographic Information System): An informatic and conceptual framework for rendering a diversity of human, social, environmental, and natural phenomena by means of overlapped maps arranged as layers.

Imagery: The set of captured images by means of orthographic process or satellite image procedure.

Lockdown: The mandatory restriction to the outdoor displacements and commutation for preventing the direct contact with non-familiar people.

Network Externalities: In the digital age, the positive effect for the app designers or multisided-markets operators of having a further wide network of users is a profitable situation for increasing the effectiveness and the dissemination of the digital products, apps, platforms, etc. The individual users appreciate the higher quantity of people using the same platform, and this effect can be enhanced further by the incorporation of additional users.

Rendering: The noticeable visualization of a GIS process in terms of maps, layers, or images.

Tracking: The set of strategies for tracing the route described by individuals in their spatial displacements.

Chapter 8

Government Response Capacity to the COVID–19 Pandemic: Estimating the Impact of Lockdown Measures in Colombia

Alvaro Chaves

Colombian School of Engineering, Colombia

ABSTRACT

This work estimates the impact of the preventive isolation measures adopted by national and regional authorities in Colombia to answer the following question: Where do the government's isolation measures effectively reduce the number of COVID 19 infections and deaths? Using official information reported by the Ministry of Health and constructing a panel data structure, a model of differences in differences suggested by Cerulli and Ventura is estimated. Estimates of the impact of containment measures show that the peak is delayed and the number of infections and deaths reduced. The government's response to the pandemic on diseases has a significant dynamic impact over time once implemented. The pre-treatment period was significantly affected by the current treatment.

INTRODUCTION

The world is currently facing a wave of uncertainty and adverse effects in all orders of the emergence of the COVID-19 pandemic, which originated in Wuhan, China, on December 10, 2019, where the first death occurred a month later, on January 9, 2020. From that moment on, it reflected the speed of the disease's spread in the number of reported cases, which grew exponentially worldwide.

Colombia was no exception. The first case of contagion in this country, classified as imported, occurred in Bogotá on March 6, involving a 22-year-old woman from Milan, Italy. Since then, COVID-19 has been spreading throughout the country. As of July 30 this year, the Ministry of Health's official data indicates that the number of confirmed cases in Colombia is 276,055, 9,454 deaths, and 142,777 recovered, leaving a balance of 123,258 active cases in the country. At the city level, according to information

DOI: 10.4018/978-1-7998-8339-5.ch008

Government Response Capacity to the COVID-19 Pandemic

from the National Health Institute (INS), Bogotá D.C. leads the way with 95,199 points, followed by Barranquilla (28,940), Cali (17,797), Cartagena (15,209), Leticia (2,372), and Villavicencio (2,160)¹.

The response of the National Government to stop the spread of the virus was not long in coming. On Tuesday, March 24, a nationwide quarantine was decreed, which would end on May 25. However, given the increase in the number of cases and deaths, the measure was extended until July 31, 2020. The idea of quarantine or preventive isolation measures is to buy time and avoid the collapse of health systems and try to delay the peak of disease transmission.

This chapter estimates and analyzes the impact of the government's containment measures to mitigate the COVID-19 pandemic's harmful effects in Colombia. The interest in estimating these measures' impact lies in responding to the following counterfactual: what would have happened to the number of infections and deaths from the pandemic if the government had not implemented preventive isolation measures? It is well known that such strategies seek to postpone the peak of disease and flatten the infection curve in the country while preventing the health system from collapsing. A difference-in-differences model using a city-level data panel estimates the dynamic effect of confinement on the outcome variables number of infections and deaths.

The results show that infections' treatment effect has a significant dynamic influence over time once it is implemented. The period before the treatment was significantly affected by the current treatment, showing that quarantine generated a fall in the daily rate of infections of approximately 5%. The quarantine effects in the periods following its implementation ($t + 1$) were equally important. This result implied an accumulated drop in the number of infections after the impact of 12.3%. The post-treatment period significantly impacted the rate of infections once the government issued the containment measure.

The motivation for this analysis is manifested in the following aspects, which relate to the government's ability to mitigate the catastrophic effects of the pandemic:

- **Uncertainty:** The world is facing a wave of anticipation and adverse effects at all levels due to the appearance of the COVID-19 pandemic, which translates into policy dilemmas that the government faces flattening the infection curve and at the same time avoid a collapse of the economy. This is known as the hammer and dance strategy (Baldwin and Weder di Mauro, 2020, Fernandez Villaverde et al, 2020, Eichenbaum, Rebelo y Trabandt, 2020, Farboodi, Jarosch y Shimer, 2020).
- **Policy interventions:** Government response capacity to mitigate the adverse effects of the pandemic while trying to minimize the negative impact on the economy, which have manifested themselves in significant job losses and sharp drops in the Gross Domestic Product, accentuation of poverty, and inequality, among others.
- **Health and the economy:** The current situation poses a dilemma between health and the economy. The quarantines and other containment measures are a moral imperative in the face of the pandemic because people are dying who shouldn't be dying in countries where the costs of containment and financial bailouts to protect the economy can be borne.
- **Supply and demand shocks:** For Colombia, Zuleta (2020) and Cárdenas (2020) have diagnosed how the pandemic affected the Colombian economy. They find that the shocks translate into the paralysis of several sectors of the economy and job insecurity, exit of many companies from the market and job destruction, drop in central government revenues as a result of the recession and deterioration in fuel prices, high future fiscal costs for government programs to mitigate the harmful effects of the pandemic.

The chapter contains six sections. Section two provide an overview of sources about the economics of COVID-19, highlighting research that concentrates on measuring the impact of the pandemic. Section three describes the methodology used to measure the impact of Colombia's containment measures to reduce daily infections and deaths. Section fourth, briefly discusses some recommendations related to impact measurement and highlights the difficulties arising from the lack of information at the micro-level. A possible future research agenda related to the economic impact of COVID-19 on some outcome variables is discussed in section five. Finally, conclude in section five.

LITERATURE REVIEW

The substantial economic impact of the COVID-19 pandemic has unleashed much interest among economists in studying and quantifying the effect of the pandemic on the economy based on models of the virus's behavior. This phenomenon is studied from conventional economic models to quantify the possible impacts (see Stock, 2020, and Avery et al., 2020 for an essential summary of work in this line).

According to Fernandez Villaverde et al. (2020), economists have argued that many of the parameters of economic models that capture the nexus between different economic variables are not structural in Hurwicz's (1962) sense depend on the behavior of agents and policy decisions. For example, the rate of contacts between individuals that determines the number of new infections is a function of endogenous labor supply and individuals' consumption decisions. In this sense, it is studying the evolution and effects of the virus from this approach, for example, the work of Eichenbaum, Rebelo, and Trabandt (2020) and Farboodi, Jarosch, and Shimer (2020).

Similarly, pandemic recovery and death rates as clinical parameters could be a function of public policy decisions such as expanding hospital capacity or prioritizing patients to different Intensive Care Units (ICUs). Similarly, the mortality rate is a crucial parameter to analyze the epidemic's severity, using a complex function of clinical parameters, demographics, and disease selection mechanisms resulting from endogenous decisions (Korolev, 2020).

The paper by Fernandez Villaverde et al. (2020) brings together all these ideas to allow COVID-19 infection rates to be influenced by social distancing policies and by several parameters that vary between countries, states, and cities, which are good proxies for demographics and the heterogeneity behind the evolution of the pandemic. In this sense, they start from the basic discrete-time epidemiological models but include social distancing policies and calibrate them incorporating social distancing. The authors conclude that the models closely follow the dynamics of the virus globally, including the behavior of individuals, and responds to policy measures implemented by governments.

Other works related to the "economics of COVID-19" do not study problems related to identification in economic behavior models, characterized by having a vast number of parameters estimated from the observed data that are sometimes not identified. On the other hand, some researchers have entirely ignored the use of behavioral models and have opted for time series analysis to determine the trajectory followed by the new Coronavirus, for example, Linton (2020), Kucinskis (2020) et al, and Liu, Moon and Schorfheide (2020). Indeed, the result of Linton (2020), based on the evolution of daily cases of COVID- 19 in different countries of the world, applies quadratic trend models to estimate the highest point of new infections and deaths caused by the new Coronavirus. The author finds that for the United Kingdom, the rise would occur within two weeks after the development of his studies and that the total number of daily chaos at the peak would be 8,000.

Government Response Capacity to the COVID-19 Pandemic

Berger, Herkenhoff, and Mongey (2020) analyze the impact of testing for the number of infected and the effect of quarantines. Bethune and Korinek (2020) estimate the negative externalities arising from the pandemic and find that these are very large. On his part, Bodenstein, Corsetti, and Guerrieri (2020) using behavioral models with computable general equilibrium models to quantify the effects from input-output matrices for the United States. Garriga, Manuelli, and Sanghi (2020), Hornstein (2020) study a wide variety of virus containment measures. Toda (2020) estimates epidemiological SIR models to evaluate the optimal mitigation policy controlling factors such as the period and intensity of social distancing.

A large body of work has focused on studying the macroeconomic effects of COVID-19. Ludvigson, Ma, and Serena Ng (2020) quantify the macroeconomic impacts of costs and fatal disasters in the recent US history of COVID-19. The authors construct a series of macroeconomic disasters and estimate a VAR for the period 1980: 1 to 2019: 12, finding that the effects are more concentrated in employment losses rather than capital stock destruction and affect the health and welfare of human capital.

Chang and Velasco (2020) analyze the endogenous effects that depend on economic policies and the implicit and explicit incentives offered by these policies, based on an economic model of the pandemic that considers the decisions made by individuals related to the spread of the virus. The authors find that a public policy influences the speed of the virus via incentives. Public health policies and macroeconomic policies can complement each other to reduce the pandemic costs and reduce the spread of the virus.

Lin and Meissner (2020) study the impact of non-pharmaceutical intervention policies such as “stay-at-home” (quarantine) on the speed of virus spread and find that local policies have a negligible effect on the economy, contrary to the impact generated by health policies. On the other hand, they find a fragile relationship between quarantine and the spread of the virus, and it is more related to the increased residential activity. Spillovers from economic policy and behavioral responses are significant in containing the virus.

A fashionable research approach these days is characterized by using more sophisticated behavioral models involving multiple dimensions. Acemoglu, Chernozhukov, Werning, and Winston (2020), Alvarez, Argente, and Lippi (2020), and Chari, Kirpalani, and Phelan (2020) describe the optimal isolation policies implemented by a planner who wants to control the number of deaths from a pandemic while minimizing the costs associated with social isolation policies. Aum, Lee, and Shin (2020) build a quantitative model of an economy hit by a pandemic where agents differ in age and skills; and choose occupations to maximize their income and minimize the fear of infection. From the calibration of the model, they replicate the spread of COVID-19 in South Korea and the UK and find that isolation measures do not exhibit a straightforward trade-off between GDP and health policies as commonly believed. In addition, they find that, had the UK government adopted the policies implemented by South Korea, the losses in output (GDP) and the increase in the number of infections could have been substantially smaller in both the short and long run.

Gregory, Menzio, and Wiczer (2020) develop and calibrate a job search model to forecast the evolution of the US labor market during and after the COVID-19 pandemic. The model is designed in such a way that it captures the transition heterogeneity of workers across employment-unemployment states and different employers. The results show that isolation measures to contain the spread of the new Coronavirus have acute adverse effects on the unemployment rate due to the difficulty of recovering lost jobs for workers who have taken years to get them.

For the Colombian case, several pieces of research try to measure the impact of the new Coronavirus on the economy and the evaluation of isolation measures. Cordovez, Santos, Bravo, and Cascante (2020) use a mathematical model to study the dynamics of COVID-19 infection in a realistic urban environ-

ment and evaluate the effect that mitigation measures can have on the spread of the new Coronavirus in Bogota. In addition, they assess the impact of gradually opening sectors of the economy and the effect of opening public and private schools and universities. The study finds that the mitigation measures implemented allow postponing the exponential growth of diseases but do not prevent exceeding the bed capacity in intensive care Units (ICU).

On the other hand, the duration of the restriction overtime or the proportion of people covered by the rule always have the same effect of shifting the infection curve over time, and the closure of universities and schools is less efficient in slowing the growth of the curve compared to the restriction of adult mobility. Another significant result of the work is that the effects of restricting the economic sectors are determinant for not exceeding the capacity of the health system in June, and a restriction of the economy that generates a decrease in mobility during June of 60% is the minimum for not exceeding the supply of ICUs.

The research of Zuleta, Alvarez, Leon, Medellin, and Zambrano (2020), presents a description of the spread of COVID-19 in Colombia. The authors conclude that containment was a necessary measure to soften the increase in the contagion rate while preparing the health infrastructure to cope with the adverse effects. From this, they design policy proposals to contain the contagion and adjust the health infrastructure, mitigate the harmful effects of the crisis on the incidence of poverty and protect formal employment to help the survival of firms. For the duration of the containment, sufficient unconditional cash transfers to households affected by the paralysis will be necessary.

Bardey, Fernandez, and Gravel (2020) perform a graphical analysis of the potential impact of containment measures such as confinement and mobility restrictions. Through the estimation of correlations between the difference in logarithms (growth rate) of cumulative cases of new infections and the number of deaths, they find that these policies produce immediate effects on the growth of cases of disease and on the growth rate of the number of deaths, which have suffered a delay after the measures implemented. According to the authors, the graphical analysis is consistent with the epidemiological characteristics of the virus. It suggests that the policies implemented have had a significant effect on the growth rate of new infections and the number of deaths.

Bonet-Morón, Galvis et al. (2020) presents a regional approach to the effects of the new Coronavirus on economic activity. The study evaluates the regional and sectoral economic impact of the preventive isolation measures ordered by the National Government to avoid the harmful effects of the new Coronavirus. Based on an input-output model, the loss in terms of formal and informal jobs in different sectors of the economy is estimated. Results show that losses range between \$4.6 and \$59 billion per month according to the scenarios considered, representing between 0.5% and 6.1% of the national GDP. The departments of Antioquia, Boyacá, San Andrés, Santander and Valle del Cauca are the most affected.

MEASURING THE IMPACT OF COVID-19

Evolution of COVID-19

An increase in effective reproduction has characterized the dynamics of the COVID-19 virus in Colombia. The reproduction number, R , shows the relationship between the disease's propagation's growth rate and the daily transition rate. The values of this number indicate the expected number of people infected by an infected individual within a population of individuals susceptible to acquiring the disease.

Government Response Capacity to the COVID-19 Pandemic

On the other hand, the trajectory of the number of daily infections and deaths at the regional level presents a behavior different from the national one, explained by the sizes of the population and the number of people susceptible to contract the disease, as well as the culture of self-care.

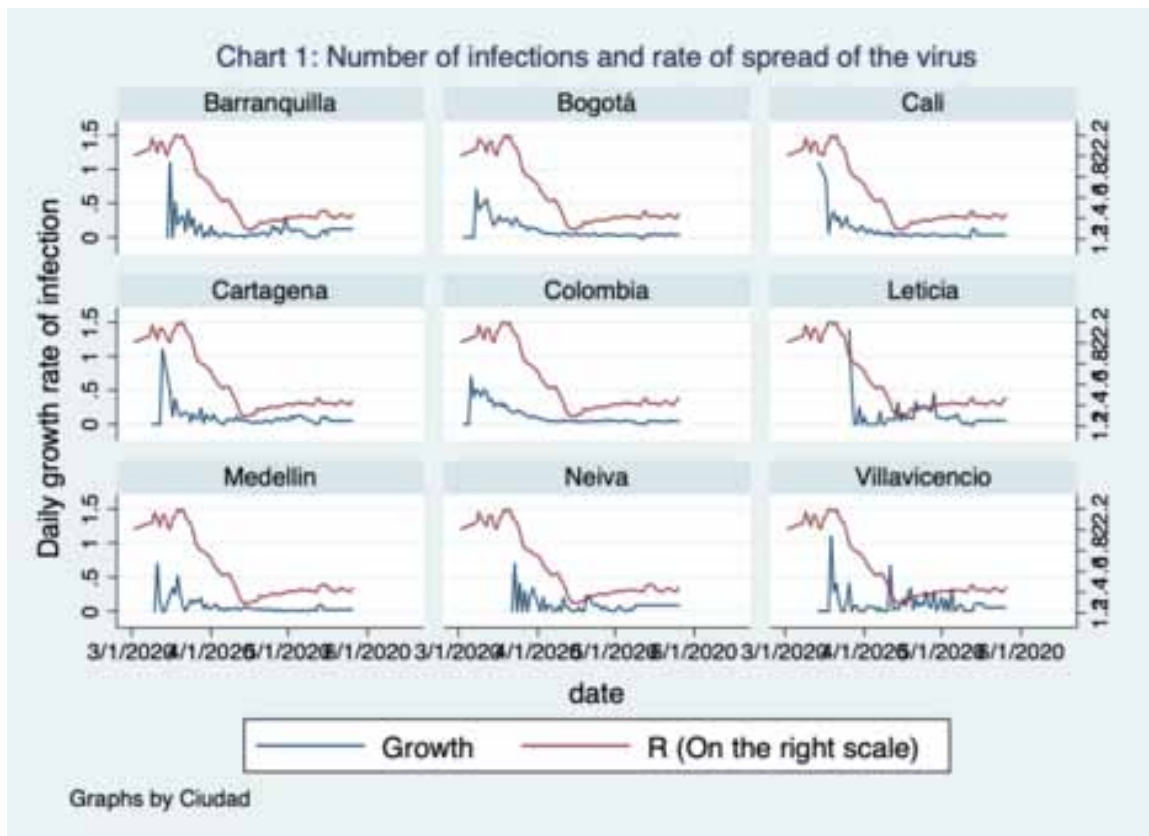
Figure 1 presents the number of infections and the number of effective reproductions at the national and some departments. There is a positive correlation between the number of cases of COVID-19 and virus spread measured by the number of effective reproduction. At the beginning of the pandemic in Colombia, the virus's spread was 2.3, indicating that one infected person could infect three susceptible people. This was reflected in a very high daily case growth rate, as evidenced in Figure 1.

On the other hand, Figure 1 shows that the measures to contain the pandemic based on public policies implemented by the government must, on the one hand, take into account the evolution of this variable and, on the other hand, if future cases of infections and deaths are to be extrapolated. This factor will be present in the equations or estimated curves (Figure 1):

Cases and deaths at the national level and Bogotá D.C. follow similar trajectories, although the stories are different due to population sizes. The average daily growth rates of infections at the national level and in Bogotá D.C. are 27,3% and 26,8%, respectively, implying a rapid expansion of the virus. The average day-to-day growth rates of deaths at the national and in Bogotá are 25,5% and 17,9%, respectively.

Figure 1. Number of infections and rate of spread of the virus

Source: Own calculations based on official information from the Ministry of Health. <http://www.ins.gov.co/Noticias/Paginas/Coronavirus.aspx>.



Similarly, the dynamics of the number of fatalities in Leticia stands out, with an average daily growth of 22,9%, one of the highest after Bogotá (Figure 2).

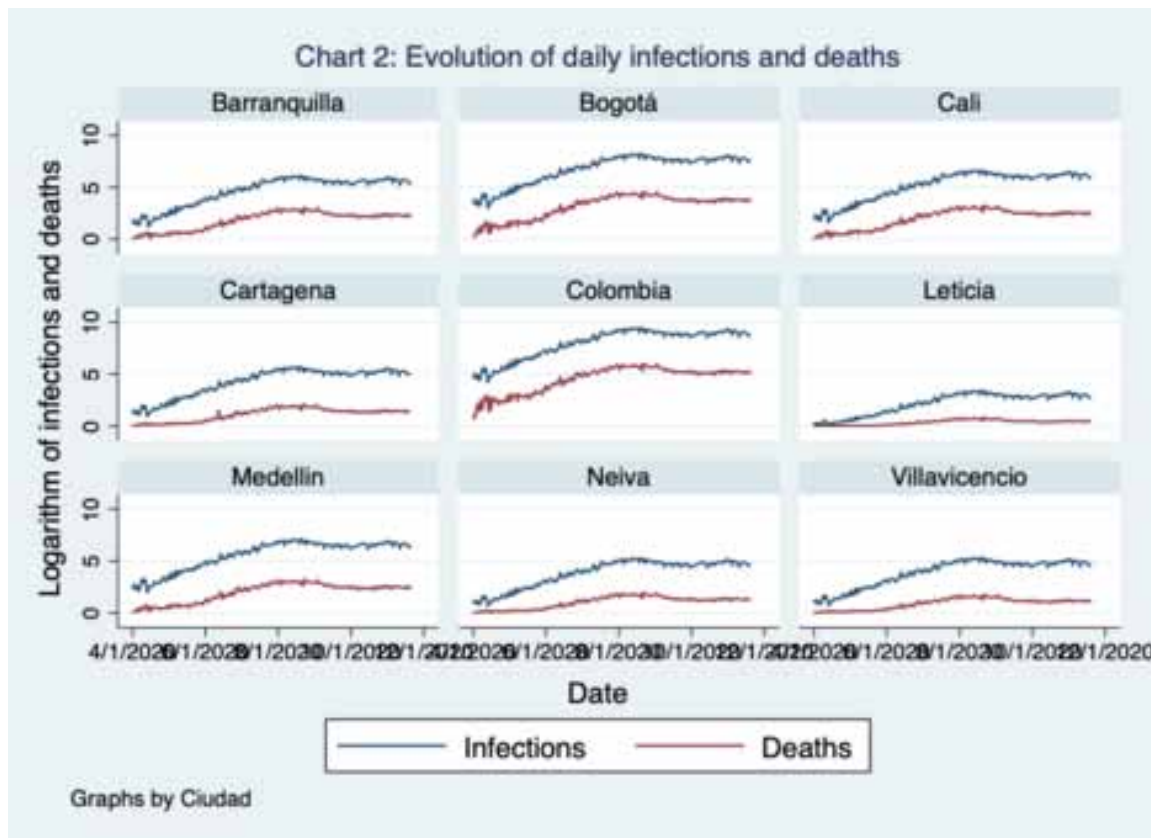
Table 1 presents descriptive statistics for the main cities and the national total from March 6 to July 31, 2020. It highlights the average number of infections and deaths in Bogotá D.C., Cali, Villavicencio, and Cartagena. The city with the lowest number of cases of COVID-19 and fatalities so far is still Medellín.

Government Response to the Pandemic

Currently, in Colombia, the virus is still spreading, and the growing trend is increasingly worrying, despite the tightening of containment measures, which seem less effective. Testing for the virus is not growing as fast as its spread. Contact tracing does not appear to be working, and the number of available ICU beds is reaching maximum occupancy levels. Given this context, local governments have introduced more stringent containment measures, the implementation of which has been complex, partly due to the scarcity of resources and the fatigue of people in different regions, making it a challenge not only for the central government but also for local governments, which are facing increasingly precarious economic conditions.

Figure 2. Evolution of daily infections and deaths

Source: Own calculations based on official information from the Ministry of Health. <http://www.ins.gov.co/Noticias/Paginas/Coronavirus.aspx>.



Government Response Capacity to the COVID-19 Pandemic

Table 1. Descriptive statistics on COVID-19 in Colombia

	Barranquilla					Bogotá D.C.					Cali				
VARIABLES	N	Mean	Max	Min	Stdv	N	Mean	Max	Min	stdv	N	Mean	Max	Min	Stdv
Cases	85	346	2,774	0	0	85	2,394	7,743	1	1	85	662.1	2,228	0	0
Death	85	10.46	28	0	0	85	92.58	218	0	0	85	35.74	65	0	0
R	85	1.643	2.197	1.29	1.293	85	1.632	2.197	1.29	1.293	85	1.632	2.197	1.293	1.29
Groups	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
	Cartagena					Colombia					Leticia				
VARIABLES	N	Mean	Max	Min	Std	N	Mean	Max	Min	std	N	Mean	Max	Min	Std
Cases	85	394.7	1,968	0	0	86	6,218	23,003	1	1	86	336.6	1,791	0	0
Death	85	24.58	68	0	0	86	284.3	776	0	0	86	11.76	32	0	0
R	85	1.632	2.197	1.29	1.293	86	1.639	2.197	1.29	1.293	86	1.639	2.197	1.293	1.29
Groups	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
	Medellín					Neiva					Villavicencio				
VARIABLES	N	Mean	Max	Min	Stdv	N	Mean	Max	Min	stdv	N	Mean	Max	Min	Stdv
Cases	84	197.8	491.7	0	0	84	46.37	278.6	0	0	86	400.5	2,270	0	0
Death	84	1.667	3	0	0	84	3.31	5	0	0	86	3.581	7	0	0
R	84	1.636	2.197	1.29	1.293	84	1.636	2.197	1.29	1.293	86	1.639	2.197	1.293	1.29
Groups	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9

Source: Own calculations based on official information from the Ministry of Health. <http://www.ins.gov.co/Noticias/Paginas/Coronavirus.aspx>.

Even though the early measures adopted by Colombia managed to postpone the peak of infections and decrease the spread of the virus, the recent trend of the disease continues to grow exponentially, so it requires joint work between health and economic authorities to mitigate the devastating effects of the pandemic (Chaves, 2020).

Some interventions that the Colombian government has been implementing to mitigate the disaster generated by COVID-19 are the following (Cardenas, 2020):

- Strengthen the health infrastructure. This means having a volume of professionals with the necessary equipment for their protection and, at the same time, increasing the number of ICUs throughout the country.
- Promote social distancing and self-care. Given the high percentages of maximum capacity in the ICUs, it is essential to promote campaigns to not frequent high mobility closed spaces.
- Increase the application of tests to detect the virus and further track the number of contacts. Despite the government's efforts to increase the number of tests, it is necessary to reduce the time lag between disease symptoms and diagnosis while strengthening the traceability of infections and reducing positivity rates.

- Implement policies at the regional level: Many of Colombia's municipalities are COVID-19 free. Therefore, approaches to contain the disease could be implemented more flexibly and according to each region's needs.
- Increase the coverage of economic support programs. Mainly to the poorest and most vulnerable households, which lack social safety nets that would help alleviate the pandemic's harmful effects, as the "Solidarity Income" program has been doing.

To estimate the impact of COVID-19 on the result variable daily infections and deaths, I use the stringency index indicators and their variants calculated by the University of Oxford, described below.

Government Responses Indicators

According to Oxford University research team (2020), the rapid spread of COVID-19 globally has created a wide range of government responses. Standard measures include school closings, travel restrictions, bans on public gatherings, emergency investments in healthcare facilities, new forms of social welfare provision, contact tracing, and other interventions to contain the virus's spread, augment health systems, and manage the economic consequences of these actions.

The Oxford COVID-19 Government Response Tracker (OxCGRT) provides a systematic cross-national, cross-temporal measure to understand how government responses have evolved over the entire period of the disease's spread. The project tracks governments' policies and interventions across a standardized series of indicators and creates a suite of composites indices to measure these responses' extent. Data is collected and updated in real-time by a team of over one hundred Oxford students, alumni and staff, and project partners.

The methodology of the stringency index built by the University of Oxford, the indicators are of three types:

- **Ordinal:** These indicators measure policies on a simple scale of severity/intensity. These indicators are reported for each day a policy is in place. Many have another flag to note if they are "targeted," applying only to a sub-region of jurisdiction, a specific sector, or "general," using throughout that jurisdiction or across the economy.
- **Numeric:** These indicators measure a specific number, typically the value in USD. These indicators are only reported on the day they are announced.
- **Text:** This is a "free response" indicator that records other information of interest.

Table 2 presents the set of indicators used to calculate the stringency index and its corresponding geographic coverage. Data is collected from publicly available sources such as news articles and government press releases, and briefings. These are identified via internet searches by a team of over one hundred Oxford University students and staff. OxCGRT records the source material so that coding can be checked and substantiated. Based on the information reported in Table 2, the following indicators are estimated and used in this work to analyze the Colombian government's response capacity to the pandemic:

- **Government response index:** It is an index composed of nine indicators: school closures, cancellation of public events, closure of public transportation service, confinement, general information campaigns, restriction of international mobility, among others. The indicator is

Government Response Capacity to the COVID-19 Pandemic

Table 2. OxCGRIT Indicators

ID	NAME	TYPE	TARGETED
Containment and closure			
C1	School closing	Ordinal	Geographic
C2	Workplace closing	Ordinal	Geographic
C3	Cancel public events	Ordinal	Geographic
C4	Restrictions on gathering size	Ordinal	Geographic
C5	Close public transport	Ordinal	Geographic
C6	Stay at home requirements	Ordinal	Geographic
C7	Restrictions on internal movement	Ordinal	Geographic
C8	Restrictions on international travel	Ordinal	No
Economic response			
E1	Income support	Ordinal	Sectoral
E2	Debt/contract relief for households	Ordinal	No
E3	Fiscal measures	Numeric	No
E4	Giving international support	Numeric	No
Health systems			
H1	Public information campaign	Ordinal	Geographic
H2	Testing policy	Ordinal	No
H3	Contact tracing	Ordinal	No
H4	Emergency investment in healthcare	Numeric	No
H5	Investment in Covid-19 vaccines	Numeric	Yes
H6	Facial coverings	Text	No
Miscellaneous			
M1	Other responses	Text	No

Source: University of Oxford and Blavatnik School of Government (2020): Variation in government responses to COVID-19.

an average of each of the nine hands and takes values between 0 and 100 to indicate a more significant response from the government. It is important to comment that the indicator does not reflect the effectiveness of the government's response, i.e., the measures were implemented so well and were successful and do not capture the demographic or cultural characteristics that could affect the spread of COVID-19.

- **Stringency Index:** The index measures government policies' rigor but not the effectiveness of a country's response to the pandemic. Values near 100 indicate more stringent measures of the government to address the pandemic. A higher score does not necessarily mean that the country's response is "better" than another country's index close to zero.
- **Containment and health index:** This index is based on the Government Rigor Index, using its nine indicators plus the testing and contact tracing policy. The values are between 0 and 100, so an index close to 100 indicates a higher willingness and capacity of the government to test and trace contacts.
- **Index of Economic Support:** An index composed of 2 indices: income support index and household debt relief. The income support index captures whether the government covers salaries or makes monetary transfers, or delivers some International Bitterness Units IBU people who lost their jobs. The debt relief index records whether the government is freezing financial obligations (loan repayments, service payments, etc.). The index has an ordinal and a binary scale where 0

Government Response Capacity to the COVID-19 Pandemic

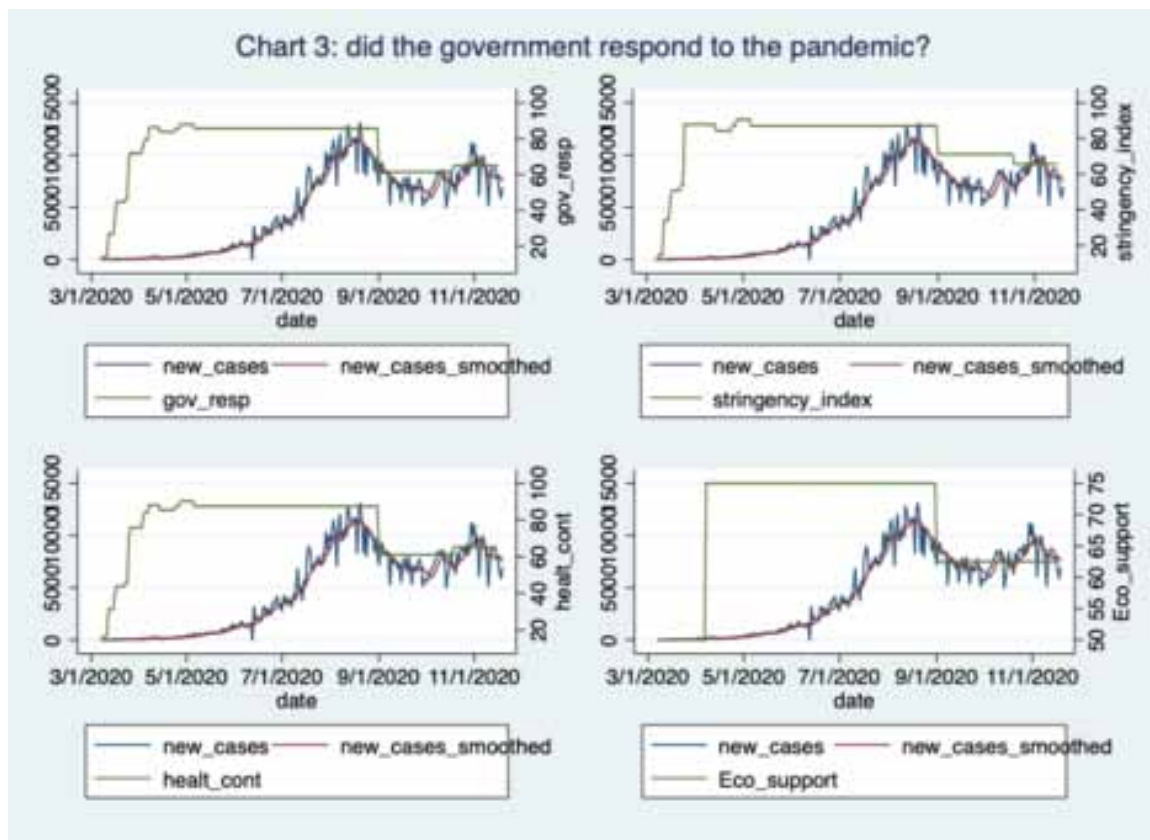
indicates no income support, one if the government replaces less than 50% of the salary, and two if the government replaces 50% or more of the lost income.

A preliminary analysis to detect the government's response capacity to the pandemic consists of describing the trajectory of the indices mentioned above and the number of daily cases of COVID-19. Figure 3 shows the everyday infections and the different indicators of the government's response to COVID-19.

The correct scale measures the different indicators calculated by Oxford University (green line), and the left plate measures the number of daily cases. The Colombian government responded quickly to the spread of the virus, given that since the first cases of contagion, the rate of support has increased significantly. In contrast, the number of infections has grown but has not yet reached its peak. This could reflect that these measures were able to postpone the rise and possibly flatten the infection curve. However, some analysts comment that quarantine was adopted too quickly in Colombia when there were only about 100 cases per day, as reflected in the graph (top left)²It is important to note that when the response rate reaches a maximum close to 100 in May and remains at that level, the peak of infection in Colombia was born in August of last year, reflecting the government's strict stance to contain the virus.

Figure 3. Did the government respond to the pandemic?

Source: Own construction based on official information from the Ministry of Health and the University of Oxford. <https://ourworldindata.org>.



Government Response Capacity to the COVID-19 Pandemic

However, once the height of daily cases is reached, the government's measures are relaxed (reducing the gov_resp index to 60) with the implication of having new infections in the future.

Similar behavior is shown in the graph that relates the number of daily infections and the stringency index that measures how strictly the Colombian government decided school closures, local public transportation and avoided crowding in overcrowded spaces. In addition to the above, the national government imposed three strict quarantines, which would last until the end of August last year (graph at top right).

On the other hand, the graphs below show the government's measures in terms of health (Health_cont index) and economic support (Eco_support) along with the number of daily cases of COVID - 19. The increase in the health containment rate reflected the government's effort to conduct more testing and contact tracing, associated with a higher number of daily cases. In contrast, the spread of the virus (Ro number) increased. However, once the infection peak is reached, the health containment rate drops to a range of 58, reflecting less testing and tracking by the government. Currently, Colombia has a low capacity to test for the virus, and the monitoring of infections remains poor. Indeed, according to the website, our world in data³, the average daily growth rate in the number of tests performed between June 8 and August 8 was 1,31%, while between august 30 and october 16, it decreased by -0.83%. From the end of october until January 10, 2021, the average daily growth in the number of tests performed was 0,24%.

Finally, the graph at the bottom right shows the economic support index and the trajectory of the number of daily infections, reflecting the government's ability to implement measures such as income support that captures whether the government covers part of salaries or makes monetary transfers, or delivers some IBU people who lost their jobs, debt relief from deferment of household financial obligations (loan repayments, service payments, among others) and unconditional cash transfers, especially to the most vulnerable population. In Cardenas and Beltran's research (2020), it is stated that The Central Bank of Colombia, Banco de la República, has cut its policy rate by 175 basis points since march while providing ample liquidity both in domestic and foreign currency. Some of the tools have been to increase terms and quotas in repo operations, allowing more agents to be part of these repo operations. They were doing non-delivery forwards and foreign exchange swap auctions in US dollars. Unlike direct intervention in the foreign exchange market, these options do not imply a reduction in the stock of foreign reserves.

On March 23, the central bank announced that it would outright buy government and private bonds from the market. Additionally, the Central Bank provided a COP 10 trillion (US\$ 2.7 billion) relief to banks by reducing reserve requirements from 11 percent to 8 percent. The government used existing cash transfer programs to provide additional support to low-income households called "ingreso solidario."

Estimating the Impact of Containment Measures

This section estimates the potential impact of containment measures taken by the National Government to respond to the pandemic's spread, such as the establishment of quarantine, various forms of intelligent distancing, and the gradual opening of sectors. In order to validate whether these measures succeeded in reducing the number of infections and deaths, equation seven is estimated, incorporating binary variables that capture the actions' timing. Also, a government response index to the pandemic calculated by the University of Oxford is included, constructed from 17 indicators, such as school closures and travel restrictions in any transportation mode. A composite index takes values between 0 and 100, with deals near 100 indicating a strong government response to the pandemic (University of Oxford and Blavatnik School of Government, 2020).

In order to measure the impact of the government’s isolation and restriction measures on outcome variables, a dynamic model of differences in differences suggested by Cerulli (2017) is estimated for the number of daily infections and deaths, which takes the following form:

$$\ln y_{it} = \mu_{it} + \beta_{-1} Did_{it-1} + \beta_0 Did_{it} + \beta_{+1} Did_{it+1} + \gamma X_{it} + \theta_i + \varepsilon_{it} \quad (1)$$

where the coefficient β_{+1} measures the treatment’s impact a period after it has occurred, β_{-1} measures the treatment’s effect a period before the treatment has occurred, and θ_i captures the fixed group effect; it is assumed that the treatment happens only once throughout the analysis period. Therefore, there will be a sequence of possible treatments over time. Vector X contains a set of control variables such as linear trends, quadratic trends, binary variables that capture different government interventions, and the number of effective reproductions that measure the disease’s transmission rate.

The parameter of interest to be estimated is the ATE (Average Treatment Effect)⁴, which is defined as follows for two potential outcomes w^j y w^k :

$$ATE_{jk} = E[\ln y_{it}(w^j) - \ln y_{it}(w^k)], \forall (i, t) \quad (2)$$

In (2), the treatment occurring only in one period out of three, and one lag and one lead, and it is possible to define six ATEs:

$$\begin{bmatrix} & w^1 & & w^2 & w^3 & w^4 \\ w^1 & - & & & & \\ w^2 & ATE_{21} & - & & & \\ w^3 & ATE_{31} & ATE_{32} & - & & \\ w^4 & ATE_{41} & ATE_{42} & ATE_{43} & - & \end{bmatrix} \quad (3)$$

The generic ATE_{ij} represents the ATE of sequence against the counterfactual line.⁵ j, y $ATE_{ij} = -ATE_{ji}$.

According to Cerulli et al. (2017), the ATEs have a straightforward interpretation from the estimation of the parameters β_{-1} , β_0 , and β_{+1} :

- $\beta_{+1} \neq 0$: Treatment delivered at t affects the outcome at t-1. Current treatment involves past results (anticipatory effect). Therefore, the pre-treatment period is affected by the current treatment.
- $\beta_0 \neq 0$: Treatment delivered at t consists of the outcome at t and shows a simultaneous effect.

Government Response Capacity to the COVID-19 Pandemic

- $\beta_{-1} \neq 0$: Treatment provided at t affects the outcome at $t+1$. Current treatment affects future outcomes (lagged effect). Therefore, the post-treatment period is affected by the current treatment.

In equation (1), the treatment dummy variable Did_{it} is a binary interaction variable that was constructed as follows:

$$D1_{it} \begin{cases} 1 & \text{if } t \geq \text{March 26th} \\ 0 & \text{Otherwise} \end{cases} \quad (4)$$

$$D2_{it} \begin{cases} 1 & \text{if } g > \bar{g} \\ 0 & \text{Otherwise} \end{cases} \quad (5)$$

Therefore:

$$Did_{it} = D1_{it} * D2_{it} \quad (6)$$

In equation 5, the dummy variable takes the value of 1 if the growth rate of infections and deaths g is greater than the average growth rate \bar{g} . Thus, can obtain two groups: Cities with infection and death growth rates above the national average (treatment group) and cities with growth rates below the average (control group). In this way, the Did_{it} variable of interest captures the effect of confinement measures and restrictions on the outcome variables (infections and deaths) of those cities that present the highest growth rates in these variables.

Table 3 presents the results of the estimation of the impact of government interventions on the number of daily infections by COVID-19 (equation 1), using the method suggested by Cerulli et al. (2017). The interventions' impact is reflected in the estimated values of the parameters that accompany the binary variable of interaction in different periods. In this case, the variables D_s measure the previous and subsequent impact on the outcome variable once the government implements Government intervention.

The sign and magnitude of the estimated parameter that accompanies the variable Did in the equation estimated by fixed effect, which turned out to be statistically significant and different from zero. On average, the government's treatment (lockdown) generated a drop in the number of daily cases of COVID - 19 of 22%, which is statistically significant and different from zero to 1% of significance, in the case of the model estimated by fixed effects.

The magnitude of the impact of the virus containment measures implies that the cities with a greater increase in the number of infections that quickly implemented the intervention measures managed to reduce the average number of infections by about 5,3% and 4,2% in two next periods (estimated parameters accompanying the variables D_{F3} and D_{F2}), keeping all other factors constant. This implied that the treatment (measure) implemented by the government affected reducing infections in the following periods. That is, the post-treatment period is affected by the current treatment.

The treatment delivered at t affects the outcome at $t+1$ is presented in the estimation of the parameters accompanying the variables D_Ls and implies that the current treatment involves future outcomes (lagged effect). Therefore, the post-treatment period is affected by the current treatment. The results show that the signs of the estimated parameters accompanying the D_Ls variables are as expected. Once implemented the government intervention, the measure managed to reduce infections by 8,5%, one period behind and 11,4% three periods back.

Other measures adopted by the government were also included, such as school closures (*clscoll*) and a pandemic response indicator (IRG) calculated by the University of Oxford.¹³ In the case of school closures, the estimated parameter showed a negative sign. The measure generated a reduction in the number of infections; however, this measure is not statistically significant. For its part, the government's response to the pandemic effectively reduced the number of infections in the estimates obtained by OLS.

The remaining control variables have the expected sign and were statistically significant and different from zero. For example, the number of effective reproduction (R) has a positive sign, which indicates that an increase in its value implies an increase in the number of daily cases of COVID-19. This means that an increase of one unit in R generated an increase in the number of infections of 2,3⁶ in the model estimated by OLS. On the other hand, the dummy variables IRG (stringency index) and school closure (*clscoll*) have the expected sign (negative) only in the estimation by OLS.

Table 4 presents the impact of the intervention measures on deaths using the dynamic method suggested by Cerulli et al. (2017). The negative implications only turned out to be statistically significant in a new way and presented the expected sign (negative) in the equation estimated by fixed effect for D_{F3} , D_{F1} , D_{L2} , and D_{L3} . This implies that, on average, the measure generated a fall in the number of deaths, and therefore, the pre-treatment and post-treatment were able to affect the current treatment.

The impact of the government's response measured through the IRG index generates a lagging effect on deaths. However, its magnitude is minimal since the approximate reduction in the number of deaths from COVID-19 was only 0.012%. The fact that the containment measures on the death equation were not significant could imply that many deaths had a history related to primary diseases. Some people recovered satisfactorily, which should be studied in a future research agenda based on other models that capture these factors

Tables 5 and 6 present the results in estimating the Average Treatment Effect (ATE) for the outcome variables infections and deaths (see equation 2).

The ATE for the number of infections is presented in Table 5 and implies that the average impact on reducing daily infections was -0,331. This means that the cities with the highest growth rate in infections and that we implemented the interventions could reduce infections by 33,1% compared to those with low rates of increase in diseases. It is important to note that although the magnitude of the impact is essential, it is not statistically significant and different from zero for daily infections. It is necessary to mention that although the final effect on infections is not statistically significant and diverse from zero before the government implemented the containment measure, the difference between cities with high and low infection rates was in the magnitude of 2,02 percentage points and statistically significant at 1% of significance.

The above result showed the government's ability to react to the COVID-19 pandemic by implementing containment measures, closing schools and overcrowded spaces, and generating methods for tracking the disease.

The ATE for daily deaths is presented in Table 6 for the treatment (cities with high growth in deaths) and control (cities with low growth rates) groups. The impact estimation results reveal that 0,84 percent-

Government Response Capacity to the COVID-19 Pandemic

Table 3. Impact of Government Interventions on COVID-19 infections

	(1)	(2)
VARIABLES	OLS	Fixed Effects
_D_F3	-0.0378	-0.0531***
	(0.951)	(0.00154)
_D_F2	-0.0531	-0.0422***
	(0.951)	(0.00271)
_D_F1	0.423	0.396***
	(0.964)	(0.0214)
Did	-0.339	-0.216***
	(0.974)	(0.0188)
_D_L1	-0.0272	-0.0853***
	(0.970)	(0.00520)
_D_L2	0.0769	0.0377***
	(0.970)	(0.00582)
_D_L3	-0.106	-0.114***
	(0.970)	(0.00338)
_D_L4	0.389	0.548**
	(0.698)	(0.177)
Closcoll	-0.0396	0.196*
	(0.405)	(0.0877)
L.closcoll	-0.383	-0.00244
	(0.396)	(0.0389)
T	0.00735	0.0425***
	(0.00568)	(0.00314)
t2	-4.79e-05***	-0.000114***
	(1.78e-05)	(5.35e-06)
R	4.236***	1.214**
	(0.395)	(0.363)
IRG	-0.0228***	0.0101
	(0.00460)	(0.00556)
L.IRG		0.00693**
		(0.00272)
Constant	-1.869***	-1.680***
	(0.535)	(0.216)
Observations	2,087	2,087
R-squared	0.592	0.960
Number of City		9
City FE		YES
Robust standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

Source: Own calculations based on official information from the Ministry of Health.

Government Response Capacity to the COVID-19 Pandemic

Table 4. Impact of Government Interventions on COVID-19 Deaths

	(1)	(2)
VARIABLES	OLS	Fixed Effects
_D_F4	1.398***	0.507**
	(0.492)	(0.193)
_D_F3	-0.671	-0.682**
	(0.573)	(0.204)
_D_F2	0.517	0.526**
	(0.557)	(0.178)
_D_F1	-0.204	-0.224***
	(0.627)	(0.0558)
Did	0.00899	0.104**
	(0.627)	(0.0436)
_D_L2	-0.133	-0.162***
	(0.637)	(0.0381)
_D_L3	-0.206	-0.212***
	(0.576)	(0.0569)
_D_L4	0.686*	0.934**
	(0.390)	(0.341)
closcoll	0.236	0.543***
	(0.227)	(0.108)
L.closcoll	-0.169	0.121
	(0.222)	(0.0916)
T	-0.00322	0.0227***
	(0.00395)	(0.00505)
t2	-2.71e-05**	-7.10e-05***
	(1.23e-05)	(1.09e-05)
R	3.809***	1.499**
	(0.286)	(0.551)
IRG	-0.0251***	0.00873
	(0.00378)	(0.00583)
Constant	-2.939***	-3.302***
	(0.412)	(0.613)
Observations	2,087	2,087
R-squared	0.533	0.822
Number of City		9
City FE		YES
Robust standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		
Source: Own calculations based on official information from the Ministry of Health.		

Government Response Capacity to the COVID-19 Pandemic

Table 5. Difference and differences estimation results

Table 5: DIFFERENCE-IN-DIFFERENCES ESTIMATION RESULTS
 Number of observations in the DIFF-IN-DIFF: 2097

	Before	After		
Control:	1040	125	1165	
Treated:	832	100	932	
	1872	225		

Outcome var.	lncases	S. Err.	t	P> t
Before				
Control	4.329			
Treated	6.357			
Diff (T-C)	2.027	0.074	27.27	0.000***
After				
Control	1.465			
Treated	3.161			
Diff (T-C)	1.697	0.214	7.91	0.000***
Diff-in-Diff	-0.331	0.227	1.46	0.145

R-square: 0.42
 * Means and Standard Errors are estimated by linear regression
 Inference: * p<0.01; ** p<0.05; * p<0.1

Table 6. Difference and differences estimation results

Table 6: DIFFERENCE-IN-DIFFERENCES ESTIMATION RESULTS
 Number of observations in the DIFF-IN-DIFF: 2097

	Before	After		
Control:	1040	125	1165	
Treated:	832	100	932	
	1872	225		

Outcome var.	lndeath	S. Err.	t	P> t
Before				
Control	1.337			
Treated	2.895			
Diff (T-C)	1.559	0.055	28.42	0.000***
After				
Control	0.193			
Treated	0.911			
Diff (T-C)	0.718	0.158	4.54	0.000***
Diff-in-Diff	-0.841	0.167	5.02	0.000***

R-square: 0.36
 * Means and Standard Errors are estimated by linear regression
 Inference: * p<0.01; ** p<0.05; * p<0.1

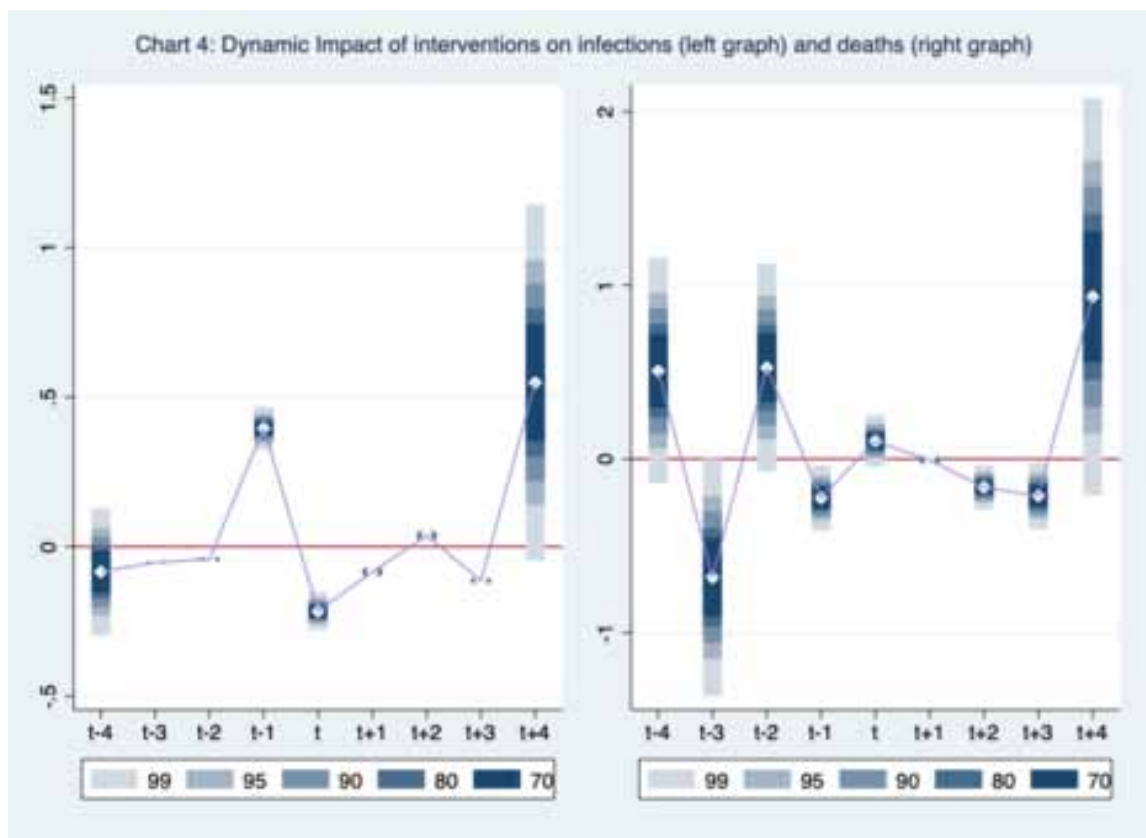
Source: Own calculations based on official information from the Ministry of Health

age points reduced the number of fatalities once established government interventions in those cities with a significant growth rate in deaths.

The dynamic effect of government intervention to mitigate the adverse impact of COVID-19 is presented in Figure 4, where it is represented the results plotting the lags and lead coefficients with 99, 95, 90, and 70 confidence intervals.

Figure 4. Dynamic impact of interventions on infections (left graph) and deaths (right graph)

Source: Own calculations based on official information from the Ministry of Health



The pre-treatment pattern lays around zero for contagion and death variables, which possibly indicates a small impact initially but strengthens over time. The post-treatment pattern shows a positive effect of the intervention, especially for the death variable, since it could reduce the average growth rate in this outcome variable.

SOLUTIONS AND RECOMMENDATIONS

The pandemic has created a formidable policy challenge to keep the economy afloat while lessening its effects on citizens' health. Containment was a necessary measure to soften the rising infection rate while preparing the health infrastructure to cope with its health effects. However, this should be a temporary measure because it can generate permanent impacts on the economic structure with perverse consequences in the long run.

For the duration of the confinement, it will be necessary to make good transfers to paralysis-affected households. It will also be essential to support firms through credit guarantees and payroll subsidies to avoid their destruction and the consequent loss of jobs.

Government Response Capacity to the COVID-19 Pandemic

In parallel, investment in health infrastructure and a testing program to better manage the health crisis must continue to be maintained. However, the government will not be able to place the economy on its shoulders for many months, as its excessive indebtedness will also have repercussions for the future. It is necessary to ease the isolation to activate economic activity, but with the measures required to keep the pandemic under control.

This analysis is a first approximation of the impact generated by the preventive isolation decreed by the national government in the context of the COVID-19 pandemic. However, it ignores the fact that the effects are differential depending on the regions of the country. Therefore, a methodology could be implemented, by a regional input-output model, to analyze supply and demand shocks through the matrix of intermediate consumption and final demand. Similarly, this methodology would allow inter-sectoral relationships to be taken into account to determine aggregate effects on output. From the creation of isolation scenarios of current employees in the different sectors, the change in the production due to the confinement of that labor force compared to the initial state could be determined. This research does not consider increases in public spending or direct aid that the government may be carrying out to mitigate the crisis. These measures are interesting to study if the economic impact of COVID-19 on the Colombian economy is to be measured or qualified.

Similarly, this research does not analyze the impact of confinement on the labor market, which manifested itself in a significant increase in the unemployment rate and loss of income for many households affected by the confinement measure. Indeed, future analysis should include, for example, the direct effect of containment on vulnerable sectors and the indirect effect, via reduced demand, on the rest of the industries that generate a generalized fall in demand for labor. Thus, confinement measures hurt workers' incomes, directly impacting poverty in the country.

FUTURE RESEARCH DIRECTIONS

The current crisis is, in essence, a supply-side crisis since the central policy governments resorted to contain the spread of the virus was confinement. The major policy resorted to by governments to prevent the spread of the virus was confinement, with a sudden halt to production. Under these conditions, the subsequent effect was a fall in corporate and household incomes, thus curbing investment and consumption. By restricting production and wealth generation, governments necessarily became the guarantors of last resort. Governments necessarily became the guarantors of last resort for businesses and households through a wide variety of easing policies in limiting production and wealth generation.

In addition to its devastating effects, the pandemic has generated significant uncertainty. Although a vaccine already exists, there is still an uncertain path to so-called 'herd immunity, and it may even be unattainable. The authorities will thus have to alternate between total or partial isolation and openness, seeking to balance the adverse health effects of the spread of the virus with the negative impact on the economy. There will likely be 'new normality in the long term, although it is difficult to foresee how this will be achieved. Many things will not be the same as before, since some protective measures will be maintained (for example, the use of masks and prohibition of crowds), and social and work customs will be different (for instance, concerning the attendance at restaurants and public shows or teleworking).

Future research agenda could include an evaluation of the impact of the vaccination program on some outcome variables like the future course of the labor market as manifested in a higher rate of employment generation and the gradual rebound of economic activity, as well as a reduction in poverty levels.

It is interesting to measure the impact of the government's economic measures to contain the harmful effects of the pandemic and some signs of recovery that could present the Colombian economy in the coming years. It is also striking to measure the social costs, such as poverty and inequality, which could show a massive setback in terms of the goals achieved during the last fifteen years, which will undoubtedly affect its long-term economic development.

On the other hand, the work neglects aspects of people's use of time in confinement to measure, for example, whether virtual work improved or deteriorated people's productivity. One option is to explore the surveys that the National Administrative Department of Statistics (DANE) has been conducting on using the time of people in quarantine, which has been applied since August 2020.

CONCLUSION

Colombia responded to the COVID-19 pandemic by increasing testing, establishing strict containment measures, contact traceability, and increased ICU capacity.

The effect of the government's response to the pandemic on infections has a significant dynamic impact over time once implemented. The pre-treatment period was significantly affected by the current treatment. The effects of quarantine in the periods following its implementation ($t + 1$) were equally important, resulting in a cumulative drop in the number of infections after the impact of 12,3%. It is concluded that the post-treatment period had a significant effect on the number of infections once the confinement measure was implemented, whose effect on the variable resulting from deaths was weak. This implies that many deaths had a history related to primary diseases and that some affected persons recovered satisfactorily, which should be studied from other models that capture these factors outside of this work.

Like many other countries, Colombia responded to the COVID-19 pandemic through increased testing, the establishment of strict containment measures, contact traceability, and increased ICU capacity. It appears that Colombia's containment strategy was taken very early, given the severity of the pandemic compared to other countries, which remains one of the most stringent measures. However, due to recent trends in the spread of the virus, there are some signs with the pandemic's management since the positivity rate of the disease has been located above 10%. Although there is no clear answer to how many tests should be performed, the World Health Organization (WHO) suggests that countries should test to keep positivity rates below 10%.

REFERENCES

- Acemoglu, D., Chernozhukov, V., Werning, I., & Whinston, M. D. (2020). A Multi-Risk SIR Model with Optimally Targeted Lockdown. *Cemap working paper, The Institute for Fiscal Studies. Department of Economics, UCL, CWP14(20)*, 1–60.
- Alvarez, F. E., Argente, D., & Lippi, F. (2020). A Simple Planning Problem for COVID-19 Lockdown. *National Bureau of Economic Research, Working Paper 26981*, 1-33.
- Aum, S., Lee, S. Y., & Shin, Y. (2020). Inequality of Fear and Self – Quarantine: Is There a Trade – Off between GDP and Public Health? *National Bureau of Economic Research, Working Paper 27100*, 1-31.

Government Response Capacity to the COVID-19 Pandemic

Avery, C., Bossert, W., Clark, A., Ellison, G., & Ellison, S. F. (2020). Policy Implications of Models of the Spread of Coronavirus: Perspectives and Opportunities for Economists. *National Bureau of Economic Research, Working Paper 27007*, 1-45.

Baldwin, R., & di Mauro, W. B. (Eds.). (2020). *Mitigating the COVID Economic Crisis: Act Fast and Do Whatever it Takes*. London, UK: Centre for Economic Policy Research.

Bardey, D., Fernández, M., & Gravel, A. (2020). *COVID 19: Some Data Analysis*. <https://sites.google.com/view/covid19somedataanalysis/home>

Berger, Herkenhoff, & Mongey. (2020). An SEIR Infectious Disease Model with Testing and Conditional Quarantine. *National Bureau of Economic Research, Working Paper 26901*, 2-29.

Bethune & Korinek. (2020). Covid-19 Infection Externalities: Trading Off Lives vs. Livelihoods, *National Bureau of Economic Research, Working Paper 27009*, 1-36.

Bodenstein, M., Corsetti, G., & Guerrieri, L. (2020). *Social Distancing and Supply Disruptions in a Pandemic*. Finance and Economics Discussion Series 2020-031. Board of Governors of the Federal Reserve System. doi:10.17016/FEDS.2020.031

Bonet-Moron, J., Ricciulli-Marin, D., Pérez-Valbuena, G., Galvis-Aponte, L., Haddad, E., Araújo, I., & Salgueiro, F. (2020). *Impacto económico regional del COVID 19 en Colombia: Un análisis insumo – producto*. Documentos de Trabajo sobre Economía Regional y Urbana, Banco de la República, No. 288.

Cardenas, M., & Martinez, H. (2020). COVID – 19 in Colombia. Impact and Policy Responses. *Center for Global Development*, (Jul), 1–18.

Cerulli, G., & Ventura, M. (2017). *Estimation of pre and post-treatment Average Treatments Effects (ATEs) with binary time-varying treatment using STATA*. <https://journals.sagepub.com/doi/10.1177/1536867X19874224>

Chang, R., & Velasco, A. (2020). Economic Policy Incentives to Preserve Lives and Livelihoods. *National Bureau of Economic Research, Working Paper 27020*, 1-23.

Chari, V. V., Kirpalani, R., & Phelan, C. (2020). The Hammer and the Scalpel: On the Economics of Indiscriminate versus Targeted Isolation Policies during Pandemics. *National Bureau of Economic Research, Working Paper 27232*, 1-27.

Chaves, A. (2020). Análisis sobre la evolución del COVID – 19 en Colombia: ¿se alcanzará el pico de contagio? *Revista Tiempo & Economía*, 8(1). <https://revistas.utadeo.edu.co/index.php/TyE/article/view/1672>

Cordovez, J., Santos, M., Bravo, C., & Cascante, J. (2020). *¿Es la prolongación de la cuarentena la solución al problema?: Modelación COVID 19 en Bogotá*. Grupo de Biología Matemática y Computacional – BIOMAC, Universidad de los Andes. https://uniandes.edu.co/sites/default/files/asset/document/modelo_matematico.pdf

Eichenbaum, M. S., Rebelo, S., & Trabandt, M. (2020). The Macroeconomics of Epidemics. *National Bureau of Economic Research, Working Paper 26882*, 1-41.

- Farboodi, M., Jarosch, G., & Shimer, R. (2020). Internal and External Effects of Social Distancing in a Pandemic. *Becker Friedman Institute for Economics. University of Chicago Working Paper, Technical Report 2020-47* 2020, 1-36.
- Fernández-Villaverde & Jones. (2020). Estimating and Simulating a SIRD Model of COVID-19 for Many Countries, States, and Cities. *National Bureau of Economic Research, Working Paper 27128*, 1-58.
- Garriga, C., Manuelli, R., & Sanghi, S. (2020). Optimal Management of an Epidemic: Lockdown, Vaccine and Value of Live. *HCEO Working Paper Series. The University of Chicago*, (May), 1–57.
- Gregory, V., Menzio, G., & Wiczer, D. (2020). Pandemic Recession: L or V – Shaped? *National Bureau of Economic Research, Working Paper 27105*, 1-21.
- Hornstein, A. (2020). Social Distancing, Quarantine, Contact Tracing, and Testing: Implications of an Augmented SEIR-Model. *Technical Report. Federal Reserve Bank of Richmond*, 20(May), 1–38. doi:10.21144/wp20-04
- Hurwicz, L. (1962). On the Structural Form of Interdependent Systems. In *Logic, Methodology and Philosophy of Science*, Vol. 44 of *Studies in Logic and the Foundations of Mathematics* (pp. 232 – 239). Elsevier.
- Korolev, I. (2021). Identification and Estimation of the SEIRD Epidemic Model for COVID-19. *Journal of Econometrics*, 63-85.
- Kucinskis, S., Arroyo, F., Bullano, F., & Rondón-Moreno, C. (2020). *Tracking R of COVID-19: A New Real-Time Estimation Using the Kalman Filter*. <https://ssrn.com/abstract=3581633>.
- Lin, Z., & Meissner, C. (2020). Health vs Wealth? Public Health Policies and the Economy During Covid 19. *National Bureau of Economic Research, Working Paper 27099*, 1-64.
- Linton, O., & Li, S. (2020). *When will the COVID-19 pandemic peak?* Cambridge Working Papers in Economics: 2025.
- Liu, L., Moon, H., & Schorfheide. (2020). Panel Forecast of Country-Level Covid- 19 Infections. *National Bureau of Economic Research, Working Paper 27248*, 1-25.
- Ludvigson, S., Ma, S., & Ng, S. (2020). Covid19 and the Macroeconomic Effects of Costly Disasters. *National Bureau of Economic Research, Working Paper 26987*, 1-22.
- Stock, J. H. (2020). Data Gaps and the Policy Response to the Novel Coronavirus, *National Bureau of Economic Research, Working Paper 26902*, 1-10.
- Toda, A. A. (2020). *Susceptible-Infected-Recovered (SIR) Dynamics of COVID-19 and Economic Impact*. <https://arxiv.org/pdf/2003.11221.pdf>
- University of Oxford. (2020). *Our World in Data. Coronavirus Pandemic (COVID – 19)*. <https://our-worldindata.org/coronavirus>
- University of Oxford & Blavatnik School of Government. (2020). *Variation in Government Response to COVID – 19*. BSG-WP – 2020/032: <https://www.bsg.ox.ac.uk/research/publications/variation-government-responses-covid-19>

Government Response Capacity to the COVID-19 Pandemic

Zuleta, H. (2020). *Recesión y recuperación en tiempos del Coronavirus. ¿Es el momento de reformas profundas? Foco Económico*. <https://focoeconomico.org/2020/06/09/recesion-y-recuperacion-en-tiempos-del-coronavirus-es-el-momento-de-reformas-profundas/>

Zuleta, H., Alvarez, A., León, D., Medellín, M., & Zambrano, A. (2020). *El coronavirus en Colombia: Vulnerabilidad y opciones de política*. PNUD LAC C19 PDS No. 1.

KEY TERMS AND DEFINITIONS

ATE: The average treatment effect (ATE) is a measure used to compare treatments (or interventions) in randomized experiments, evaluation of policy interventions, and medical trials. The ATE measures the difference in mean (average) outcomes between units assigned to the treatment and units assigned to the control.

Contagious: Transmission of a disease by contact with the pathogen that causes it.

Containment Measures: Decisions taken by the government to isolate people from crowded places to prevent the spread of disease.

Difference in Differences: Is a statistical technique used in econometrics and the social sciences that attempts to mimic an experimental research design, by studying the differential effect of a treatment on a ‘treatment group’ versus a control group in a natural experiment.

Lockdown: A state of isolation or restricted access instituted as a security measure.

Response Capacity: Government’s ability to respond quickly to a public health problem generated by a pandemic.

Response Indicator: Variable or indicator of interest used to measure the response to a government-imposed policy measure.

ENDNOTES

- ¹ Daily official statistics reported by the Ministry of Health: <http://www.ins.gov.co/Noticias/Paginas/Coronavirus.aspx>.
- ² The gov_response indicator can be interpreted as an average of the other indices.
- ³ <https://ourworldindata.org/coronavirus>. Reports daily information on COVID 19 cases and deaths for Colombia.
- ⁴ The equation is equivalent to estimating the parameters β_{-1} , β_0 , and β_{+1} and verifying if they are statistically significant and different from zero.
- ⁵ In this chapter, the following counterfactual is postulated: what would have happened to the number of daily infections and deaths if the government had not established the confinement measures?
- ⁶ For example, if the R number value is 2, so one sick person can infect two more people. The higher the R-number, the greater the spread of the disease.

Chapter 9

Transformation of the Globalization Process: Pandemic as a Game Changer?

Ilena Švihlíková

University College of Business in Prague, Czech Republic

ABSTRACT

This chapter focuses on the analysis of the globalization process as a phenomenon of the recent decades. The chapter starts with an analysis of the roots of globalization, which are a combination of economic policies and labour-saving technologies. Then the most powerful actor, the transnational company, is introduced, followed by the analysis of their position in the world division of labour. Special attention is given to the changes brought by financial crises, especially the Great Recession. The changing nature of globalization is demonstrated also via the challenges presented by the COVID-19 pandemic. At the end, the author presents possible future scenarios, applying them on the Czech Republic, as a country strongly connected with the world economy and placed in the position of a dependent economy.

INTRODUCTION

The goal of this chapter is to outline future scenarios regarding the process of globalization and on this basis present recommendations for the Czech Republic, which is an open economy strongly integrated into the world economy.

To achieve this goal the process of globalization and its roots have to be analysed and understood. Furthermore, special attention is given to the COVID-19 pandemic that may be a game changer when it comes to the international division of labour.

The globalization process is a complex one, intertwining economic, financial, technological, social and political spheres. The author defines the globalization as a dynamic process with technological-economic core that has ambiguous impacts on the economic, social and political sphere (Švihlíková, 2010). The roots of the process can be found in the 70's. The 70's are a highly problematic decade. This decade is an illustration of problems' concentration. The Bretton-wood system of fixed exchange rates

DOI: 10.4018/978-1-7998-8339-5.ch009

Transformation of the Globalization Process

breaks down and paves way for flexible exchange rate regimes and a different position of the central banks. In the framework of the European integration first steps are made towards the goal of common currency, first in the form of the European monetary system. The breakup of the Bretton-wood system causes financial chaos and instability and questions the post-war economic order.

Further problematic features of the 70's include the oil shocks. The aim of this chapter is not to describe the evolvement of OPEC and its position on the world oil market. Rather, the consequences of both of the oil price shocks are relevant. The oil shocks resulted in stagflation, a new phenomenon combining economic stagnation with inflation. This new combination led to a reformulation of monetary policy stance and later to a whole different view of economy and the role of the state.

The complicated decade also marks an end to the post-war recovery and the "golden" years that meant high employment, increasing living standards and high economic growth on the background of labour-creating technologies. In most developed countries we see a structural shift towards the service sector. The service sector gains prominence in the developed economies, being the most important in terms of GDP ratio or employment. However, decline in the heavy industry (mining) leads to the origins of structural unemployment.

These profound changes in the economic environment are accompanied by new technological achievements that mark a shift towards labour saving technologies. Examples could be a microprocessor, or a personal computer. The spread usage of container shipping is widely underestimated, although it was one of the key preconditions for new division of labour controlled by the transnational corporations.

The objective conditions of labour-saving technologies were completed by a profound change in economic policies. Keynesian policies characterized by progressive taxation, government interventions and strong social policy fell into disgrace. The new policy mix combined features from monetarism and supply side economics. Neoliberal policies, practised firstly by the New right (personalized by Margaret Thatcher in the UK and Ronald Reagan in the US), presented practically an antithesis to the Keynesian economic and philosophical view.

Neoliberal policies put emphasis on the market, supporting policies of deregulation, liberalization and privatization. The state and its economic role were to become smaller, as well as the position of trade unions. Less care was shown for social problems (unemployment) and more for the inflation and structural economic change. It were these policies that opened way for globalization and a stronger expansion and influence of transnational corporations. With deregulation of financial flows, it became easier to invest abroad, or to even shift parts of the production to cheaper countries. At the same time, technological achievement enabled systemic decline in transport costs, modern IT technologies facilitated control from abroad.

The core of neoliberal recipes is concentrated in the so-called Washington Consensus, created by the US ministry of finance, World Bank and International monetary fund. This "neoliberal bible" was then used for the transforming countries (after the fall of the Eastern block) at the beginning of the 90's. The Czech Republic (at that time Czechoslovakia) was one of those countries, thus it is important to mention it in the context of this chapter. The neoliberal dominance even strengthened because of the fall of the alternative system, as though it were following the words of the British prime minister "there is no alternative." It is important to state that the countries of the former Eastern block were integrating into a world already dominated by transnational corporations, which controlled the world division of labour. Thus, the hierarchy of the world economy was established already.

In the 80's there were already visible problems concerning the new economic approach. The debt crises in the south American countries and the following "structural adjustment programmes" by IMF

saw the penetration of the neoliberal approach and the strong involvement of international organizations like the WB or IMF, the purposes of which were originally very different.

The beginning of globalization marks a very important change in one of the most crucial indicators, in the labour income share. The labour income share is an indicator widely used in the political economy, as it defines how much of the product goes to the labour and how much to the capital. Since the 70's in all developed countries we see a reversal in trend. Labour income share starts falling, which is an indication of a weaker position of labour. There is a profound discussion going on what are the reasons for this development. Globalization is undoubtedly one of the factors contributing to the weakening of labour in developed countries.

BACKGROUND

The topic of globalization is highly controversial. Both in the decisive sphere and on the academic level we can encounter very different opinions, which then lead to different economic policies and policy recommendations.

When we talk about globalization and the international division of labour, we have stress that the discourse is necessarily marked by interests of many groups. As mentioned in the introduction, the neoliberal era, which enabled globalization is connected with the interests of capital. On the other hand, the advocates of labour and its position are getting weaker (trade unions typically). This can be seen on the declining labour income share in all developed countries. Globalization brings competition to ordinary workers, jobs were shifted to cheaper foreign countries. Some countries even lost their industrial backbone (typically US, UK).

Further, we have to take into consideration the shift in paradigm in one institution itself. This “development” can be well seen in the IMF. IMF has changed its position profoundly. In the 80's it became together with the World Bank a main advocate of neoliberal policies. IMF had not only theoretical but also practical tools (structural adjustment programs, when IMF served as a lender of last resort) to force a country to accept neoliberal policies (one size fit for all). This pressure continued through the 90's, although the criticism grew, even from prominent economists. Well-known example is the American economist, Joseph Stiglitz. He summarized his critique in now famous book *Globalization and its discontents*, which represented a breakthrough. However, the political position of IMF did not change, rather leading to campaigns against Joseph Stiglitz.

Change both in the theoretical discourse and economic recommendations is presented by the Great Recession. Needless to say, the IMF, who never foresaw any crisis, gave very different economic policy recommendations when it was the US, who was severely hit by the crisis (and where the crisis actually originated) and when it were countries of south-east Asia. After the Great Recession, the IMF slowly changed (Dabla-Norris, 2015) its position, focusing more on the questions of inequality and its connections to economic growth, even rejecting the “trickle down policy.” We can view similar development by some economists as well, e.g. Jeffrey Sachs. Sachs was a proponent of neoliberal policies. His quotation about “jump into the market economy” is relatively known. However, later on Sachs becomes critical of the simple neoliberal policies and IMF's recommendation, as witnesses by his opinions on the solution of the Greek debt crisis.

There were institutions with different and more critical views than the IMF and World Bank. International Labour Organization was drawing attention to the decline in labour income share, in trade union

Transformation of the Globalization Process

density and rising inequality. UNCTAD and its Trade and development reports were offering a different view of the world economy development from the neoliberal mainstream in many issues, e.g. the global imbalances, financial crises and their solutions or ISDS clauses.

Further, there were critical voices of academics with broader view, not taking into consideration only economic issues, but rather focusing on the interconnections between the economic sphere and changes in the society. In this context we may mention Noam Chomsky, or Zygmund Bauman. Bauman's book *Globalization: The human consequences* belongs to the most important critical works, published already in the predominantly neoliberal 90's.

However, not staying only in the English-speaking environment, critical view was also presented by the German author, Hans-Peter Martin, in his book "Die Globalisierungsfalle" (in English *The global trap*). The author concentrates on topics that were not so visible in the 90's – the economic divide in the society (described in the metaphor of 20/80 society) and the decline of political and economic power of the nation state. As this article deals also with the Czech economic situation and its model, it is necessary to mention at least a few critical economists. One of the most notable was Miloš Pick, critique of the neoliberal transformation from the start, offering different procedures for the transformation process. His book "Stát blahobytu, nebo kapitalismus?" (*The welfare state, or capitalism?*) is a series of expert articles and studies that comment the ongoing economic events and provides a deep insight into the transformation process of Czechoslovakia, later the Czech Republic. More critical stance towards neoliberal globalization can also be found in the studies of trade union economists (M. Fassmann, J. Ungerman). The ČMKOS' (Czech-Moravian Confederation of Trade Unions) economists belong to those, who have been not satisfied with the position of the Czech Republic in the international division of labour, pointing to a large difference between the economic indicator of GDP per capita and the wage level. The economist, Růžena Vintrová, opposed austerity policies and focused on the importance of domestic demand, whereas Eva Klvačová and her team engaged in the topic of rent-seeking, both as a global phenomenon and as a domestic problem.

The economists, Robert O'Brien and Marc Williams offered in their book *Global political economy* a long-term view of the international economy development. The Korean author, Ha-Joon Chang, concentrated on the issues of economic development in a hierarchical international division of labour, studying examples of economies and economic policies that contributed to "climbing the ladder." He confirms the historically strong role of the state and the importance of developmental strategies, like e.g. the application of infant industry theory. However, after the country was able to achieve the higher position, its interest lies in "kicking away the ladder" and supporting liberal economic conditions, so that other countries would not follow suit. This book offers valuable insights in the developmental policy, which increases its importance for countries that want to change their unfavourable position in the international division of labour.

TRANSNATIONAL CORPORATIONS: DIVISION OF LABOUR IN THE GLOBALIZATION ERA

This chapter deals with presumably the most important actor in the globalization era, with the transnational corporations. It is true that transnational corporations are not exclusively connected with the globalization era, with its roots in the 70's. However, their expansion, their rise in power and in the ability to shape the international division of labour is connected with globalization.

Transnational corporation can be defined as a big company, with a mother company (mostly in a developed country) and affiliates. The mother company controls the affiliates. Transnational corporations operate worldwide, they perceive the market as global, use economies of scale and can use their dominant market position.

It was the former chief of World Trade Organization, Pascal Lamy, who draw attention to the fact, that the division of labour has changed profoundly. He said: "We still think in terms of Adam Smith's world of trade between nations, but in reality most trade now takes place within globe-spanning multinational companies and their suppliers. It is not competition between China and the US that is relevant, so much as competition between Nokia's and Samsung's value chains. Instead of "Made in China" on the back of an iPhone, the label should read "Made in the World", reflecting Japanese microchips, US design, Korean flat-screens and Chinese assembly." (Lamy, 2010).

The division of labour via affiliates is not the only option. In some cases, e.g. the textile industry, the global value chains are more suitable. The companies included in the chain are not in a position of an affiliate, but fulfil the role of a cheap supplier, e.g. from countries like Bangladesh.

There are three motives to shift an affiliate abroad. Historically the most important, witnessed e.g. by the Seven sisters, was of course the resource seeking. This motive means that production, technology needs to be transferred to countries that dispose of a certain primary commodity, like the oil.

For the globalization era there are two more motives typical. One of them is the market seeking motive. This motive reflects growing purchasing power in some countries, with vast and interesting markets. However, the most significant motive is definitely the efficiency seeking one. It was this motive that made the incentive to transfer production/parts of production to cheaper countries. Efficiency can be connected with labour costs, with the absence of trade unions, or with the absence of social insurance. Further, it can mean the tolerance of child labour (especially in the textile industry in many south-east Asian countries) or some tax incentives, even tax holiday. It is this motive that demonstrated the often criticized "race to the bottom."

The expansion of transnational corporations, which, just to remind, would not have been possible, without a profound change in economic policies, including liberalization of capital flows, and the objective conditions like the container shipping and IT technologies, has dramatically changed not only the division of labour, but also the balance of power between the state and these companies.

In the last thirty years we have witnessed it is the states that compete against each other for foreign direct investments that are used as tools by transnational companies. When we talk about competitiveness, we usually mean the competitiveness of a state, valued and ranked by "experts" and managers across the globe. The recommendations do not concern much the living standard of citizens of the given country, or their preference, but rather favourable conditions for transnational companies and their activities. The nation state is getting in a weaker position, its economic manoeuvring space is limited, which has severe implications on the political situation. Citizens in developed countries have their socio-economic expectations linked to the state (although in different intensity across countries). The decreasing ability of the state to influence and shape economic conditions is threatening the legitimacy of the political regimes.

The competition among the states is probably best visible on the example of taxes. Transnational corporations have many tools how to avoid taxation. Using transfer pricing is one of them, shifting headquarters to countries with low taxation, like Ireland is another one. The author has followed the debate about "fair" taxation for decades, with minimal results. The austerity policies after the Great recession concentrated on increasing VAT, but not on getting more money from transnational corporations. The current initiative, originating in the Biden administration, focuses on minimal tax rate. However, the

Transformation of the Globalization Process

resistance from countries like Ireland is significant and shows how much the race to the bottom logic has penetrated the system.

As mentioned, transnational corporations use foreign direct investment for their activities. FDI can have the form of greenfield investment, usually connected with the shift of production from developed countries to cheaper countries abroad (Mexico, China, ASEAN countries). This process has even led in the US and UK especially to the loss of their industrial backbone with dramatic consequences for the labour market, for the wage level and inequality in the society. Further form of FDI is mergers and acquisition, prominent in the 90's in the financial sector. This form is concentrated in developed countries and usually connected with job losses.

Regarding the division of labour, shaped by the transnational corporations, which before the pandemic controlled 80% of international trade, we can define two main strategies how the states cope with this globalized environment.

The first one can be called the strategy of adaptation. The country tries to define a competitive advantage that will shape its internal socio-economic policy (and not vice-versa!). In the case of the abovementioned Ireland, it is the tax advantage, together with the usage of English and intensive (personal) connections to the US. In the case of the Czech Republic it is the "cheapness", reflected in the undervalued exchange rate and low wages, together with the market closeness to Germany. This form of "adaptation", or integration into the division of labour is crucial as it determines the economic policy of a given country and it is difficult to change. Furthermore, the strategy also helps to determine the standard of living. The country integrates itself in a given position into the net of the transnational corporations, which means certain value added. From this value added in the economy, the wage level is derived.

However, not all countries, as history shows us, are satisfied with their position in the international division of labour and are actively trying to change it. A typical example of a country, playing by its own rules, is China. Historically we can see many examples of countries that integrated into the world economy with delay and had to cope with it, as they did not want to be in dependent or underdeveloped position. We can go back as to Alexander Hamilton, whose practical economic recommendations were later transformed into an economy theory, the "infant industry theory" by a German economist, Friedrich List.

Infant industry theory has been applied in many countries and many situations, in fact, it is impossible to find a country, that for the sake of its own development did not combine active state economic policy together with some protectionist measures (although limited in time). This is the case of Japan after the World War II, the case of Singapore, country first known for its "state capitalistic" approach, or later China.

The emerging countries thus try to support their own transnational corporations, very often with the active help of the state, which compensates for them the "delay." In some cases, the successful transnational corporations are even state owned, or under state control.

The dominance of transnational corporations has profoundly changed the international division of labour. The economies are more intertwined, at the same time vulnerable and dependent of one another. As we will see in further chapters, shocks can spread more easily in such an interconnected system. Before the pandemic, transnational corporations controlled as much as 80% of international trade. The "old view" of states trading manufactured products and/or primary commodities does not correspond so much to reality, where we can see intermediate goods moved around the globe, increasing the importance of cheap container shipping.

States and their governments are in a weaker position, mostly trying to accommodate transnational companies, than their own citizens, which in turn means threat for the legitimacy of the whole political

system. Countries, who want to catch up use different developmental strategies, however strong role of the state belongs undoubtedly to the framework.

WTO statistics show us that the globalization era can be defined by increasing role of international trade. During the globalization era trade volume had increased twofold of even threefold in relation to the world product. This means that more and more goods were destined for the international trade, where the transnational companies play the dominant role. However, this formula had been broken after the Great Recession.

FINANCIAL CRISES AND BUBBLES

It is the breakdown of the Bretton-wood system that opens way to financialization of economies, with two main accompanying problems in the forms of bubbles and financial crises.

The 90's are known for their concentration of financial crises, starting from the Mexican financial crises to the crisis in south-east Asia, originating in Thailand that later spread to other Asian countries, to Russia, and further on to Latin American, to Brazil and Argentina.

Whereas the so-called emerging countries were hit by financial crises, characterized by sudden shifts and outflows of financial capital, developed countries were starting to have problems with bubbles. Japan was the first from the developed countries to experience a huge bubble burst, already at the end of the 80's and practically has not recovered since.

The US experienced a dot.com bubble that burst at the beginning of the new millennium. The dot.com bubble needs more explanation. Before to be known as bubble, the expansion of Internet and the new possibilities brought by it, we called the "New economy." New technologies can change the whole economic system, as proven by the existence of capitalism itself. Internet and connected technologies were thought to bring about new economic paradigm that would change the rules of economy. Especially the existence of the economic cycle was put in doubt, some analysts claiming that the "New economy" meant an endless growth with lowering unemployment. New economy was accompanied by high expectations from the modern service sector. However, the New economy proved more to be a bonanza for financial companies and financial markets.

As soon as the bubble burst and showed typical moral hazard behaviour by auditing companies, the start of a new bubble has commenced, this time in the real estate sector. The burst of that bubble transformed into a huge problem in the developed world, called the Great Recession.

The financial crises concentrating on the emerging countries reasserted a strong role of the IMF by "solving" these crises. Countries that were praised for their economic policy (e.g. Thailand) were, after the rapid outflow of capital, called "irresponsible" by the same institution, namely the IMF. The recommendations of the IMF led to deep economic crises and provoked strong criticism (J. Stiglitz). The IMF applied its typical policy "one size fit for all" and its policy recommendations led to worsening socio-economic situation for ordinary people, in the case of Indonesia with especially dramatic social and political consequences. China, which resisted the policy recommendations for liberalizing its capital account, was not hit, however this experience motivated China to accumulate high foreign exchange reserves (mostly in USD). The effect on Russia (also via the dramatic decline in oil prices) actually led to a change in the highest post, paving way for the political career of Vladimir Putin. The crisis originating in south-east Asian region spread via different channels to other countries, showing how interconnected the world is. The channels included standard interest rate differentials, trade spillovers,

Transformation of the Globalization Process

outflows of short-term speculative capital searching for a “different destination”, and changes in investors’ sentiment. Joseph Stiglitz, because of its criticism of the IMF conduct, became a “heretic” among the mostly neoliberal economists. He described the policies of IMF as follows: “The IMF organized a typical rescue package, based on fiscal austerity and high interest. There were massive bankruptcies. The magnitude of unemployment was hard to believe. Real wages went down 20 to 30 percent. The crisis spread to Indonesia, Malaysia, and the Philippines, and eventually Korea. Stock markets lost 40 to 80 percent of their values, and banks failed.” It can be added that Stiglitz later famously wrote that the solution to the crisis should not be worse than the crisis itself (Komisar, 2011).

Although the results of the IMF policies were disastrous, and it became obvious that countries that resisted the IMF “recipes” were doing much better (like Malaysia), nothing important in the neoliberal policies has changed. The establishment of the G20 forum was one of the few results, however this forum has not been used much until the start of Great recession. The country that resisted the IMF massively was Argentina, under the presidency of Nestor Kirchner who tried to conduct a debtor-led default (Švihlíková, Přelom).

The neoliberal dominance was anchored, the IMF proved its inclination to put the interests of creditors (speculators) first, even by selling out very cheaply national wealth of countries hit by the crisis. The real causes of problems (the pro-cyclicality of capital flows, the herd behaviour and other irrational features on the capital market) were not addressed. This would namely mean to start to doubt the whole neoliberal core of globalization.

THE GREAT RECESSION

The Great Recession symbolized in many regards a milestone. It is a crisis that originated in the most developed country, in the US. It spread to other developed countries, however the developing countries were not hit so severely. It ultimately led to a different policy mix in the US and in the EU and also opened way for the policy of quantitative easing, which became “a standard” tool for the central banks. The Great recession also led to changes in the relationship of international trade and world product.

It may be curious at first sight how a real estate market and mortgages, which are typical examples of local market, could spread to the developed world and cause such a havoc. The answer lies in financialization that was strong both domestically (in the US) and externally. The subprime mortgages were actually a reflection of a long-term decline in purchasing power of households. The corresponding real estate bubble, driven by low interest rates contributed to the wealth effect, which led the households to accumulate more debt.

The market with “asset backed securities”, which were (another example of moral hazard) rated high by the rating agencies, were introduced as something “innovative”, the price of which will never go down (which by itself is a definitional feature of a bubble). Very risky debt was “packed” into new fancy names like CDO (collateral debt obligation), presented as a financial innovation and sold out to the world. With the highest possible rating even foreign central banks were interested in these “new” securities. However, behind them there was nothing more than a house burdened by a mortgage.

With the increase in interest rates, motivated by the overheating of the real estate market, the circle was accomplished. The aim of this chapter is not to describe in detail the causes of the Great Recession, but to concentrate more on the consequences.

As in other cases, the IMF was not able to foresee the crisis. However, what is interesting is that unlike in the south-east Asia, its recommendations were completely of different kind. They included even Keynesian approaches like sufficient liquidity in the economy so as to avoid credit crunch, stimulative measures, nationalizing debt etc. The forum of G20 was activated, as it became obvious that the G7 format had outlived its purpose and did not correspond to the new economic reality.

A rift arose rather quickly among developed countries. Whereas the US concentrated on stimulative measures, the EU, under the German lead, focused on fiscal consolidation. History has shown us that the American approach was more appropriate and led to a relative fast recovery of the American economy. The EU has been hit by strong debt crises, the origins of which were in the insufficient architecture of the Euro area. However, it was another possibility to show how dysfunctional the recipes of IMF are (e.g., the overoptimistic growth rates for Greece in comparison with the absolutely unsustainable Greek debt).

The Great Recession thus led to the acceptance of extreme monetary policy that was previously seen in Japan. Central banks started using quantitative easing (sometimes in combination with negative interest rates) for many different reasons. First of them was the threat of deflation, which was reflected in academic debates of secular stagnation. However, quantitative easing, leading in Japan to the balance sheet of Bank of Japan, being bigger than Japanese GDP, had also other purposes. In the Euro area the quantitative easing was effectively the only instrument holding together the diverging euro area, the central bank under Mario Draghi trying to prevent euro area from breaking up. Buying large amounts of state bonds proved to be an instrument how to drive the costs of lending down for countries with large public debt, such as Italy. Quantitative easing was also used as a tool to “clean” the balance sheets of banks, make them start lending again, and thus avoiding credit crunch. To analyze in depth the consequences of this extreme monetary policy (regarding liquidity, bubbles on the exchange markets, or inequality) surpasses the aim of this article.

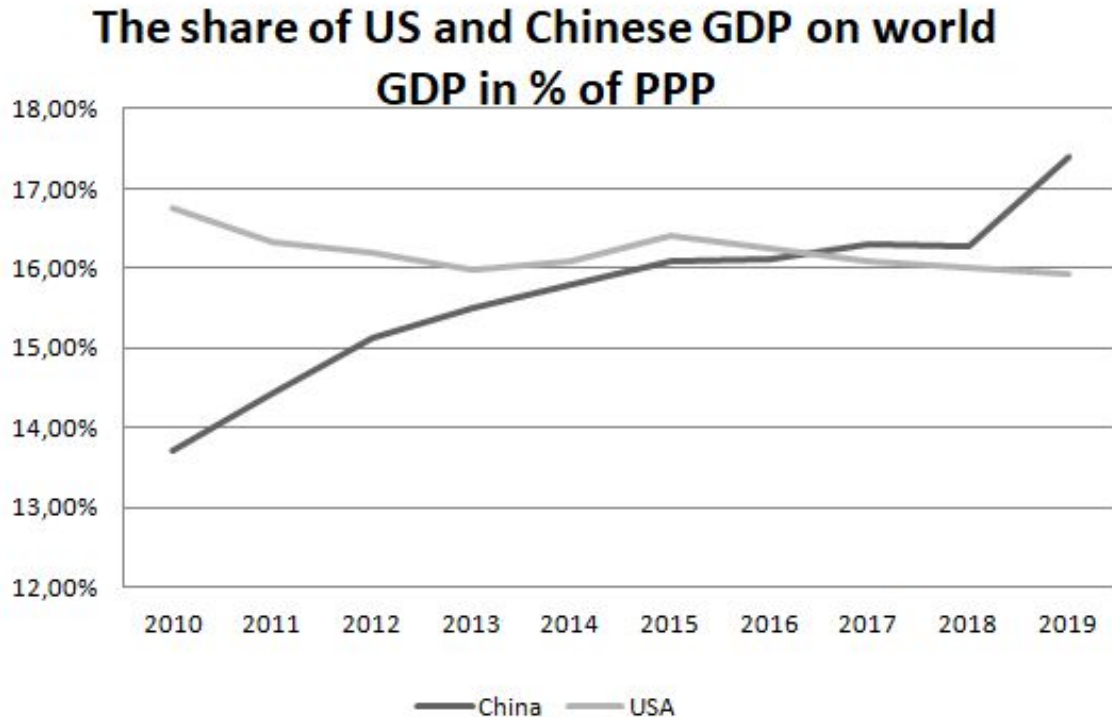
The austerity had dramatic effects on the socio-economic situation especially in countries hit by the debt crisis (mostly southern countries of the EU). De facto we may speak about two peripheries in the EU (the eastern and the southern). The topic of increasing inequality started to be accepted as a serious problem by the economic mainstream (OECD, even IMF), although until the pandemic not much has changed in the economic policy. Moreover, the importance of rent, rent-seeking and rentiers in economic policy has started to be reflected by mainstream, e.g. by the World economic forum in Davos, or by Martin Wolf in his commentaries for Financial Times (Wolf, 2018).

However, we mustn't overlook two deep changes that occurred in the world economy. First, China has used the years after the Great Recession to strengthen its economic position and almost without noticing has become the biggest world economy (in PPP standards Figure 1). Whereas the position of the EU economies is dwindling, China's role in the world economy is increasing, as well as the position of Chinese companies. Analyzing the ranking of transnational companies, we can see that the traditional dominance of US, West-European and Japanese companies is disrupted almost solely by Chinese companies, such as Alibaba, Huawei, Bank of China, Sinopec etc.

The second huge change lies in the change of globalization itself. The indicator that typically connected increase in trade with the increase in world product, seems no longer to “hold together.” Whereas in the decades before the Great Recession, trade volume used to grow two or three times more than the world GDP (Figure 2), after 2008 this relationship is lost. So far, no “new formula” has been found. However, it is obvious, that the process of globalization has changed. The victory of Trump has strengthened discussions about the possible peak of globalization, mostly regarding increase in protectionist measures, from tariffs to increase usage of sanctions. COVID-19 pandemic presented a further “hit” to globalization.

Figure 1. The share of US and Chinese GDP on world GDP in %, of PPP

Source: IMF: WEO Database, 2020



COVID-19 PANDEMIC AND ITS CONSEQUENCES FOR THE FUTURE OF GLOBALIZATION

Covid-19 pandemic can be truly considered a global event. The pandemic has highlighted vulnerabilities of globalization. The main problems are the distortions of the complex supply chains, disruption in transport, resulting in shortage of specific goods (microchips), or in delays in deliveries. This situation presses for higher prices, resulting in renewed inflation fears.

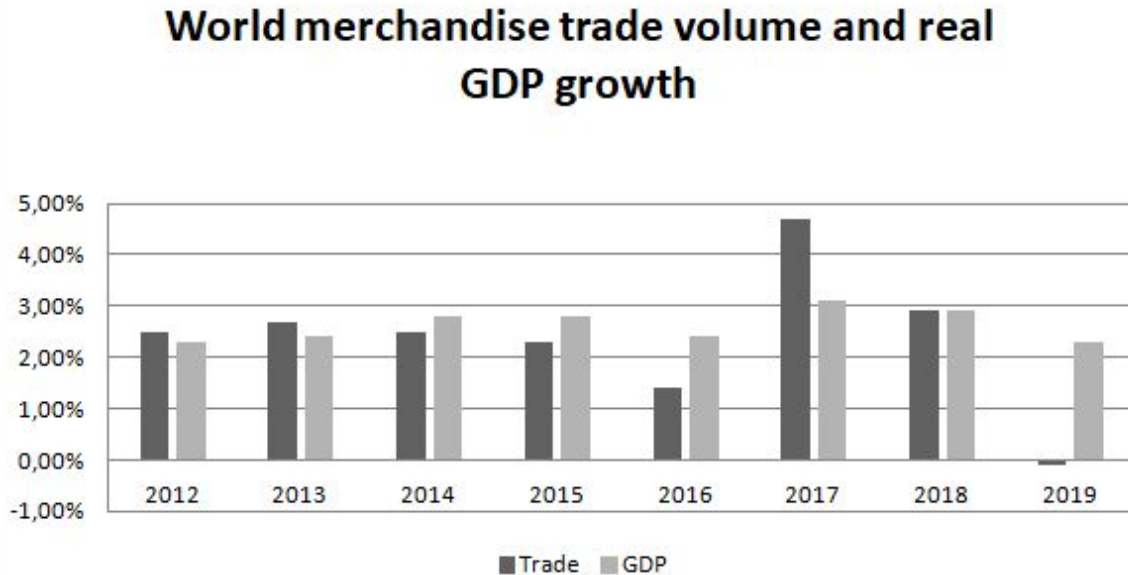
Another factor is the awareness of negative side of outsourcing. At the outbreak of pandemic, European countries found out they were not even able to produce a simple good such as a mask and were reliant on exports mostly from China. Dependence on distant markets, together with loss of strategic production capacity may lead to reconsideration of economic policy.

UNCTAD (UNCTAD, 2020) has drawn attention to the fact that foreign direct investment together with growth of global value chains has slowed down, which is a corresponding trend to the slowing of trade, mentioned in the previous chapter. Pandemic is a further factor that will contribute to a profound change in international production.

The changing factors include both objective and subjective features, as it was at the beginning of globalization. Subjective factors include the necessity to boost domestic strategic production, increase economic and social resilience and environmental sustainability. These factors are accompanied by objective technological achievements that include 3D print and further decentralized technologies. UNCTAD

Figure 2. World merchandise trade volume and real GDP growth

Source: WTO: World Trade Statistical Review, 2020.



precisely names additive manufacturing, supply chain digitalization and robotics-enabled automation. The technological possibility and expediency of these new technologies that proved to be very useful during the pandemic, is the crucial factor that may contribute to deep changes in the international division of labour.

The consequences of changes in the international division of labour would be enormous, however it would not be appropriate to talk about deglobalization as a clear-cut process. Rather, there will be different reactions by different types of goods and services.

One of the major trends may be reshoring, e.g., the return of production capacities to a domestic country (domestic of the mother company). Reshoring has been already going on, albeit the trend was not very strong. The former American president Trump was trying to motivate (for both geopolitical and economic reasons) American companies abroad (mostly in China) to return back to US. Of course, the wage difference, or price differences altogether have not vanished. However, increasing automation may mean that in cases of certain production, cheapness is no longer the best strategy. Reshoring may present a threat for developing or emerging countries that wanted to compete in the international division of labour through their price advantages and may even threaten industrialization and modernization process of some developing countries. Return of production to home destinations of transnational companies could be connected with inflation pressures.

Immediate reactions to disruption in supply chains can include the increase in stock of important commodities /goods and diversification of supply chains. This can boost e.g. shortening of supply chains. The interconnectedness among ASEAN countries with China is an example of regional supply chains. The shortening however still demonstrates the need of a “gravitation” center. E.g. certain Balkan countries are counting with shortening of supply chains and see the possibility to get engaged in this chain, under the dominance of Germany.

Transformation of the Globalization Process

Another possible trend is local production via the technologies like 3D print. Local production is resilient and means direct and local connection between the producer and the customer. UNCTAD foresees, in connection with this strategy, also more strive for self-sufficiency, customization and less trade. Local production is usually environmentally sustainable as it uses local resources and local labour thus contributing to lower emissions and socially stabilizing the region.

Thus, it can be expected that the massive trend of outsourcing production to cheaper countries will at least partly reverse itself, and different countries, and production types will undergo different adjustments and changes. Developed countries may place more emphasis on strategic production, creating incentives for companies to produce such goods at home (e.g. microchips). Supply chains will have to become more resilient, in some cases shorter, with regional powerhouses leading the process. Some production capacities may be shifted back to the domestic country, serving also neighboring countries. Local production will become more important, as it presents a resilient, sustainable form of economic activity boosted by technologies that have decentralized nature.

Globalization will nonetheless exist, but in a different form. It is highly possible that globalization will include the process of intangible assets (van der Marel, 2020). These include manuals, data, information and ideas and their sharing. The sharing and exchange of these assets is hugely helped by digitalization that enables this new “phase” of globalization. Such change would actually mean more maneuvering space for nation states via local or nearby production, while at the same time preserving the possibility of international cooperation and sharing. At the same time, transnational corporations would still exist, but would not have the dominant position they maintained before pandemic.

It remains to be seen, what the future holds for globalization and the international division of labour, but pandemics like wars present a milestone, after which the world has changed profoundly. It is important for every country to understand the transformation the globalization has gone through to be able to use new, emerging trends to boost its own position in the world hierarchy, thus increasing the standard of living for its citizens. The transformation of globalization, triggered also by the pandemic, offers thus a unique chance for countries, unsatisfied with their position in the world economy hierarchy, to transform and modernize their economies and at the same time make them more resilient and socially stable.

SOLUTIONS AND RECOMMENDATIONS

The transformation of globalization offers both a unique chance and a challenge for the whole hierarchy of world economy and for the states as well. Depending on the current situation, the state will have to come up with economic strategies that take into account the ongoing tendencies. Not only environmental sustainability, but also modern decentralized technologies, more focus on digitalization and sharing of intangible assets, strategic concerns, all these factors will influence the decision makers in countries getting aware of the changing nature of globalization.

Developed countries, who are usually the domestic countries for transnational corporations will try to maintain their top position in the division of labour. More considerations for strategic production may lead to special incentives for productions that proved to be of crucial importance (health care material, microchips). Reshoring, or shortening of supply chains with focus on the nearby region may be the dominant feature of the transnational corporation from these countries. The discussion in the EU about “strategic autonomy” shows the probable direction of these changes.

The situation will be more complicated for developing or emerging countries. For many of these their hopes for rapid industrialization will not be fulfilled. This means that their policy of attracting foreign direct investment via incentives (or child labour) will no longer be efficient. These countries will have to reshape their economic strategies, focusing more on the development of their own domestic economic structures and support of regional development.

Taking the example of the Czech Republic, as a small (in the EU context middle-sized), open economy, the transformation of globalization offers a very good chance to change the dependent economic structure. The Czech economy is strongly influenced by transnational corporations. In international comparison it achieves from low to middle value added. Czech companies (in dependent position) are far from the final customer and under the wage ceiling. The existence of the wage ceiling (e.g. the Czech companies are price takers) limits wage convergence and the increase in the living standard. More focus on local economy would “balance” the economic structure of the Czech Republic, at the same time making the country less dependent, increasing the importance of wage convergence. For local economy, wage is not only a cost, but also the main source of income, leading to very different perception of wage convergence policies. (Fassmann, 2019).

There are however also threats included in the changing nature of the globalization process. Regionalization of supply chains could for the Czech Republic, neighboring to Germany, mean even a bigger increase of involvement by German production chains and strengthening the dependence model it has had for about thirty years. In fact, in such case, the countries of central, eastern and south-eastern Europe (Balkan countries) would serve as a “new production facilities” substituting for China and other Asian economies.

Thus, recommendations for countries like the Czech Republic would include a major rethink of their economic strategies, a stop to incentives for transnational companies (like Amazon), instead of that, support for local companies and start-ups, policy direction towards wage convergence and not a constant pressure for price competition, support for food self-sufficiency etc. It is not an easy task, as the policy of “cheapness” has deeply penetrated both the economic and political decision making.

FUTURE RESEARCH DIRECTIONS

This chapter dealt with the topic of globalization and the transformation of this process. The pandemic has helped to trigger changes in the international division of labour that will have profound impacts on supply chains, transnational corporations and their functioning and on the role of the nation state.

Future research directions may include impacts of decentralized technologies on supply chains and their resilience and the shift of economic policy focus. Comparative studies of different countries policies regarding the changing nature of globalization, the shift towards intangible assets may show, which policies are efficient and which are not. At the same time, there will be different scenarios not only for different countries, but also for different production patterns, as it is highly unlikely to expect that all production will be reshored or even localized.

Studies of individual states or adjustment strategies of individual transnational corporation may be of interest, however the whole view may be even more important. Pandemic, as all huge milestones, presents an opportunity to change the hierarchy in the world economy. It was already the Great Recession that hit mostly the developed country and offered China a leap in its world economic position. The pandemic

Transformation of the Globalization Process

and its mastering has shown that countries of Eastern Asia were best equipped, whereas the developed countries suffered many Covid-related deaths and at the same time their economies took a blow.

We cannot consider the pandemic to be the last crisis of the 21st century, rather we should observe it as a useful lesson. Grasping the opportunities presented by the pandemic may have deep consequences for the international political situation and the current tensions between the US and its emerging rival, China.

Future research should thus comprise not only technological and economic aspects, but should include also environmental impacts and impacts on the situation on the international stage as well. Systemic approach using expertise from many fields may prove to be crucial not only for understanding the complex process in the world economy, but also for finding a way how to influence these processes to benefit the citizens.

CONCLUSION

The globalization has its roots in the 70's, a very complicated decade. In the 70's the objective and subjective conditions had been met and created a huge change in the world economy. The technological achievements of labour saving technologies together with container shipping, the change in economic policy towards neoliberalism created favourable conditions for the expansion of transnational corporations. The process of globalization carried with itself many negative features, e.g. the decline in labour income share, reflecting the fierce competition between labour force from different countries, smaller maneuvering space for state economic policy, impact of the race to the bottom etc. However, these negative features, including higher financial instability leading to a concentration of financial crises and bubbles, were not reflected in adjustments of economic policy.

It was the Great Recession that presented a milestone for developed countries and led to profound changes in economic policy, e.g. the usage of quantitative easing. The dramatic impacts of fiscal austerity highlighted the topic of inequality and rent-seeking, slowly bringing about a change in institutions that were notorious for their support of neoliberal policies, like the IMF.

Insecurity about the future of the world economy, accentuated by the strategic rivalry between the US and China, widespread usage of sanctions and growing environmental concerns was strengthened by the Covid-19 pandemic. The pandemic has shown the vulnerabilities of globalization, and with the spread of decentralized technologies such as 3D print, the transformation of globalization is underway. There may be various scenarios for different countries and production spheres, however it is obvious that as far as global production of goods is concerned, it has peaked, and the future of globalization lies more in the sharing of ideas, data and information. If the future is more collaborative and less competitive, remains to be seen. Countries, which strive for change and are not satisfied with their position in the hierarchy of world economy, should not only analyze and focus on the ongoing changes, but also adjust their policies and recommendations, so as to make use of the changing nature of globalization.

REFERENCES

Dabla-Norris, E., Kochhar, K., Suphaphiphat, N., Ricka, N., & Tsounta, E. (2015). *Causes and consequences of income inequality: A global perspective*. IMF. <https://www.imf.org/external/pubs/ft/sdn/2015/sdn1513.pdf>

Fassmann, M., Mayant, M., Pavelka, T., Švihlíková, I., Hejduk, R., Smejkalová, K., Středula, J. (2019). *Šance na přiblížení českých mezd vyspělé EU* [Chances of Czech wage convergence towards developed EU]. ČMKOS.

Komisar, L. (2011). *Interview with Joseph Stiglitz*. The Progressive. <https://archive.globalpolicy.org/social-and-economic-policy/the-three-sisters-and-other-institutions/internal-critics-of-the-world-bank-and-the-imf/50588-interview-with-joseph-stiglitz.html>

Lamy, P. (2010). *The Doha round marks a transition from the old governance of the old trade order to the new governance of a new trade order*. WTO. https://www.wto.org/english/news_e/sppl_e/sppl173_e.htm

Švihlíková, I. (2010). *Globalizace a krize. Souvislosti a scénáře* [Globalisation and crisis. Connections and scenarios]. Grimmus.

Švihlíková, I. (2014). *Přelom. Od Velké recese k Velké transformaci* [The milestone. From Great Recession to Great Transformation]. Inaque.sk.

UNCTAD. (2020). *Covid-19 will likely transform global production, says UN report*. <https://unctad.org/news/covid-19-will-likely-transform-global-production-says-un-report>

van der Marel, E. (2020). *Globalization isn't in decline, it's changing*. ECIPE. <https://ecipe.org/publications/globalization-is-changing/>

Wolf, M. (2018). *Why so little has changed since the financial crash*. Financial Times. <https://www.ft.com/content/c85b9792-aad1-11e8-94bd-cba20d67390c>

WTO. (2020). *World trade statistical review*. WTO.

ADDITIONAL READING

Blanchard, O. (2021). *Combating inequality: Rethinking government's role*. The MIT Press. doi:10.7551/mitpress/13469.001.0001

Chang, H.-J. (2002). *Kicking away the ladder: Development strategy in historical perspective*. Anthem Press.

El-Ojeili, C., & Hayden, P. (2006). *Critical theories of globalization: An introduction*. Palgrave Macmillan. doi:10.1057/9780230626454

O'Brien, R., & Williams, M. (2013). *Global political economy: Evolution and dynamics*. Palgrave Macmillan. doi:10.1007/978-1-137-34114-3

Prigogine, I., & Stengers, I. (1984). *Order out of chaos: Man's new dialogue with nature*. Bantam Books.

Rifkin, J. (2015). *The zero marginal cost society: The Internet of things, the collaborative commons and the eclipse of capitalism*. Griffin.

Rodrik, D. (2012). *The globalization paradox: Democracy and the future of the world economy*. W. W. Norton.

KEY TERMS AND DEFINITIONS

Additive Manufacturing: A process of industrial production using 3D print.

Financialization: An increasing influence of financial markets and institutions in economy.

Globalization: A dynamic process of interconnectedness with technological-economic core, leading to ambiguous impacts on the political and social sphere, as well as on international relations.

Great Recession: A large systemic economic failure, originating in the US in 2007, spreading to other developed countries.

Labour Income Share: A part of the national income that is allocated to wages.

Neoliberalism: An economic doctrine, focusing on free markets, small government, deregulation, liberalization, and privatization.

Reshoring: A transfer of a company or business operation that was moved overseas back to its country of origin.

Transnational Corporation: A huge company with a mother company and affiliates, conducting its activities globally, using the economies of scale.

Chapter 10

Internationalization in Times of Uncertainty: Expanding From Europe Towards Asia

Hannes Thees

Catholic University Eichstätt-Ingolstadt, Germany

ABSTRACT

This chapter aims to explore the uncertainties that the COVID-19 pandemic induced in internationalization. In this regard, the COVID-19 pandemic challenges companies worldwide as global value chains were interrupted and business models were contested. The theoretical background describes the internationalization processes and the specific role of foreign direct investments (FDI), but also the basics of uncertainty in doing business. Because of the scope of internationalization and the peculiarities of the COVID-19 pandemic, a descriptive analysis of secondary data from global databases was conducted. This includes macroeconomic data and also global research reports. With a focus on European-Asian relations, the results reveal an interruption in the flows of goods and services in Eurasia, but more importantly, also in FDI. Further on, there is a correlation between uncertainty and FDI flows. Finally, this chapter discusses future directions in internationalization, including resilience, regionalization, and the rise of China in global economics.

INTRODUCTION: A PANDEMIC CHALLENGES INTERNATIONALIZATION

We need to acknowledge that the Covid-19 Pandemic has fundamentally changed globalization's mechanisms as it interrupted international cooperation and global value chains. However, the pandemic's long-term effects on internationalization (Zahra, 2021) may be hard to predict. Especially the initial stage of the Covid-19 Pandemic has shown that international cooperation is not that self-evident. Besides national politics, companies are in key responsibility to implement measures against Covid-19 to slow down the pandemic, but with this, companies face the dilemma to manage their international activities: Value chains are shut down and need a stepwise recovery, or key partners are in lockdown. Every effort is highly intertwined with the pandemic and global value chains (Alon, 2020; Sforza & Steininger, 2020).

DOI: 10.4018/978-1-7998-8339-5.ch010

First studies showed that different crisis scenarios on an international scale are prevalent. Although a positive outlook by managers exists, differences among regions emerge (McKinsey & Company, 2021). As these recovery plans come into the discussion now, costs cuttings challenge economic recovery during the lockdown, making it difficult to innovate and prepare for future openings.

The mentioned challenges define a certain degree of uncertainty for companies and entrepreneurs' activities in internationalization and strategic planning in general. Moreover, there is a gap to explore long-term perspectives for the future of internationalization (Song & Zhou, 2020). Therefore, this chapter builds upon the effects of internationalization during the Covid-19 Pandemic in search of adaption and challenges. By recognizing highly complex internationalization and current challenges, the author aims to explore the consequences of the Covid-19 Pandemic, but also future development paths that lie especially in Eurasia. As the future of globalization is highly driven by Asia, a focus is set on the Chinese efforts in internationalization. This chapter asks *how do crises, such as the Covid-19 Pandemic, influence internationalization, especially between Europe and Aisa, and what are future directions to achieve economic stability*. However, in the sense of a bounce-forward, practical questions occur: How to start new cooperation and launch new investments for future projects? How to achieve innovation in times of uncertainty? Which forces are shaping global markets? How to mitigate global crises?

From a theoretical perspective, various approaches are available to support this study, e.g. on international governance (Abbott & Snidal, 2001) or global value chains (Humphrey & Schmitz, 2002). The role of uncertainty for entrepreneurs and companies in internationalization is critical (Alimadadi et al., 2018; Cuervo-Cazurra et al., 2018; Harris & Wheeler, 2005; Liesch et al., 2011). These theoretical considerations need to be combined with the current challenges of the Covid-19 Pandemic. Therefore, a proper case study is employed by European companies' activities towards Asia, as different strategies of handling the pandemic and the restart meet here and the Asia-Pacific market is a driver for future economic development and "a window of opportunity" (GTAI, 2020). The focus of the study is on the pandemic phase in European-Asian relationships but recognizing major developments beforehand and in specific regions.

Thus, section four analyzes secondary statistical data, e.g. on changes in foreign direct investments (FDI) or mergers and acquisitions (M&A). Further on, section five discusses the important future direction of internationalization in terms of resilience, globalization and the Chinese role in global economics.

THEORETICAL BACKGROUND: CURRENT ISSUES AND CONCEPTS

Internationalization is strongly related to globalization. The Covid-19 Pandemic has hit the world at a moment of severe globalization. However, a couple of incidents challenged the speed of globalization. The term globalization is generally used to describe an increasing internationalization of markets for goods and services, corporations. In this regard, central elements are the increased mobility of capital, faster technological innovations and an increasing interdependency of national markets (OECD, 2013). This interdependence sector-wise, but also across countries, supports globalization through the emergence of value chains distributed across different geographies. Value chains reflect the physical mobility of labor and capital, but globalization also means mobility regarding non-physical flows (e.g. information, knowledge, experiences, cultural factors) (Humphrey & Schmitz, 2002). The World Health Organizations summarized globalization by pointing on the interconnectedness:

Globalization, or the increased interconnectedness and interdependence of peoples and countries, is generally understood to include two interrelated elements: the opening of international borders to increasingly fast flows of goods, services, finance, people and ideas; and the changes in institutions and policies at national and international levels that facilitate or promote such flows. Globalization has the potential for both positive and negative effects on development and health (World Health Organization).

Steger (2017) puts it in short words: Globalization describes “a variety of accelerating economic, political, and cultural processes that constantly change our experience of the world.”

Internationalization

Internationalization reflects a set of concepts and approaches that yield to increasing involvement in international markets, although there is no single definition (Westhead et al., 2007). In general, it describes the sales or business activities of a company outside its home country (Li Sun, 2009). As a corporate strategy, it adapts products and services for different national markets. As a learning and resource allocation process, it distributes and exchanges resources in foreign markets (Autio, 2017). One can differentiate between inward and outward internationalization. Inward internationalization reflects topics on import, licensing, and franchising, while outward internationalization associates exporting and foreign direct investments (FDI) (Westhead et al., 2007).

There are also overlappings to related concepts, such as international entrepreneurship, that issues entrepreneurial activity across national borders (McDougall & Oviatt, 2000). Further on, international entrepreneurship is a process of “creatively discovering and exploiting opportunities that lie outside a firm’s domestic markets in the pursuit of competitive advantage” (Zahra & George, 2002, p. 261). The companies that achieve a certain degree of internationalization are called Multinational Enterprises (MNEs), born global firms (BGs) or international new ventures (INVs) (Knight & Liesch, 2016; Li Sun, 2009). Multinational companies are firms that internationalize their business activities and maintain value added-holdings overseas (Shah et al., 2012). These firms operate their branches, offices or production facilities abroad. Their organizational form is highly internalized. Their cross-border activities are typically including FDI, exporting and other non-equity modes of operations. These activities are allocated in more than one country abroad (Knight & Liesch, 2016; Shah et al., 2012). With all those definitions, it becomes clear that internationalization is a process and often a strategic process in multinational companies (Melin, 1992; Santangelo & Meyer, 2017). Resource allocation in foreign markets and the process of learning are evident. Such definitions also underline the soft factors besides the hard factors of location selection. Soft factors on knowledge, confidence, and commitment to acting in foreign are essential (Autio, 2017).

The theoretical basis in internationalization is often the market internalization theory (Knight & Liesch, 2016), with roots in multinational enterprise theory (Buckley & Casson, 1976; Rugman, 1980), but there are also links to location and network theory, factor mobility, globalization and global value chains, regional planning, economic development, growth, and competitiveness. Lately, sustainability gains importance across spatial and functional scales. However, the theoretical framework of the so-called Uppsala internationalization process is widely spread since 1977 and various times revised. The Uppsala model explains the characteristics of the internationalization process of the firms, where companies go through four stages of involvement in internationalization. This describes an internationalization process with the gradual development of management and successive investment with the central factor of

knowledge. Significant factors that influence internationalization are in this regard gradual acquisition, integration, and use of knowledge related to foreign markets and their operations (Johanson & Vahlne, 2009). Further on, research engages in analyzing the details of internationalization, e.g., the influence of innovation and productivity performance (Siedschlag & Zhang, 2015). Of high importance is also the transfer capacity, which deals with the transfer of tacit knowledge between parent and subsidiary companies. The theory of international knowledge transfer refers to the incurred costs of knowledge transfer within multinational companies. The speed of knowledge absorption depends on the intensity of personal contact and effective interpersonal communication. Influencing factors continue to be the type of knowledge, willingness and ability of the sender and recipient, and the context of the knowledge transfer (Schätzl & Liefner, 2012). From a methodological perspective, econometric analyses are often conducted in internationalization.

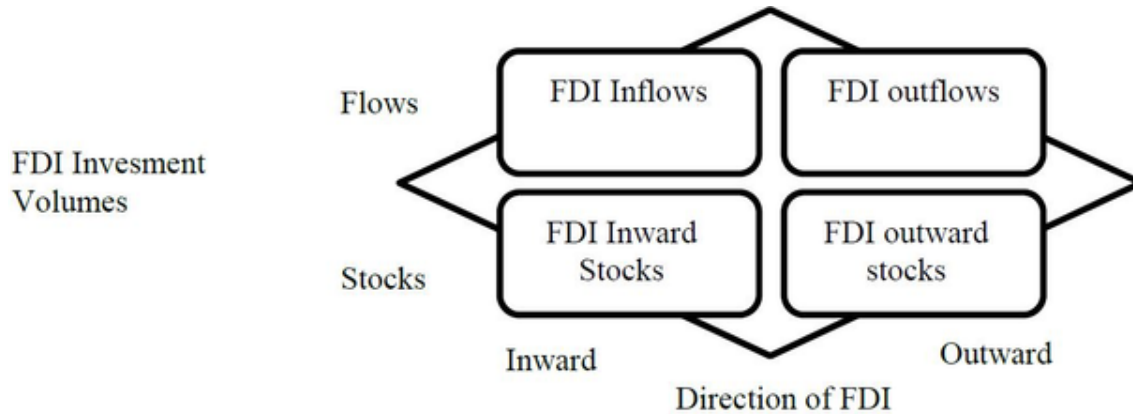
Foreign Direct Investments (FDI)

The emergence of multinational enterprises and internationalization is closely linked to FDI. FDI creates multinational companies because they own and control economic activities in different states (Buckley & Casson, 1976). The connection between parent companies and the other locations creates networks. Among the theories of multinational corporations, important is also the eclectic paradigm, according to Dunning (1981). Dunning explains four strategies or motives that motivate companies to engage in international activities. FDI is defined as investment abroad by which an investor aims to exert a lasting and direct influence on economic activities in the target country (OECD, 1996). The aim of FDI is to significantly influence and gaining a degree of control over their business activities over the long term. It is made by an individual or company in one economy who wants to establish a lasting interest in an enterprise located in another economy (OECD, 1996, 2020). These investments find expression in monetary transactions, real transfers or intangible transfers: Acquisition of real estate, companies or shares, the establishment of branches, subsidiaries, or transfer of funds to already owned entities, and knowledge transfer. Significant influence is deemed to exist if the investor holds 10% or more of the shares or voting rights. Another essential factor is the desire to control the company's activities, strategies and management. FDI must be distinguished from exclusive portfolio investments, which do not pursue the motive of permanent control (Bathelt & Glückler, 2012).

FDI can be divided into brownfield and greenfield investments, among others: A large part relates to brownfield investments, which are characterized by the acquisition or expansion of existing companies. In general, mergers and acquisitions (M&A) are consolidations of firms or assets through various types of financial transactions (Hayes, 2005). In acquisition, one company purchases the majority of the share capital (>50%) or a whole legally independent organization so that the economic independence of the acquired company is lost. In a merger, two or more legally independent companies combine to one, so that a new legal entity is formed and joint action is achieved (Malik et al., 2014). A small portion of FDI relates to greenfield investments to establish new businesses (Bathelt & Glückler, 2012; OECD, 1996). Another typification captures the direction of FDI activity (inward/outward) and the character of FDI sizes (stocks/flows). In combination, this results in the following types, which are also used for statistical classification (Figure 1). Further possible differentiation of FDI should be noted: e.g., differentiation between initial and follow-on investments and equity or debt share. Furthermore, a distinction can be made between horizontal, vertical and conglomerate FDI according to the integration orientation (Lüning, 1992).

Figure 1. Levels and types of FDI

Source: Own illustration, adopted from Kutschker and Schmid (2011, p. 94).



The main reason for FDI is the optimization of the profit rate. In economically rational decisions, the capital flow is shifted from countries with a lower profit rate to countries with a higher one (Schätzl, 2001). Further reasons can be risk diversification or an increase of return on equity. Dunning (1981) lists a categorization of motives: resource-seeking, market-seeking, efficiency-seeking, and strategic asset-seeking. Especially in market-seeking, the investor develops sales or production branches abroad to gain access to new markets and, as a result, create local sales. In contrast to exports, FDI, e.g., with a local branch, enables direct access to consumers. From a strategic perspective, there is an increase in FDI seeking access to geographically distant knowledge stocks, whereas demand- and supply-oriented FDI is declining.

Insofar as FDI is chosen as a development path, there are numerous effects in the recipient country. It should be noted that FDI may well have the opposite effect in the donor country. One example is the possible loss of jobs in the donor country. Whether an investment has a negative effect on a donor country depends, among other things, on the motives (e.g., efficiency orientation) (Kutschker & Schmid, 2011).

The effects of FDI on the economies of developing and emerging countries were viewed negatively until the 1980s. Subsidiaries of multinational companies were said to make only small and, under certain circumstances, negative contributions to development (Pack & Saggi, 1997). These negative effects occur predominantly when subsidiaries are unilaterally aligned with the parent company. Thus, the subsidiary is not involved in the transfer of knowledge and maintains only limited ties to the local environment. The fears are that local workers are only used for the simplest manufacturing activities and that the subsidiaries of multinational companies located in one place only cooperate with each other, but not with local companies (Blomström et al., 2001). In the last two decades, FDI has been attributed a positive development contribution for their target countries, mainly due to the inflow of knowledge (Lall, 1993; Pack & Saggi, 1997). However, the growing dependence on developments in other countries, e.g., financial crises and speculation, should be viewed critically, as discussed in section 2.

Crises and Uncertainty

Uncertainty in doing business was never that high as at the beginning of the Covid-19 Pandemic (Ahir et al., 2018). Especially for multinational companies in their processes of internationalization, Covid-19 developed from a shock towards an economic crisis. In economics, a shock is unpredictable and “refers to any change to fundamental macroeconomic variables or relationships that has a substantial effect on macroeconomic outcomes and measures of economic performance, such as unemployment, consumption, and inflation” (Investopedia, 2007). A shock can further develop into a crisis. In times of crises, economies experience intense difficulty, trouble or threat, which leads to an unstable and abnormal situation (Shaluf & Said, 2003). Therefore, the Covid-19 Pandemic has embraced uncertainties for doing business.

Against this background, risk and uncertainty are often used as synonyms. However, differences lie in perspective. Uncertainty is a perceived lack of certainty, reliability or validity of an event. It refers to situations where there is an unknown future or where this future is known but not predictable (Liesch et al., 2011). No information about the possible outcomes of processes is available to decision-makers, or the existing information is too imprecise to determine a probability from it. The terms were initially derived from accounting and financing (Liesch et al., 2011; Lin & Liu, 2012; O’Reilly et al., 2011). Risk, in opposition, describes actions and decisions with a known probability distribution that allows to calculate or quantify the risk. Relevant subconcepts are risk perception and aversion. In this regard, the risk is simpler and easier to cope with as companies can protect from certain risks. In handling risk and uncertainty, two concepts came into relevance: Risk mitigation and management of uncertainty. During the process of internationalization, we can see an interaction of those concepts in exploiting and deepening involvement in international markets (Liesch et al., 2011).

Mitigation in this regard is more of a technical and programmatic approach to avoid or handle risk but also to exploit possible opportunities. From an engineering perspective, mitigation is about choices, testing, verification, open architectures, and modularity (McManus & Hastings, 2006). In addition, Menoni and Margottini (2011) collected various approaches at the interface of the European and global levels for achieving sustainable risk mitigation. However, uncertainty can also function as a trigger and turned into an advantage, following the proverb: “The only thing certain thing about uncertainty is that it can happen anytime”. The only thing to do is to be prepared. Four essential factors in preparing are forecasting and updating plans regularly, automation of data collection, efficient financial reporting, and the use of self-service platforms (Corporate Finance Institute, 2020). In terms of management and leadership, uncertainty has also found access to the principle of VUCA-World (VUCA-WORLD, 2020). VUCA is an acronym for Volatility, Uncertainty, Complexity, and Ambiguity. In a strategic approach, it can also be transferred to Vision, Understanding, Clarity, and Adaptability/Agility. Following strategies like VUCA, it is a central aim to adapt to an omnipresent uncertainty on the one hand, but also to keep risk-taking at a low level on the other hand (Johanson & Vahlne, 2009). Keeping risk and uncertainty at an acceptable level is, of course, necessary, but not a sufficient condition in internationalization (Liesch et al., 2011)

Risk mitigation and uncertainty management are recognized and researched as dynamic variables in an international context (Liesch et al., 2011). The relationship between uncertainty and investment has been of interest to economists for a long time (Sarkar, 2000). Often research has focused on the role of the individual entrepreneur in risk-taking. However, there is research need for a more nuanced consideration of risk and uncertainty in the international expansion of firms and their interactions (Liesch et al., 2011).

In sum of these theoretical descriptions, internationalization needs to be considered as a multi-faceted and interrelated concept. M&A and FDI are direct outcomes of internationalization processes, while uncertainty, including shocks and risk, impacts the likelihood and scope of internationalization activities.

METHOD: STATISTICAL ANALYSIS ON EUROPE-ASIA RELATIONS

This chapter aims to provide an overview of the current effects of the Covid-19 Pandemic on internationalization and future directions of coping with uncertainty. The methodological approach in this regard can be manifold: Qualitative interviews may explore the uncertainty of entrepreneurs during the crisis or reveal individual strategies on a corporate level. Moreover, statistical analysis on an international scale provides economic data across countries. The second possibility of statistical analysis is applied in this chapter with the aim of comparing data on internationalization before and during the Covid-19 Pandemic.

With this, the author sourced information from various databases:

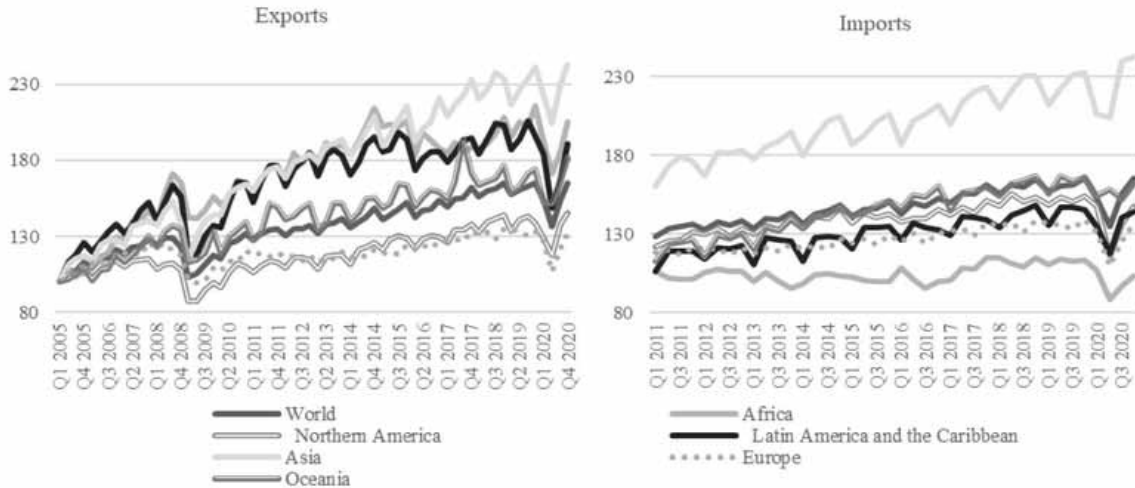
- First, statistical reviews (McKinsey&Company, 2020; OECD, 2020; Roland Berger, 2020; UNCTAD, 2020) were provided early in the crisis and show different effects of the Covid-19 Pandemic. Those reports are especially important as they provided immediate insights into changes in internationalization and thoughts about changes in international markets. However, those are often preliminary statistical data compared with subjective evaluation and prognosis.
- Second, specific and actual surveys help to assess the entrepreneurial perspective in the crises, e.g., provided by pwc (2021) or McKinsey & Company (2021). However, the study focuses on Asia and European activities in the Asian market. Therefore additional case-specific information and national policies were collected.
- Third, major international databases are provided by World Trade Organization (2020), UNCTAD (2021), OECD (2020), or European Commission (2021). These databases were selected through their worldwide coverage and good traceability, while Asian data is hardly accessible through language barriers and intransparency. Such data includes import and export, but also the number and amount of FDI and Mergers and Acquisitions. The mentioned databases are organized similarly: Popular inquiries, such as trade balance or GDP development, are accessible through shortcuts. To have a closer look at the needed data on internationalization, individual queries are necessary. Those are available through the download of complete data sets or the use of filters. The respective country data is clustered in accordance to trade unions or continents. Although data quality is high on the national scale, statistics are limited in their depth and timely availability. A further limitation arises as partially country data for 2020 are not completely available – especially for the fourth quarter 2020. The key problems in recording are the existence and reliability of coverage, completeness, collection method, basis, periodicity, thresholds, components, time allocation, currency conversion, and minimum criteria (UNCTAD, 2009).

Through analyzing the statistical data, the author mostly uses descriptions and comparisons. Partially growth estimations are included. Further analysis such as regression needs a clearly defined sampling and coherent database, which sets a goal for future research. The following section elaborates on these results by descriptive analysis and linking of data sources relevant to internationalization.

Internationalization in Times of Uncertainty

Figure 2. Merchandise exports and imports by region, 2005 – 2020 (2005Q1=100)

Source: UNCTAD (2021)



RESULTS: INDICATIONS FOR INTERNATIONALIZATION

Starting with the global scale, the results will further display international economic performance (section 5.1), Asian-specific developments (section 5.2), Asian-European relations (section 5.3) and entrepreneurship-specific factors (sec. 5.4).

International Economic Performance

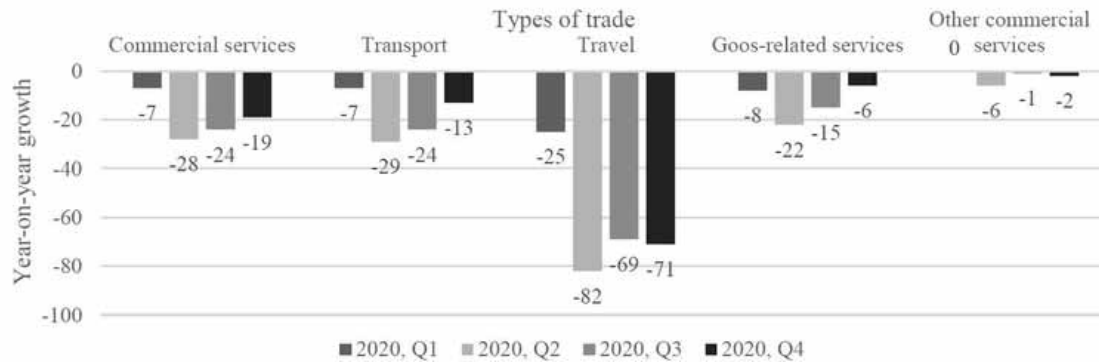
From the global scale, we can assess the current development and Covid-19 recovery. According to new estimates from the World Trade Organization, the volume of merchandise trade¹ is expected to “increase by 8.0% in 2021 after having fallen 5.3% in 2020”, which illustrates a rebound from the Covid-19 Pandemic in 2020 (Figure 2). Further estimations declare that the total volume of global trade remains below the pre-pandemic trend, even in 2022. This positive trend is supported by world GDP. The Covid-19 Pandemic caused a drop in 2020 of 3.8% in world GFP. The recovery reveals increase rates by 5.1% in 2021 and 3.8% in 2022 (World Trade Organization, 2021).

Looking at the details, that merchandise trade fell by 8% in 2020, while commercial service exports even shrunk by 20%. The sector most strongly affected is travel, with a drawdown of travel services by 63% in 2020 (World Trade Organization, 2021) (Figure 3).

The strong recovery in Q3 2020 was influenced by policy interventions and fiscal stimulus, e.g., in the US or the EU. Asia, in contrast, builds upon its effective pandemic management to minimize the economic downturn. Interestingly, the trend barometer from WTO shows a merchandise trade recovery that is clearly above the estimated average (World Trade Organization, 2021). In the same way, M&A activities have seen a rebound in Q4 2020, but mainly in advanced economies (OECD, 2020). Although there is a positive outlook for global trade, challenges occur in forecasting by the progress of the Covid-19 Pandemic, regional disparities, weakness in service trade, or lagging vaccination (World Trade Organization, 2021).

Figure 3. Year-on-year growth in world trade, 2020

Source: World Trade Organization (2021).



Looking at the import and export activities by comparing countries reveals growth potential in Asia. China shows growth in import and export in 2020 of about 1.5%. On average, East Asia provides growth of about 0.5%. In opposition, the US (-0.5% in exports, +0.5 in imports), the EU shows a decline of about 0.4% (UNCTAD, 2021). Those statistics reveal a slow down in global trade, which is also caused by prioritizing home regions. The Standard Chartered Bank (2021) found that companies in Europe (84%) and North America (74%) focus on their home region for further economic growth. The Asia Pacific (55%) remains a target for their international expansion strategies (Standard Chartered Bank, 2021). This tendency towards Asia is also visible in Global Value Chains. Xu et al. (2020) investigated the COVID-19 impacts on global value chains to mitigate their risks and enhance their resilience in various industrial sectors and display interruptions in value chains, especially in pharmaceuticals, food, electronics, automotive industry. A peculiarity of the Covid-19 Pandemic is that all stages of the global value chains were disrupted, including manufacturing, processing, but also transport, and logistics (Xu et al., 2020).

Besides the relatively apparent effects on global value chains, the crisis effects are much more diverse and need a holistic analysis. Zahra (2021) or Ratten (2020), for example, put an eye on the effects of entrepreneurship. Hossain (2021) pointed to the Sharing Economy or Aruga et al. (2020) to energy consumption. All those studies contribute to sketching the big picture. Barua (2020) tried in the early days of the Covid-19 Pandemic to assess macroeconomic impacts by providing a holistic framework. Significant to recognize are potential shifts in international cooperation in the long run, which brings us to elaborating the Asia-Europe relationship.

Asia's economic development during the Covid-19 Pandemic

With a particular focus on Asia, there are claims from scholars and consultancy that widely agree that Asia takes over in being the driver of world economic growth (Gerstl & Wallenböck, 2021; GTAI, 2020; McKinsey & Company, 2019; The Economist Intelligence Unit). Also during the Covid-19 Pandemic, the East-Asian but also Central Asian regions may gain momentum in the recovery process. The World Economic Forum summarizes that Asia's GDP actually overtakes the rest of the world in terms of GDP and providing a considerable share of global growth. This builds upon the fast development since the 1990s that includes soaring consumption and its integration into global flows of trade, capital, talent, and innovation. "In the decades ahead, Asia's economies will go from participating in these flows to

determining their shape and direction. Indeed, in many areas—from the internet to trade and luxury goods—they already are. The question is no longer how quickly Asia will rise; it is how Asia will lead” (McKinsey & Company, 2019). However, Asia has the highest dynamics worldwide, but it consists of very different countries in terms of economics and society, which together host 4.5 billion inhabitants.

In addition, Asia’s economic power has been expressed by the start of the Regional Comprehensive Economic Partnership (RCEP) in 2020. Despite the Covid-19 Pandemic, this agreement should also help counter the disruptive geopolitical tensions and encourage the post-pandemic economic recovery in Asia (Chang, et al., 2021). The economic decline during Covid-19 was characterized in Asia by a demand shock, similar to other regions of the world (Asian Development Bank, 2020). However, the economic risk varies across regions. Thus it is exceptionally high in South Asia and Southeast Asia (Noy et al., 2020). This regional disparity is also visible in the Asian GDP forecasts (Appendix, Table 1[REMOVED REF FIELD]). Central Asia in this regard provides only moderate growth for the upcoming years.

Having a look at the global FDI allows analyzing the internationalization as indicated in section 3.2. According to the UNCTAD (2021) data, the Covid-19 Pandemic has caused global investments to decline more than during the financial crisis, which might be reasonable through the great uncertainty (Süßel, 2021). The UN ESCAP (2021) report further reveals a downward trend in greenfield FDI by 40%. In combination with FDI and the World Uncertainty Index, Figure 4 shows the drop of FDI during the Covid-19 Pandemic and previous crises. However, not every crisis has induced such a drop, depending on the global range of the particular crises. The FDI slump during the Covid-19 Pandemic hit individual countries with varying degrees of severity. Above the global average, investment in the industrialized nations plunged to a 25-year low (Süßel, 2021). Potential profiteers of the crises might be developing and emerging countries, whose witnessed only a decline of 12%, and even smaller was the decline in Asia, where FDI only fell by 4% (UNCTAD, 2021). In this regard, emerging markets expand their share of global FDI inflows to 72%. The global leader is China, which ranks one as the largest FDI recipient in 2020 (Savic, 2021; Süßel, 2021). In contrast, the ASEAN countries witnessed a decline of 31% (Savic, 2021; UN ESCAP, 2021).

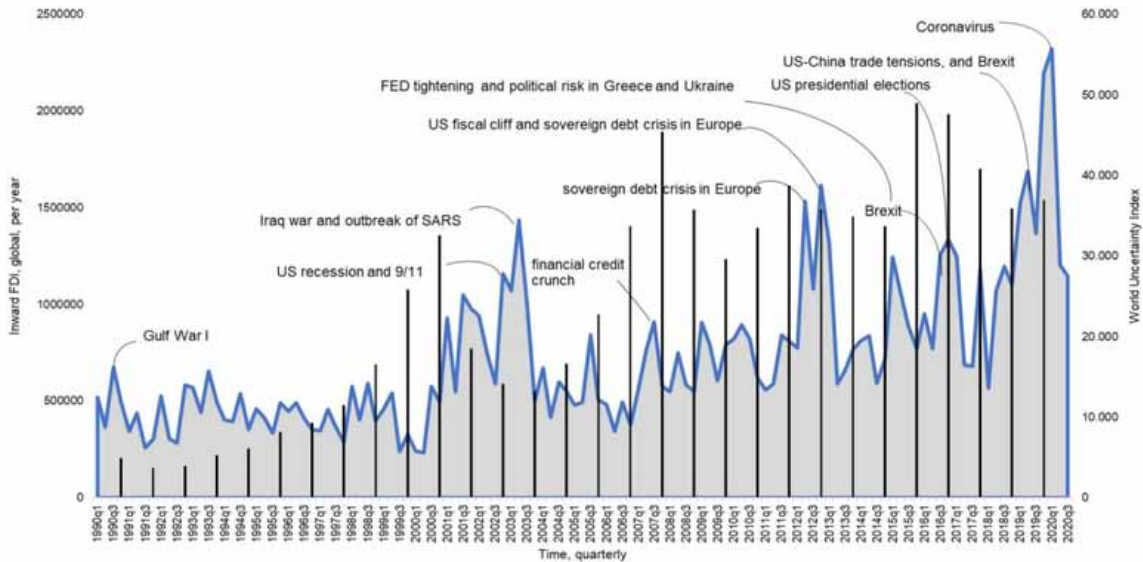
In sum, Gregory (2021) collects a couple of interesting potentials in Asian countries. For example, the provision of incentives for foreign investors, including free trade zones, competitive tax rates, potentials in Chinese banking and tech-driven sector, Singapore as the worlds best place for doing business, the high education of Malaysian workers, Indonesia’s central location, the growing middle class in Thailand, Hong Kong as a financial hub, Taiwan as an attractive location for innovative technology and R&D driven development, south Korea as one of the most business-friendly countries in the world. Those listed potentials open a window of opportunity also for European companies in Asia.

Indicators for the Internationalization between Europe and Asia

Eurasia – as the overarching concept for Asia and Europe - is in a vital position for future globalization, as the potential for economic development exist specifically in Central Asia and Eastern Europe. Such economic development is also based on trade and connectivity, which currently lack coordination of transport between Asia and Europe and within the Eurasian countries (Gussarova et al., 2017; Jovanović et al., 2018). From the available data, we can also draw a conclusion on the internationalization from Europe towards Asia. At first, the imports (Figure 5) and exports (Figure 6) between the EU and selected Asian countries to reveal a drop during 2020, but also a strong recovery at the beginning of 2021.

Figure 4. FDI under Uncertainty

Source: Own illustration based on data from UNCTAD (2021) and Ahir et al. (2018)

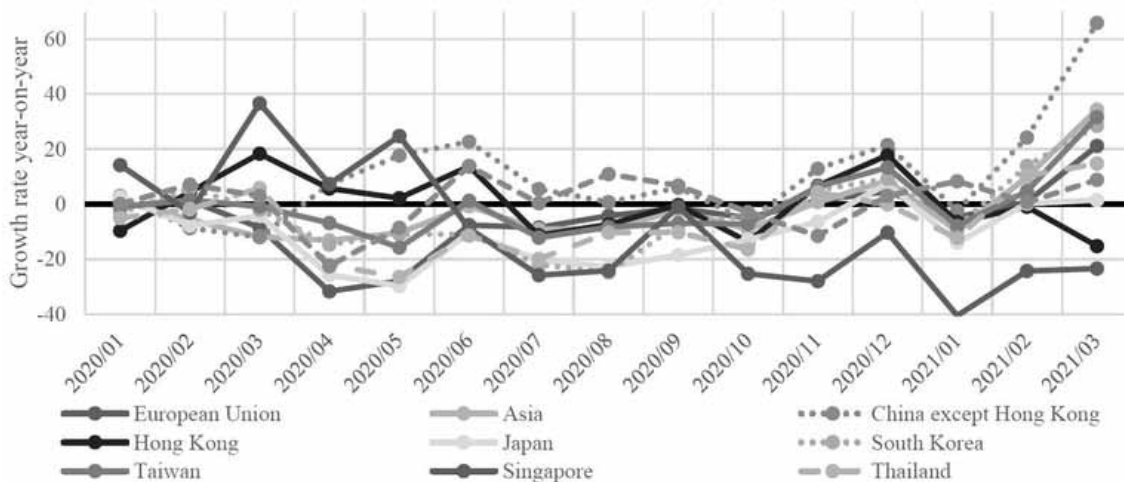


Furthermore, the increase in imports from China illustrates the provision of aid goods at the beginning of the pandemic.

Regarding the FDI, data confirms a significant drop of inward FDI within the EU and the inward FDI coming from Asia. In general, outflows from China in 2020 remain stable with 132.94 billion USD compared to 136.91 in 2019 (Ministry of Commerce PRC, 2020), but there is also a heavy drop of 35% at the beginning of 2021. However, FDI outflows from China to EU27 and the UK passed their peak in 2018 with 44.2 billion EUR, while in 2019 only 11.7 billion EUR were transferred (Kratz et al.,

Figure 5. Imports in the EU from Asia, Growth rate M/M-12 of the trade value

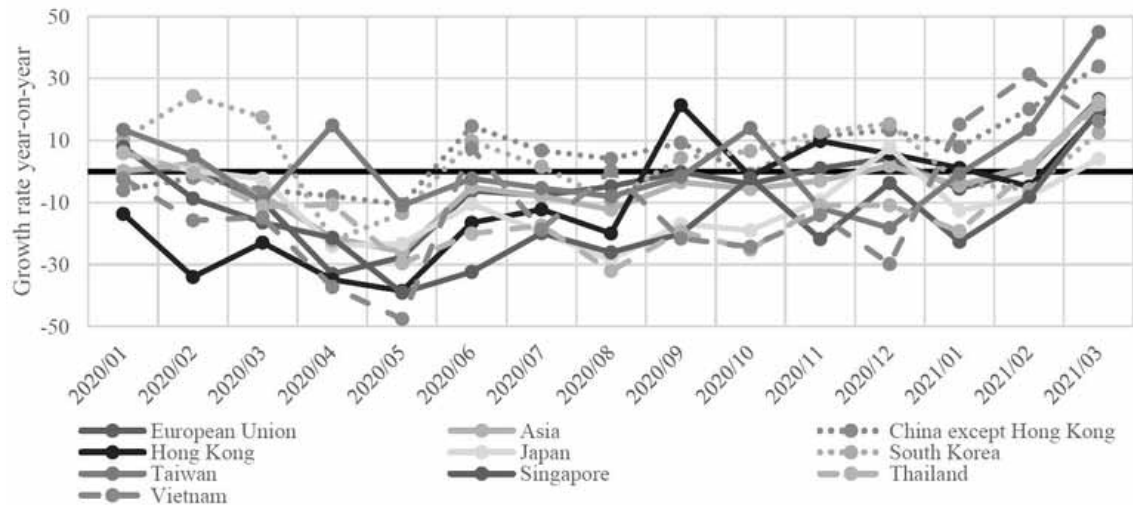
Source: Own illustration, based on data from European Commission (2021)



Internationalization in Times of Uncertainty

Figure 6. Exports towards Asia from the EU, Growth rate M/M-12 of the trade value

Source: Own illustration, based on data from European Commission (2021).



2021). During the Covid-19 Pandemic in 2020, the FDI outflows from China only reached 6.5 billion EUR, equal to the value in 2013. In addition, the investments from state-owned companies remain at a 10-year-low. Besides Covid-19 related uncertainty, experts also claim the outbound capital controls and the heightened regulatory scrutiny (Kratz et al., 2021).

In the other direction, the outflows from the EU towards China specifically dropped from 379.92 million USD in 2019 to 87.08 in 2020 (OECD, 2020), revealing a strong impact of the Covid 19 Pandemic. The most important FDI-sending countries in 2019 were the Netherlands, Ireland and Germany. All of those witnessed a drawdown in 2020 (OECD, 2020).

However, those statistics still stress the importance of the Asian market for European companies. There is also a countertrend where Asian economies focus on investing in the EU (Biswas & Dygas, 2021). The relatively aggressive investments of Asian companies in Europe have been the subject of discussion across politics and media. Especially the EU-China relations was for a long time lacking reciprocity (Hanemann & Huotari, 2018). Dudas and Dudasova (2016) in this regard, analyzed the growth and decline of Chinese investments abroad and the recognition of China as a typical host country in FDI. However, China developed towards one of the most important players in international financing and thus also in Europe. Investments and mainly M&A reached such a high level in a certain business field, e.g., the high-tech sector, that the EU changed its policy in 2018. This policy has the potential to limit the number of takeovers from European companies (Dudas & Rajnoha, 2020). Otherwise, with the data availability and news discussions, we can still see a focus on Chinese investments in the EU rather than European efforts in China or Asia. Although the Covid-19 Pandemic challenged Chinese investments in Eurasia, still huge investments were made in East Asia and Africa (International Institute of Green Finance [IIGF], 2021). This also supports the thesis that China gains momentum during the crises by trying to diminish the uncertainties for particular countries and giving them support and trust. At the same time, China underlines its successful opportunity management based on its institutions and governing structures (Jing, 2021), which also drive their growth in international trade. In the case of a further recovery in China, Song and Zhou (2020) argues for structural reforms, the implementation of new technology

and re-integration in global markets. At a company level, Asia is, despite the current uncertainty, in the spotlight. For example, 57% of German respondents are likely to prioritize Asia, increasing about 7% from June to December 2020. A countertrend is represented by US firms (42% listed Asia in their Top 3 investment markets) (Standard Chartered Bank, 2021). The reasons for investing in Asia are manifold. Exporting products or services and sourcing are the main reasons. In addition, the manufacturing of a firm's product in its own production facilities abroad is also relevant (Standard Chartered Bank, 2021).

Specific Entrepreneurial Challenges

Taking a look at the business reactions on the Covid-19 Pandemic, pwc (2021) conducted a global study that assists this chapter in understanding reactions on a global scale. In general, 70% of the respondents claimed a negative impact of the crisis. However, also 20% state a positive impact. Challenges especially evolve from the uncertainty and the implementation of crisis management under that hardly predictable situation. However, we can see from various studies that international markets are still relevant. 42% of the surveyed companies by Standard Chartered Bank (2021) acknowledge that their best growth opportunities are outside of their home market. In the US, the share is also higher. Target regions are spread globally, but companies reveal a focus on Asia. 85% of companies conduct or consider activities in Asia (Standard Chartered Bank, 2021).

A major obstacle in internationalization during the Covid-19 Pandemic is the missing local contact. In greenfield investments and M&A, travel restrictions are a significant barrier. Such deals are not closed from the comfort of your desk at home (Süßel, 2021). As challenges of international growth in Dezember 2020 are assessed: Understanding regional regulation, Building relationships with suppliers and adopting supply chain logistics or sourcing funding, and managing liquidity (Standard Chartered Bank, 2021).

During the crises, 62% of the surveyed companies by pwc (2021) indicated that they use a crisis plan to respond to the pandemic. However, in this response, only 35% claimed their response as "very" relevant, which also means that the majority had somehow inappropriate plans. In order to improve the crisis reaction, organization resilience became the subject of discussion in 84% of companies. And with this, a great share of companies reported increasing their investment in building resilience, which also needs to be integrated with functional areas carefully (pwc, 2021).

DISCUSSION AND FUTURE DIRECTIONS

The reduction and handling of uncertainty are strongly linked to interdisciplinary thinking, the digitalization of business models, the consideration of sustainable development goals, or the green recovery of value chains and resilient trade networks. In this regard, we can perceive the economic recovery as a chance for sustainable globalization that includes international relations on the state level, but also the international cooperation of companies and entrepreneurs in the long run. The aim of future developments must be the mitigation of the current crises across all stakeholder levels, but also the preparation for upcoming shocks and crises of whatever kind. Against the background of a globalized world, companies and entrepreneurs are highly intervened with global networks and politics as well and need to recognize three major concepts: re-thinking (sec. 5.1), re-scaling (sec. 5.2) and re-centering (sec. 5.3).

Re-Thinking: Preparing for a Resilient Future

The Corona crisis, like all crises, can be a starting point for change and renewal, as they disrupt traditional or established behavioral patterns (Shaluf & Said, 2003). The first wave in the Covid-19 Pandemic in spring 2020 was definitely such a disruptive shock to economics and society. In summer 2021, we are in a phase where infection rates are declining and the economy has learned to cope with the situation (sec. 4.1). Here comes adaption and resilience into focus that exceeds the known management of uncertainty. It is not just keeping risk and uncertainty at an acceptable level but also to take opportunities in a challenging situation.

Resilience is an adaptive capacity to prepare and respond to a disruption in order to achieve an effective recovery, which realizes a return to a normal state of operation after the disruption (Tukamuhabwa et al., 2015). Success factors for a decreasing vulnerability are considered diversity instead of dependency, spatial dispersion, regionalization to a certain degree (Javorcik, 2020), the adaption of products and design of the value chain, as well as resilience monitoring (Miroudot, 2020).

Companies that were surveyed by pwc globally recommend similar factors to prepare for upcoming crises: Designate a crisis response team, design a crisis response plan in accordance to the companies' strategy and building an integrated resilience program to allow real-time and after-action assessment (pwc, 2021). Those factors need sensitivity for resilience and the recognition of resources and supply chains that are affected during crises. With this, the perception of risk and uncertainty, as well as a resilient culture, are becoming success factors (Noy et al., 2020; pwc, 2021) and require to re-think corporate strategies and aims. Especially in internationalization, where uncertainties are manifold in context conditions and the dependence from partners and customers is high. Noy et al. (2020) support the need for resilience by claiming to reduce the exposure and vulnerability of economies to pandemic risks. Finally, the economy relies on the resilience of the whole social system, including public health and supportive policies. Not saying that certain systems were not resilient during the Covid-19 Pandemic, however, extensive funding and support by politics have limited the damage and this is a rather European perspective.

Different kinds of strategies are necessary to promote the resilience of a system or particularly of a company. However, supportive may be transdisciplinary research, the digitalization of business models, the consideration of sustainable development goals, or green recovery of value chains and resilient trade networks. In an "era of pandemics" (IPBES), it seems to be clear that a bounce back to the previous status is risky and adaption and flexibility are necessary. Especially in terms of globalization: *"The 'same-old, same-old' is no longer feasible, which may not be a bad thing. Post-pandemic, we will find a new balance, and it is at least possible that the positive experiments will continue and be harnessed to tackle other global issues."* (McCausland, 2020, p. 56).

Re-Scaling: From Globalization to Regionalization

The Covid-19 Pandemic has changed production patterns and supply networks on a global scale, as the domestic production of essential goods and medical products was in focus. Moreover, trade costs were rising and countries tried to diversify production chains to reduce dependency on single suppliers or countries. During the crisis, globalization has become a critical issue, including discussing whether globalization is a driver for pandemics (Ludovic et al., 2020) by the fast flows of goods and people. Has globalization passed its peak?

During the last decade, we have seen a slowdown in the pace of globalization. Protectionism and trade war are keywords here. Although we see these challenges, since world war II, we have experienced nothing else than progressive globalization. Covid-19 undoubtedly promotes a slowdown in globalization. However, the Covid-19 Pandemic is a trigger to question current forms of globalization (Felbermayr & Görg, 2020; Peng et al., 2017; Sforza & Steininger, 2020; World Economic Forum, 2021). Although globalization is now being deviled to some extent in the crisis, it is nevertheless probable that - insofar as the health conditions are given - we will quickly take this path again. The latter perspective is shared among the optimists, whereas pessimists request a re-scaling towards a localization that is also in line with the transition of globalization since the 2008 financial crisis. Healthy international relations between China, the US and Europe are leading the way (Wang & Sun, 2020).

The ongoing globalization for many years was supported by pure internationalization - both entrepreneurial and political. The Covid19 crisis has now shown us the dependencies that globalization creates and has forced globalization to pause. Suddenly, many countries are left to their efforts; only partially joint procurement initiatives were used in the EU. The nation-state is coming to the fore, and international cooperation is being scaled back. The protection of the individual in his or her own country is supposed to be the top priority. Internationally, solidarity is promised with encouragement, but for the developing countries, which are characterized by even greater dependence in the world markets and simultaneous political instability, it can quickly degenerate into an unsatisfactory phrase. No wonder, then, that globalization has become a nightmare. Instead of growth, global risk now dominates.

Parallel to these “invisible dependencies”, states and the population argue about a new de-globalization, about the reduction of global dependency. Often the concept of regionalization is mentioned, with the aim of securing local supply chains for system-relevant products and also valuing other local products, local production and quality. In regionalization, activities are more focused on regional contexts. It is an intensification process of intra-regional social and economic interactions (Börzel et al., 2016). Economic geography refers to a process in which the region gains importance as a frame of reference for politics and other institutions. Supranational economic regions exist, which have developed naturally through economic processes like the densification of the exchange of goods and services and capital interdependencies into de facto blocs. Potential for regionalization in Eurasia evolves especially in Central Asia, where linkages between countries are still poor, but multilateralism is part of current policies.

It is proven with the descriptive statistics (sec. 5) that risk and uncertainty are somehow influencing internationalization. However, the sum of internationalization activities becomes more robust, also due to regional shifts away from crisis regions (Wang & Sun, 2020). This would by no means be an abandonment of our state of development; on the contrary, stronger regionalization could generate new value creation and the chance for more sustainable production chains. Nevertheless, this can only succeed if market policy instruments and social goodwill also effectively take effect - pure political will probably miss the point. Therefore, regionalization in its market perspective is accompanied by regionalism as the top-down perspective. In this regard, China and the Belt and Road Initiative (BRI) might promote a new regionalization in East and Central Asia that gains at least some independence from global value chains.

Re-Centring: China as a Growth Pole

Internationalization is also a national-strategic question of how globalization should be shaped in the future. China was the first country to respond to the pandemic and will now be the first country to emerge from the crisis. It will be exciting to see which path China and the BRI countries choose. What is certain

Internationalization in Times of Uncertainty

is that even before Covid-19 Pandemic, the world was more dependent than ever on China, and at the same time, criticism of China's actions with the BRI caused much resentment (Gerstl & Wallenböck, 2021). In post-Covid-19 times, China has a lot of prestige at stake - failure of the BRI would mean failure on the road to becoming a super trading power. However, now would be the right time to raise global relations to a more sustainable and equal level. We will probably not be able to avoid globalization *per se* due to the strong interdependencies between countries and companies. In this regard, companies are depending on international relations to rely on stable context conditions for their internationalization (Liesch et al., 2011).

China's foreign trade policy has been a key driver of globalization over the past decade, which has also been strengthened by the BRI launched in 2013. The Covid-19 Pandemic further underlines the role of regions and China's role in the recovery (Wang & Sun, 2020). With its geopolitical peculiarities, the BRI serves as a linking element as it includes political-driven initiatives and space for entrepreneurial activity. Although China and some East Asian countries are crisis-tested from previous epidemics, in the spring of 2020, China teetered between cover-up and turmoil, shock, and actionism. Now seemed the time to declare a contest of policy systems and global leadership (Pechlaner & Thees, 2020). China now wants to show what international role it can play in the crisis; it is showing cooperation and solidarity, at least outwardly, supplying protective equipment, providing experts, and, in particular, supporting countries along the BRI (Cole & Dodds, 2021). China manages to do what neighboring countries and other cooperative communities might fail to do due to their own isolation. China is now present with aid and financing, and this support alone provides clues as to whether China's influence in the world is declining. For now, China's trade influence may be weakened by the halt in international trade flows, but confidence is being built in cooperative countries through emphasized solidarity. Trade forecasts support the fast recovery of Chinese outward investments.

Further, the financial injections that China can make to keep infrastructure projects built and operating will increase partner countries' dependencies on China. Of course, this does not affect all countries and the steps that companies take now in internationalization might be groundbreaking. Specifically, economically smaller countries are becoming dependent on China's support as investment rates are high (Freeman, 2018; Öztürk, 2019; Pieper, 2020). With the rise of China, companies and entrepreneurs need to find their position in coping with China. Some companies clearly state to stay away from China; others do not have a choice as China is rising in economic and political regards and leading Asia. For a long time, the European position was very passive, claiming to achieve fairness and equality, especially in Chinese relations. Still, in 2021, the EU declares trade protection and limits the influence of state-owned companies. Nevertheless, the EU and, in particular, countries in Eastern Europe are aware of the high importance of investments from and to China.

CONCLUSION

In the discussions on internationalization and uncertainty, it became clear that economies worldwide were hit hard by the stop of international flows of goods and people. However, with the data available, we can see rebound effects from the second half of 2020, which gives a positive outlook for future internationalization. In the same way, uncertainty is declining and companies learned to cope with the situation. In addition, we need to recognize that our current globalization causes dependency in international relations and internationalization that seemed to be crisis-resistant only to a limited extent. Reflecting

the guiding question, *how do crises, such as the Covid-19 Pandemic influence internationalization, especially between Europe and Aisa and what are future directions to achieve economic stability*, learnings include: (1) The longer the world is in shutdown, the greater the impact on internationalization will be, (2) Economic effects are determined by international cooperation and dependencies and vary across regions, (3) the Covid-19 Pandemic is likely to reconfigure patterns of internationalization (4) China is a driver for the recovery of internationalization and (5) Asia and specifically China is becoming an important region for receiving and sending FDI, while (6) economically weaker countries in Eurasia are challenged by dependencies on Chinese investments.

In sum, this chapter has highlighted the importance of internationalization and its contribution to globalization over the past decades. The Covid-19 Pandemic has disrupted the ongoing increase. However, globalness will remain, but the regional and the local level have gained momentum. Not to forget, responses to the Covid-19 Pandemic in economic terms differed across the world and companies suffered in the first phase of the pandemic from the high uncertainties. But we can also see that internationalization requires international relations on a political scale as support. It is thus vital to implement cooperative strategies across nations to decrease uncertainty and secure global value chains. In this regard, companies can assist by implementing resilience, proper strategic planning, or assessing globalization trends. In this interesting linkage between the corporate and the national political level, further research is needed. Future research could include the qualitative analysis of factors influencing internationalization during crises, alternative business models for MNEs in a more regional setting, or the Chinese focus on East Asia or along with the BRI. The latter includes effects on trade, but also power relations and local effects.

REFERENCES

- Abbott, K. W., & Snidal, D. (2001). International 'standards' and international governance. *Journal of European Public Policy*, 8(3), 345–370. doi:10.1080/13501760110056013
- Aharoni, Y. (1966). The foreign investment decision process. *The International Executive*, 8(4), 13–14. doi:10.1002/tie.5060080407
- Ahir, H., Bloom, N., & Furceri, D. (2018). The World Uncertainty Index. SSRN *Electronic Journal*. Advance online publication. doi:10.2139/ssrn.3275033
- Alimadadi, S., Bengtson, A., & Hadjikhani, A. (2018). How does uncertainty impact opportunity development in internationalization? *International Business Review*, 27(1), 161–172. doi:10.1016/j.ibusrev.2017.06.002
- Alon, I. (2020). COVID-19 and International Business: A Viewpoint. *FIIB Business Review*, 9(2), 75–77. doi:10.1177/2319714520923579
- Aruga, K., Islam, M. M., & Jannat, A. (2020). Effects of COVID-19 on Indian Energy Consumption. *Sustainability*, 12(14), 5616. doi:10.3390/u12145616
- Asian Development Bank (Ed.). (2020). *The Economic Impact of the COVID-19 Outbreak on Developing Asia*. <https://www.adb.org/sites/default/files/publication/571536/adb-brief-128-economic-impact-covid19-developing-asia.pdf>

Internationalization in Times of Uncertainty

- Autio, E. (2017). Strategic Entrepreneurial Internationalization: A Normative Framework. *Strategic Entrepreneurship Journal*, 11(3), 211–227. doi:10.1002/ej.1261
- Barua, S. (2020). *Understanding Coronanomics: The Economic Implications of the Coronavirus (COVID-19) Pandemic*. Draft Manuscript. Advance online publication.
- Bathelt, H., & Glückler, J. (2012). *Wirtschaftsgeographie: Ökonomische Beziehungen in räumlicher Perspektive* (3rd ed.). UTB: Vol. 8217. E. Ulmer.
- Biswas, P. K., & Dygas, R. (Eds.). (2021). *Routledge Studies in the Modern World Economy. Asian foreign direct investment in Europe*. Routledge. doi:10.4324/9781003186601
- Blomström, M., Kokko, A., & Globermann, S. (2001). The determinants of host country spillovers from foreign direct investment: A review and synthesis of the literature. In N. Pain (Ed.), *Inward investment, technological change and growth: The impact of multinational corporations on the UK economy* (pp. 34–65). Palgrave. doi:10.1057/9780230598447_2
- Börzel, T. A., Goltermann, L., & Striebinger, K. (2016). *Roads to Regionalism: Genesis, Design, and Effects of Regional Organizations. The international political economy of new regionalisms series*. Taylor and Francis. doi:10.4324/9781315606675
- Buckley, P. J., & Casson, M. C. (1976). *The Future of the Multinational Enterprise*. Academic Press.
- Chang, S., Liao, C., & Meng, I. (2021). *Asia Market Outlook 2021: Attractive Opportunities As Economies Rebound*. PIMCO. <https://global.pimco.com/en-gbl/insights/viewpoints/asia-market-outlook-2021-attractive-opportunities-as-economies-rebound>
- Cole, J., & Dodds, K. (2021). Unhealthy geopolitics? Bordering disease in the time of coronavirus. *Geographical Research*, 59(2), 169–181. doi:10.1111/1745-5871.12457
- Corporate Finance Institute. (2020). *Uncertainty: Definition, Example, and Role in Investing*. <https://onlinelibrary.wiley.com/doi/pdf/10.1002/j.2334-5837.2005.tb00685.x>
- Cuervo-Cazurra, A., Ciravegna, L., Melgarejo, M., & Lopez, L. (2018). Home country uncertainty and the internationalization-performance relationship: Building an uncertainty management capability. *Journal of World Business*, 53(2), 209–221. doi:10.1016/j.jwb.2017.11.002
- Dudas, T., & Dudasova, M. (2016). Growth of Chinese investments in Europe after the global economic crisis of 2008-2009. *Economic Annals-XXI*, 160(7-8), 9–13. doi:10.21003/ea.V160-02
- Dudas, T., & Rajnoha, R. (2020). Chinese high-tech foreign direct investments in the EU – trends and policy responses. *Problems and Perspectives in Management*, 18(2), 316–328. doi:10.21511/ppm.18(2).2020.26
- Dunning, J. H. (1981). Explaining the international direct investment position of countries: Towards a dynamic or development approach. *Weltwirtschaftliches Archiv*, 117(1), 30–64. doi:10.1007/BF02696577
- European Commission. (2021). *Database - International trade in goods - Eurostat*. <https://ec.europa.eu/eurostat/web/international-trade-in-goods/data/database>
- Felbermayr, G., & Görg, H. (2020). Die Folgen von Covid-19 für die Globalisierung. *Perspektiven der Wirtschaftspolitik*, 21(3), 263–272. doi:10.1515/ppw-2020-0025

- Freeman, C. P. (2018). China's 'regionalism foreign policy' and China-India relations in South Asia. *Contemporary Politics*, 24(1), 81–97. doi:10.1080/13569775.2017.1408168
- Fueglistaller, U., Müller, C. A., & Volery, T. (2012). *Entrepreneurship: Modelle, Umsetzung, Perspektiven ; mit Fallbeispielen aus Deutschland, Österreich und der Schweiz* (3. Aufl). Gabler.
- Gerstl, A., & Wallenböck, U. (Eds.). (2021). *Rethinking Asia and international relations. China's Belt and Road Initiative: Strategic and economic impacts on Central Asia, Southeast Asia and Central Eastern Europe*. Routledge.
- Gregory, J. (2021, May 13). Expanding into Asia - Best 8 Asian Markets for Expansion. *New Horizons Global Partners*.
- GTAI. (2020). *Asien-Pazifik: Motor der Weltwirtschaft*. <https://www.gtai.de/gtai-de/trade/specials/asien-pazifik>
- Gussarova, A., Aminjonov, F., & Khon, Y. (2017). *The Eurasian Economic Union and the Silk Road Economic Belt: Competition or Convergence? Implications for Central Asia*. Kazakhstan. Friedrich Ebert Stiftung.
- Hanemann, T., & Huotari, M. (2018). *EU-China FDI: Working towards reciprocity in investment relations*. Rhodium Group; Merics. https://merics.org/sites/default/files/2020-04/180723_MERICSCOFDI-Update_final_0.pdf
- Harris, S., & Wheeler, C. (2005). Entrepreneurs' relationships for internationalization: Functions, origins and strategies. *International Business Review*, 14(2), 187–207. doi:10.1016/j.ibusrev.2004.04.008
- Hayes, A. (2005). *Guide to Mergers and Acquisitions*. Investopedia. <https://www.investopedia.com/terms/m/mergersandacquisitions.asp>
- Hossain, M. (2021). The effect of the Covid-19 on sharing economy activities. *Journal of Cleaner Production*, 280, 124782. doi:10.1016/j.jclepro.2020.124782 PMID:33106734
- Humphrey, J., & Schmitz, I. T. (2002). How Does Insertion in Global Value Chains Affect Upgrading in Industrial Clusters? *Regional Studies*, 36(9), 1017–1027. doi:10.1080/0034340022000022198
- International Institute of Green Finance (IIGF). (2021). *Databases for the Belt and Road Initiative (BRI)*. <https://green-bri.org/databases-for-the-belt-and-road-initiative-bri/>
- Investopedia. (2007, August 21). *Economic Shock*. <https://www.investopedia.com/terms/e/economic-shock.asp>
- Javorcik, B. (2020). Global supply chains will not be the same in the post-COVID-19 world. In R. E. Baldwin & S. J. Evenett (Eds.), *COVID-19 and trade policy: Why turning inward won't work* (pp. 111–116). CEPR Press.
- Jing, Y. (2021). Seeking opportunities from crisis? China's governance responses to the COVID-19 pandemic. *International Review of Administrative Sciences*.

Internationalization in Times of Uncertainty

- Johanson, J., & Vahlne, J.-E. (2009). The Uppsala internationalization process model revisited: From liability of foreignness to liability of outsidership. *Journal of International Business Studies*, 40(9), 1411–1431. doi:10.1057/jibs.2009.24
- Jovanović, M. N., Damjanović, J., & Njegić, J. (2018). Euro-Asian overland transport links: prospects and challenges. In B. A. Blonigen & W. W. Wilson (Eds.), *Handbook of international trade and transportation* (pp. 602–627). Edward Elgar Publishing. doi:10.4337/9781785366154.00031
- Knight, G. A., & Liesch, P. W. (2016). Internationalization: From incremental to born global. *Journal of World Business*, 51(1), 93–102. doi:10.1016/j.jwb.2015.08.011
- Kratz, A., Zenglein, M. J., & Sebastian, G. (2021, June 16). *Chinese FDI in Europe: 2020 Update*. Merics; Rhodium Group. <https://merics.org/en/report/chinese-fdi-europe-2020-update>
- Kutschker, M., & Schmid, S. (2011). *Internationales Management* (7th ed.). Oldenbourg.
- Lall, S. (1993). Promoting Technology Development: The Role of Technology Transfer and Indigenous Effort. *Third World Quarterly*, 14(1), 95–108. doi:10.1080/01436599308420315
- Li Sun, S. (2009). Internationalization Strategy of MNEs from Emerging Economies: The Case of Huawei. *Multinational Business Review*, 17(2), 129–156. doi:10.1108/1525383X200900013
- Liesch, P. W., Welch, L. S., & Buckley, P. J. (2011). Risk and Uncertainty in Internationalisation and International Entrepreneurship Studies. *Management International Review*, 51(6), 851–873. doi:10.1007/11575-011-0107-y
- Lin, W.-T., & Liu, Y. (2012). Successor characteristics, change in the degree of firm internationalization, and firm performance: The moderating role of environmental uncertainty. *Journal of Management & Organization*, 18(1), 16–35. doi:10.5172/jmo.2012.18.1.16
- Ludovic, J., Bourdin, S., Nadou, F., & Noiret, G. (2020). Economic globalization and the COVID-19 pandemic: Global spread and inequalities. *Bulletin of the World Health Organization*.
- Lüning, J. (1992). *Direktinvestitionen und Standortverhalten von multinationalen Unternehmen: Eine theoretische und empirische Analyse für die Region Wien. Forschungsergebnisse der Wirtschaftsuniversität Wien*. Service Fachverlag.
- Malik, M. F., Anuar, M. A., Khan, S., & Khan, F. (2014). Mergers and acquisitions: A conceptual review. *International Journal of Accounting and Financial Reporting*, 4(2), 520. doi:10.5296/ijaf.v4i2.6623
- McCausland, T. (2020). Covid-19's Impact on Globalization and Innovation. *Research Technology Management*, 63(6), 54–59. doi:10.1080/08956308.2020.1813506
- McDougall, P. P., & Oviatt, B. M. (2000). International Entrepreneurship: The Intersection of two Research Paths. *Academy of Management Journal*, 43(5), 902–906.
- McKinsey & Company (Ed.). (2019). *Asia's future is now*. <https://www.mckinsey.com/~media/mckinsey/featured%20insights/asia%20pacific/asias%20future%20is%20now/asias-future-is-now-final.pdf>
- McKinsey & Company. (2020). *Nine scenarios for the COVID-19 economy*. <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/nine-scenarios-for-the-covid-19-economy>

- McKinsey & Company. (2021). *The coronavirus effect on global economic sentiment*. <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-coronavirus-effect-on-global-economic-sentiment>
- McManus, H., & Hastings, D. (2006). A framework for understanding uncertainty and its mitigation and exploitation in complex systems. *IEEE Engineering Management Review*, 34(3), 81.
- Melin, L. (1992). Internationalization as a Strategy Process. *Strategic Management Journal*, 13, 99–118.
- Menoni, S., & Margottini, C. (2011). *Inside Risk: A Strategy for Sustainable Risk Mitigation*. Springer Milan. doi:10.1007/978-88-470-1842-6
- Ministry of Commerce PRC. (2020). 中国已与138个国家、31个国际组织签署201份共建一带一路合作文件. <http://sg.mofcom.gov.cn/article/ydyl/202011/20201103016788.shtml>
- Miroudot, S. (2020). Resilience versus robustness in global value chains: Some policy implications. In R. E. Baldwin & S. J. Evenett (Eds.), *COVID-19 and trade policy: Why turning inward won't work* (pp. 117–130). CEPR Press.
- Noy, I., Doan, N., Ferrarini, B., & Park, D. (2020). Measuring the Economic Risk of COVID-19. *Global Policy*, 11(4), 413–423.
- O'Reilly, J., Lain, D., Sheehan, M., Smale, B., & Stuart, M. (2011). Managing uncertainty: The crisis, its consequences and the global workforce. *Work, Employment and Society*, 25(4), 581–595.
- OECD. (1996). *Benchmark definition of foreign direct investment* (3rd ed.). OECD Publications.
- OECD. (2013). *OECD Glossary of Statistical Terms: Globalisation Definition*. <https://stats.oecd.org/glossary/detail.asp?ID=1121>
- OECD. (2020). *Foreign direct investment flows in the time of COVID-19*. <https://www.oecd.org/coronavirus/policy-responses/foreign-direct-investment-flows-in-the-time-of-covid-19-a2fa20c4/>
- Öztürk, İ. (2019). *The belt and road initiative as a hybrid international public good* (125/2019). Duisburg. University of Duisburg-Essen, Institute of East Asian Studies (IN-EAST).
- Pack, F. L., & Saggi, K. (1997). Inflows of Foreign Technology and Indigenous Technological Development. *Review of Development Economics*, (1), 81–98.
- Pechlaner, H., & Thees, H. (2020). *Is the Silk Road a Road of Fear? Challenges of Global Transformation | global-e*. Re-Globalization. <https://www.21global.ucsb.edu/global-e/april-2020/silk-road-road-fear-challenges-global-transformation>
- Peng, Y., Zhu, W., Zhao, Y., Xu, C., Huang, Q., Lu, H., Zheng, Q., Huang, T., & Gao, W. (2017). Cross-media analysis and reasoning: Advances and directions. *Frontiers of Information Technology & Electronic Engineering*, 18(1), 44–57.
- Pieper, M. (2020). The new silk road heads north: Implications of the China-Mongolia-Russia economic corridor for Mongolian agency within Eurasian power shifts. *Eurasian Geography and Economics*, 1–24.
- Porter, M. E. (2008). *On competition* (Updated and expanded ed.). Harvard Business School Pub.

Internationalization in Times of Uncertainty

PWC. (Ed.). (2021). *Global Crisis Survey 2021: Building resilience for the future*. PWC.

Ratten, V. (2020). Coronavirus (covid-19) and entrepreneurship: Changing life and work landscape. *Journal of Small Business and Entrepreneurship*, 32(5), 503–516.

Roland Berger. (2020). *Managing The Coronavirus Crisis*. <https://www.rolandberger.com/en/Insights/Global-Topics/Coronavirus-business-response/>

Rugman, A. (1980). A new theory of the multinational-enterprise-internationalization versus internalization. *The Columbia Journal of World Business*, 15(1), 23–33.

Santangelo, G. D., & Meyer, K. E. (2017). Internationalization as an evolutionary process. *Journal of International Business Studies*, 48(9), 1114–1130.

Sarkar, S. (2000). On the investment–uncertainty relationship in a real options model. *Journal of Economic Dynamics & Control*, 24(2), 219–225.

Savic, B. (2021). *Asia leads the global economy out of 2020's record FDI inflow slump*. Asia Business News. <https://www.asiabriefing.com/news/2021/02/asia-leads-the-global-economy-out-of-2020s-record-fdi-inflow-slump/>

Schätzl, L. (2001). *Wirtschaftsgeographie 1: Theorie* (8th ed.). UTB für Wissenschaft Uni-Taschenbücher Geographie, Wirtschaftswissenschaften: Vol. 782. Schöningh.

Schätzl, L., & Liefner, I. (2012). *Theorien der Wirtschaftsgeographie* (10., Aufl). UTB: Vol. 782. UTB.

Sforza, A., & Steininger, M. (2020). *Globalization in the Time of COVID-19*. Academic Press.

Shah, F. A., Yusaff, R. M., Hussain, A., & Hussain, J. (2012). A critical review of multinational companies, their structures and strategies and their link with international human resource management. *Journal of Business and Management*, 3(5), 28–37.

Shaluf, I. M., & Said, A. M. (2003). A review of disaster and crisis. *Disaster Prevention and Management: An International Journal*.

Siedschlag, I., & Zhang, X. (2015). Internationalisation of firms and their innovation and productivity. *Economics of Innovation and New Technology*, 24(3), 183–203.

Song, L., & Zhou, Y. (2020). The COVID-19 Pandemic and Its Impact on the Global Economy: What Does It Take to Turn Crisis into Opportunity? *China & World Economy*, 28(4), 1–25.

Standard Chartered Bank. (Ed.). (2021). *Borderless Business report*. https://www.sc.com/en/banking/europe-americas/?utm_source=press&utm_medium=referral&utm_campaign=EACampaignAug20

Steger, M. B. (2017). *Globalization: A very short introduction* (4th ed.). Oxford University Press.

Süßel, C. (2021, February 10). *Corona trocknet Investitionsflüsse aus*. GTAI. <https://www.gtai.de/gtai-de/trade/wirtschaftsumfeld/bericht-wirtschaftsumfeld/welt/corona-trocknet-investitionsfluesse-aus-609644>

The Economist Intelligence Unit. (Ed.). (2021). Regional Comprehensive Economic Partnership: Set to strengthen Asian supply chains? In *Asia-Pacific Trade and Investment Trends 2020/2021: Foreign Direct Investment Trends and Outlook in Asia and the Pacific*. Author.

Tukamuhabwa, B. R., Stevenson, M., Busby, J., & Zorzini, M. (2015). Supply chain resilience: Definition, review and theoretical foundations for further study. *International Journal of Production Research*, 53(18), 5592–5623.

UNCTAD. (2009). World investment report 2009: Transnational corporations, agricultural production and development. World investment report: Vol. 2009. United Nations Conference on Trade and Development (UNCTAD).

UNCTAD. (Ed.). (2020). *International SDG Investment Flows to Developing Economies down by one third due to Covid-19*. https://unctad.org/system/files/official-document/diaemisc2020d3_en.pdf

UNCTAD. (2021). *Statistics*. <https://unctad.org/statistics>

VUCA-WORLD. (2020, August 16). *Leadership skills & strategies*. <https://www.vuca-world.org/>

Wang, Z., & Sun, Z. (2020). From Globalization to Regionalization: The United States, China, and the Post-Covid-19 World Economic Order. *Journal of Chinese Political Science*, 1–19.

Westhead, P., Wright, M., & Ucbasaran, D. (2007). Issues Surrounding the Internationalization of SMEs: Implications for Policy Makers and Researchers. In G. I. Susman (Ed.), *Small and medium-sized enterprises and the global economy*. Edward Elgar.

World Economic Forum. (2021, February 8). *Foreign direct investments could contract by 40% this year, hitting developing countries hardest*. <https://www.weforum.org/agenda/2020/06/coronavirus-covid19-economics-fdi-investment-united-nations/>

World Health Organization. (n.d.). *Globalization*. www.who.int/topics/globalization/en/

World Trade Organization. (2020). *World Trade Statistical Review 2020*. Author.

World Trade Organization. (2021). *World trade primed for strong but uneven recovery after COVID 19 pandemic shock*. https://www.wto.org/english/news_e/pres21_e/pr876_e.htm

Xu, Z., Elomri, A., Kerbache, L., & El Omri, A. (2020). Impacts of COVID-19 on Global Supply Chains: Facts and Perspectives. *IEEE Engineering Management Review*, 48(3), 153–166.

Zahra, S. A. (2021). International entrepreneurship in the post Covid world. *Journal of World Business*, 56(1), 101143.

Zahra, S. A., & George, G. (2002). International Entrepreneurship: The Current Status of the Field and Future Research Agenda. In M. A. Hitt (Ed.), *Strategic Management Society book series. Strategic entrepreneurship: Creating a new mindset* (pp. 253–288). Blackwell.

KEY TERMS AND DEFINITIONS

Foreign Direct Investment (FDI): Is a cross-border (asset) investment in foreign companies with the aim of significantly influencing and gaining a degree of control over their business activities over a long term. It is made by an individual or company in one economy who wants to establish a lasting interest

Internationalization in Times of Uncertainty

in an enterprise located in another economy (OECD, 1996, 2020). Significant influence is deemed to exist if the investor holds 10% or more of the shares or voting rights.

Global Value Chains: Value chains consist of a collection of different activities that a company carries out in order to create value for its customers and to remain competitive (Porter, 2008). By restructuring and outsourcing firm's activities worldwide, global value chains are formed. A global value chain describes the international dispersion of entrepreneurial activities like trade and investments and a geographical fragmentation of production processes, in which the value of the product or service is increased (Humphrey & Schmitz, 2002).

Internationalization: Is a process of increasing participation in international markets (Westhead et al., 2007). It describes the sales or business activities of a company outside its home country (Li Sun, 2009). As corporate strategy it adapts products and services for different national markets. As a learning and resource allocation process it distributes and exchanges resources in foreign markets (Autio, 2017). It is a consequence of gradual adjustments to changing conditions within the company and its environment (Aharoni, 1966). Inward activities of internationalization are relating processes like importers, licensees and franchisees. Outward activities describe processes associated with exporting, licensing, franchising and foreign direct investment (FDI) (Westhead et al., 2007).

Mergers and Acquisitions: Are consolidations of firms or assets through various types of financial transactions (Hayes, 2005). In acquisition one company purchase the majority of the share capital (>50%) or a whole legally independent organization, so that the economic independence of the acquired company is lost. In merger two or more legally independent companies combine to one, so that a new legal entity is formed and joint action is achieved (Malik et al., 2014).

Multinational Companies: Are firms that internationalize their business activities and maintain value added-holdings overseas (Shah et al., 2012). These firms operate their branches, offices or production facilities abroad. Therefore, their organizational form is highly internalized. Their cross-border activities are typically including foreign direct investment, exporting and other non-equity modes of operations. These activities are allocated in more than one country abroad (Knight & Liesch, 2016; Shah et al., 2012). These firms are also known as international or transnational organizations.

Resilient Trade Networks: Resilience is an adaptive capability to prepare and respond to a disruption in order to achieve an effective recovery, which realizes a return to a normal state of operation after the disruption (Tukamuhabwa et al., 2015). Consequently, resilient trade networks ensure the sustainability of their activities, such as exports and imports, for a successful long-term operation. They have the ability to recover from shocks and are robust and adaptive to crisis, external influences and change. Success factors for a decreasing vulnerability are considered diversity instead of dependency, spatial dispersion, regionalisation to a certain degree (Javorcik, 2020), adaption of products and design of the value chain as well as resilience monitoring (Miroudot, 2020).

Uncertainty: Is a perceived lack of certainty, reliability or validity of an event. It refers to situations where there is an unknown future or where this future is known but not predictable (Liesch et al., 2011). No information about the possible outcomes of processes is available to decision-makers (Fueglistaller et al., 2012) or the existing information is too imprecise to determine a probability from it.

ENDNOTE

- ¹ Merchandise Trade Definition: Goods which add or subtract from the stock of material resources of a country by entering (imports) or leaving (exports) its economic territory. Goods simply being transported through a country (goods in transit) or temporarily admitted or withdrawn (except for goods for inward or outward processing) do not add to or subtract from the stock of material resources of a country and are not included in the international merchandise trade statistics. (United Nations. International Merchandise Trade Statistics -- Concepts and Definitions).

APPENDIX

Table 1. Growth Rate of GDP in Asian Countries, in % per year

	2016	2017	2018	2019	2020	2021	2022
Central Asia	2,5	4,2	4,5	4,9	-1,9	3,4	4,0
Armenia	0,2	7,5	5,2	7,6	-7,6	1,8	3,0
Azerbaijan	-3,1	0,2	1,5	2,5	-4,3	1,9	2,5
Georgia	2,9	4,8	4,8	5,0	-6,2	3,5	6,0
Kazakhstan	1,1	4,1	4,1	4,5	-2,6	3,2	3,5
Kyrgyz Republic	4,3	4,7	3,8	4,6	-8,6	3,5	5,0
Tajikistan	6,9	7,1	7,3	7,5	4,5	5,0	5,5
Turkmenistan	6,2	6,5	6,2	6,3	1,6	4,8	4,9
Uzbekistan	6,1	4,5	5,4	5,8	1,6	4,0	5,0
East Asia	6,1	6,3	6,1	5,3	1,8	7,4	5,1
Hong Kong, China	2,2	3,8	2,8	-1,2	-6,1	4,6	4,5
Mongolia	1,2	5,3	7,2	5,2	-5,3	4,8	5,7
People's Republic of China	6,8	6,9	6,7	6,0	2,3	8,1	5,5
Republic of Korea	2,9	3,2	2,9	2,0	-1,0	3,5	3,1
Taipei, China	2,2	3,3	2,8	3,0	3,1	4,6	3,0
South Asia	7,6	6,6	6,4	4,2	-6,0	9,5	6,6
Afghanistan	2,3	2,6	1,2	3,9	-5,0	3,0	4,0
Bangladesh	7,1	7,3	7,9	8,2	5,2	6,8	7,2
Bhutan	7,4	6,3	3,8	4,3	0,9	-3,4	3,7
India	8,3	6,8	6,5	4,0	-8,0	11,0	7,0
Maldives	6,3	7,2	8,1	7,0	-32,0	13,1	14,0
Nepal	0,4	9,0	7,6	6,7	-1,9	3,1	5,1
Pakistan	4,6	5,2	5,5	1,9	-0,4	2,0	4,0
Sri Lanka	4,5	3,6	3,3	2,3	-3,6	4,1	3,6
Southeast Asia	4,9	5,4	5,1	4,4	-4,0	4,4	5,1
Brunei Darussalam	-2,5	1,3	0,1	3,9	1,2	2,5	3,0
Cambodia	7,0	6,9	7,5	7,1	-3,1	4,0	5,5
Indonesia	5,0	5,1	5,2	5,0	-2,1	4,5	5,0
Lao People's Dem. Rep.	7,0	6,9	6,2	4,7	-0,5	4,0	4,5
Malaysia	4,4	5,8	4,8	4,3	-5,6	6,0	5,7
Myanmar	5,9	5,8	6,4	6,8	3,3	-9,8	...
Philippines	7,1	6,9	6,3	6,1	-9,6	4,5	5,5
Singapore	3,3	4,5	3,5	1,3	-5,4	6,0	4,1
Thailand	3,4	4,2	4,2	2,3	-6,1	3,0	4,5
Timor-Leste	3,4	-4,1	-1,1	1,8	-7,9	3,4	4,3
Viet Nam	6,2	6,8	7,1	7,0	2,9	6,7	7,0
The Pacific	4,9	3,7	0,8	4,3	-5,8	1,4	3,8
Cook Islands	6,0	6,8	8,9	5,3	-5,9	-26,0	6,0
Federated States of Micronesia	0,9	2,7	0,2	1,2	-5,4	-1,8	2,0
Fiji	2,4	5,4	3,8	-0,4	-19,0	2,0	7,3
Kiribati	5,1	0,3	2,3	2,4	0,6	-0,2	2,3
Marshall Islands	1,3	4,1	3,6	0,7	-5,5	-1,4	2,5
Nauru	3,0	-5,5	5,7	1,0	0,8	1,5	1,0
Niue	3,5	2,4	6,5
Palau	-0,4	-2,0	5,8	-1,8	-10,3	-7,8	10,4
Papua New Guinea	5,5	3,5	-0,3	5,9	-3,3	2,5	3,0
Samoa	8,1	1,0	-2,1	3,6	-3,2	-9,2	3,1
Solomon Islands	5,9	5,3	3,0	1,2	-4,5	1,0	4,5

continued on following page

Table 1. Continued

	2016	2017	2018	2019	2020	2021	2022
Tonga	6,6	3,3	0,3	0,7	-0,8	-5,3	1,8
Tuvalu	3,0	3,2	4,3	4,1	0,5	2,5	3,0
Vanuatu	3,5	4,4	2,9	3,5	-9,8	2,0	4,0
Developing Asia	6,1	6,2	6,0	5,0	-0,2	7,3	5,3
Developing Asia excluding the NIEs	6,6	6,6	6,5	5,5	0,0	7,7	5,6
... data not available.							

Note: Newly industrialized economies (NIEs) comprises Hong Kong, China; Korea, Republic of; Singapore; and Taipei,China.

Source: ADB

Chapter 11

The Impact of the Spread of COVID-19 on Globalization: The Future of Globalization

Lenka Nigrinová

University College of Business in Prague, Czech Republic

ABSTRACT

The text analyzes the changes in the process of globalization which have occurred in connection with the spread of COVID-19 and determines the possibilities for further development. It is based on the definition of globalization according to the OECD. Several years before the pandemic came, and globalization entered a phase of slowdown. It was called deglobalization. The main facts that caused this process were financial recession in 2008 and changes in USA and China economic relationship. The pandemic has weakened economic growth in many countries, reduced trade and travel, and introduced restrictive measures. The effects of a pandemic for individual states depend on the extent to which the states are connected in global production and trade networks. Three scenarios and their impact on globalization, trade, and the world economy are introduced.

INTRODUCTION

The concept of globalization is linked to a few main areas: economic, financial, political, social, cultural and also technological. Economic globalization is an interdependence of world economies due to growing cross-border trade in goods, services, capital and the rapid spread of technology. According to the author, economic globalization includes many processes related to the spread of economic activities among countries around the world. Economic globalization then represents the interdependence of world economies due to the growing cross-border trade in goods, services and capital, which has been facilitated in recent years by the rapid spread of technology. Political globalization involves the transformation of relations between political processes and states (Ougaard, 2004).

Social globalization is defined as information flows, personal contacts and cultural sharing across countries (Dreher 2006). The social dimension of globalization is related to the impact of globalization

DOI: 10.4018/978-1-7998-8339-5.ch011

on people's lives and work, on society, culture and human security. The globalization of culture is manifested not only in the fact that all the most important scientific discoveries and outstanding literary works are translated into many languages. Popular songs and melodies, films, the best examples of fashion and dramatic art are spreading all over the planet at high speed (Chumakov, 2012). In this context, it is also important to mention Huntington's view that culturally based civilizations have a strong influence on people. They affect them more than political and economic systems or levels of development (Huntington, 2011). The spread of technology across national borders, data transfer and the Internet has greatly accelerated technological globalization in recent decades.

Globalization is a process that has been strengthened by the liberalization of markets, in particular by reducing tariffs and barriers to the movement of capital and by the movement of people. It is clear that globalization is connected with the behavior of states and governments (especially the strongest economies in the world), which actually create the conditions for liberalization and for the integration processes. In addition to liberalization and integration, the development of transport and information systems, technological innovation, the development of electronic data interchange systems, the speed of communication, the huge rise of multinational companies and the interconnection of financial markets are essential preconditions for the development of globalization.

The globalized world we live in today is a world that brings many uncertainties, frequent changes and also risks. Globalization is a spontaneous process that is not controlled by any central authority or institution. Many activities are mainly affected by the functioning of the markets and competition, which brings with it certain advantages but also risks. The main benefit of globalization is the increase in competition in the markets, which leads to lower costs, commodity prices, pressure for higher quality goods and thus increases the overall efficiency of the system. Limited resources are used better and more efficiently, and this in turn leads to economic growth for many countries. Thanks to their size and number of branches, multinational companies can offer a wide range of services and satisfy the needs of customers around the world. Multinational companies develop economic activities in several markets through full or partial ownership of branches. These companies have great geographical flexibility and therefore relocate their operations to other parts of the world according to the evolution of political conditions, the system of investment incentives, tax policies, cost of labor, the competitive environment and production costs in the territory.

Other advantages of globalization are greater choice (wide range of goods and services) and lower prices for consumers, satisfaction of customer preferences anywhere in the world. Globalization also contributes to the spread of technology and knowledge, leading to stronger and faster communication. Gains come from the sharing of ideas and also skills across national borders. To summarize the consequences of globalization, we can say that globalization generally leads to resource efficiency and the allocation of production to a place with higher labor productivity, but production costs and revenues are often unevenly distributed, which can result in global imbalances.

There are differing views on the effects of the interdependence of states and regions that globalization also brings. This dependence can bring benefits in terms of knowledge transfer, such as know-how and technology. But due to the strong interconnectedness of economies, there are negative effects, such as the spread of economic recession, crisis, or disease across national borders. The negatives of globalization include economic, social and cultural threats. Thanks to the interconnectedness of national markets, even a crisis of one or a few states can become a global crisis. Other disadvantages of globalization are inequalities in income and wealth, and standardization vs. local customs. Standardization facilitates the exchange of goods and services and streamlines marketing efforts and delivers economies of scale.

The Impact of the Spread of COVID-19 on Globalization

However, it is not possible to monitor and offer products according to local market trends. Standardization reduces the local specifics of national countries and increases the competitive pressure on the production and sale of national products.

As cultures and products begin to lose their typical features, we lose global diversity. Retail chains in the form of super and hyper mean bankruptcy for many small businesses. Multinational companies do not have to submit to any authority. If strict legal measures are taken in a country to protect the domestic market or the environment that are not in line with the company's vision, companies will relocate their operations where the rules are more benevolent. Another problem is the loss of national identity and the erasure of cultural traditions. The role and importance of the nation state is weakening due to behavior and increasing influence in multinational companies. These companies often benefit from the comparative advantages of low environmental costs and low mineral prices, and this has a negative impact on the environment, especially in countries with lower environmental requirements. Environmental problems are also caused by the development of transport and large scale industrial production. The spread of disease is also a risk of globalization. As seen in 2020, COVID-19 spread more easily and faster due to the increased mobility of people who worked, traveled or studied abroad.

It follows from the above that the basic and main pillars of globalization are the market, the state, and civil society. The goal of this chapter is to analyze the changes in the process of globalization which have occurred in connection with the spread of COVID-19 and determine the possibilities for further development and identify the impact on the fundamental pillars of globalization.

BACKGROUND

Although there is still inconsistency in the understanding of the term globalization, and there is no generally accepted definition of globalization, economists typically use the term to refer to international integration in commodity, capital and labour markets (Borgo, Taylor & Williamson, 2003). There are various definitions of globalization used by international organizations. In the text of this chapter we will use the OECD definition. *“The term globalisation is generally used to describe an increasing internationalisation of markets for goods and services, the means of production, financial systems, competition, corporations, technology and industries. Amongst other things this gives rise to increased mobility of capital, faster propagation of technological innovations and an increasing interdependency and uniformity of national markets.”* OECD. (2013, June 10). Glossary of Statistical Terms. Retrieved from <https://stats.oecd.org/glossary/detail.asp?ID=1121>

According to liberalism theory, globalization is explained as a market-driven process that requires human beings to strive for greater economic prosperity and political freedom. This has led to liberalization and technological progress in the field of transport and communications (Jackson 2020).

The theory of realism is based on the reality of state power. Realism emphasizes the role of the nation state, saying that all states are motivated by national interests because all states strive to preserve their political autonomy and their territorial integrity. Once these interests are secured, states may be interested in securing more resources, thereby extending their own political or economic power to other areas. According to the realism theory, globalization will provoke vulnerability and conflict, because the more people and states are interdependent, the more insecure they will be and conflicts can arise.

It follows from the above definitions that the process of globalization is based on the integration and internationalization of markets, which lead to the increased interconnectedness and interdependence

of people and countries which can cause positives (increasing efficiency and economic growth, dissemination of technology and knowledge), but also brings negative effects on development inequalities, health and the environment. Controversy and ambiguity lie in the definition of globalization and its understanding as a process. One contradiction lies in the characteristics of the process itself in terms of scope and difference from integration, and the other in terms of time, from when it is possible to talk about globalization. Given that the subject of the chapter is not historical events, but changes that took place in the last year, we will deal with the essence of globalization and its form in recent years. The inconsistency lies in whether globalization is something really new at the moment, or whether globalization is just a continuation and deepening of integration processes in the world. Dicken perceives the current globalization as a qualitatively new process and documents this by the fact that while in the 20th century trade took place between independent companies and portfolio investments prevailed, nowadays it is mainly trade within transnational production networks (2007). Jeníček understands globalization in a similar way in his publication of the *World Economy* (2002). Although globalization has deeper roots, the author believes that there have been significant qualitative changes in recent years that distinguish globalization from previous periods. It is mainly about the speed and depth of globalization processes. There has been a large increase in the volume of internationally traded goods, and more recently, services. This is due to the ongoing liberalization of trade. The development of international trade is leading to a growing number of states and national economies participating in international trade. Along with the growth of trade in goods and services, in recent decades, there has also been a significant increase in the volume and speed of trade in finance and investment.

A typical feature of globalization are changes in the structure of production and services, as multinational companies always relocate activities to those countries that offer the most suitable conditions for efficient production. However, the proliferation of COVID-19 led to a very exceptional situation where dependence on the supply of certain commodities appeared to be very problematic. And the question arose as to whether the main criterion for the distribution of production should be only the economic aspects of production or whether states should ensure the production of goods in the national economy. It is a way to reduce dependence on imports and thus strengthen one's self-sufficiency. These considerations began to intensify at the beginning of the spread of COVID-19, as restrictions on the supply of protective equipment and medicines from China led to a dramatic shortage of these goods in many markets. Thus, the pandemic has shown how risky dependence on global supply chains is. The pandemic has also caused major changes in communication, much higher use of online communication and also changes in work. Many people can work remotely from home, so there has been a more pronounced shift in the globalization of work.

Consequence and cause of a certain phenomenon in the context of globalization

The problem at hand is determining what the consequences and the cause of a certain phenomenon in the context of globalization. These include liberalization, technological progress, transport and more. Some authors believe that transport, liberalization or technological progress and their modernization are the cause of the development of globalization, while others argue that globalization contributes to the growth of technological progress, transport, and further liberalization.

Globalization has been made possible by major advances in technology and information, which have provided the basic technical infrastructure for the functioning of the global economy. Information technol-

The Impact of the Spread of COVID-19 on Globalization

ogy has become an important factor in the productivity and competitiveness of companies. The role of knowledge and information in making a profit and ensuring competitiveness has increased. The ability to sell a product or service depends on the provision and dissemination of information. The development and spread of information technology (the rise of personal computers, the Internet, the invention of the World Wide Web) and communication technologies (mobile phones, fiber optic cable systems) play and continue to be an important role in the process of globalization. The advantage of technology is the speed with which users of these services are able to respond to various stimuli. Advances in this area make it easier for companies to organize in multinational corporations and accelerate the movement of capital, technology, and skills to other countries. Thanks to progress in this area, multinational companies have evolved and capital, technology and skills/knowledge have moved more quickly to other countries. Optical cables and wireless technologies have made communication between business partners and branches of multinational companies easier and cheaper. New information technologies allow flexible management of individual parts of multinational companies, as they can facilitate the rapid exchange of information between headquarters and branches. Automation of production and reduction of transaction costs for global communication have enabled the fragmentation of industrial production, which is based on the comparative advantage of different countries in each production phase.

The basic impetus for the development of globalization were economic activities, which began to move from the local or national level of management, organization, production and ownership to the global level. Globalization developed significantly in the 1970s. It was affected by the end of the Bretton Woods agreements (an important factor in the development of globalization was the liberalization of national currencies against the dollar and the transition to a system of freely moving exchange rates), the oil crisis in the first half of the 1970s, the ensuing economic recession and the development of transport, deregulation of international trade in goods and money, deregulation of national markets in the transition from welfare to liberalism oriented policy that favored the free market and created incentives to attract investment by multinational companies and further liberalize world trade in goods.

Liberal politics has limited intervention in all areas of society. However, it relinquished some decision-making powers at the expense of multinational corporations. Developed countries have liberalized both domestic and foreign markets since the 1970s and pursued policies that encouraged the inflow of foreign direct investment (FDI) thereby supporting the expansion of multinational companies and the development of globalization. Globalization since the 1980s has been characterized by: information and technology changes, foreign exchange and capital flows which were interconnected globally, the decline of communism in Europe, and new actors (WTO and regional blocs). The basic preconditions include a free and non-discriminatory business environment, a liberal trade policy with low tariffs, market processes, deregulation of nation states, which is related to the transition from the welfare state to a liberal-oriented policy that focuses on the free market.

In recent years, the development of globalization has largely been conditioned by the development of information technology and the Internet, international transport, telecommunications services, of course, liberalization and integration processes. Practice also shows the opposite link, which means that the development of globalization and international trade contributes to the speed and qualitative changes in both transport and information technology as well as knowledge sharing between states. Certainly, we can find several interrelationships and the interdependence and conditionality of processes. It is important that these processes lead to trade facilitation and consequently to economic growth.

THE RELATIONSHIP BETWEEN GLOBALIZATION AND REGIONALIZATION

The topic discussed, which is also related to future developments and the spread of the pandemic, is the relationship between globalization and regionalization. Is the conclusion of regional integration agreements a harbinger of further and deeper globalization, or is it rather an obstacle to globalization? Given that the liberalization of trade in goods, agricultural products and services at the global level has not continued and that no progress has been made in the WTO negotiations in recent decades, the conclusion of regional trade agreements is an alternative way of liberalization. However, the question is whether these agreements and regional protection can be overcome in the future by global integration and liberalization?

Benefits of Globalization

Uncertainties and differing views exist on the benefits of globalization for individual states. Some authors are inclined to believe that this is a zero-sum game, meaning that rich states are gaining from the process of globalization and, conversely, weaker states, or less developed ones, become even poorer (Hartungi, 2006). However, there are neoliberal theories emphasizing that globalization is not a zero-sum game. There is also a group of authors who believe that globalization brings synergistic effects, which means that globalization can benefit all stakeholders (Carfi, 2009). Globalization brings not only growth of international trade, but contributes to intensifying the flow of FDI and strengthening the role of multinationals, which often go beyond state. Globalization has a positive effect on economic growth, the development of new technology, and the growth of living standards. However, it carries the risks of wealth and income inequalities because some countries, companies or individuals benefit more than others.

Currently the process of globalization also has a significant impact on the shape of international economic relations, which leads to countries becoming increasingly interconnected with trade in goods, services and capital flows. Involvement in globalization processes enables the reallocation of production and resources from relatively less effective to efficient areas. With the growth of production on a transnational scale and with increasing force of the transnational corporation increase the pressure of business and transnational corporations on nation states. Therefore, the question remains whether states will keep their role in the 21st century, or whether they will be partially limited by ongoing processes. The situation is changing in connection with the spread of COVID-19.

ROLE OF THE STATE AND ITS FUTURE IN THE PROCESS OF GLOBALIZATION

Theorists also view the role of the state and its future in the process of globalization. Some argue that the sovereignty of nation states is limited and their role is influenced and weakened by multinational corporations. Some theorists argue that the state has marginal importance or they believe in the end of the nation state. Others claim that the state significantly shape the nature and operation of globalization (Negash, 2015).

In recent decades, in addition to states, political and economic events have been influenced by other entities such as transnational corporations, integration groups and international organizations. The operation of these entities leads to a weakening of the role of the state. Transnational corporations have great economic power, have access to extensive raw material resources, take advantage of cooperation and the

The Impact of the Spread of COVID-19 on Globalization

big internal market, which leads to tax optimization and the crossing of trade barriers. They lobby for their interests, contribute to the activities of political parties, are represented on important committees, and thus increase their influence on the governments of the countries where they operate. An increasing part of economic activities has an internal form, or it is a relationship between companies that have mutual relations. Previously, these were relations between companies that were economically independent.

The position of the state in a globalized world has been the subject of research. Globalists argue that the role of the state is weakened in the age of globalization because states are too small to deal effectively with global challenges. According to internationalists, on the other hand, the state's ability to regulate people's lives is sufficient. Transformationalists say that states remain militarily, economically and politically powerful and that the role of the state must change to adapt to new conditions, which is related to the strengthening role of transnational corporations and also to the fact that many states are at the forefront of integration groups and therefore part of their sovereignty in favor of the supranational level (McGrew & Lewis, 2013).

As a result of globalization, the economic power of the state is weakened, because the state liberates many areas of economic life, deregulation occurs, which is usually set to suit powerful entities. State gives up companies that it has so far owned in areas such as energy or transport. Lobbying and interest groups also play a role here. As a result of globalization, the importance of the market is increasing and some regulatory functions of the state are being reduced. The weakening of the state is also related to international financial markets, where exchange rate instability causes speculative capital movements. It has an adverse effect on the balance of payments and has a retroactive effect on the exchange rate. And national interest rate is determined largely in global context. States have little autonomy to increase domestic corporate taxes and little freedom in lowering interest rates fearing the danger of large capital flights (Nedash, 2015).

States also enter into integration agreements, which means that the state benefits from economic integration, protection advantages of a larger market and a stronger negotiating position in relation to third countries, but in turn loses some of its sovereignty. This, together with the weakening economic function of the state, also leads to a reduction in political legitimacy. It follows from the above that there has been an internal and external weakening of the state in recent years.

Problems related to the rapid spread of COVID-19, lack of safeguards, pharmaceuticals due to heavy dependence on Chinese imports, inability to cope with the consequences of a global pandemic or through the WHO have shown that the state is the most capable unit because it has been able to respond relatively quickly to unforeseen events such as pandemic.

According to the author, the nation state will remain a basic unit of the world order, but its role will be influenced by the strength and position of the most important international organizations such as the IMF, WTO and WB, as well as transnational corporations and the development of information technologies. The state is leaving part of its traditional authority and shares part of its sovereignty with regard to the emerging complex interdependence.

Proponents of a return to the sovereignty of nation states as protection against global market domination argue that strong states would not be powerless against globalization because they could regulate and tax multinationals on their own. In the case of smaller states such as the Czech Republic, however, this is difficult to imagine and do, because a small state whose economy is made up of multinational companies will not be able to enforce its own rules of the game against these multinational companies. To achieve domestic goals, national governments are forced to engage in extensive multilateral cooperation.

The pandemic reminded us of the importance of the role of the state. It is clear that sovereign states must remain major players in international relations. COVID-19 has shown the need for states to respond through policies to the effects of global events, such as pandemics. It was and are the states and governments of the individual countries that determined the measures that need to be taken to limit the spread of the pandemic. States must bear the economic consequences of restrictions. Effective public policy requires a legitimate enforcement mechanism based on state sovereignty. Already in the spring of 2020, the situation showed that integration units such as the EU are more of a coalition of independent states. It was up to each state to decide how to prevent the spread of COVID-19. The Commission has issued recommendations on a common approach to conflict prevention in all EU countries. From the beginning of the spread of COVID-19, it was clear that the state controls, redistributes and supports, but also closes borders, monitors compliance and punishes. Most EU countries were not prepared for the spread of the disease and did not have sufficient hygiene and protection aids. Even in these difficult times, states need to work together, and their representation should contribute as accurately as possible to sharing information on epidemic and medical knowledge. International organizations can also contribute to disseminating information and sharing positive experiences.

In addition, the states still have to deal with the spread of COVID-19 must kick-start the economy, contribute to business development and recovery in industries that have been affected by lockdowns, increase the purchasing power of the population and create jobs. After years of deregulation and the functioning of foreign corporations, which have often relocated production outside Europe and America, the state is in a difficult position. It turns out that countries are heavily dependent on imports and are unable to ensure self-sufficiency even in such basic areas as agriculture, the health industry or the supply of basic consumer goods. The solution is a greater emphasis on at least partial ensuring self-sufficiency, greater development of cross-border cooperation and cooperation between states. Thus, there is room for redefining the role of the state, for strengthening the nation state in its socially oriented and decentralized form with a strong interaction of local and supranational elements. A link should be established between the global market and the nation state. It is also necessary to reduce the economic and political attacks that have led to the weakening of the state in the past, as this has limited the scope for implementing the state's autonomous economic policy.

Development of Globalization

Globalization was criticized several years before the process of globalization was disrupted or slowed down. The criticism was mainly about inequality, social and cultural threats and adverse environmental impacts. So, a few years before the pandemic came, globalization has entered a phase of slowdown. This was called deglobalization or slowbalization. Contributed to deglobalization: the financial recession in 2008 and changes in USA-China economic relations. Statistics and some studies (Witt 2019) also show that deglobalization began before the pandemic. World trade fell sharply after the global financial crisis in 2008. It then increased, but trade as a percentage of gross domestic product (GDP) falls. There has also been a decline in real FDI and global value chains (UNCTAD 2020).

Financial Recession in 2008

There is no complete agreement on the course of the financial and later economic recession. However, there is a consensus on the issue of the financial crisis. In the beginning, there was speculation in the

The Impact of the Spread of COVID-19 on Globalization

American mortgage market. A related factor was the existential state support for providing mortgages to less creditworthy clients. The Federal Reserve System (FED) cut interest rates to sustain lending and prevent the US economy from cooling and falling into recession. The outbreak of the financial crisis and its spillover from the US to Europe and the rest of the world were the result of securitization, which was the restructuring of bank loans into new, more liquid products. The securitization violated the credit standards of individual banks and other lending financial institutions. Since 2010, the growth trend in the development of macroeconomic indicators has been gradually reversed. The reason was the relatively quick and strong reaction of governments and central banks. The decline in globalization was affected by this global financial recession in 2008. The rapid pace of globalization has not been able to resume since then. The world economy has recovered since 2008, but several major changes have taken place. In connection with the financial crisis and the recession of the economy, many countries began to use protectionist instruments of trade policy (also traditionally liberal markets such as the EU or the USA). This later led to changes in economic relations between the United States and China, and a few years later resulted in the emergence of a US trade war with China.

Changes in the USA and China Economic Relationship

Following China's accession to the WTO in 2001, China has committed itself to rapidly reducing import tariffs and opening its markets to foreign companies. Within four years of joining the WTO, China has generally met most of its legal obligations. Enforcement of intellectual property rights and increasing the transparency of industrial regulations have been slow, complicating US companies' access to the Chinese market. The US-China relationship was negatively affected by the financial recession in 2008. Then relations began to become increasingly competitive, and US trade policy shifted from trade liberalization to protectionism. The Trump administration generally favored US interests over global interests, which led to a strengthening of US protectionist policy and also to criticism of many international organizations.

The Trump administration and its tariff restrictions on its partners, especially China, have led to a reduction in trade between the United States and China. These tense relations have weakened the process of globalization, because the US and China are strong and important world economies. Since 2018, US-China relations have become even more complicated and competitive. In January 2018, Donald Trump announced the introduction of tariffs for solar panels and washing machines. Later, other tariffs were introduced. The Chinese Ministry of Commerce responded by imposing tariffs on 128 products imported from the United States. Chinese officials subsequently agreed to substantially reduce the US trade deficit with China by committing to a substantial increase in their purchases of US goods, and so the trade war seemed to have been suspended. Shortly afterwards, the US introduced a 25% rate on Chinese goods containing industrially important technology (Buckley 2018). These and other measures have led to a reduction in trade and economic growth. The US-China trade war continued in 2019. It was not until January 2020 that US President Donald Trump and Chinese Deputy Prime Minister Liu Che managed to sign the first part of the expected trade agreement. The US economy has already been showing negative and positive results due to tariffs, with a number of industries showing employment growth, while redundancies were planned in other industries. The rivalry between the US and China has led to serious concerns about the end of economic globalization. Production could move to the third countries that were not affected by the bilateral trade war. If tensions become multifaceted, a scenario with significant de-globalization will be much more likely (Antras 2020). The rivalry between the USA and China had negative effects on both countries and on the global economy as a whole.

The Impact of COVID-19 on Globalization

At the end of 2019, a coronavirus (SARS-CoV-2) first appeared in Wuhan, China. COVID-19 initially spread slowly, but gradually spread to more countries and spread rapidly. Therefore, the WHO on March 11, 2020 declared a global pandemic (Shrestha 2020). Strong global interconnectedness of states and continents, trade, mobility of people and travel were among the main reasons that led to the rapid spread of the disease from Asia to Europe and other parts of the world at the beginning of the year. COVID-19 is a pandemic that has hit the world. This pandemic is a strong shock to the entire world economy, as it has affected all countries in the world and most industries, moreover, it is not disappearing, but is spreading in waves that vary in strength but still affect most countries at the same time.

As many countries were unprepared for the spread of this type of coronavirus and did not have enough protective equipment and pharmaceuticals, they addressed the situation by closing borders to reduce disease transmission, and governments introduced numerous measures to restrict movement, meetings and business in selected fields. These measures included the closure of schools, selected companies, job restrictions and led to the temporary replacement of full-time teaching by online teaching and the recommendation that work from home be preferred in fields where possible, whenever the virus spread rapidly in the countries concerned. All these measures and protectionism led to reduced mobility, trade, retail, partly production and reduced economic growth. Policy intervention and quarantine were reflected in an increase in the cost of production of intermediate products and finished goods which were produced for the internal market but also for the export market. Many countries have begun to think about trade independence and how to reduce dependence on Asian markets, especially China, and global supply chains, and produce more goods in the domestic economy. Globalization and cross-sectoral links have played an important role in transmitting the recession. It turns out that the more the country and the company are integrated into global production networks, the more the shock from one country through trade ties spread to other countries. Trade then has two different effects. It offsets the effect of shock by allowing consumers to shop and to consume goods that they would not otherwise be able to consume, but increases production costs inputs that are used at home and abroad. It follows that more open and integrated states have more indirect effects, because they are more dependent on the supply of intermediate products. If trade barriers were to increase further, this would lead to further decline in income.

The pandemics has weakened economic growth in many countries, reduced trade and travel. The effects of a pandemic for individual states depend on the extent to which the states are connected in global production and trade networks. The development of networks was conditioned mainly by efficiency and efforts to use specialization, which led to the chains being very long and often geographically concentrated. At present, companies are also more concerned about diversification and reducing dependence on major nodes such as Asia and especially China. Changes to regional chains will be costly because they have been formulated over the long term and on the basis of economic efficiency. Differences in costs will be determined by the nature of the sector concerned. Primary resource-oriented industries will depend on transport links with processors at the regional level. It will be easier to create a regional processing industry, such as the food industry, as it can obtain inputs locally and adapt products to suit local consumer preferences. Most countries in the world have been directly affected by the pandemics, which means an increase cost of goods for domestic consumption, but also indirectly - through increases of intermediate products from abroad and a decline in demand for goods produced for foreign markets.

According to the Pandemic Vulnerability Index (Shrestha 2020), the pandemic has burdened the world economy, healthcare and globalization by disrupting travel, reducing companies' economic activities and

The Impact of the Spread of COVID-19 on Globalization

increasing health care demands. Based on the results of the PVI, some countries were more vulnerable than others. In Africa, the most vulnerable countries were South Africa and Egypt; in Europe it was Russia, Germany and Italy; in Asia and Oceania it was India, Iran, Pakistan, Saudi Arabia and Turkey; and in America it was Brazil, the USA, Chile, Mexico and Peru. The pandemics revealed and deepened the differences between low- and middle-income countries and developed high-income nations. The pandemic showed an inability to accurately detect and control the pandemic (Shrestha 2020).

The impact on individual sectors of the economy is also quite different. The economic effects of the shock caused by the spread of COVID-19 are different. The degree of involvement of individual sectors depends primarily on the degree of involvement in the global production network. The economic effects therefore depend mainly on the strength of the spread of the disease and the management of the pandemic in the country, the degree of integration of the country, the degree of involvement in trade with intermediates and on heterogeneity in the production structure of countries. According to Sforza and Steininger, the decline in value added is widespread across all sectors, but mostly in services and the intermediate resources manufacturing and wholesale and retail in all countries. The strongest in absolute numbers declines in value added occur in service sectors, which include services such as accommodation and catering, real estate and also public services. In relative terms, the drops in sectoral value added are the highest in the sectors of textiles and electrical equipment for Italy, pharmaceuticals and motor vehicles for Germany, manufacturing and machinery equipment for the US and textiles and electrical equipment for China (Sforza, Steininger 2020). The pandemic has had and continues to have a major impact on international tourism than other global economic shocks of past decades. As many tourists are opting to travel closer to home, the intercontinental air and cruise ship sectors and services are severely affected and will take a long time to return to pre-pandemic values.

However, it must be recalled that the current crisis has accelerated trade in services and digital trade and created the conditions for its earlier and further development. Therefore, we expect this trend to continue in the future and there will be an increase in trade in the area of intangible assets and the development of digital exchange. The growth of digital flows is growing as the pandemic has caused many people to work from home, children and students to study online, and entertainment to move into the online environment.

Although the current crisis has a completely different origin than in 2008, it is possible to compare the two crises. The crisis caused by the spread of COVID-19 was caused by the sudden freezing of the economy by the introduction of government measures aimed at preventing the further spread of the pandemic. The decline in industrial production and the economic segment was therefore sudden and compared to the crisis in 2008. However, restrictive measures are repeatedly being introduced in individual countries as the situation regarding the spread of coronaviruses changes. In both crises, there was a decline in trade.

The measures introduced in most G20 countries caused a decline in trade in goods in the second quarter of 2020. Compared to the first quarter of 2020, exports fell by 18% and imports by 17%, the largest decline since the financial crisis in 2009. The decline in trade occurred in April 2020, when strict restrictions were imposed in most countries. However, data for May and June point to a partial recovery in all G20 economies as guarantees have been released. China was the only G20 economy to record export growth (up 9%) in the second quarter of 2020, after declining 9% in the first quarter, due to the spread of COVID-19 from China. This justifies a decline in the first quarter of 2020. Thereafter, exports increased as demand for medical equipment and protective equipment, which was produced in large quantities in China, increased. International trade in goods grew in the fourth quarter of 2020, but

more slowly than in the third quarter of 2020, when exports increased by 21% and imports by 17%. The growth of trade in goods in 2020 has been strengthened since the second quarter of China, which has seen continued steady growth in international trade (OECD).

Measures to reduce the spread of COVID-19 are being developed by international organizations. These measures and recommendations are to be used at national and regional level to overcome the risks and problems of disseminating COVID-19. The main recommendations are formulated by the WHO. In general, it prepares advice for the public, advice for health workers and administrators and advice for travel. WHO also published six basic measures to limit the spread of the virus. Important measures are summarized in Strategic Preparedness and Response Plan for 2021 which builds on what is known about the virus so far and translates this knowledge into strategic actions. This plan aims to mitigate the risks associated with the new variants and also addresses the provision of diagnostics and vaccines as a way to successfully address the COVID-19 pandemic.

The pandemic, due to its complexity and severity, also causes socio-economic problems. According to WB COVID-19 has led to an increase in poverty and deepened inequality in the world. There has also been a reduction in world trade and the WTO has set up a website as one of the tools for resolving the crisis, which will provide up-to-date information on trade and support measures taken by WTO members in response to the COVID-19 pandemic. The WTO acts as a forum for international cooperation and trade policy coordination. The WTO should ensure fair and rapid access to vaccines and ensure that trade measures are not used to create barriers to vaccine exports.

Coordination within the EU was initially insufficient, but during the pandemic, the need for cooperation, trust and solidarity between Member States was confirmed. The EU has taken a number of measures to reduce the spread of the virus, health measures to better prepare EU countries for health and sanitation crises, and to overcome economic and social problems. The EU Recovery Plan is called Next Generation EU and makes suggestions on how to transform Europe's economies and create new opportunities and jobs. The SURE program, in turn, serves to reduce the increased public spending that serves to preserve jobs during the pandemic. The EU recommends maintaining access to medical products and vaccines for developing countries and encourages cooperation to address the pandemic at international level. Harmonization of measures to reduce the risk of COVID-19 is important not only for overcoming health problems related to the pandemic, but also for removing barriers to free trade.

PREDICTION OF FURTHER DEVELOPMENT OF GLOBALIZATION

The following section of this chapter deals with the presentation of individual scenarios and their impact on globalization, trade and the world economy. The prognosis is a systematically derived statement about the future state of reality. Factual decision-making, especially in the medium or long term, is not possible without at least a rough idea of the development of the situation, including possible activities of individual entities (Prorok, 2012). Therefore, the previous part of the text summarized the development of globalization in recent years, and the important factors that affected its current and future shape. Currently three possibilities for future development can be considered: continuation of globalization, strengthening the role of nation states, and regionalization.

CONTINUATION OF GLOBALIZATION

According to this scenario, after the end of the pandemic and certain changes in the economic order, there should be a return to the trajectory of globalization from before 2020. The main starting point for this view is based on past experience. An example is the SARS epidemic caused by the coronavirus SARS-CoV in 2002-2003. This epidemic has been stopped with effective anti-epidemic measures. It was a local epidemic, which distinguishes it from the current pandemic. Similarly, the Hong Kong flu, also known as the flu pandemic in 1968, broke out and killed millions of people in 1969. Then it returned in the form of the second wave in 1969-1970. It was caused by the H3N2 strain of influenza A virus, which was a descendant of H2N2 and caused a pandemic of the Asian influenza in 1957-1958. All these pandemics, including the Spanish flu pandemic, which took place in several waves between 1918 and 1920, show that the economic recovery has taken place relatively quickly and the world economy has returned to its original trajectory. Thus, once a sufficient proportion of the population has been vaccinated, recovery from COVID-19 is expected to be as successful as in previous pandemics. And that even for political leaders, cooperation will continue in the period after the end of the pandemic as an effective solution to the losses incurred and the possibility of restoring the pace of economic growth and increasing international trade. As part of the further development of globalization, we can expect redefining of some processes. Currently, the position of the WTO and the WHO is weakened and the activities of both organizations have been criticized by the United States and its previous President Donald Trump. The role of the WTO is also weakened by the fact that the current negotiations began in 2001 and no final agreement has been reached since then. Therefore, many countries do not hope for a shift in the process of globalization in the near future. To relaunch and strengthen the process of globalization, both organizations would need to gain more trust and authority and be the ones to create rules that respond quickly and in a timely manner to problems and threats that may arise. The pandemic will show political leaders that international cooperation is key to effectively combating the virus. In this case, the pandemic will limit the end of economic globalization. In this case, the pandemic. And it will also allow politicians and international organizations to argue that international cooperation and the continuation of globalization are important for economic recovery, for improving production and distribution.

COVID-19 was most affected by large cities and places with a high concentration of people and manufacturing, health system institutions and places associated with airports and ports. For this reason, transformations and changes in infrastructure and organization can be expected in the case of modeling global cities and production centers. The main challenge for the future of globalization is institutional and political in nature rather than technological, although new technologies could exacerbate the inequality trends that have created the current political resistance to globalization (Antras 2020). This is cooperation in the field of basic infrastructure (water, energy production and distribution, transport and telecommunications), where it is necessary to overcome social inconsistencies and political conflicts through the institutional framework and political cooperation and with the participation of international organizations.

LESS INTEGRATED WORLD AND STRENGTHENING THE ROLE OF NATIONAL STATES

This situation will occur as globalization slows down and weakens integration and interdependence between states and societies. This would mean a reduction in real income due to growth in trade costs, which is related to the introduction of higher trade barriers. All this would lead to a long-lasting recession in many states and the whole world economy. Given the scale and sensitivity of this pandemic, the consequences will be much worse than in previous epidemics or pandemics, and certainly worse than the global financial crisis in 2008. If the vision of this scenario is to be fulfilled, some states can be expected to curtail liberal trade policies, strengthen their independence and grow the state's role in the economy, and in some cases nationalism may be strengthened. If health concerns and the spread of COVID-19 continued, this would certainly lead to a distortion of globalization and a partial reduction in cooperation between states. Health concerns can be expected to further weaken globalization. In this case, therefore, globalization would be significantly disrupted and, if cooperation between states worked, it would rather only be at the regional level, and only to a limited extent. In fact, in a less integrated world, countries will experience a reduction in real revenues due to increased business costs (Sforza & Steininger 2020).

The role of the state and its basic functions, which are the redistributive function (it is associated with the distribution of funds from public funds), would be strengthened. The role of the state as a bearer of economic policy and a creator of the institutional framework as an entity creating a way of organizing markets and the structure of the corporate sphere would also be strengthened. In this case, a pandemic will reduce economic globalization. We expect that globalization will be replaced by a wave of localization, and therefore interregional production and trade will decrease, the share of domestic economic activities will grow.

REGIONALIZATION

The third possibility is that economic recovery will not be so easy and that it will not be possible to build on the level of globalization before 2020, and that states will try to cooperate more at regional level and trade will first increase within the region and then re-establish links between regions. This scenario seems very likely as a future for the coming years. The world would be divided into smaller economic units and regional integration groups.

Regionalism must be understood from the perspective of the integration process that leads from a global perspective to the interconnection and growth of individual parts of the world economy. Opinions on the process of regionalization vary, some prefer global integration, others advocate regional integration because they see in it the possibility of easier integration, which can grow to a global scale in the future. By participating in regional groupings, the state gains access to the wider business economic space. At the same time, however, it renounces part of his sovereignty.

Currently, the main regions are Europe, North America and Latin America, East Asia, India, Russian Federation. In these blocks, economic interaction and trade are strengthened. However, these regions will be interconnected through trade, financial and other flows, but perhaps in smaller volumes and at a slower pace. Then there are relatively strong economies such as the United Kingdom, Japan, or Australia, which operate rather independently and do not have more interconnected agreements on economic cooperation within the region.

The Impact of the Spread of COVID-19 on Globalization

It is now more appropriate to seek a better balance between national and international interests (Rodrik 2019), to try to ensure efficiency and supply chains in the new conditions. A regionally based economy could offer some of the benefits of recent globalization, such as sustainable growth and poverty reduction, and bring less detrimental effects such as inequality, social and cultural threats, environmental degradation, ineffective responses to global challenges and the reduction of strong global connectivity to the rapid spread of problems and threats, both economic and health, as has emerged in recent years. Like globalization, regionalization has certain disadvantages, including reducing global prosperity due to higher costs, limited effectiveness in tackling some global challenges, adopting incompatible regional standards and incompatible technologies. However, this problem could be solved through global institutions such as the WHO, the WTO and the UN. In addition, effective regional coordination will be needed to reduce duplication.

Changes in the form of FDI are related to regionalism and its wider application in practice. Vertical FDI should be complemented by horizontal investment to enable regions to expand their skills bases and cooperation within the region could be strengthened.

Regional integration brings higher production efficiency, higher economies of scale, enables greater specialization, brings advantages given to higher competition and strengthens the region's economic position in international trade. As for the political and security dimension, it also brings about an increase in the stability of the region, leading to the strengthening of peace. Agreements with less developed countries also seem to be beneficial, as they provide them with investment, technology and market access. Regional integration also helps to overcome barriers to the flow of goods, services, capital, people, technology and know-how, and this is of particular benefit to developing countries.

During the second half of the 20th century, three major economic centers were formed in the world economy, namely the European, North American and Asia-Pacific macro-regions. Integration processes are taking place in all macro-regions, leading to the creation of regional international economic integration groupings. Specific examples of regional cooperation can be found on most continents, the most developed model is the EU in Europe, the US-Mexico-Canada agreement between North American states, MERCOSUR as the most prominent bloc in Latin America, ASEAN in Asia and the African Continental Free Trade Area between African countries. A special feature is the regional economic grouping of developed and less developed countries in the form of Asia-Pacific Cooperation (APEC).

SOLUTIONS AND RECOMMENDATIONS

Based on the experience with the global enlargement of COVID-19, it is clear that the process of globalization will certainly undergo changes. The scale and changes of globalization will depend on further developments and the ability to deal with pandemic mitigation. Given the risks of global supply chains, it seems very likely that they will be partially replaced by regional supply chains, which will lead to the decline of globalization and strengthen the process of regionalization of the world economy. Even before the pandemic, some companies were considering creating regional supply chains and reducing dependence on the Asian market, especially the Chinese market, due to trade disputes between China and the United States. This process will continue and integration will take place within the regions. Deeper regionalization can replace globalization and ensure good conditions for intra-regional trade. However, it is necessary to pay attention to the mutual relations of regional groupings of their cooperation, because regional cooperation could, over time, replace the benefits brought by the trade areas of globalization.

FUTURE RESEARCH DIRECTIONS

This chapter provides an analysis of the current situation, based on years of experience in fighting a pandemic. Vaccination against COVID-19 has been taking place in recent months, and the situation may change significantly depending on the effectiveness of the vaccination and also on the percentage of the population vaccinated. Another alternative could be to find suitable medicines and new treatments in the medium term.

If the spread of the COVID-19 virus and disease could be reduced, it would be possible to consider reviving globalization and its return. Rather, the longer-term consequences of a pandemic may lead to reduced integration and a shift towards regionalization.

This results in another research opportunity, namely monitoring the impact of regional integration on individual countries, trade, sectors of the economy and the impact on the entire world economy. Furthermore, it would be possible to examine relations between regions over time on a global scale, the complexity of global coordination and cooperation between regions and the impact of integration agreements and participation in regional integration groupings on the position of the nation state. Monitoring the solution of problems due to new conditions and interests in the creation of regional groupings and building new supply chains.

CONCLUSION

COVID-19 has brought change to society and the world in the way we work, communicate, restricted travel, led to insecurity, fear, limited trade and investment, and encouraged a return to domestic products, bringing the idea of greater independence and sovereignty to individual states. The pandemic has caused and continues to cause changes that have far-reaching consequences for the world economy and globalization, the functioning of international companies and international trade in goods, services and capital. There has been a shift towards protectionism, increased interventions, limited global integration and cooperation, and the promotion of economic self-sufficiency. Strong national specialization and related dependence on imports and global supply chains have been found to be high risk.

Given that even after more than a year of fighting the pandemic, the spread of the disease has not been significantly reduced and is still returning in subsequent waves, affecting several countries or regions at the same time. We cannot expect a rapid return to globalization as we have known for the last two decades. The strengthening of regionalism seems very likely. Different countries have benefited differently from globalization and technological change. Therefore, regionalization can be one of the ways to reduce wealth inequalities, ensure less dependence on imports of strategic goods, return to local products and especially food, and can lead to environmental protection.

The question of the status of the state and national sovereignty was again the subject of debate in the context of the pandemic. The nation state will certainly remain the basic guarantor of the security and protection of the population. However, some redefinition of the role of the state is assumed. Emphasis will be placed in particular on strengthening the socio-economic area, although these functions will continue to be partially provided by non-state actors, such as private companies, civil society and interest groups, state and local authorities. It is clear that the size and economic strength of a state will determine its position, and that even after this crisis, strong states or strong regions will be strengthened. Related

The Impact of the Spread of COVID-19 on Globalization

to this is the position of strong states and their leaders. The new Biden government is trying to restore the multilateralism that criticized previous US President Trump.

But globalization has slowed down in recent years and the pandemic has slowed the process further, global coordination and cooperation between nations seems essential for the future and for further solutions to similar problems. Therefore, it is necessary to create a system of rules for the functioning of the world economy. The platform for these negotiations are international organizations. Rules should be enforced, regulated and also monitored.

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

REFERENCES

- Antràs, P. (2020). *De-globalisation? Global value chains in the post-covid-19 age*. <https://www.nber.org/papers/w28115>
- Borgo, M., Taylor, A., & Williamson, J. (2003). *Globalization in Historical Perspective*. University of Chicago Press.
- Carfi, D. (2009). *Globalization and differentiable general sum game*. https://www.researchgate.net/publication/289523221_Globalization_and_differentiable_general_sum_game
- Chumakov, A. N. (2012). *Social Aspects of Globalization (From a Globalistics Viewpoint)*. Globalistics and Globalization Studies.
- Dicken, P. (2007). *Global Shift Mapping the Changing Contours of the World Economy*. Sage Publications.
- Dreher, A. (2006). Does globalization affect growth? Empirical evidence from a new index. *Applied Economics*, 38.
- Hartungi, R. (2006). Could developing countries take the benefit of globalisation? *International Journal of Social Economics*, 33(11), 728–743.
- Huntington, S. (2011). *The Clash of Civilizations and the Remaking of World Order*. Simon & Schuster.
- Jackson, A. (2020). *Emerging Innovative Thoughts on Globalization amidst the Contagion of COVID-19*. https://link.springer.com/content/pdf/10.1007%2F978-3-319-71059-4_131-1.pdf
- Jeníček, V. (2002). *Globalizace světového hospodářství* [Globalization of the World Economy]. C. H. Beck.
- McGrew, A., & Lewis, P. (2013). *Global Politics: Globalization and the Nation-State*. John Wiley & Sons.
- Negash, H. (2015). *The Contemporary Globalization and Its Impact on the Role of States. Research on Humanities and Social Sciences. International Institute for Science, Technology and Education (IISTE)*. E-Journals.
- Ougaard, M. (2004). *Political globalization. International political economy series*. Palgrave Macmillan.
- Prorok, V. (2012). *Tvorba rozhodování a analýza v politice* [Decision making and analysis in politics]. Grada Publishing.

- Rodrik, D. (2019). Globalization's Wrong Turn. And How It Hurt America. *Foreign Affairs*.
- Sforza, A., & Steininger, M. (2020). *Globalization in the time of COVID-19*. <https://www.cesifo.org/en/publikationen/2020/working-paper/globalization-time-covid-19>
- Shrestha, N. (2020). The impact of COVID-19 on globalization. *One Health, 11*.
- Witt, M. A. (2019). De-globalization: Theories, Predictions, and Opportunities for International Business Research. *Journal of International Business Studies*.

ADDITIONAL READING

- Antràs, P., & Chor, D. (2018). *On the Measurement of Upstreamness and Downstreamness in Global Value Chains*. Taylor & Francis Group. doi:10.3386/w24185
- Atkeson, A. (2020). *What Will Be the Economic Impact of COVID-19 in the US? Rough Estimates of Disease Scenarios*. Working Paper 26867. National Bureau of Economic Research. <https://www.nber.org/papers/w26867>
- Buckley, Ch. (2018). China Slaps Tariffs on 128 U.S. Products, Including Wine, Pork and Pipes. The New York Times. <https://www.nytimes.com/2018/04/01/world/asia/china-tariffs-united-states.html>
- Buckley, P. J. (2011). International integration and coordination in the global factory. *Management International Review, 51*(2), 269–283. doi:10.1007/11575-011-0075-2
- EstradaR.ArturoM. (2020) *Is globalization responsible of the Wuhan-COVID-19 worldwide crisis*. doi:10.2139/ssrn.3551944
- Kobrin, S. J. (2017). Bricks and mortar in a borderless world: Globalization, the backlash, and the multinational enterprise. *Global Strategy Journal, 7*(2), 159–171. doi:10.1002/gsj.1158
- Maffioli, E. M. (2020). How is the world responding to the 2019 coronavirus disease compared with the 2014 west african ebola epidemic? *The American Journal of Tropical Medicine and Hygiene*. <https://www.ajtmh.org/view/journals/tpmd/102/5/article-p924.xml>
- Meyer, K. E. (2017). International business in an era of anti-globalization. *Multinational Business Review, 25*(2), 78–90. doi:10.1108/MBR-03-2017-0017
- Shadlen, K. (2008). Globalisation, power and integration: The political economy of regional and bilateral trade agreements in the Americas. *The Journal of Development Studies, 44*(1), 1–20. doi:10.1080/13562570701722089
- Stiglitz, J. E. (2018). *Globalization and Its Discontents Revisited*. Norton Company.

KEY TERMS AND DEFINITIONS

Deglobalization: It is a process of slowing down globalization, reducing interdependence and integration between states and thus reducing trade.

Global Value Chains: It includes distribution and production processes that are located around the world. The companies wanted to optimize their production and supply processes, so they deployed different stages of production in different places.

Globalization: It is a continuation and deepening of integration processes in the world. Globalization is a process that has been strengthened by the liberalization of markets.

Integration: Involvement of states in higher units. In the case of economic integration, trade barriers are removed, and economic cooperation is promoted.

Multinational Company: A large company established in one country, which through branches in one or more other countries produce or sell goods or services.

Pandemic: A large-scale epidemic that affects multiple continents at a given time.

Regionalization: It is the decomposition of the world into smaller economic units and regional integration groupings.

Chapter 12

International Cooperation in Mitigating Global Air Transport Crises: The Response of the Airports and Airlines to Critical Developments in the Industry

Jan Zýka

Vysoká škola obchodní v Praze, Czech Republic

Michal Červinka

Vysoká škola obchodní v Praze, Czech Republic

Lucie Vosečková

Vysoká škola obchodní v Praze, Czech Republic

ABSTRACT

The authors deal with the unprecedented effects of COVID-19 on the air transport sector and the reactions of selected segments to this situation. Air transport is a global industry, and this situation needs to be addressed through cooperation at an international level. The authors focus on the airport and airline sector, which, due to the nature of their business, chooses a different strategy. Despite the need for international cooperation, there are also efforts to use the crisis situation for its own expansion into vacant market segments, especially by selected low-cost air carriers. The strategic starting points of international organizations for individual sectors are given as well as examples of selected airport entities and airlines. The chapter is complemented by a common approach of airports and air carriers, which could significantly affect the cost of air transport, especially in the EU.

INTRODUCTION

Air transport has an international character and is currently perceived as a sector that contributes in-

DOI: 10.4018/978-1-7998-8339-5.ch012

tensively to the globalization of society. Air transport performance is growing at an average rate of 1.5 times GDP growth over a favorable economic cycle. This growth brings not only positive factors, such as an active contribution to the development of international cooperation and tourism but also a strong dependence on external influences. Leaving aside the standard aspects of seasonal or environmental influences and capacity limits, these are in particular macroeconomic aspects, diseases, war conflicts, political unrest, or terrorism. The strengths of air transport and air transport business can frequently without prior warning turn into unpredictable weaknesses, which need to be addressed in the process of mitigating the effects of crises.

Just as international character contributes to the destabilization of the air transport sector, international cooperation and the exchange of know-how are key aspects in mitigating such crises. In the past, air transport has gone through more crises based on the above-mentioned reasons. None of these crises have been as deep and have led to such limitations in the operational and economic performance of the global aviation sector as the current crisis caused by the COVID-19 pandemic.

Restrictive measures applied in aviation, tourism, and practically in a substantial part of the global economics have a long-term impact on the air transport sector. The crisis has affected not only airports and air carriers but also other parts of the sector, such as aircraft manufacturers, air traffic control providers, and other cooperating sectors. Crises in previous periods were shorter, usually lasting a few months. Currently, considering the crisis has lasted since 2020, some pessimistic scenarios assume that the air transport sector will not recover until 2025.

The authors will therefore focus on presenting and evaluating possible ways by which two key subjects of the air transport sector can respond to fluctuations in demand: air carriers and airport operators, including possible restrictions given by market and regulatory mechanisms.

IMPACT OF COVID-19 ON AIR TRANSPORT

One such phenomenon that has significantly affected most sectors of human activity is the Coronavirus disease pandemic. It first appeared in Wuhan, China, at the end of 2019, and especially since March 2020, it has gradually affected air traffic around the world under the better-known acronym COVID-19 and has brought devastating economic and social impacts to many areas. The authors, therefore, focus on the unprecedented effects of the COVID-19 crisis, due to which the International Air Transport Association (IATA) itself has identified 2020 as the worst year of air transport demand (IATA 2021).

Revenues of air carriers in passenger-kilometers (RPK indicator) decreased by 65.9% year-on-year, ie the most in the entire history of aviation. Due to the temporary closure of borders between some countries or the need to pass covid tests with a negative result, this decrease was logically most pronounced on international routes, where there was a decrease in available seat kilometers (ASK) by 75.6%. It was decreased by 26.8 percentage more than on domestic routes.

The most significant impact was felt by a hub and spoke carriers relying mainly on a developed network of directly operated foreign destinations. The average occupancy of aircraft has also changed. The seat load factor (SLF) decreased by 19.2% to 62.8% for international flights and by 17% to 66.6% for domestic flights. Better results were achieved by air transport of goods, where the cargo tonne-kilometer (CTK) indicator decreased by only 10.6% and the cargo load factor (CLF) by 7.7%. During the most-strict measures in April 2020, 7,000 of the total number of approximately 8,000 commercial aircraft were grounded in Europe (Eurocontrol 2021). In this phase, the maintenance departments of the

Table 1. Air transport performance 2018 - 2022

	Year	2018	2019	2020*	2019/20***	2021**	2020/21***
Traffic volumes	Passenger growth, rpk, %	7,4	4,2	-66,3	-1578,57	50,4	-131,55
	Sched passenger numbers, millions	4,378	4,543	1,795	39,51	2,808	156,43
	Flights, million	38,1	38,9	16,4	42,16	22,2	135,37
	Freight tonnes, millions	63,3	61,3	54,2	88,42	61,2	112,92

Source: (IATA and authors, 2020)

* estimation

** forecast

*** year to year change (%)

airlines or separate MROs played an important role. They had to be able to preserve the aircraft, perform ongoing maintenance and at the same time to be ready to restore the aircraft to airworthiness in a short time. (Serrano and Kazda, 2021)

Some air carriers received subsidies or state guarantees for bank loans to get over the period with the lowest demand. Even strong air carriers are facing declines in traffic and financial results.

Ryanair Reports Full-Year Loss Of €815m As Traffic Falls 81% Due To Covid-19 Travel Restrictions (Ryanair 2021).

Recovery of operations is not without problems and air carriers must carefully consider returning to previously operated routes or expanding into new markets.

Wizzair reports a reduction in the load factor between January and May 2021 from 90.2% to 61.1% (Wizzair 2021).

This low-cost company, for example, had to cancel its plans to operate domestic routes in Norway.

Table no. 1 shows a comparison between the air transport performance in the period of growth before COVID-19 (2018-2019) and the impacts on air transport in 2020 with the forecast for 2021. The impacts on air freight transport are less devastating than on passenger transport. It should be noted that the revised forecasts of the development of air transport in future periods are more pessimistic than the assumptions of the International Air Transport Association (IATA) from the end of 2020.

The data for 2020 are projections and data for 2021 are estimates.

Similarly, operators of large and small international airports have been and still are affected by the crisis. For example, in the so-called Eurocontrol countries, there was an average decrease of 56.9% year-on-year between 2019 and 2020 to 3.71 million IFR departures, and approximately the same number of arrivals. The lower seat load factor contributed to an even more significant decrease in the numbers of checked-in passengers. For example, at London Heathrow Airport, the number of checked-in passengers decreased from 81 to 22 million year on year. It means a decrease of more than 73%. Naturally, there was not only a dramatic reduction in revenues from landing, parking, and other fees but also revenues from non-aeronautical activities such as retail sales, including duty-free, parking, catering services, advertising, etc. These activities significantly help diversify income sources and can in some cases account for up to 40% of all airport revenues. In 2020, traffic decreased by 70.4% in Europe and by 73% in EU countries (Eurocontrol 2021).

SPECIFICS OF APPROACHES OF AIRLINES AND AIRPORTS TO THE COVID-19 CRISIS

Area of health, economics and environment

In the case of air carriers, the process of dealing with conditions related to the decline in demand depends on the rate of direct impact, its profile, and also the portfolio of destinations and bases. Therefore, network carriers such as British Airways, Lufthansa, or Air France, which have a strong market of their own as well as a business class segment, can approach crisis mitigation in different ways. The situation and solution will be different for regional or low-cost air carriers, who are heavily dependent on the situation in their region.

On the contrary, regional and low-cost air carriers manage to react flexibly to the situation, move aircraft between individual bases and cancel individual flights or routes. For legacy air carriers, such flexibility is practically unattainable, as it would significantly disrupt the integrity of the hub and transfer links and waves at such an airport. Even the governments of the respective states, who change the restrictions and rules of entry into their territory or open the borders to close them again in a few days from day to day, do not simplify the process. Due to such chaotic changes and flight cancellations, the reliance of passengers is returning very slowly. Despite the need for international cooperation, there are also efforts to use the crisis for its own expansion into vacant market segments, especially by selected low-cost companies.

In the airport segment, the impact of the crisis is usually enormous, especially if the airport focuses mainly on passenger transport. Focusing on the freight segment mitigates the impact of the crisis at selected airports, although it is very rare that such focus on the freight segment would fully compensate for the significant decrease of passenger transport. Risk diversification is particularly important in this period, ie. searching for other revenue opportunities for airports not only in the field of aviation activities, such as the air freight segment but also in the field of so-called non-aviation revenues.

Response of the airports to the pandemics

As this sector strives for a full recovery, the health, safety, and well-being of passengers and staff remain the highest priority. The airports have introduced many new safety and health measures to ensure that passengers feel safe and that the customer experience reflects their changing needs and expectations and addresses their concerns.

ACI World provides resources and guidance to assist airports and works closely with the World Health Organization (WHO), the International Civil Aviation Organization (ICAO), and its other global partners.

Health Area

The ACI Airport Health Accreditation (AHA) program provides airports with an assessment of the extent to which their health measures are in compliance with the ACI Aviation Business Restart and Recovery guidelines and ICAO recommendations, as well as industry best practices.

ACI Airport Health Accreditation:

- Enables airports to demonstrate to passengers, staff, regulators, and governments that they are prioritizing health and safety in a measurable, established manner.
- Enables airports to validate their own measures throughout their facilities and processes.
- Reassures the traveling public using the airport's facilities.
- Promotes the recognition of professional excellence in maintaining safe hygienic facilities.
- Promotes best practices and aligns efforts across the industry, and
- Ensures harmonization between ICAO global guidance and industry implementation.

Accreditation is voluntary with a request to join the program initiated by the airport (ACI 2021).

Economic Area

Airports Council International (ACI) considering the economic need encourages member airports to continually improve operational and cost efficiencies, reduce flight costs, and deepen capacity shortages, but also to generate a sufficient rate of returns to invest in additional capacity.

Airports are stable providers of infrastructure assets, even in the sometimes tumultuous aviation sector. While airports and air carriers are internally interconnected and rely on each other to operate efficiently, they are based on different business models. Air carriers are able to quickly respond to changes in traffic flows by leasing or decommissioning their capacity. On the other hand, airports have to make long-term planning decisions to ensure capacity sometimes up to 50 years ahead.

Nevertheless, by increasing operational efficiency, employee productivity, and the use of new revenues, the airport has invested to meet the needs of the fast-growing aviation sector and developed new business models. Airports are also likely to seek increase of the share of non-traffic or non-passenger revenue during a decrease in demand (Serrano and Kazda, 2020).

Over the last 30 years, airports have evolved from simple providers of urban or government infrastructure to sophisticated and commercially oriented service providers. As in any other industry, the pressure to operate effectively is constant and comes from customers and stakeholders.

In recent years, airports have played a key role in maintaining the affordability of air traffic and stabilizing the operating costs of air carriers. This was the case, for example of 11 September 2001 and SARS, when airports have shown a high degree of flexibility in dealing with their air carriers' customers in order to alleviate some of the financial pressure they have experienced.

One of the possibilities to support airports is the use of the Recovery Fund. However, the rules of this fund are in conflict with the agenda of EU green airports. ACI EUROPE called on the European Commission to urgently ensure that airports can effectively benefit from the EU's € 672.5 billion in EU Rehabilitation and Resilience Facility (RRF) to fund their sustainability and digitization projects. As is clear from the EU regulation on RRF investments at airports under the RRF must comply with the EU Guidelines on State aid to airports and airlines of 2014. As these guidelines prohibit all investment aid to medium and large airports and even provide for strict limits on this support for smaller airports, most EU airports will not have access to RRF funding unless conditions change (ACI 2021).

Environmental Area

European Union has set up the goal of reducing global warming in accordance with the Paris Agreement, through unprecedented and profound reductions in emissions in all sectors, so that global emis-

International Cooperation in Mitigating Global Air Transport Crises

sions decrease by 45% by 2030 to net-zero by 2050. ACI EUROPE reveals that these restrictions are “at odds with the objectives of the EU Green Agreement and the Commission’s own greening agenda for airports - as set out in the Sustainable and Smart Mobility Strategies adopted last December”, and calls on the Commission to revise state aid guidelines without delay, especially those which are aimed at decarbonization (UN 2020).

The European airport sector is fully in line with the EU’s climate aim, committing itself in 2019 to having CO₂ emissions under Net Zero control by 2050. Nearly 170 airports in Europe are currently working to reduce their carbon footprint under Carbon Accreditation, 52 of which are already carbon neutral. However, further progress towards Net Zero will require additional investments. Only to decarbonize terminals at the top 50 European airports will cost EUR 25.9 billion. While airports would finance these investments in the ordinary course of time, the COVID-19 pandemic has turned this assumption upside down - especially given the limited financial support provided to airports by European governments. Therefore, there is a clear need for airports to be eligible for RRF funding.

Olivier Jankovec, CEO of ACI EUROPE, said: “You can’t just tell an industry that decarbonization must be the way forward if we then can’t even access RRF financing due to State aid rules. The Commission must come to terms with the material impact of the COVID-19 pandemic on our industry. Airports are in a survival mode, with negative cash flow, daily operations financed through debt, and a weak revenue outlook once travel can restart. All this means many airports will simply not be able to consider investments in the coming years. What we are facing is an unprecedented airport investment crunch.” It is clear, that such changes in legislation would have never been achieved by individual airports without international cooperation. (ACI 2021).

Operation Recovery Plan

ACI EUROPE also called on European Union countries to ensure that airport s’ sustainability and digitization projects are considered in national recovery and resilience plans. Investments in airport infrastructure during the economic crisis have strong positive multiplier effects, bringing employment and economic stability to their regions (ACI 2021).

Cooperation of Air Carriers

Air carriers cooperate similarly to airports in the field of health under the leadership of the International Air Transport Association (IATA). The created rules and the unified procedure are also used by air carriers that are not members of the IATA, for example by low-cost air carriers.

Reconnection plans

Taking into consideration that governments contemplate plans to restore freedom of travel, several key elements will be considered:

- **Vaccination:** IATA supports unrestricted access to travel for vaccinated passengers and welcomes the growing number of countries that have completely or partially lifted restrictions on vaccinated passengers.

- Harmonization of vaccines: A globally standardized approach is essential, especially as regards the equal treatment of different vaccines and mutual recognition of vaccination certificates.
- Testing: Many governments are implementing testing regimes to facilitate travel. IATA supports this approach to ensure fair access for unvaccinated passengers to travel without necessary quarantine. IATA countenance states where testing for passengers is free and accessible in accordance with WHO regulations.
- A credible testing framework: As with vaccination, a global testing framework is important. Standardization of the relevant test certificates is also necessary.
- Crew: ICAO-CART management recommends crews to be exempted from testing and restrictions dedicated to passengers. IATA supports crew health management protocols, such as regular testing at home bases, along with limited interaction with the local community during stopovers.
- IATA Travel Pass: IATA has developed a digital application to manage the health data that passengers need to travel. The IATA Travel Pass will help governments, air carriers, and individual passengers to manage vaccine or test requirements, with accurate information, secure identification, and verified data (IATA 2021).

AIR CARRIERS - ECONOMIC AREA

Financial Assistance and Cost Reduction

The last critical element of a safe and successful restart of air transport is continued governmental financial and regulatory support, regulatory reducing, and cost reduction throughout the whole value chain. Governmental funding of approximately \$ 239 billion has been a lifeline for many air carriers. Cash burning is expected to reach \$ 81 billion in 2021, up to \$ 149 billion in 2020, and the return of demand of 2019 is not expected at least 2023.

Ongoing support will be necessary to stabilize the sector, especially to maintain critical skills. This support must not further increase the debt burden of the sector, which has increased by more than 50% to \$ 651 billion. Air carriers have drastically reduced costs, but revenues have decreased even faster. This continues to jeopardize aviation jobs.

The aviation sector has to be placed by means of drastically reduced incomes. In particular, it is essential that airports and air navigation service providers avoid increasing costs in order to fill budget gaps that depend on pre-crisis levels (IATA 2020).

Environmental Approach

An important area of cooperation in the aviation sector is the reduction of CO₂ emissions. There is political and economic pressure to reduce emissions in air transport, especially in Europe. In the air carriers segment, this issue is addressed by a system of emission allowances on the one hand, on the other hand, technical parameters and operating procedures are constantly improving, leading to a long-term reduction in CO₂ produced by the aviation sector. The airport segment follows the path of carbon neutrality when a system and methodology for achieving it at individual airports have been created. International cooperation of airports and air carriers is necessary not only for a unified approach in the area of environmental protection but also for joint negotiations with, for example, EU institutions. However, airports, together

International Cooperation in Mitigating Global Air Transport Crises

Table 2. Global air fuel consumption between 2018 and 2021

	Year	2018	2019	2020*	2019/20***	2021**	2020/21***
Fuel / emissions	Fuel consumption, billion gallons	95	96	51	53,13	65	127,45
	CO ₂ emissions, million tonnes	905	914	488	53,39	619	126,84

Source: (IATA, 2020)

with air carriers, have claimed responsibility for reducing CO₂, nevertheless, they demand fair access to environmental targets in line with the latest scientific knowledge.

AIR CARRIERS - ENVIRONMENTAL AREA

Despite the unprecedented sector crisis brought by COVID-19, IATA and its members reaffirm their commitment to environmental protection. Combating climate change remains a top priority. IATA and its members committed to reducing CO₂ emissions by 50% by 2050 through innovative technologies, sustainable aviation fuel, and improved operations and infrastructure.

The reduction of air traffic has led to a reduction in fuel consumption and, of course, to a reduction in CO₂ emissions. Table no. 2 shows the reduction in fuel consumption in the period of the COVID-19 crisis compared to the period of air transport development flights (2018-2019). This is global, worldwide data. European aviation accounts for only a minority of these CO₂ emissions. Stakeholders in the aviation sector, and in cooperation with their international organizations, should fight against the extreme view that banning or dramatically reducing air transport in Europe will make a significant contribution to reducing global greenhouse gases. This defense should be carried out across sectors, by the combined efforts of all stakeholders, including their organizations.

The crisis in air transport can also serve as an opportunity to accelerate technological change. An example is the acceleration of the optimization of transatlantic routes when the test operation was started in advance when the use of the temporarily reduced airspace load will be used. Another, although for many a painful process is the accelerated decommissioning of less economical aircraft B-747 or A380. IATA set carbon targets more than a decade ago and today air transport produces half as much CO₂ as 30 years ago (IATA 2021).

The conclusions can help strengthen the sector's resilience to mitigate crises caused not only by COVID-19. The prerequisite and at the same time the risk of further expansion is the financial stability of air carriers and airports, structural changes in demand, and also increased costs incurred in meeting safety, environmental and hygienical requirements.

Airbus versus Boeing

The EU and the US agree to suspend all tariffs related to the dispute between Airbus and Boeing.

The EU and the US have agreed to suspend all retaliatory duties on exports from the EU and the US imposed because of disputes between Airbus and Boeing for a period of four months. The suspension allows both parties to focus on resolving this long-lasting dispute. It provides significant support to EU

exporters, as the US has been allowed to increase \$ 7.5 billion in EU exports to the US. Similarly, EU tariffs on US exports to the EU of around \$ 4 billion will be suspended. This suspension will help restore confidence, and will therefore give us a space to reach a comprehensive and long-term negotiated solution. A positive trade relationship between the EU and the US is important not only for both parties but also for global trade in general (EC 2021).

Ryanair versus Condor

Ryanair has succeeded for the third time in legal proceedings with a lawsuit concerning state aid to air carriers. State aid given to Condor is according to the latest verdict is invalid. Ryanair has been successful for the third time in suing some European countries and the European Commission to help air carriers over the COVID-19 pandemics. The Court of Justice of the European Union ruled that state aid to the Condor, the German air carrier, was in breach of the EU rules, although the transaction was previously approved by the European Commission.

This is a partial victory for Ryanair: Condor does not have to return the state aid yet. The Court of Justice of the European Union has previously ruled in the same way on state aid to the Dutch KLM and the Portuguese company TAP Air Portugal.

The German government backed Condor last April with a loan of EUR 550 million. This happened after the same air carrier obtained a loan of EUR 380 million from Germany before the COVID-19 pandemics due to the collapse of Thomas Cook, the parent company of Condor (EUR-LEX 2021).

SOLUTIONS AND RECOMMENDATIONS

Partnership with Governments is the Key

Due to its global nature, air transport crises are trans-regional and often global. It is therefore not in the power of one aviation entity or of an individual state to solve such problems. Freedom of travel means basic needs as well as basic means for individuals, businesses, economies, and to international business. Therefore, cooperation and coordination of international organizations with individual governments and supranational organizations, such as the EU, is necessary in order to avoid unnecessary delays in the resumption of aviation operations. “In collaboration with governments, IATA is preparing maps that would reopen quarantined borders and take into account vaccination, testing capacity, and virus prevalence. However, there is a need to coordinate the various rules applied around the world. Only governments can solve this according to global data-based standards. Aviation is ready to help if governments set benchmarks against which we can plan a restart” said IATA CEO Willie Walsh.

Currently, in the economic area, individual entities tend to not to cooperate, whether they are airports or air carriers or there is a competitive struggle, for example, between network and low-cost air carriers. Nevertheless, coordination is needed in setting clear rules for support from public or state funds, so that, on the one hand, these resources are available to those in need, and, on the other hand, so that these resources do not become a means of competition. It is clear that the current crisis, by its depth, is difficult to manage without the help of public funds, although providing public funds may appear to be contrary to the principles of the free market. Cooperation in other areas, such as legislation or technology, is a prerequisite for the functioning of a global industry such as air transport. Albers and Rundshagen

International Cooperation in Mitigating Global Air Transport Crises

(Albers and Rundshagen, 2020) discuss the possible role of governments in assisting air carriers. On the contrary Abate (Abate et al., 2020) draws attention to the unequal level of government aid in different countries, which distorts equal business opportunities.

FUTURE RESEARCH DIRECTIONS

Air transport is going through a difficult period. The restart of the sector is accompanied by changes in the areas of technology, finance, and trade. It is probable that there will be a transformation of the market, the decline of some air carriers and airports. The crisis has started or accelerated the changes that have already begun. This process opens up further perspectives on the operation of air transport in the area of air carriers and airport operations. Air transport financing issues, including how public resources are involved, are and will be highly topical. Important aspects are environmental issues in the context of air transport, especially in Europe. International cooperation is important there, in addressing the adequacy and pressure to reduce air traffic and the additional financial burden in relation to the real burden to the environment, the physics, and the technological progress in aviation technology. The issue of cooperation in air transport provides a wide range of possibilities for elaboration and longer research on the topic.

CONCLUSION

The critical situation in the aviation sector has limited possible cooperation between airports. Coordination takes place mainly on the premises of international organizations in the case of airports, on the premises of Airports Council International. The main topic is the coordination of health measures and the methodology for increasing the health security of check-in at airports. In the area of air carriers, there is a rather competitive struggle to take over the markets liberated by the air carriers affected by the crisis. These procedures are chosen mainly by low-cost carriers. In addition, there is an attempt to challenge the financial assistance already provided to selected mainly network carriers such as in the above-mentioned Ryanair v. Condor. The International Air Transport Association also coordinates health measures. Airline alliances, which could play a greater role in the cooperation of air carriers, do not intervene more actively in resolving the current situation. It can be stated that the cooperation takes place mainly at the level of international organizations ACI, IATA, ICAO, e.g. with World Health Organization. These international aviation organizations analyze the current situation and issue reports containing relevant operational and financial data. These reports are used as a basis for negotiations with governments, EU institutions and other stakeholders to find possible ways to recover the sector.

The decarbonization (carbon neutrality) program continues at airports and air carriers. The EU's approach and policy on carbon footprint in relation to air transport are unchanged. The question is whether it would not be appropriate to reconsider the policy of emission allowances with regard to the share of European aviation in global CO₂ production and to adjust the policy of emission allowances, given the financial problems of aviation, especially air carriers.

The COVID-19 crisis has helped to speed up some technical and organizational measures in air transport, such as the introduction of a new system of transatlantic routes, increasing the flexibility of traffic in that area. It can be assumed that the crisis helped open the door to an EU-US agreement, resp. Airbus and Boeing to suspend the customs war on grounds of unlawful State aid in breach of competi-

tion rules. Despite the fact that this unprecedented crisis has negatively affected the entire air transport sector, it can be stated that it also has a positive effect, for example, in the field of technology.

REFERENCES

Abate, M., Christidis, P., & Purwanto, A. J. (2020). Government support to airlines in the aftermath of the COVID-19 pandemic. *Journal of Air Transport Management*, 89, 101931. doi:10.1016/j.jairtraman.2020.101931 PMID:32952317

Albers, S., & Rundshagen, V. (2020). European airlines' strategic responses to the COVID-19 pandemic (January-May, 2020). *Journal of Air Transport Management*, 87, 101863. doi:10.1016/j.jairtraman.2020.101863 PMID:32834690

EUROCONTROL. (2021). *Comprehensive Assessment of COVID-19's Impact on European Air Traffic*. EUROCONTROL. <https://www.eurocontrol.int/publication/eurocontrol-comprehensive-assessment-covid-19s-impact-european-air-traffic>

EUROCONTROL (2021). *COVID-19 - Grounded aircraft in the EUROCONTROL area: Aviation Intelligence Unit Portal*. EUROCONTROL. https://ansperformance.eu/covid/acft_ground/

Europe, A. C. I. (2021). *Recovery Fund at odds with EU green airport agenda*. ACI Europe. <https://www.aci-europe.org/press-release/308-recovery-fund-at-odds-with-eu-green-airport-agenda.html>

Europe, A. C. I. (2021). *ACI Europe welcomes global airport industry long-term carbon goal*. Airports Council International Europe. ACI Europe. <https://www.aci-europe.org/press-release/323-aci-europe-welcomes-global-airport-industry-long-term-carbon-goal.html>

European Commission. (2021). *News*. European Commission. https://ec.europa.eu/commission/press-corner/detail/en/IP_21_1047

IATA. (2021). *Reconnecting the World*. IATA. <https://www.iata.org/en/programs/covid-19-resources-guidelines/reconnecting-the-world>

IATA. (2021). *Airlines Unable to Cut Costs Deep Enough to Save Jobs*. IATA. <https://www.iata.org/en/pressroom/pr/2020-10-27-02>

IATA. (2021). *IATA Economics*. IATA. <https://www.iata.org/en/publications/economics/?Search=&EconomicsL1=149&EconomicsL2=150#searchForm>

IATA. (2021). *Here is how aviation can reach its climate change targets*. IATA. <https://www.iata.org/en/programs/environment/sustainable-flying-blog/waypoint-2050/>

IATA. (2021). *2020 Worst Year in History for Air Travel Demand*. IATA. <https://www.iata.org/en/pressroom/pr/2021-02-03-02/>

Publications Office of the European Union. (2021). *LexAccess to European Union law*. Publications Office of the European Union. <https://eur-lex.europa.eu/legal-content/cs/TXT/?uri=CELEX%3A62020TJ0665>

International Cooperation in Mitigating Global Air Transport Crises

Ryanair. (2021). *Ryanair Reports Full Year Loss Of €815m As Traffic Falls 81% Due To Covid-19 Travel Restrictions*. Ryanair. <https://corporate.ryanair.com/news/ryanair-reports-full-year-loss-of-e815m-as-traffic-falls-81-due-to-covid-19-travel-restrictions/?market=cz>

Serrano & Kazda. (2021). COVID-19 Grounded Aircraft - Parking and Storing. *Communications - Scientific Letters of the University of Zilina*, 23(2), A103-A115. doi:10.26552/com.C.2021.2.A103-A115

Serrano, F., & Kazda, A. (2020). The future of airport post COVID-19. *Journal of Air Transport Management*, 89, 101900. doi:10.1016/j.jairtraman.2020.101900 PMID:32834696

United Nations. (2021). *Carbon Neutrality by 2050: the World's Most Urgent Mission Secretary-General*. United Nations. <https://www.un.org/sg/en/content/sg/articles/2020-12-11/carbon-neutrality-2050-the-world%E2%80%99s-most-urgent-mission>

VandenBos, G., Knapp, S., & Doe, J. (2001). *Role of reference elements in the selection of resources by psychology undergraduates*. <http://jbr.org/articles.html>

Wizz Air. (2021). *Investors information corporatae webside*. Wizz Air. <https://wizzair.com/en-gb/information-and-services/investor-relations/investors/traffic-statistics>

World, A. C. I. (2021). *ACI Airport Health Accreditation Programme*. ACI World. <https://aci.aero/about-aci/priorities/health/aci-airport-health-accreditation-programme/>

KEY TERMS AND DEFINITIONS

Airline Alliances: Partnerships between or among airlines usually concluded to share resources, pick up or extend partner routes, provide marketing branding, or offer the ability to earn and redeem miles through each others' rewards programs.

Airports Council International: Global representative of more than 1.900 world's airport providing support to the airports by working with governments, regional ACI members, experts, and international organizations.

COVID Crisis: Global pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) ongoing from 2019 till today (2021).

Decarbonization Programs: Programs dedicated to reducing 'carbon intensity' and decreasing the level of produced greenhouse gas emissions.

EU Rehabilitation and Resilience Facility (RRF): European Commission's fund established to provide financial support for investment and reforms to decrease the economic and social impact of the COVID Crisis and make European economies more sustainable.

Fluctuations in Demand: Increase and decrease in purchasing activity caused by direct and/or indirect influences.

International Civil Aviation Organization (ICAO): International governmental organization and a specialized and funding agency of the United Nations established by the Chicago Convention currently consisted of 193 national governments with the aim to support their diplomacy and cooperation in air transport.

Chapter 13

International Standardization in Tourism Services: Tool to Reduce and Restart Tourism in the Post-COVID-19 Time

Petr Houska

 <https://orcid.org/0000-0002-2940-8371>

University College of Business in Prague, Czech Republic

Zdenka Petru

 <https://orcid.org/0000-0002-5269-2091>

Prague University of Economics and Business, Czech Republic

ABSTRACT

The aim of this chapter is to draw attention to the importance of international standardization in tourism services with a view to the elimination of barriers to free movement of tourism services and its importance for consumers: visitors in tourism, when the international standards encourage consumers responsibility, enforce their legitimate demands, expectations, safety, and security. This contribution also describes the basic guidelines to prevent the spread of coronavirus in the tourism industry. These measures will contribute to the recovery of the tourism sector and restore the confidence of the traveler. Furthermore, the measures emphasize the possibilities of greater acceptance of international standards for tourism services in the post-COVID-19 period. They will also contribute to faster renewal of individual sectors/ tourism services. At the same time, they contribute to reopening and engaging individual destination/ countries in international tourism.

INTRODUCTION

Globalization is a powerful force shaping national and regional economies. Services, including tourism, are the fastest-growing sector of the global economy. Globalization results in easier access across borders, which for the tourism industry means more foreign tourism as well as increased global competition

DOI: 10.4018/978-1-7998-8339-5.ch013

International Standardization in Tourism Services

from international tourist destinations. More specifically, globalization influences tourism in several ways (Dwyer et al., 2008): tourism flows, the diffusion of ICT, tourism networks, choice of destination region, growth in tourism travel, Chinese and Indian industrialization. A key element of successful tourism industry is the ability to recognize and deal with changes. Over the past six decades, tourism experienced continued expansion and diversification. An ever-increasing number of destinations worldwide have opened and invested in tourism. Tourism was one of the fastest-growing economic sectors in the world until 2019. However, since the pandemic of COVID-19 started (in China 2019), the tourism sector has been seriously affected. According to UNWTO (2021), due to COVID-19 (SARS-CoV-2), the world witnessed an unprecedented 73% drop in international tourism recorded in 2020. Tourism suffered a loss of 1.1 billion international tourists, and a loss of US\$ 1.3 trillion in export revenues from tourism. Moreover, 100 to 120 million jobs were effectively at risk. With such an important impact on the economy, countries saw the need to identify and implement measures that reduce the spread of the pandemic and recover tourism confidence to travel and to consume tourism services.

In this regard, national, regional, public, and private protocols were developed against COVID-19 worldwide with different approaches and scopes. It seemed relevant and necessary to harmonize the measures to reduce the risk of contagion of COVID-19 in a single protocol providing a framework to the countries with the agreed minimum requirements and recommendations to considering the contagion risks. The foremost aim of international standardization is to facilitate the exchange of goods and services through the elimination of technical trade barriers and develop provisions regarding GATS Article VI on Domestic Regulation. The aim is to develop different fields so that they can „contribute to creating more appropriate, trade-friendly and transparent regulatory frameworks to facilitate and promote trade in services. This applies to both national standards and „international standards of relevant international organization“. Their focus is: licensing procedures, professional qualifications requirements and technical standards intervening into effective market access and specifically the commercial presence of foreign services suppliers in the national marketplace. This activity concerns the whole services sector. Tourism constitutes a major sector of services in terms of the trade volume, the liberalization commitments already made, and the objectives of progressive liberalization. The developing countries are expected to benefit from it.

At national level, there is a remarkable trend towards defining new standards for tourism activities in search of quality, safety, and competitiveness. It is visible not only in well-developed tourism markets. It is also expected, required, and eventually achieved in new emerging tourism receiving countries. Virtually all top tourism destinations in the world are engaged in standards-driven programs aimed at quality with a view to sustain their market share and competitiveness. Developing countries are the ones who most ask for international assistance in defining quality standards for their tourism activities, as this is regarded as a measure to enhance and market their tourism products and thus better connect with the world marketplace.

Authors (Sasidharan et al. 2002) say that provision of internationally recognized environmental awards (standards) would be instrument to the tourism enterprises of developing countries in marketing their services to high-spending, environmentally conscious western tourists.

The importance of standards for developing countries is mentioned in the Memorandum of International Organization for Standardization (ISO) and the World Bank Group (Buxbaum, 2016). The aim of this memorandum was to help to increase countries' awareness, and involvement in the development and use of international standards that provide open, fair, and transparent trade. International standards are a unique opportunity to help developing countries strengthen their national quality infrastructures and to

better integrate with regional and global markets. These countries consider international standards as a means of transferring know-how to them from the developed economies. Notwithstanding the increasing interest in general tourism standards, the private sector is active in designing its corporate brands (Cai, 2009) practically standing for a whole family of standards. They address varying scopes of products and services, target diverse groups of customers, and imply the use of management systems aimed to ensure compliance with the established design of such products and services. Standards included under better-known brands are often referred to as „international standards “. Small businesses tend to benchmark its products against such better-known national and international brands. It, therefore, appears that progress in the debate on international tourism standards will depend on demonstrating the benefits standards can bring to both services suppliers and recipients or procurers of services. First, this requires clarifying possible misunderstandings about international standards and explain what type of international standards can practically help.

International standardization provides all interested stakeholders with the appropriate system to develop voluntary documents that can serve as a reference for the transparent exchange of tourism services. In this business, the tourist will benefit from the existence of standards that provide him/her with advanced information about the quality, safety security to be expected in the destination. Not of less value is the same information for those who intend to access the market offering its services, both from the private or public sector and the tourist activity. Via the standards, the tourism service, tourism service providers can know the expectations of the international tourist.

Due to the fast spread of COVID-19 worldwide, partly also due to the tourism flows, the need to create and adopt measures to reduce its spread in developed as well as developing countries and restart tourism was obvious. The adopted international standards to reduce spread of COVID-19 provide benefits to all sectors of tourism. The chapter shows that international standardization in this case can again help the tourism industry to find a way to restart tourism and build tourist's confidence in the quality of tourism services, especially from the point of view of safety and security. International standardization and accepted standards to reduce the spread of COVID-19 are not only valid in this case but have a wider application in the case of any future infections.

BACKGROUND

The issue of standardization is not a new concept. They are existing different definitions from different authors. Jain (1990) explains standardization as: “Standardization means offering a common product on a national, regional and worldwide basis “. Clow (2005) on the other hand defines standardization as follows: “Standardization means presenting a unified theme across nations and cultures “. Different definitions can be found in the dictionaries. Several authors deal with it from various points of view. From the point of view of use in marketing, authors such as Brotherton (1997), Rice (2004), and Toner (2006) deal with the standardization of products or services. Paliwoda (1995) writes about standardization as a benefit for companies, which states that standards contribute to modifying the cost of a product / service according to the needs of the local market. In this context, Toner (2006) adds that standardization “makes life easier” for companies. White (2005) then points out that standardization minimizes operating costs and risks and allows companies to offer better services to their customers. There is a difference when product is a service or a commodity (goods). There is also the difference in their possible standardization. Author Bozkurt (2010 and 2012) discuss standardization in tourism industry as an impossible

task. The issue of standardization in tourism (Indrova et al., 2011) is the subject of ongoing debate at the international level. This debate provides evidence of the diversity of views on the objectives of this standardization, its value, potential, limits, or feasibility. Virtually all the world's major tourism destinations therefore deal with managed quality standardization programs in terms of the sustainability of their market share and competitiveness. Communicating quality (Handszuh, 2004) to tourism consumers is part of the process of various types of communication. It implies determining the content, the message, the ways of communications, its carriers, and its recipients. When transferring the concept of quality, it is necessary to take into an account what people, being in tourism as policymakers, businessmen or travelers understand by this term, and how to adapt to people's interpretation of quality.

They are different types of standards. Quality standards (Sweeney, 1980) and standards of quality management (Anttila, 1992; Casadena et al., 2010) are the main topics of these discussions. Authors (Taxi et al., 2020) are analyzing the relationship between internationalization of quality standards, human issues, and competitive advantage in organizations in six tourism subsectors: hotels and tourism apartments, travel agencies, restaurants, rural accommodation, beaches, and tourism information offices. They are considering effects of these standards on operational and business performance and effects related to human issues (training, motivation, and involvement of employees). According Sand-off (2005 and 2009) the main reason for applying standardization is to control the output activity and service quality. Standardization would mean that hotels need to treat every single customer according to these standards, but no single hotel guest is the same. The customization of services, services to be tailored to customer's needs and wishes (Peelen et al., 2013) is also important. It is leading to a higher level of satisfaction (Dominici et al, 2020). However, a certain standard of quality must be met for all. The problem of standardization and customization has been described by Brotherton (1997). However, tourism planners and entrepreneurs should strive for a seamless process of communicating quality at all stages of the supply of tourism products and services. Both the quality status and standards can be expressed by graphical symbols. At present many developments worldwide are reported to this end. The existence of the following possibilities is recognized in this respect (Handszuch, 2004): category or class, certification, brands, and quality labels.

Other big group of standards is linked with the sustainable tourism. Authors (Strombach et al., 2013) are discussing that the development of standards and certification programs in global tourism has gained importance in the production-consumption. New service standards focus on the social dimension of sustainability. Authors (Novelli et al., 2017) dealing with implementation of standards to improve sustainable tourism in the region. According Surmeier (2020) the sustainability standards in tourism can contribute to capability building and upgrading at the firm-level.

On the other hand, the issue of COVID-19 and its impact started to be a great issue immediately after it occurred and has appeared in the spotlight of all international and national tourism organizations. They all were publishing the impact on tourism. COVID-19 became immediately topic of tourism research. Authors were paying attention on general impacts of COVID-19 namely on tourism demand, destinations as destination management organizations and policy makers (Sigala, 2020) and tourism degrowth (Butcher, 2021). Many authors (Kaushal et al, 2021; Kumar, 2021; Pramana et al, 2021) and others were dealing with impact of COVID-19 on tourism development in respective countries. In general, in countries highly depending on incoming tourism.

Some papers are mentioning the importance of safety standards (Zheng et al, 2020) and medical tourism standards (Vequist, 2021) especially in relation with COVID-19.

HOW TO BETTER UNDERSTAND STANDARDS

The use of the term “standard”, following the practice of International Standardization Organization (further only ISO), may give rise to the original misunderstanding. The terms “standards”, or “norms”, both are primarily understood as mandatory rules, or legally binding measures fixed in the national regulatory framework. Dictionaries confirm this view, but they also refer to voluntary, non-binding standards. The difference is often seen in whether a standard is created among those concerned (from within), or imposed from outside, for those concerned and affected, for example by legislative bodies for tourism companies. ISO has its definition of standard, which does not refer to its binding status. The international standards are the “minimum” standards. In general, the existence of a standard gives rise to requirements and rights. When it comes to voluntary standards, they should be understood as an agreement among major stakeholders on the prevailing best practice. Standard is best practice recognized and written down by a majority. Standards are especially important where legislation is lacking.

Compliance with a standard is one of the conditions of delivering quality. Where there are various levels or scopes of a service or product, the latter can be classified or graded by categories. Therefore, classification is describing a service or product according to different sets of related standards corresponding to each category.

A standard can address several aspects of a service or product. They are tangible or physical characteristics or attributes of the plant and equipment which are used to produce and deliver a service, description of a service, professional qualifications (to provide a service), language (terminology, signs and symbols), processes or procedures. Standards may also refer to specifics of an establishment, or service, such as safety and security, hygiene, or accessibility. Some standards may include elements relating to more than one aspect.

International tourism standards may be drafted by various bodies. Such bodies are International Standard Organization (ISO), European Committee for Standardization (CEN), European committee for Electrotechnical Standardization (CENELEC), European Telecommunications Standard Institute (ETSI), American National Standard Institute (ANSI), and many more. In these organizations, representatives from industry, research, governments, and civil society, discuss and agree on what should be a standard. Once a standard is published, its use is normally voluntary but in some cases certain specific standards can be made mandatory by law (such as technical, health’s ones.).

INTERNATIONAL STANDARDIZATION IN TOURISM UNDER THE UMBRELLA OF ISO

ISO (International Organization for Standardization) is the world’s largest developer of voluntary technical standards. ISO is a non-governmental organization established in 1947 with members consisting of the National standards organizations of 164 countries, based on one member per country. These National standards organizations are in some cases national associations made up of industry and consumer interests; in other cases, they are specific governments ministries or departments that have a national mandate for the development of standards. All, however, have some form of official recognition of their national role and international involvement in this area.

ISO develops standards to meet market requirements. The work is carried out by experts on loan from the industrial, technical, and business sectors which have asked for standards, and which subsequently

put them to use. These experts may be joined by others with relevant knowledge, such as representatives of government agencies, consumer organizations, educational establishments, and testing laboratories. Collaboration with relevant international organizations is provided through liaison arrangements.

An international standard embodies the essential principles of global openness and transparency, consensus, and technical coherence. These are safeguarded through its development in an ISO Technical Committee (ISO/TC), representative of all interested parties, supported by a public comment phase (the ISO Technical Enquiry). ISO and its Technical Committees are also able to offer the ISO Technical Specification (ISO/TS), the ISO Public Available Specification (ISO/PAS), and the ISO Technical Report (ISO/TR) as solutions to market needs. All ISO standards and documents are accessible for all if they are interested. These ISO products represent lower levels of consensus and have, therefore not the same status as an International Standard. The most known and applied are standards ISO 9000 and ISO 14000 focused on management systems. ISO 9000 is primarily focused on quality management, and ISO 14000 is focused on environmental management. The ISO standards 9000 influence management in in the business sphere and in the public sphere for more than 30 years. They are constantly developed and improved to reflect economic and social developments. They are synonymous with modern management. Both standards (ISO 9000 and ISO 14 000) focus on the work of the organization, not its outcome.

Since the beginning of 2004, the separate ISO members from different points of the globe have contacted the ISO Secretary-General expressing interest in developing International Standards for tourism services. Based on these requirements has been established in 2005 Technical committee ISO/TC228 Tourism and related services under the twinned leadership of **UNE** (Spain) and **INNORPI** (Tunisia). Members of this committee are **73 countries and 36 organizations in liaison** are involved. The scope of standardization is defined as: “Standardization of the terminology and specifications of the services offered by tourism service providers, including related activities, touristic destinations and the requirements of facilities and equipment used by them, to provide tourism buyers, provides and consumers with criteria for making informed decisions “. In June 2021, under the umbrella of ISO/TC 228 have already been published 35 tourism standards and **12 projects were under the developing**. ISO/TC 228 is covering following areas: diving services, health tourism services, adventure tourism, yacht harbours, bareboat charters’ services, sustainable tourism, accessible tourism, tourist visits, accommodation, and restaurants. In the year 2021 was published the first international standard for accessible tourism to help the tourism industry to make travel accessible to everyone (ISO 21902:2021). This international standard provides requirement and guidelines to equal access and enjoyment of tourism by people of all ages and abilities.

International standardization is linked with certification, which confirms that the requirements of the standard are combined. Certification also has its marketing dimension. The certificate holder can thus demonstrate his/her responsible approach to customers. In the case of tourism sectors to tourists

IMPACT OF COVID-19 PANDEMIC ON THE TOURISM INDUSTRY

Global tourism suffered its worst year on record in 2020, with international arrivals dropping by 74% according to the latest data from the World Tourism Organization (UNWTO, 2021 a). Destinations worldwide welcomed 1 billion fewer international arrivals in 2020 than in the previous year, due to an unprecedented fall in demand and widespread travel restrictions. This compares with the 4% decline recorded during the 2009 global economic crisis.

According to the latest UNWTO World Tourism Barometer (2021a), the collapse in international travel represents an estimated **loss of USD 1.3 trillion in export revenues** - more than 11 times the loss recorded during the 2009 global economic crisis. The crisis has put between **100 and 120 million direct tourism jobs at risk**, many of them in small and medium-sized enterprises. The COVID-19 pandemic in 2020 happened in two waves, and all countries and their governments were adopting their lockdowns. Majority of countries were closing their economies in March 2020 with reopening in the summer month (middle or end of June – September 2020) and new closures in September/October 2020 lasting till the end of 2020, and onwards. There were adopting measures for the economy and tourism recovery taking into consideration recommendations and guidelines of international bodies. Due to the evolving nature of the pandemic, many countries were even 2021 **reintroducing stricter travel restrictions**. These included mandatory testing, quarantines, and in some cases a complete closure of borders, all weighing on the resumption of international travel. At the same time, the gradual rollout of a COVID-19 vaccine has been expected to help. Looking further ahead, most experts did not see a return to pre-pandemic levels happening before 2023. 43% of respondents point to 2023, while 41% expect a return to 2019 levels will only happen in 2024 or later. UNWTO's extended scenarios for 2021-2024 indicate that it could **take two-and-a-half to four years for international tourism to return to 2019 levels** (UNWTO, 2020). Nevertheless, the return to the typical international demand pattern was gradual with 2019 levels predicted to return by 2023. The return to travel, however, happen with new consumer habits, calling for strong adaptation and agile responses from the tourism industry. Ensuring safe travel opportunities became a priority for destinations. As expected, potential travellers would likely travel more slowly, closer to home, and lesser-known destinations. International institutions (WHO, OECD) and tourism organizations (UNWTO, WTTC) during the year 2020 were coming with health recommendations and guidelines for recovery, different types of support of economies including tourism industry. WHO (World Health Organization) concentrated its attention on health and security information, guidelines, and recommendation for travel (especially air travel), for workers, and the travellers staying at hotels, and other accommodation establishments.

UNWTO has identified the following 7 priorities for tourism recovery (UNWTO, 2020 a):

1. **Provide liquidity and protect jobs.** This priority aimed: to create dedicated tourism support schemes for SMEs, entrepreneurs & self-employed; provide exceptions, reductions or/and deferred of social security & fiscal payments as well as critical bills for companies, self-employed and workers (especially for the most vulnerable); set up financial instruments to facilitate liquidity (moratoria on loans repayments, loan guarantees or flexible credit loans for working capital); review cancellation policies considering consumers' rights and the urgency of liquidity for companies; to expand & extend social benefits (unemployment insurance benefits, allowances for jobseekers); support workers and job seekers transition into new jobs in the new normal, and ensure dialogue between companies and workers' unions (international labor standards).
2. **Recover confidence through safety & security.** This priority was orientated on: setting proportionated safety and hygiene protocols to reduce risks throughout the whole tourism value chain & in each step of the traveler's journey; providing clear information to travelers on existing measures in place at destinations & companies; giving clear information to travelers on what to expect (rights and guarantees if falling sick while travelling or at the destination); focusing on human-centered communication – empathy, reassurance and connection; creating communication campaigns geared

International Standardization in Tourism Services

towards confidence building including the safety measures undertaken by the destinations and companies.

3. **Public-private collaboration for an efficient reopening.** This priority included: establishment of mechanisms for public-private collaboration in the definition and implementation of health-related protocols ; creation of actionable and proportioned protocols in full coordination with the private sector and health authorities to ensure they are scientific evidence-based and applicable; sharing knowledge and good practices; setting mechanisms to support the adaptation of companies, destinations and the training of their staff and investments in better, and shared data systems.
4. **Open borders with responsibility.** Responsible opening borders meant to: introduce and adapt actionable border processes & procedures in line with public health evidence-based on a risk assessment; revise regularly travel restrictions & protocols to ensure they remain proportionate to the public health risk assessment; enhance the use of technology for safe, seamless, and touchless travel; provide reliable, consistent & easy to access information on travel restrictions & protocols to the private sector and travelers; define roles & responsibilities for governments, private sector & travelers. Governments & regional blocks should advance travel facilitation towards e-visa/visa on arrival/no visa policies and remove visa cost temporarily to stimulate demand.
5. **Harmonize and coordinate protocols & procedures.** The harmonization of travel and tourism-related health protocols and procedures should be made at the global level to ensure regional and international coordination in the borders' re-openings. For this process, there were recommended relevant ICAO (Convention on International Civil Aviation) international standards, recommended practices, and specifications on travel documents to ensure harmonization and interoperability for passenger data exchange, including the set-up of a Passenger Public Health Form (by whom and how data is collected and shared). The coordination of common policies among tourism, health, interior, and transport authorities should be ensured. The harmonization includes setting up visitors' tracing apps and work towards their international interoperability.
6. **Added value jobs through new technologies.** This priority covered: adoption of national policies that support the digital transformation of destinations, companies, employees, and job seekers; support of companies, which accelerate a digital transformation; embrace new profiles: cybersecurity, big data analysis, data scientists; support job seekers with new skills: new products, marketing, market intelligence; providing more and better training and implementation online training to skill up staff in service delivery, back office, technology, languages, safety measures; providing free online training for those most affected, in partnership with universities, tech companies and other educational and training institutions; promotion online free training such as the UNWTO Online Academy and support the development and marketing of courses in multiple languages.
7. **Innovation and sustainability as the new normal.** The new normal will be different from the past, so it is necessary to: accelerate the transition towards a circular economy in the tourism value chain; transit to more resource-efficient & low carbon tourism to adapt and mitigate the climate crisis; define carrying capacity & advance effective destination management: build a more sustainable & responsible tourism sector through added value and better data evidence-based tourism measurement & monitoring systems (UNWTO INSTO Observatories & UN Measuring Sustainable Tourism Initiative).

Among UNWTO's (2020b) recommendations for recovery and resilience of tourism, they were such as: responsible travel, solidarity, and supporting recovery. In UNWTO (2020b) COVID-19 tour-

ism recovery package was mentioned the importance of domestic tourism for the recovery including a specific recommendation for domestic tourism marketing strategy with the important role of destination management organizations (DMO). Domestic tourism, which accounts for around 75% of the tourism economy in OECD countries (OECD, 2020), expected to recover more quickly after the COVID-19 pandemic. During the COVID-19 crises the domestic tourism really reached better results than the international tourism (Kvitkova et al, 2021). World Travel and Tourism Council (WTTC, 2020) emphasized the importance of safety in the tourism sector, even if 100% safety cannot be guaranteed. Considering, WHO (2020b) and CDC (2020) guidelines, WTTC in cooperation with experts created protocols in general and for different sectors of the tourism industry. The WTTC protocols were accompanied with the SafeTravel Stamp, which was created for travellers to recognize destinations and businesses around the world which adopted the SafeTravels health and hygiene global standardized protocols. These protocols were introduced as living documents which would be updated as new information become available about COVID-19. This especially designed stamp also would allow travellers to recognize governments and companies around the world, which have adopted the WTTC protocols- so consumers/tourist can experience "SafeTravels". Eligible companies such as hotels, restaurants, airlines, cruise lines, tour operators, attractions, short-term rental, car rentals, outdoor shopping, transportation, airports can use the stamp, once the WTTC health and hygiene protocols have been implemented. The protocols as well as the stamp became recognized and adopted by 76 countries and 9 subregions within countries (by September 2021). The numbers are different in different world tourism regions: in Americas 27/3, in Europe 15/3, in Africa 16/1, in Assia-Pacific15/1, and in Middle East 3/1. In the years 2020 and 2021 there was not any study made about that, how these stamps were working in respective countries. The countries/subregions that applied for and received the mark stated that it was for them another way to demonstrate their commitment to the health of tourists and locals alike. The goal of this activity was of tourism's comeback to generate benefits going far beyond tourism industry. Trust and tourism will catalyse consumer demand, investments, and jobs, thus generating opportunities for all.

Countries themselves, especially those depending very much on international tourism, have seen the need to identify and implement measures that reduce the spread of the pandemic and recover tourism confidence to travel and to consume tourism services. In this regard, national, regional, public, and private protocols with different approaches and scopes have been developed against COVID-19 worldwide.

INTERNATIONAL STANDRARDIZATION DURING THE COVID-19 PANDEMIC

The COVID-19 crisis has illustrated the crucial importance of standards as a mean to valorise knowledge. During the pandemic, there was a shortage of medical protective equipment, such as masks. Manufacturers adapted existing production lines to fabricate more of them. People could be sure that these masks were safe and efficient against the virus thanks to existing international standards. Some international and national standardization bodies made especially the medical standards freely available to ensure the production of high-quality protective masks to keep people safe against COVID-19.

Also, in tourism during the COVID-19 crises it seemed to be relevant and necessary to harmonize all these different measures to reduce the risk of contagion of COVID-19 in a single protocol. Such protocol should provide a framework to the countries with the agreed minimum requirements and recommendations to consider during the time the risk of contagion exists.

International Standardization in Tourism Services

The main task of ISO/TC 228 was to prepare International Standards. In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of documents as:

- ISO Publicly Available Specification (ISO/PAS), which represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50% of the members of the parent committee casting a vote.
- ISO Technical Specification (ISO/TS), which represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote. An ISO/PAS or ISO/TS is reviewed after three years to decide whether it will be confirmed for the next three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

ISO established in 2020 the new working group on “Measures to reduce the spread of COVID-19 in the tourism industry” (WG 18) within ISO/TC 228 Tourism and related services to prepare the new standard. This standard is based on the 21 UNE (Spanish Association for Standardization) Specifications developed in Spain to reduce the spread of coronavirus and provide safer tourism services. The Spanish Association for Standardization-UNE, in collaboration with the Institute for Spanish Tourism Quality (ICTE), has published Specifications, which establish the guidelines and recommendations to reduce the risk of COVID-19 infection in the tourism sector.

The Spanish Association for Standardization has made these documents open access, available free of charge to anyone to use. The UNE standard 0066 Specification is made upon series of parts aimed at the safe provision of tourist services in the different subsectors. This activity is in line with the above-mentioned UNWTO global guidelines.

The other specifications in this series cover visits to beaches, wineries, industrial organizations, cultural and historical sites, tourist coach companies, car rental companies, cable transport and water transport companies, nautical sports facilities and nautical activities, night leisure, protected natural spaces, amusement and leisure parks, MICE (Meetings, Incentives, Conventions/Congresses, Events/Exhibitions) tourism and unique public spaces.

These are in addition to recently published UNE Specifications for spas, hotels and tourist apartments, travel agencies, campsites and holiday resorts, restaurants and catering services, rural accommodation, golf courses, tourist guides, museums and heritage sites, tourist information offices, inns/hostels, active tourism, and ecotourism. Public-private collaboration was the key to harmonize guidelines, which had subsequently been validated by the Ministry of Health. The proposed measures aimed at the sector and were added to the measures of social distancing, barrier gestures and the use of face masks intended for the population and tourists.

The UNE Specifications are the key tools, backed by healthcare experts, for the implementation of a series of hygiene and health safety protocols that guarantee the minimization of the risk of infection from coronavirus. They will also avoid a territorial dispersion of protocols and help prepare for the reopening of the tourism sector once the lockdown measures are eased, promoting the image of Spain as a safe tourist destination.

Therefore, based on these Spanish experiences, the convenor of WG 18 was from the Spanish Tourism Quality Institute and supported by the Spanish Standardization Association (UNE).

In 2021 ISO adopted **ISO/PAS 5643:2021 Tourism and related services — Requirements and guidelines to reduce the spread of Covid-19 in the tourism industry**. This document describes the basic guidelines to prevent the spread of coronavirus in the tourism industry and is complementary to the existing national protocols. These measures should contribute to the recovery of the tourism sector and restore the confidence of the traveller and establishes requirements and recommendations for tourist organizations to prevent the spread of coronavirus in order to protect their employees’.

This document applies to the whole tourism value chain, including the following 20 subsectors: accommodation, adventure tourism and ecotourism, beaches, catering services, golf services, medical spas and wellness spas, MICE tourism, museums and heritage sites, natural protected areas (NPA’s), night leisure, scuba diving, ski areas, theme and leisure parks (including water parks, animal parks as zoos, aquariums, wildlife refuges, and family entertainment centres), tourist transport, tourist guides, tourist visits, tourist information offices (TIO), travel agencies, unique public spaces, and yacht harbours and nautical activities.

Each tourism service provider, in the document named as tourist organization, has to be in conformity only to those measures that apply to the services that it offers. The standard includes the core requirements established in part 4 (COVID-19 risks management requirements), which are the general requirements, legal requirements. The tourist organizations should have their contingency plan. The general measures for the tourist organizations are following: plan task and work processes to guarantee the safety distance; to establish rules for the use of facilities and common spaces; to provide health and safety guidelines with comprehensive, clear, and legible information on health and safety measures to apply in the workplace, before, during and after work; to facilitate hand washing with soap and water, and to provide adequate face masks for its use according to the risk assessment results; to train the staff in the correct use and maintenance of the protective equipment the use (the training activities should be registered); to encourage staff and external service providers to conform to the contingency plan and ensure that they respect the safety measures; to determine the protocol for dealing with visitors who do not conform to the health and safety measures; availability of contact details of healthcare centres, both public and private; to promote contactless payment (e.g. cards, mobile phones), avoiding, as far as possible, the use of cash; use electronic and online channels to provide information (website, social media, electronic signs). The standard further includes the relevant applicable subclauses in clause 5 (Specific requirements per tourist subsector) which are specific for above mentioned 20 subsectors of tourism industry. The standard includes in subclause 6 also requirements for ancillary services and facilities which may concern again all subsectors as: common toilet facilities, dressing rooms and lockers, gyms, swimming pools, valet service, children’s play areas, sport activities and other recreational activities, entertainment activities, shopping areas, and lifts. The term tourist organization applies to all 20 subsectors. This standard refers to several ISO standards already published specifically to subsectors of tourism industry. The guidelines and requirements for respective sectors of tourism industry in this standard are very detailed and easy to adapt even for small and medium-sized enterprises in tourism. The guidelines and requirements included in this standard can be used even later, not only in the time of COVID-19 pandemic.

As an example, following are some of the standard guidelines and requirements for sector of accommodation:

International Standardization in Tourism Services

- in reception area and check-in service to establish the necessary mechanism to ensure the safety distance at the reception; encourage pre-check or self-check in to reduce the presence of visitors; disinfect cards or keys, if used, at the end of the stay or after each use if these are left at reception.
- in bedrooms shall be a non- manual bagged waste bin in the bathroom; extra linen or pillows shall be provided in a way that prevents cross-contamination; textiles, decorative objects and amenities in the room should be reduced when possible; bedrooms shall be cleaned and disinfected in safe conditions; cleaning and disinfection shall be done when clients are not in the room.
- in common areas the tourist organization shall pay particular attention to the cleaning and disinfection of shared use areas; determine and make known the safe capacity of the different shared spaces; provide bins with non-manual activation; ensure safe use of vending machines (if available) encouraging the clients to wash their hands or use hand sanitiser before and after use; reduce consumables as needed (e.g., soap, paper towels).

According to UNWTO (2021a), Europe was the leading world tourism destination in tourism arrivals and its share both international arrivals and incomes on the world tourism. Europe was proving year by year the increasing ratio in international arrivals. In 2020, Europe recorded a 70% decrease in arrivals, despite a small and short-lived revival in the summer of 2020. The region suffered **the largest drop in absolute terms**, with over 500 million fewer international tourists in 2020. The Americas saw a 69% decrease in international arrivals, following somewhat better results in the last quarter of the year 2020 (UNWTO, 2021a).

Due to this high dependence on international tourism, Europe had reacted to this negative situation. As reaction to this ISO standard was adopted in 2021 the European standard CWA 5643-2:2021 as a CEN (European Committee for Standardization) agreement. This agreement consists of two parts. The first one establishes requirements and recommendation for tourist organizations to prevent the spread of coronavirus SARS-CoV-2 in order to protect their employees' health from COVID-19 and to provide safer tourist services and products to tourists and residents. This part corresponding with the ISO/PAS 5643:2021 and applies to the whole tourism value chain, including 20 subsectors. The second part should help to promote Europe as a safe, COVID-19 proof tourism destination through a common visual identity and build confidence among European Union travellers and international travellers. Thereby, this document should give a competitive advantage to Europe on the global tourism market. However, some European countries also have put in place national or regional health and safety protocols for tourism establishments and services, they were of varying degree of granularity. This document provides a visual identity, which can be displayed by European tourist organizations. This visual identity of the European Tourism COVID-19 Safety Seal (2021) is the trademark owned by the European committee for Standardization (CEN) and is given for free, when tourist organization fulfil the requirements. Such tourist organizations can display the visual identity. This document is the easy way of support of tourism industry, especially small and medium-sized enterprises (SMEs) and micro-enterprises that have been significantly impacted by the COVID-19 crisis and required major support. The tourism industry is primarily built (in some countries up to 99,9%) on this type of enterprises (OECD, 2008).

Not any of the above standards (ISO/PAS 5643:2021 and CWA 5643-2:2021) can overrule national regulations. Countries which decided to implement these standards, designated the competent authority. Such an authority is then responsible for implementation and enforcement the requirements established in standard. The competent authority establishes a control system suitable to monitor conformity with standards for those tourism organizations who decide to use the visual identity. Competent authority can

be Ministry of Tourism and/or the Ministry of Health of the relevant country, even designated regional tourism authorities. The competent authorities of each European country should have the list of those tourist organizations which obtained the visual identity. This visual identity confirms the safety and security against COVID-19 spread for both domestic and international tourists.

FUTURE RESEARCH DIRECTIONS

This chapter brings some attention to the role and importance of international standardization of tourism services. With the further development of tourism and its globalization, the role of international standardization will grow. The demand for standardization is rising from the tourism industry and its sectors. This tourism industry interest is confirmed by many international standards already adopted and standards still under development in 2021. In the future they can be other new fields, tourism services, they will ask for international standardization. As the discussion showed, standardization of tourism services is not often the research topic. However, standards are a crucial tool to valorise research results especially in technical and technological practise. In some tourism sectors the research is even not much applicable. This can be changed considering new technologies or materials used also in some tourism sectors. From the point of view of future research, it would be interesting to monitor the acceptance and spread of specific international stamps (as WTTC Safe Travel Stamp), these specific standards (ISO/PAS 5643:2021 and CWA 5643-2:2021), and other international standards in the tourism industry, in different sectors, or different destinations/countries. Above all, the new research topics can be defined and be valorised in adoption of new international standards. Research results help developing new standards in tourism.

CONCLUSION

International standardization of tourism services enables free movement of services worldwide and is important for tourism stakeholders not only in the normal conditions of their operation. They have to react to the trends in tourism and changes. The COVID-19 crisis as mentioned above had a very negative impact on the tourism industry, on its all sectors. The impact is not only contemporary but will be longer-lasting. Tourism was affected as the first and most probably will be as the last one to recover. The international standardization body was able to react very quickly to the COVID-19 crises and to the demand from the tourism industry to create a new standard. The new standard includes guidelines and recommendation covering different sectors of the tourism industry. These standard measures contribute to reducing the spread of the COVID 19 and its variants, that occurred newly in 2021 (South Africa, Brazil, India). For the restart and recovery of tourism industry, it is necessary to bring back the confidence of customers/tourists. International standards, their application by tourism service providers can assure the same quality of services and safety and security of customers/tourists worldwide.

The newly developed international standards are applicable not only in the time of COVID-19, but much longer. These standards can be applied by tourism sectors in case of any other infection/pandemic in future. The international standards give confidence to consumers that innovative technology is safe, destinations and services provided by tourism sectors are safe, too. In additions, the important role of all international standards is to inform consumers on what to expect.

International Standardization in Tourism Services

According to international tourism organizations (UNWTO, WTTC and others) COVID-19 crisis is an opportunity to rethink the tourism industry and its contribution to the people and planet; an opportunity to build back better towards a more sustainable, inclusive, and resilient tourism industry that ensure the benefits of tourism. Global coordination is essential for tourism. The international standardization of tourism services and health security play an important role in it.

ACKNOWLEDGMENT

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

REFERENCES

- Antilla, J. (1992). Standardization of Quality management and quality assurance: A project viewpoint. *International Journal of Project Management*, 10(4), 208–212. doi:10.1016/0263-7863(92)90079-O
- Borkurt, A. (2010). Tourism Industry and Standardization: An Impossible Task? *Journal of Cucureva University Institute of Social Science.*, 19(3), 331–344.
- Borkurt, A. (2012). Tourism Industry and Standardization: Possibilities and Opportunities. *Cag University Journal of Social Science*, 9(1).
- Brotherton, B. (1997). The Standardization versus Customisation, Dilemma in Hospitality and Tourism“. *Marketing Intelligence Service*, 8, 121–124.
- Buxbaum, P. (2016). *How Countries Benefit from International Standards*. Global Trade. <https://www.globaltrademag.com/how-countries-benefit-from-international-standards/>
- Cai, L. A., Gartner, W. C., & Munar, A. M. (2009). *Tourism Branding: Communities in Action*. Emerald Group Publishing Limited.
- Casadena, M., Marimon, T., & Mori, A. (2010). The future of standardized quality management in tourism: Evidence from the Spanish tourist sector. *Service Industries Journal*, 30(14).
- CDC, Centres for Disease Control and Prevention. (2021). <https://www.cdc.gov/coronavirus/2019-ncov/index.html>
- CEN, European Committee for Standardization. (2021). <https://www.cen.eu>
- Clow, K. E. (2005). Standardization. *Concise Encyclopaedia of Advertising*, 162.
- CWA 5643-2, CEN Workshop Agreement. (2021). *Tourism and related services – Requirements and guidelines to reduce the spread of Covid-19 in the tourism Industry -European visual identity*. Retrieved 06/15/21 from: <https://www.cen.eu/news/brief-news/Pages/NEWS-2021-015.aspx>
- Dominici, G., & Guzzo, R. (2010). customer Satisfaction in the Hotel Industry: A Case Study from Sicily. *International Journal of Marketing Studies.*, 2(2), 3–12. doi:10.5539/ijms.v2n2p3

Dwyer, L., Edwards, D., Mistilis, N., Roman, O., Scott, N., & Cooper, Ch. (2008). *Megatrends underpinning tourism to 2020: Analysis of key drivers for change*. CRC for Sustainable Tourism Pty Ltd.

European Tourism Covid-19 Safety Seal. (2021). *Visual identity*. Retrieved 06/15/21 from: <https://www.cen.eu/work/products/labels/pages/default.aspx>

Handsuh, H. (2004). *Communicating Quality to Tourism Consumers. European Seminar-Workshop on Tourism Quality Systems*. WTO.

Indrova, J., Houska, P., & Petru, Z. (2011). Kvalita ve službách cestovního ruchu. ISO (International Organization for Standardization).

ISO 21902:2021. Tourism and related services – Accessible tourism for all – Requirements and recommendations. Retrieved 08/15/21 from: <https://www.iso.org/standard/72126.html>

ISO/PAS 5643:2021 Tourism and related services — Requirements and guidelines to reduce the spread of Covid-19 in the tourism industry, Geneva, Switzerland ISO/ TC 228 Tourism and related services. <https://www.iso.org/committee/375396.html>

Jain, S. C. (1990). *International Marketing Management*. Pws-Kent Publishing.

Kaushal, V., & Srivastava, S. (2021). Hospitality and tourism industry amid COVID-19 pandemic: Perspectives on challenges and learning from India. *International Journal of Hospitality Management*, 92, 102707. doi:10.1016/j.ijhm.2020.102707 PMID:33024348

Kumar, P. (2021). Impact of Covid-19 Pandemic on Indian Tourism & Hospitality Industry. *World Wide Journal of Multidisciplinary Research and Developmet.*, 7(9), 22–26.

Kvitkova, Z., & Petru, Z. (2021). Domestic Tourism as a Factor of Survival and Recovery of Tourism in the V4 Countries (a comparative study). *Conference: 21st International Joint Conference Central and Eastern Europe in the Changing Business Environment: Proceedings*. 10.18267/pr.2021.krn.4816.13

Novelli, M., Klate, M., & Dolezal, C. (2017). The ASEAN Community-based Tourism Standards: Looking Beyond Certification. *Tourism Planning & Development*, 14(2), 260–281. doi:10.1080/21568316.2016.1243146

OECD. (2008). Globalisation, SMEs and Tourism Development. In *Tourism in OECD Countries 2008: Trends and Policies*. OECD Publishing doi:10.1787/9789264039773-en

OECD. (2020). OECD Tourism Trends and Policies 2020. Advance online publication. doi:10.1787/6b47b985-en

Paliwoda, S. (1995). *International Marketing* (2nd ed.). Butterworth-Heineman Ltd.

Peelen, E., & Beltman, R. (2013). *Customer Relationship Management*. Pearson.

Pramana, S., Paranartha, D. Y., Ermawan, G. Y., Deli, N. F., & Srimulyani, W. (2021). Impact of COVID-19 pandemic on tourism in Indonesia. *Current Issues in Tourism*, 1–21. Advance online publication. doi:10.1080/13683500.2021.1968803

Rice, D. (2004). *Standardization Efforts Taking Off*. Lodging Hospitality.

International Standardization in Tourism Services

- Sandoff, M. (2005). Customization and Standardization in hotels – a paradox or not? *International Journal of Contemporary Hospitality Management*, 17(6), 529–535. doi:10.1108/09596110510612167
- Sandoff, M. (2009). A transnational Approach to customer loyalty. *International Journal of Contemporary Hospitality Management*, 21(3), 239–250. doi:10.1108/09596110910948279
- Sasidharan, V., Sirokaya, E., & Kerstetter, D. (2002). Developing countries and tourism ecolabels. *Tourism Management*, 23(2), 161–174. doi:10.1016/S0261-5177(01)00047-4
- Sigala, M. (2020). Tourism and COVID-19: Impacts and Implications for advancing and resetting industry and research. *Journal of Business Research*, 117, 312–321. doi:10.1016/j.jbusres.2020.06.015 PMID:32546875
- Strombach, S., & Sarmer, A. (2013). Knowledge dynamics in setting sustainable standards in tourism – the case of “Fair Trade in Tourism South Africa”. *Current Issues in Tourism*, 16(7-8), 736–752. doi:10.1080/13683500.2013.785485
- Surmeier, A. (2020). Dynamic capability building and social upgrading in tourism – Potential and limits of sustainability standards. *Journal of Sustainable Tourism*, 28(10), 1498–1518. doi:10.1080/09669582.2020.1744615
- Sweeney, A. E. (1980). Quality Standards in Tourism. *International Journal of Tourism Management*, 1(4).
- Taxi, J. J., Pereira-Moliner, J., Molina-Arazín, J. F., & Lopez-Gamero, M. D. (2020). Quality standards and competition advantage: The role of human issues in tourism organizations. *Current Issues in Tourism*, 23(20), 2515–2532. doi:10.1080/13683500.2019.1653833
- Toner, C. (2006). *FSA denies pushing for standardization*. Mortgage Strategy.
- UNWTO. (1995). *GATS & Tourism*. Agreeing on Trade and Tourism, Implications of the General Agreement on Trade in Services.
- UNWTO. (1997). *International Tourism: A Global Perspective*. UNWTO.
- UNWTO. (2020). *COVID-19 Tourism Recovery Technical Assistance Package*. https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2020-05/COVID-19-Tourism-Recovery-TA-Package_8%20May-2020.pdf
- UNWTO. (2020a). *UNWTO priorities for tourism recovery*. <https://www.unwto.org/restarting-tourism>
- UNWTO. (2020b). *Global guidelines to restart tourism*. <https://www.unwto.org/restarting-tourism>
- UNWTO. (2021a). *2020: Worst Year in Tourism History with 1 Billion fewer International Arrivals*. <https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2021-01/210128-barometer-en.pdf?Ga11QTYG.Ky9LDZ2tIDKc.iRZkinJeuH>
- UNWTO. (2021b). *Tourism Numbers Down 83% but Confidence Slowly Rising*. <https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2021-06/210602-unwto-barometer-en.pdf?rNy0Q9kCLL.4MgS3dLlc8vpDxNCUt7LY>

UNWTO. (2021c). *International Tourism Highlights, 2020 Edition*. <https://www.e-unwto.org/doi/book/10.18111/9789284422456>

Vequist, D. G. (2021). The Continuation of Care in Cross-Border Health Travel: Implication for Medical Tourism Standards. *Journal of Healthcare Management Standards*, 1(1). doi:10.4018/JHMS.2021010101

Visual identity of the European Tourism Covid-19 Safety Seal. (2021). Retrieved 02/12/21 from: <https://www.cen.eu/work/products/Labels/Pages/Tourism.aspx>

White, D. (2005). *European Standardization: No Panaceas in Sight*. Security Industry News.

WHO. (2020). https://www.who.int/health-topics/coronavirus#tab=tab_1

WTO. (n.d.). *About WTO*. https://www.wto.org/english/thewto_e/thewto_e.htm

WTTC. (2020). *'Safe Travels': Global Protocols & Stamp for the New Normal*. Retrieved 02/12/21 from: <https://wtcc.org/COVID-19/Safe-Travels-Global-Protocols-Stamp>

Zheng, J., Geng, J., & Hoce, F. (2020). Analysis of the Current Station of China's Tourism. Safety Standards and Suggestions for Improvement. *ICEME 2020. 2020 The 11th International Conference on E-business. Movement and Economics*, 254-259.

KEY TERMS AND DEFINITIONS

Brand/Brands: Brand may include a series of quality attributes. Eventually a brand may be representative of a certain service idiom and level of quality. Brands and particularly trademarks can replace certification. Commercial brands are protected by intellectual property rights.

Category or Class: Attributing an establishment or service to a certain class. It does automatically carry the characteristics of quality, although it may give rise to the expectations of such, especially when it comes to higher class establishment (e.g., 5-star hotel). Official classification tends to be disliked by some hoteliers, but consumers prefer to be guided by classification in making their preliminary choices.

Certification: An official document attesting to a status or level of achievement. Some tourism establishments, especially hotels, have begun to display certification insignia (especially according to ISO 9000 and ISO 14 000 standards) thus alluding the guaranteed quality. Mentioned type of the ISO standards, so far, refer to management certification to support quality. It should therefore be made clear that undergoing a certification process does not necessarily promise all quality, or the quality expected by the individual customer at a given time. Certification does not intervene in the quality level. This is established by the company itself. It does not even provide for management excellence. Certification is therefore a starting point of a whole process aiming streamlining a company's operations and subsequently rewarding it with a quality product.

COVID-19: Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus SARS-CoV-2. In the years 2019-2021, this virus spread worldwide into a pandemic.

Quality Labels: Degree or standard of excellence. A tourism establishment or service may obtain a quality label or distinction by meeting the standards established by its own professional organization, or the organization it joins, or an external organization conceding such distinction on its own right. The effectiveness of quality labels will be checked only over time. Some prestigious organizations such as

International Standardization in Tourism Services

Michelin or the American Hotel and Motel Association enjoy good reputation. The National quality labels have already started in many places such as in Switzerland, Germany, Czech Republic.

Standard: Originally a level of quality, used as a measure, norm, or model. Primarily understood as mandatory rules, or legally binding measures. ISO standard consists of requirements and rights, it is voluntary, and it is the best practice recognized and written down by majority.

Tourist Organization: Provider offering tourism services and products.

Chapter 14

Challenges and Opportunities in the Tourism Sector in the Post-COVID-19 Period

Iveta Hamarneh

University College of Business in Prague, Czech Republic

ABSTRACT

The COVID-19 pandemic has not only a significant impact on public health but also severely affected the tourism sector, one of the drivers of the global economy. Although this situation crisis makes tourism highly vulnerable, the sector is also in a unique position to contribute to broader and just effective recovery plans and actions. This chapter considers the major significant impacts, behaviours, and experiences that four major tourism stakeholders are experiencing during the COVID-19 period. Research on (1) tourism demand, (2) tourism supply, (3) destination management organizations, and (4) policy makers will identify the main challenges and opportunities in tourism sector in the post-COVID-19 period.

INTRODUCTION

Before COVID-19, travel, and tourism had become one of the most critical sectors in the world economy and has experienced continued expansion and diversification to become one of the world's largest and fastest-growing economic sectors (UNWTO, 2020a). It was accounting for 10% of global GDP and more than 320 million jobs worldwide (Behsudi, 2020). In many countries (for example Croatia, Greece, Spain and Italy), tourism has acted as an engine for development through foreign exchange earnings and multiplicative function. Tourism has promoted entrepreneurship and developed local economies. A relatively robust global economy drove tourism growth, growing middle classes, rapid urbanization in emerging countries, affordable travel and accessible tourism for all, visa facilitation, technological improvements, and new business models connected with sustainable and responsible behavior and activity (Rocca, 2015; Angelo, 2016; OECD, 2020; UNWTO, 2020a).

Tourism, consisting of both inbound and domestic tourism, has represented a significant part of the gross domestic product for many economies worldwide (UNWTO, 2020a). This proportion was largest

DOI: 10.4018/978-1-7998-8339-5.ch014

Challenges and Opportunities in the Tourism Sector in the Post-COVID-19 Period

in Macao, where tourism accounted in 2019 for 48% of GDP. Domestic tourism was over six times larger than international tourism (in a number of overnight trips). Domestic tourism expenditure is higher than inbound spending in most large destinations (UNWTO, 2020b)

In 1950, at the dawn of the jet age, just 25 million people took foreign trips. By 2019, that number had reached 1.5 billion, and the travel and tourism sector had grown to almost too-big-to-fail proportions for many economies (Behsudi, 2020).

The global pandemic, the first of its scale in a new era of interconnectedness, has put 100 million jobs at risk, including micro, small, and medium-sized enterprises (SMEs). SMEs employ a high share of women (and young people), who represent 54 percent of the tourism workforce (as compared to 39% in the overall economy), according to the United Nations World Tourism Organization (UNWTO). Global tourism suffered its worst year on record in 2020, with international arrivals dropping by 74%, according to the latest data from UNWTO. Destinations worldwide welcomed 1 billion fewer international arrivals in 2020 than in the previous year due to an unprecedented fall in demand and widespread travel restrictions. To compare with the 4% decline recorded during the 2009 global economic crisis (UNWTO, 2021).

Tourism-dependent countries will likely feel the negative impacts of the crisis for much longer than other economies (Behsudi, 2020). Contact-intensive services key to the tourism and travel sectors are disproportionately affected by the pandemic and will continue to struggle until people feel safe to travel en masse again (OECD, 2020; WTTC, 2020)

The chapter aims to discuss and identify the main challenges and opportunities in the tourism sector in the post-COVID-19 period. The integral part of the chapter is also the main trends and forms of tourism suited in the post-COVID-19 period. The main challenges and opportunities and the trends are recognized for longer-lasting after the Covid-19 pandemic.

BACKGROUND

On December 8, 2019, the government of Wuhan in China, announced that health authorities were treating dozens of new virus cases identified as coronavirus disease 2019 (COVID-19) (Bakar, 2020).

Guo, Cao, Hong et al. (2020) tries to explain the clinical characteristics of COVID-19 that, as an emerging acute respiratory infectious disease, COVID-19 primarily spreads through the respiratory tract by droplets, respiratory secretions, and direct contact for a low infective dose. COVID-19 is contagious during the latency period. It is highly transmissible in humans, especially in the elderly and people with underlying diseases. The median age of patients is 47-59 years, and 41.9-45.7% of patients were females. As designated SARS-CoV-2, COVID-19 patients presented similar symptoms, such as fever, malaise, and cough. Most adults and children with SARS-CoV-2, COVID-19 infection presented with mild flu like symptoms, and a few patients are in critical conditions and rapidly develop the acute respiratory syndrome, respiratory failure, multiple organ failure, and even death.

Lau & Chan (2015) presents data regarding the mortality rate caused by the pandemics like the SARS (Severe Acute Respiratory Syndrome) and the MERS (Middle East Respiratory Syndrome) that MERS has a higher mortality rate (>35%) than SARS (9.6%). Likewise, the Asian Development Bank (ADB) Briefs (2020) comparative data shows that the fatality rate of COVID-19 compared to other pandemics is lower; however, the infection rate is comparatively higher, which has created a new fear to visitors.

Compared to the earlier epidemics, the impact of COVID-19 on the tourism sector is significantly different. While this global pandemic is far greater than the SARS outbreak, there are three other sig-

nificant differences. First, travel has increased since the early 2000s when SARS hit, with international arrivals more than doubling between 2000 and 2019. China, a large part of that growth, is now the largest outbound tourism market. Secondly, the emergence of social media to share information is compounding uncertainty and has led to heightened anxiety about travel. This is likely to continue into the recovery period. Thirdly, the median age of the global population is higher than ever before. This means a more extensive, older population is more at risk (World Bank Group, 2020).

The pause of tourism activities and halt of visitors' mobility due to the outbreak of COVID-19 has invited crisis in the industry. The tourism crisis is not a new phenomenon. There have been crises in history, such as war, terrorism (WTTC, 2019), and global economic crisis (UNWTO, 2013), which interrupted tourism growth, but the study of crisis management in tourism began recently (Tse, 2006; COMCEC, 2017).

According to Rocca (2015), tourism is a social, cultural, and economic phenomenon, representing the set of movements generated by the search for places and activities that are different from usual and have no economic motivation, which underlines the "mobility" as essential to tourism. Tourism is traditionally associated with leisure and vacation, where tourists look for revitalization and relaxation in a holiday. However, the crisis affects tourism mobility.

Sönmez, Backman & Allen (1994) had defined tourism crisis as any occurrence which can threaten the everyday operations and conduct of tourism-related businesses; damage a tourist destination's overall reputation for safety, attractiveness, and comfort by negatively affecting the visitor's perceptions of that destination; and in turn, cause a downturn in the local travel and tourism economy, and interrupt the continuity of business operations for the local travel and tourism industry, by the reduction in tourist arrivals and expenditures.

A similar definition of tourism crisis was presented by Lührman (2003), that a tourism crisis is any unexpected event that affects traveler confidence in a destination. It interferes with the ability to continue operating normally.

Tourism crisis, as a theory developed by Beirman (2011), defines crisis as an event or set of circumstances that can severely compromise or damage the marketability and reputation of a tourism business or an entire tourism development region.

According to Kunwar (2016), tourism crises can affect the development of economic, political, socio-cultural, and environmental domains that can further affect demand and supply in tourism generating and destination countries. The strategic plan of crisis management can reduce the impacts; therefore, evaluating the effectiveness of these strategic plans can ensure constant refinement of the crisis.

Crisis management in the tourism industry could be defined as how tourism destinations and the tourism industry respond to sudden disasters or catastrophes, which can be natural or man-made (Smith, Macleod & Robertson, 2011).

Definitions and theories related to the crisis in tourism justify the current crisis of pandemics. The fear of COVID-19 has dramatically changed the confidence, perception, and motivation, which not only has reduced the tourism activities in the destinations but has stopped the mobility of the travelers impacting the global economy into high risk. Many leaders and economists have declared the situation very worst and have started comparing the crisis similar to World War II (Ulak, 2020).

Mair, Ritchie & Walter (2016) argue that various tourism researchers have called for proactive crisis response and management planning based on learning from SARS. However, Jamal & Budke (2020) did not find the proactive crisis response on this event and depict his view that, unfortunately, coordinated crisis management and communication plans have rarely been implemented effectively at the local or

Challenges and Opportunities in the Tourism Sector in the Post-COVID-19 Period

country level. The issues are not simply economic recovery, destination image management, media management, and promotion. It has always been a problem for individuals not to learn a lesson from its past crisis or least bothered after eradicating crises.

Overall, the impacts and subsequent management of a crisis will depend on the suddenness and severity of the crisis. However, most destinations and practitioners now recognize the importance of immediate reactions, the careful management of media, the involvement of all stakeholders, and the benefits of learning long-term lessons from other destinations which have suffered a crisis. It is also recognized in the current situation connecting with the COVID-19 pandemic.

RESULTS AND DISCUSSION

According to the UN World Tourism Organization and World Trade Organization, tourism has been till 2019 the world's third-largest export category after fuels and chemicals, and ahead of automotive products and food (UNWTO, 2020a).

Export revenues from international tourism have grown faster than merchandise exports almost every year since 2010 (UNWTO, 2020a) and have reduced trade deficits in many countries. As an important export category, international tourism can help improve the balance of payments of countries by offsetting a trade deficit or adding to an existing surplus from trade in other goods and services.

A relatively robust global economy drove tourism growth, growing middle classes and rapid urbanization in emerging economies, affordable travel and visa facilitation, technological advances, and new business models. Tourism has been vital for the success of many economies around the world. There are economic and non-economic effects of tourism on host destinations. Tourism boosts the economy's revenue, creates thousands of jobs, develops the infrastructure and superstructure of a country, and plants a feeling of cultural exchange between residents and visitors. Tourism is an excellent opportunity for foreign visitors to learn about a new culture, but it also creates many opportunities for local inhabitants. It allows young entrepreneurs to establish new products and services that would not be sustainable for the local population of residents alone. Moreover, residents experience the benefits that come with tourism occurring in their own country (Yehia, 2019).

The factors causing global tourism growth could be divided into 3 main categories (Khan, Hassan, Fahad, Naushad, 2020):

1. Demand factors (increase in disposable income, increase in leisure time, changing lifestyles).
2. Technology (better and affordable transport, more air routes and agreements, internet and mobile apps).
3. Destination factors (attractions, investment in infrastructure and services, access to information/marketing, political stability).

In this context, should be mentioned two exciting concepts which can help to restart tourism in the post-COVID-19 period.

The first one is the "LOHAS concept," the acronym for Lifestyles of Health and Sustainability (Ray & Anderson, 2000). This concept includes everything from organic food and body care to socially responsible investing, alternative medicine, eco-tourism, renewable energy, and energy-efficient cars and appliances. LOHAS is presented as a perceptual, attitudinal, and behavioral lifestyle that emphasizes

personal health and well-being as well as environmental and social sustainability in the pursuit of balanced prosperity between the individual, the environment, and society (Cheng, Chang, Tsai, Chen & Tseng, 2019).

Ergüven & Yilmaz (2016) state that social benefits, as one of the values LOHAS consumers struggle for, according to the structural and functionalist point of view, can be obtained as a result of tourism activities. Thanks to this segment, the demand for eco-friendly and sustainable tourism trips is growing. LOHAS tourists are characterized by high purchasing power, intelligent technology, cultural travel experiences, short trips, and active vacations. Compared to other tourists, LOHAS tourists spend even 50% more money during their stay at the tourist destination and have a more extended stay at the destination (one to two weeks) (Northflash, 2017). Considering the percentage of consumers who adopt healthy and sustainable lifestyles and their role in economic development and socio-cultural communication, this is regarded as a very profitable tourist segment even in relatively underdeveloped regions.

According to the main characteristics of LOHAS consumers (Ergüven & Yilmaz, 2016), they can be identified as a perspective tourism segment in the post-COVID-19 period. They are between the ages 20 and 90, cannot be placed with a single social stratum, are looking for quality, are in the high-income group, have traveling experience, have higher education levels, advocate health and sustainability, and are environmentally conscious, prefer and individually-determined lifestyle.

The second concept is the “Smart destination,” which can be characterized as a destination that adopts an interactive and participative management style. This destination aims to enhance the residents’ and visitors’ quality of life by using information and communication technologies and other data collection, storage, exchange, and processing tools (Coban & Aydin, 2020).

Smart destinations focus on the effective and efficient use of resources, a cleaner environment, and finally, sustainability (Coban & Aydin, 2020). According to the European Capitals of Smart Tourism Initiative (European Commission, 2021), a smart tourism destination facilitates access to tourism and hospitality products, services, spaces, and experiences through ICT-based tools. It is a healthy social and cultural environment, which can be found by focusing on the city’s social and human capital. It also implements innovative, intelligent solutions and fosters the development of entrepreneurial businesses and their interconnectedness.

During the COVID-19 pandemic time when public health is the highest priority and traveling is difficult or impossible, most people have come to realize just how much we appreciate visiting new destinations (OECD, 2020). It becomes such a big part of our lives, and now, during the COVID-19 pandemic, it turns out to be one of the items the people miss most. Typically, tourism is one of the major components of economic growth for communities worldwide, but the pandemic has hit the tourism industry hard (UNWTO, 2021a). The tourism industry has been forced to find new approaches and ways to back from this setback more robustly. Right now, more than ever, the tourism sector needs to think differently and embrace innovation in preparation for the inevitable influx of visitors. Innovations and initiatives are on the rise in the area of “smart tourism.”

Smart tourism plays an essential role in the development of smart cities, as initiatives to attract visitors can cause a significant increase in people and cars/busses in even the smallest of towns. This, in turn, dramatically affects the traffic in the location in question, with more and more people searching for parking places. The average tourist intends to park their vehicle in the city center or as close to major tourist attractions as possible (Cleverciti, 2021). The resulting search traffic increases congestion and traffic hazards and influences the quality of life of residents and visitors alike. Intelligent and innovative

Challenges and Opportunities in the Tourism Sector in the Post-COVID-19 Period

parking solutions can remedy the situation and considerably enhance the experience that smart tourism provides (Cleverciti, 2021).

The European Capitals of Smart Tourism Initiative recognized outstanding achievements in smart tourism in European cities. Smart tourism responds to new challenges and demands in a fast-changing sector, including the evolution of digital tools, products, and services; equal opportunity and access for all visitors; sustainable development of the local area; and support to creative industries, local talent, and heritage (European Commission, 2021).

The COVID-19 pandemic has had a significant impact on the tourism industry. With many cities and destinations now looking to recover and grow back, developing and implementing smart tourism practices in line with the green and digital transition is relevant.

There are exist four different perspectives of tourism which can be identified (Goeldner & Ritchie, 2009).

1. The visitors seek various psychic and physical experiences and satisfactions. The nature of these will largely determine the destinations chosen and the activities enjoyed.
2. Businesspeople see tourism as an opportunity to make a profit by supplying the goods and services that the tourist market demands.
3. The government of the host community or area view tourism as a wealth factor in the economy of their jurisdictions. Its perspective is related to the incomes its citizens can earn from this business. Politicians also consider the foreign exchange receipts from international tourism and the tax receipts collected from tourist expenditures, either directly or indirectly. Consequently, it may be more appropriate to simply consider tourism taxation as those indirect taxes, fees and charges affecting primarily tourism-related activities. Indirect tax receipts generated by tourism expenditure are either derived from general taxes, including import duties, sales taxes, or value added tax (VAT); or specific taxes on what are considered to be primarily tourism-related activities, such as hotel and restaurant taxes, airport taxes, visa fees, and arrival and departure taxes. The government can play an important role in tourism policy, development, promotion, and implementation.
4. Local people (host community) usually see tourism as a cultural and employment factor. Of importance to this group, for example, is the interaction between large numbers of international visitors and residents. This effect may be beneficial or harmful, or both.

All these stakeholders have to change their attitude to the future development of tourism after the COVID-19 pandemic.

Thus, tourism may be defined as the processes, activities, and outcomes arising from the relationships and the interactions among tourists, tourism suppliers, host governments, host communities, and surrounding environments involved in attracting and hosting visitors.

According to UNWTO (2020a), international tourist arrivals (overnight visitors) worldwide grew 4% in 2019 to reach 1.5 billion. 2019 was another year of solid growth, although slower than the exceptional rates of 2017 (+6%) and 2018 (+6%). Demand was slower, mainly in advanced economies and particularly in Europe. Uncertainty surrounding Brexit, geopolitical and trade tensions, and the global economic slowdown weighed on growth. 2019 was also the year of significant shifts in the sector with the collapse of Thomas Cook and several low-cost airlines in Europe. All regions enjoyed an increase in arrivals. The Middle East (+7.6%) led growth, followed by Asia and the Pacific (+4.6%). International

Challenges and Opportunities in the Tourism Sector in the Post-COVID-19 Period

arrivals in Europe and Africa (both around +4%) increased in line with the world average, while the Americas saw growth of 2%.

In 2019 China remained the world's most significant spender, with one-fifth of international tourism spending, followed by the USA and Germany. France has shown the highest growth in spending among the top 10 world spenders (UNWTO, 2020a).

Based on mentioned trends, economic prospects, and the UNWTO Confidence Index, UNWTO had forecast a growth of 3% to 4% in international tourist arrivals worldwide in 2020.

Despite the point that tourism had been experiencing continuous growth, the progressive trend was interrupted by various adverse events. In the past two decades, the tourism industry has faced several significant damaging events such as the Asian financial and economic crisis, terrorist attack on September 11, 2001, the USA, or the global financial crisis. The last one mentioned was legitimately identified as the most profound attack on the world tourism development measured by tourism receipts and tourist arrivals before the crisis connected with COVID-19. The historic shock inflicted by the global financial crisis has led many countries in the world (Greece, Spain, Ireland, USA, Canada etc.) to unsustainably high levels of public debt, distressed private-sector balance sheets, and a surge in unemployment (UNWTO, 2020a).

The UNWTO had forecasts a growth of 3% to 4% in international tourist arrivals worldwide in 2020. But unfortunately, the COVID-19 pandemic has appeared at the beginning of the year 2020, and it could be recognized the unprecedented fall of international tourism in 2020.

International tourist arrivals fell by one billion, or 74 percent, in 2020, with Asia, the first region to feel the impact of COVID-19, seeing the steepest decline, it added (UNWTO, 2021a). The current COVID-19 crisis has led to national quarantines and global travel bans, bringing international travel to a standstill. These measures have a long-lasting and destructive effect on international tourism (UNWTO, 2021a).

The COVID-19 pandemic may have long-term impacts on the travel and tourism industry. The industry — spanning airlines, bus and train companies, cruise lines, hotels, restaurants, attractions, travel agencies, tour operators, online travel entities, and others — has entered a state of suspended animation due to the current pandemic. Given the narrow margins and low cash reserves that characterize the industry, many companies across the subsectors are likely to fail in the absence of external support to reschedule or defer debt payments and other running costs, ultimately leading to unemployment. This pandemic may also lead to substantial consolidation of many aspects of the industry. Depending on the nature, scope, and severity of the pandemic, the economic and psychosocial impacts will likely curb the demand for travel and tourism services for many months — and potentially years — following the crisis. The longer-term effects of the situation can impact consumer demand for travel and tourism services on several levels. These include overall economic impact and psychosocial impacts (World Bank Group, 2020).

If, as expected, the pandemic causes a global recession and high levels of unemployment, demand for travel and tourism services will be suppressed by a downturn in disposable income and lower levels of business activity. The crisis is also likely to make consumers more tentative about travel as they will tend to associate traveling and tourism with higher risks of contracting COVID-19. Against this backdrop, government efforts will be critical to stimulate demand, enabling the industry to recover (World Bank Group, 2020).

Especially for countries where the national economy relies heavily on the tourism industry, it is crucial to closely monitor the situation and provide measures to protect the sector and mitigate this crisis's economic impact (Portal data.europa.eu, 2021). Among EU member states most depend on tourism belongs Croatia, Cyprus, Greece, Portugal and Austria.

Challenges and Opportunities in the Tourism Sector in the Post-COVID-19 Period

Domestic tourism, which accounts for around 75% of the tourism economy in OECD countries, is expected to recover more quickly and could be considered as a vehicle for the restart of the tourism industry (OECD, 2020). Domestic tourism flows have also been profoundly affected by restrictions on people's movement, but are expected to recover more quickly once containment measures are lifted. Nonetheless, domestic tourism is unlikely to compensate for the decline of international tourism flows, particularly in destinations heavily dependent on global markets.

For the restart of tourism after the Covid-19 pandemic necessary the role of localization, e.g., in-services (creation of tourist trips and excursions, emphasis on the offer of excellent local food and cuisine), in creative tourism, the possibility of reviving cultural traditions and customs, localization and its role in tourism marketing is also significant.

Destinations most dependent on international markets are likely to be most affected. But on the other hand, domestic tourism can be a driver for the restart of the economy and help support infrastructure and superstructure in the destination. Destinations in which lockdowns are being lifted should now be promoting domestic tourism. This is because international tourism is not currently possible or very limited (the year 2020-2021), and visitors will want to travel close to home to feel safer. Domestic tourism is driving the recovery of destinations but in most cases only partially, as it is not compensating for the drop in international demand (UNWTO, 2021b). According to the survey among the UNWTO Panel of Tourism Experts (UNWTO, 2021b), the respondents from Asia and Pacific were the most positive regarding the contribution of domestic tourism to the recovery of destinations.

CHALLENGES AND OPPORTUNITIES

The crisis connected with COVID-19 is an opportunity to rebuild tourism for the future. Tourism is at a crossroads, and the measures put in place today will form tomorrow's tourism. Governments and other stakeholders need to consider the longer-term implications of the crisis while capitalizing on digitalization, supporting the low carbon transition, and promoting the structural transformation needed to build a stronger, more sustainable, and resilient tourism economy (OECD, 2020). Above mentioned facts can be used for each type of crisis for tourism recovery.

Without new challenges and opportunities will not be possible to ensure tourism development, and it will not be possible to restart tourism. What is vital for the period is that the decisions to be taken are national and based on the relevant information to date. The following is an analysis of the significant challenges and opportunities that the tourism sector will encounter in 2021+ and its adaptation.

Resilience and adaptability are two fundamental characteristics for the rebirth of the tourism sector. Recovery of the economic, social, historical, and cultural heritage of the destinations is necessary.

Sustainability may become more prominent in tourism choices due to greater awareness of climate change and the adverse impacts of tourism (OECD, 2020). Natural areas, regional and local destinations are expected to drive the recovery, and shorter travel distances may lower tourism's environmental impact. In this period, nature has shown us the ability to continue living. During the COVID-19 era, people have developed a greater awareness of sustainability issues, their responsibilities towards future generations, and the consequences of their actions on the environment. As a result, they questioned the hit-and-run mass tourism model. A positive aspect of the crisis in the tourism sector is the suspension of the phenomenon of over-tourism, allowing the most affected cities to reorganize the tourism model more sustainably (Severo, De Guimarães & Dellarmelin, 2021).

Challenges and Opportunities in the Tourism Sector in the Post-COVID-19 Period

Structural changes in tourism supply are expected across the ecosystem. Not all enterprises will survive the crisis, and capacity in the sector is likely to be reduced for a period, limiting the recovery (OECD, 2020).

Visitor confidence has been hit hard by the crisis and the ongoing uncertainty. It may lead to a decline in demand and tourism consumption that continues well after the initial shock (OECD, 2020). Visitor behavior will be influenced by the evolution of the crisis and longer-term consumer trends that reshape people's travel. It may include the emergence of new niches and market segments and a more comprehensive focus on safety protocols and contactless tourism experiences.

In the post-COVID-19 period, it has become essential to understand visitors' intentions better and outline future tourist trends. Analysts and research bodies (UNWTO, OECD, IMF, WTTC) are trying to gather as much information as possible on the traces left online by potential visitors. Even during the worst times related to the pandemic COVID-19, travelers never stopped searching and planning their holidays. The decrease of restrictions and the acceleration of vaccinations will be the starting point for returning to travel.

There is no doubt that visitors will tend to visit destinations in their own country. Stakeholders for tourism development will be forced to direct their offer towards the new tourism demand. Create a range of experiences and marketing activities specifically aimed at the domestic tourism market. They will provide the guest with an offer that is safe, flexible, and attractive (OECD, 2020).

In a crisis period, offering flexible cancellations, allowing travelers to book and cancel their holiday at no additional cost, is a wise choice. Flexible cancellation terms can reassure guests and visitors and draw them to the service provided by the small and medium-sized enterprises. Understandably, those who are considering traveling want more flexibility on the possibility to rebook or cancel a stay. Due to the number of travel restrictions in place, it is not easy to plan nowadays. The option to change or cancel a trip can encourage guests to make a reservation.

Safety, security, and hygiene have become critical factors in selecting destinations and tourism activities. The covid-19 pandemic has made the cleaning aspect more significant than ever. Facilities must be thoroughly clean. High-contact areas must be regularly disinfected, also providing essentials such as hand sanitizer throughout the venue. Careful cleaning and disinfection processes will be vital to fulfilling the new generation clean guest will expect. New generation clean guest is a unique segment that includes Baby Boomers, Millennials, and Gen X travelers. People are likely to prefer private solutions when traveling, avoiding big gatherings, and prioritizing private means of transport, which may hurt the environment.

Along with the guarantee of security, safety, and peace of mind, technology has made its way among the most critical challenges that the tourism sector must face during 2021+. Incorporating new technology has made it easier for stakeholders in the tourism sector to adapt to the new reality and create jobs in the industry. Looking ahead to the 2021+ period, companies and other players in the tourism sector will have to make decisions and modifications focused on adaptability to new technology and one more extra component, creativity.

Creativity will be what will make a difference in the tourism sector in 2021+. Although broad and complex, after the COVID-19 pandemic, this concept is one of the most relevant ideas that visitors consider when planning their holidays. It seeks to break with the monotony and the feeling of confinement experienced during the past year. One of the biggest challenges tourism will face in 2021+ comprises how the offered services will be materialized through different platforms, such as social and websites. Skills shortages in the tourism sector may be exacerbated, as many jobs are lost, and workers will rede-

Challenges and Opportunities in the Tourism Sector in the Post-COVID-19 Period

ploy to different sectors. Again, it will be necessary to support education in tourism-related sectors and introduce the importance of tourism for future workers.

The reduced investment will call for active policies to incentivize and restore investment in the tourism sector to maintain the quality of the tourism offer and promote sustainable recovery. Tourism policy will need to be more reactive, and in the long term, it will move to more flexible systems, able to adapt faster to changes of policy focus. Crisis management will be a particular area of focus. Safety and health policy issues also (OECD, 2020).

Digitalization in tourism services is expected to continue to accelerate, including increased automation, contactless payments and services, virtual experiences, real-time information provision.

Policy interventions in more advanced economies are being rolled out to support the tourism sector at speed and scale. In developing economies, interventions are likely to follow a similar pattern, but with fewer resources and lesser capacity to implement them. Consequently, the sector's most effective responses are likely to emerge from multiple actors - government, other stakeholders, and private sector - working together (World Bank Group, 2020).

Policy responses include measures to support travel and tourism as a whole and those targeted at specific sub-sectors. Measures include direct financial support to alleviate debt obligations, cash grants, subsidies, employment, training support, easing regulatory burdens, and waiving fees. In addition to economy-wide and sector broad support, some policy interventions have been designed to support specific sub-sectors including hospitality, food services, hotels and transport. Several particular interventions have been targeted at the aviation sector (OECD, 2020).

TRAVEL AND TOURISM TRENDS

The situation connected with the pandemic COVID-19 has not reduced audiences' desire for travel, quite the opposite. It has even allowed for consumer habits to shift and for new travel and tourism trends to emerge.

Domestic tourism is expected to benefit, as people prefer to stay local and visit destinations within their own country (OECD, 2020). Domestic tourism will resume at a faster pace than international tourism. According to a research conducted by Booking.com, 53% of travelers want to take shorter holidays in 2021 than in 2019 (Booking.com, 2020). People will be less likely to travel further from their homes. Instead, they will tend to travel closer to home, exploring the surrounding, low-risk areas. The demand for domestic travel is on the rise. Domestic tourists are often more price-sensitive and tend to have lower spending patterns.

All activities that allow social distancing and promote hygienic conditions will be preferred by travelers in 2021+. There is a significant trend concerning the "safety first" mindset. According to a TripAdvisor study, 66% of travelers consider the safety and cleanliness of their facilities to be a key factor, and 79% of global travelers will take more precautions due to Coronavirus (TripAdvisor, 2020). Confidence in travel safety differs significantly between countries.

There is a tendency to use the car or caravan to go on vacation to the detriment of public transportation. According to the surveys, more than 40% of global travelers intend to avoid public transport to fear contracting the Coronavirus. Many travelers during the summer of 2020 preferred to go on vacation by moving less for a few days and choosing private vehicles. This trend will also develop in 2021+. It will

cause a long-term change in the way people travel and around their vacation destinations, with more people choosing to rent or use their car/caravan.

All of this has fuelled a renaissance of road trips to explore forgotten local uniques and rediscover a sense of pride in history and beauty. In any case, travelers will not cancel their love for long-haul get-aways. But they will return to them for about 2 - 3 years. According to a Booking.com research, 21% of people intend to travel to the other side of the world by the end of 2021, compared to only 6% in 2020 (Booking.com, 2020).

All experiences related to outdoor tourism are an example of safe activities, directly favoring social distancing. Travelers tend to rural tourism, ecotourism, eco-agrotourism in isolated places in the countryside or the mountains. In 2021+, travelers will prefer less crowded areas in the company of few selected people. According to the Tripadvisor research, after the lockdown, 70.5% of Italians opted for outdoor tourism, with a growth of 26.6% compared to the previous year (TripAdvisor, 2020). Families choose this type of activity the most. In any case, 69% of Italians say they want to go on vacation in the next 12 months. Similar trends are also recognized among the EU travelers, incl. Czech citizens. There is a strong desire to return to an everyday life, of which traveling is an essential part.

In recent years, the profile of outdoor visitors has changed. According to several surveys (UNWTO, OECD), mainly men practice outdoor tourism, including the age group between 35 and 64 years, and to a reasonably uniform extent among the residents of the various regions in the countries. The outdoor traveler is placed in the significant expectations cluster, referring to people's desire to have psychologically rewarding experiences. It is no longer enough to be satisfied with a product or service; the goal is to be fully happy with it in terms of the authenticity of the experience.

In 2021+, the perceived importance of the well-being of the mind is expected to increase alongside that of the body: travelers will not fail to seek solutions in line with their regeneration needs, especially after such the long and uncertain year 2020. Activities such as Yoga, meditation, and mountain walks will be a real growing trend in 2021. Nature, clean air, and relaxation have become critical features on the rise since the beginning of the pandemic (Severo, De Guimarães & Dellarmelin, 2021).

Bleisure is the possibility of combining work and relaxation. It is a growing phenomenon, much appreciated by workers/travelers. One of the impacts of the COVID-19 pandemic is that workers started questioning the necessity of commuting to the office when they have proved that they can be as efficient and productive when working from home, or a hotel room, for that matter. On the other hand, this global pandemic has almost wholly stopped international business travel. Economists predict that traveling work will not recover completely for another few years to the extent that we are used to seeing. This is mainly caused by the fact that business travel is far more regulated than leisure travel. Companies will avoid being responsible for their employees' health and safety as long as they can replace face-to-face meetings with online communication.

Remote working became mainstream during the COVID-19 pandemic with the ripple effect of people trying to make longer trips in the future to combine work and pleasure. We will see an increase in "Workcation," with travelers looking to extend their vacation experience to new locations by staying an extra week or two to work remotely. 37% of travelers have already considered booking a facility away from home to work from a different destination (Paolinelli, 2021).

Another trend that will likely gain favor is better crowd management. With many once-bustling tourist destinations reduced to minimal activities, people see the positive effect on the environment. It has given authorities something to consider in terms of controlling the crowd in the future. This win-win

Challenges and Opportunities in the Tourism Sector in the Post-COVID-19 Period

move will help tourists enjoy a more pleasant visit to famous spots while also keeping the environment in good shape (WTTC, 2020).

Touch-less travel is probably the most immediate thing people will prioritize and may also be the most visible change in the travel and tourism industry in the future. Even with the strict health and safety protocols, exchanging travel documents in the airport and hotels still a present risk of infection. The same goes for touching surfaces by the check-in counter, security checks, border control, as well as hotel front desks. It means automation is expected to become a part of the new normal of travel trends in 2021+. Biometrics (facial recognition, contactless fingerprint scan, etc.) will replace physical fingerprint and hand scanners (World Economic Forum, 2020).

From online distribution to the marketing of experiences, the digitalization of activities will continue to be part of 2021+. Staying one step ahead of competitors will mean working on the online presence and direct distribution channels. The desire to discover new worlds, open up to new cultures, and renew the mind, has always characterized the human being and will not be lacking in any future scenario. New strategies in line with the recent trends are needed to ride this change. Two thousand twenty-one travelers will continue to benefit from the online world, including new online or virtual experiences (Paolinelli, 2021).

Communication has become a fundamental part of all enterprises operating in the tourism sector. Taking care of your digital image, investing in brand identity and marketing strategies has become the basis for every business. It is fundamental and will be more and more so. It is necessary to provide transparent information and limit the uncertainty of travelers.

Social media (Facebook, Instagram, Twitter) are acknowledged as an essential information source that influences visitors' travel choices. They have significantly changed marketing communication practices for many companies, including those in the tourism industry (Song & Yoo, 2016). The reliability of the content shared on these channels contributes to the power of social media (Xuerui, Mehralieyev, Liu & Schuckert, 2019). Social media has been vital for consumers, suppliers, workforce, and partners to remain engaged amidst this exogenous event of the COVID-19 pandemic. Social media has most openly been utilized as a tool for travel businesses and DMO's (Destination Management Organizations) to maintain contact with travelers worldwide – to generate wanderlust and look towards recovery when travel is once again possible. Even though the battle with COVID-19 is now beginning to lessen and restrictions are easing, it is clear there will be long-standing impacts on consumer behavior. Social media is one of the major themes that will drive future changes (Market Research.com, 2020).

TYPES OF TOURISM SUITED FOR THE FUTURE RESTART OF TOURISM

According to the mentioned challenges, opportunities, and new trends in tourism, it can be recognized the following types of tourism are suited for the restart of tourism and travel in the post-COVID-19 period.

The COVID-19 pandemic has reduced or even temporarily halted tourism worldwide. The lack of visitors has enormous consequences not only for the tourism industry but also for the tourism economy and other sectors. Health tourism enterprises are also affected by this situation. Still, their position is somewhat different from other tourism enterprises, as the relationship of these enterprises with the healthcare system provides an opportunity to continue operations, albeit in a different role than the tourism function (Szromek, 2021).

Health tourism is among the oldest forms of tourism. Ancient civilizations as far back as 5000-1000 BC practiced many of the therapies found in spas today (Smith, Macleod & Robertson, 2011). Health tourism includes three primary forms of tourism (Smith & Puczkó, 2009, 2014; Tomić & Košić, 2020). The first is spa tourism, which seems to be the form that best realizes the health objectives of tourism. Spa tourism can only be practiced in strictly defined areas with features that positively impact human health. The second is medical tourism, which includes surgical and therapeutic tourism. The third - wellness tourism - has its other dimensions: spa tourism, holistic, alternative, New Age tourism, and spiritual tourism.

Global medical tourism undoubtedly took a hit in 2020 due to the coronavirus pandemic (Medical Device Network, 2021). Nevertheless, as the recent positive performance of destinations, implementing a combination of solutions (government support, vouchers) can help restore medical travelers' confidence, which will be the first step on the road to recovery. Spa and wellness hotels and special clinics will provide rehabilitation and spa treatment for guests, but they will offer particular post-covid therapy for the people who underwent COVID-19.

Globalization has been occurring at a high rate worldwide over the past century (Angelo, 2016). This has led to significant changes in how many societies view the world. The world has entered the informational age, with the emergence of a digital economy being its primary trend (Vorontkova, 2018). The introduction of digital technologies through virtual reality has led to a different view of the role of tourism. It was introduced as a marketing tool to attract tourists to visit various places (Rainoldi et al., 2017). However, due to the new world order shaped by the COVID-19 pandemic, virtual reality could be used as a tool to stabilize and maintain income flows from the tourism sector for many countries (Chirisa et al., 2020).

In this context, it can introduce virtual tourism, which presents viewers with an immersive experience of an activity, location, or destination through technology.

Because virtual travelers can experience activities, locations, and destinations from the comfort of their own homes, there are many clear benefits to virtual tourism. The most obvious of these advantages is that viewers can see and experience a destination without traveling to it, which means they aren't limited by available flights, travel logistics, safety concerns, and whether destinations are open (Fredericks, 2021).

The other massive benefit for viewers is cost. Virtual tourism makes destinations accessible to people who may otherwise not afford to travel to them. For accommodation, gastronomy facilities, and destinations, the apparent benefit is the ability to stay top-of-mind with potential guests and to highlight a location, amenities, and offerings. Viewers who have experienced a hotel/restaurant or area through virtual tourism are more likely to book a future stay and eagerly anticipate experiencing the activity in the real world. There are also great marketing opportunities offered by virtual tourism technology. Potential guests can see a 360-degree view of a property and its amenities rather than the flat images on a brochure or website. Experiencing a property this way increases the chances that virtual visitors will want to visit in the future and means that they can easily share the virtual offerings with their friends and relatives (Fredericks, 2021).

As was already mentioned, 2020 has been the most challenging year in the history of tourism. International arrivals in 2020 fell by 74%, with travel restrictions, low consumer confidence, and the global struggle to contain the COVID-19 virus all contributing to the worst year on record. Tourism is an essential driver of inclusive socio-economic development, and tourism generates many jobs in fragile segments of society (UNWTO, 2021a).

Challenges and Opportunities in the Tourism Sector in the Post-COVID-19 Period

Migrants, refugees, indigenous populations have been heavily affected by the economic impact of COVID-19 (International Training Centre of the International Labour Organization, 2021). While news of the vaccine has boosted tourist confidence, there is still a long road to recovery. This road to recovery is also an opportunity to guide the sector towards greater sustainability and inclusiveness and show its immense potential to generate ongoing development. All tourism stakeholders (but not only) have to explore concepts, strategies, ideas, and their practical application of sustainable, responsible, and inclusive tourism to respond to the impacts and challenges due to the COVID 19.

As we search for solutions for the restart of tourism, the diaspora emerges as an essential avenue to aid in regrowth and tourism development. Diaspora tourists (Li & McKercher, 2016) feel a stronger connection to their holiday destinations than other tourists. That is why they are more likely to visit local shops, eat at local restaurants, and stay at local accommodation facilities. The money that they spend usually goes straight to the local economy. Ultimately, they will be the best ambassadors of the destination to their friends and family back home.

The term diaspora initially stands for “the exile and dispersion of Jews from the land of Israel” (Huang, Ramshaw, Norman & Haller, 2015). Diaspora community members are connected to two homes, “their ancestral homeland” and “their current country of residence”, often with a strong sense of bonding toward their original heritage.

Diaspora tourists travel on holidays to destinations where they have an ancestral connection, such as where they were born, raised, or where their ancestors live or lived. Diaspora tourists often have family, friends, or relatives living in the destination country or ancestors who came from there (Centre for the Promotion of Imports from developing countries, 2020). Diaspora tourism also includes Friends and Family Tourism and roots tourism, also called DNA tourism or ancestral tourism. Because diaspora tourists have some connection with the destination country, they feel more like locals than regular tourists. Most diaspora tourists plan their holidays, so diaspora tourism is very much related to accessible independent traveler tourism.

CONCLUSION

Three straightforward steps emerged from the discussion for tourism to build better forward. First, improve traveler confidence; second, understand and track new market trends and the drivers of demand; and third, commit to making more resilient and inclusive tourism sectors, leveraging renewed interest in sustainability – an important takeaway in the long term.

The post-COVID-19 environment has transformed visitors, looking for more detailed factors such as health, social distancing, comfort, and services offered to enjoy their holidays. This extra demand poses a significant challenge for the tourism industry, which has to invest capital in guaranteeing sanitary measures to avoid infection and the pandemic’s spread.

The tourism sector must take their future visitors on a trip before even getting there; for this, they must take advantage of the challenge that digitalization, innovation, and creativity introduced. We must embark on a new “brand building” that improves our image and has a closer treatment for the customer through the screen before they arrive at their destination.

In this principle, sustainability, flexibility in booking, cancellation policies, and the differentiation of the type of tourism we offer will allow the stakeholders and tourism sector to capture the public’s attention.

Although 2020 was presented as a complicated year for all sectors, especially for the tourism sector, 2021+ allows us to reinvent ourselves and prepare for any adversity. This sector has a lot at stake facing 2021+, but adapting to the health reality and guaranteeing safety and disconnection will make any destination of great relevance and interest for visitors.

Travel has a unique potential to come back stronger than ever in the years to come as a primary engine of growth, equality, and prosperity for people worldwide. The tourism sector is resilient, and we look to the future with optimism, as we will see the recovery and return to global travel. In the meantime, the hosts' mission is to continually update ourselves and try to understand new trends to offer future guests the widest choice of unforgettable experiences.

The Organization for Economic and Development, World Tourism Organization, and European Union have assessed that the COVID-19 crisis provides an opportunity to rethink tourism for the future, noting that today's measures will shape the tourism of tomorrow.

The World Travel and Tourism Council has identified four intertwined trends for the industry's recovery: demand evolution, health, hygiene and personal safety, innovation and digitalization, and sustainability.

Guests' loyalty will be based on their experience, so let ourselves be guided by the concept of "experience-driven loyalty" and learn from the challenges faced to find the best solutions for the future!

REFERENCES

- ADB Briefs. (2020). *The economic impact of the COVID-19 outbreak on developing Asia*. No. 128.
- Angelo, H. (2016). From the city lens toward urbanisation as a way of seeing: Country/city binaries on an urbanising planet. *Urban Studies (Edinburgh, Scotland)*, 54(1), 158–178. doi:10.1177/0042098016629312
- Bakar, N. A., & Rosbi, S. (2020). Effect of Coronavirus disease (COVID-19) to tourism industry. *International Journal of Advanced Engineering Research and Science*, 7(4), 189–193. Advance online publication. doi:10.22161/ijaers.74.23
- Behsudi, A. (2020). *Wish you were here. Tourism-dependent economies are among those harmed the most by the pandemic. Finance & Development*. International Monetary Fund.
- Beirman, D. (2011). *Bounce back: Tourism risk, crisis and recovery management guide*. Pacific Asia Travel Association (PATA).
- Booking.com. (2020). *Smarter, Kinder, Safer: Booking.com Reveals Its Predictions for the Future of Travel*. Available on: booking.com/globalresearchreport (1).pdf
- Centre for the Promotion of Imports from developing countries. (2020). *The European market potential for diaspora tourism*. The European market potential for diaspora tourism. CBI.
- Coban, G., & Aydin, Ş. (2020). A New Concept in Tourism: Smart Tourism Destinations. In E. Çeltek (Ed.), *Handbook of Research on Smart Technology Applications in the Tourism Industry*. IGI Global. doi:10.4018/978-1-7998-1989-9.ch019
- COMCEC. (2017). *Risk & Crisis Management in Tourism Sector: Recovery From Crisis in the OIC Member Countries*. Available on: sbb.gov.tr

Challenges and Opportunities in the Tourism Sector in the Post-COVID-19 Period

Frredericks, L. (2021). The Complete Guide to Virtual Tourism in 2021. *Virtual Tourism: The Complete 2021 Guide*.

Goeldner, C. H. R., & Ritchie, J. R. B. (2009). *Tourism: Principles, Practices, Philosophies*. John Wiley & Sons, Inc.

Huang, W. J., Norman, W. C., Ramshaw, G. P., & Haller, W. J. (2015). Transnational leisure experience of secondgeneration immigrants: The case of Chinese-Americans. *Journal of Leisure Research*, 47(1), 102. doi:10.1080/00222216.2015.11950353

data.europa.eu. (2021). *The Impact of COVID-19 on the International Tourism Industry*. Available on: data.europa.eu

Rainoldi, M., Driescher, V., Lisnevskaja, A., Zvereva, D., Stavinska, A., Relota, J., & Egger, R. (2017). Virtual reality: An innovative tool in destinations. *The Gaze Journal of Tourism and Hospitality*, 9, 53–68. doi:10.3126/gaze.v9i0.19721

Ergüven, M., & Yılmaz, A. (2016). The first global lifestyle “LOHAS”: A study in Thrace. *The Journal of Academic Social Science Studies*, 51, 265–275. doi:10.9761/JASSS3715

European Commission. (2021). *European Capitals of Smart Tourism*. Available on: *An EU initiative to reward innovative and smart tourism in European Cities!* europa.eu

Cleverciti. (2021). European smart tourism destinations to watch and learn from. Smart Parking for Smart Cities.

Guo, Y. R., Cao, Q. D., Hong, Z. S., Tan, Y.-Y., Chen, S.-D., Jin, H.-J., Tan, K.-S., Wang, D.-Y., & Yan, Y. (2020). The origin, transmission and clinical therapies on coronavirus disease 2019 (COVID-19) outbreak – an update on the status. *Military Medical Research*, 7(1), 11. doi:10.118640779-020-00240-0 PMID:32169119

Cheng, C. C., Chang, Y. Y., Tsai, M. C., Chen, C. T., & Tseng, Y. C. (2019). An evaluation instrument and strategy implications of service attributes in LOHAS restaurants. *International Journal of Contemporary Hospitality Management*, 31(1), 194–216. doi:10.1108/IJCHM-06-2017-0361

Chirisa, I., Mutambisi, T., Chivenge, M., Mbasera, M., Sidambe, M., Muchenje, B., Mukwashi, T., Mabaso, E., Ncube, R., & Zengeni, D. (2020). Scope for Virtual Tourism in the Times of COVID-19 in Selected Africal Destinations. *Journal of Social Sciences*, 64(1-3), 1–13. doi:10.31901/24566756.2020/64.1-3.2266

International Training Centre of the International Labour Organization. (2021). *Building Sustainable, Responsible and Inclusive Tourism Post COVID-19*. itcilo.org

Khan, N., Hassan, A. Ul, Fahad, S., & Naushad, M. (2020). Factors Affecting Tourism Industry and Its Impacts on Global Economy of the World. SSRN.

Kunwar, R. R. (2016). Tourism crisis and disaster management. *The Gaze: Journal of Tourism and Hospitality*, 7(1), 1–36. doi:10.3126/gaze.v7i0.15118

Lau, S. K., & Chan, J. F. (2015). Coronaviruses: Emerging and re-emerging pathogens in humans and animals. *Virology Journal*, 12(1), 209. doi:10.118612985-015-0432-z PMID:26690088

Li, T. E., & McKercher, B. (2016). Developing a typology of diaspora tourists: Return travel by Chinese immigrants in North America. *Tourism Management*, 56, 106–113. doi:10.1016/j.tourman.2016.04.001

Luhrman, D. (2003). *Crisis guidelines for the tourism industry*. Asia Pacific Ministerial Summit on Crisis Management.

Mair, J., Ritchie, B. W., & Walter, G. (2016). Towards a research agenda for post-disaster and post-crisis recovery strategies for tourism destinations: A narrative review. *Current Issues in Tourism*, 19(1), 1–26. doi:10.1080/13683500.2014.932758

Medical Device Network. (2021). *Medical tourism market set to recover from the COVID-19 pandemic*. medicaldevice-network.com

Northflash. (2017). *LOHAS: The biggest market you have never heard of*. Available on: <https://northflash.com/lohas-the-biggest-market-you-have-never-heard-of/>

OECD (2020). *Tourism Policy Responses to the coronavirus (COVID-19)*. oecd.org

Paolinelli I. (2021). *The Impact of Covid-19 on Tourism and the New 2021 Travel Trends*. ecobnb.com

Ray, P. H., & Anderson, S. R. (2000). *The cultural creatives: How 50 million people are changing the world*. Three Rivers Press.

Rocca, R. A. (2015). Tourism mobility. Best practices and conditions to improve urban livability. *TeMA-Journal of Land Use, Mobility and Environment*, 8(3), 1–330. doi:10.6092/1970-9870/2814

Severo, E. A., De Guimarães, J. C. F., & Dellarmelin, M. L. (2021, March). Impact of the COVID-19 pandemic on environmental awareness, sustainable consumption and social responsibility: Evidence from generations in Brazil and Portugal. *Journal of Cleaner Production*, 286, 1. doi:10.1016/j.jclepro.2020.124947 PMID:33173257

Smith, M., Macleod, N., & Robertson, H. (2011). *Key Concepts in Tourism Studies*. SAGE Publications Ltd.

Smith, M., & Puczko, L. (2009). *Health and Wellness Tourism*. Elsevier.

Smith, M., & Puczko, L. (2014). *Health, Tourism and Hospitality. Spas, wellness and medical travel*. Routledge. doi:10.4324/9780203083772

Song, S. J., & Yoo, M. (2016). The Role of Social Media during the Pre-purchasing Stage. *Journal of Hospitality and Tourism Technology*, 7(1), 84–99. doi:10.1108/JHTT-11-2014-0067

Sönmez, S. F., Backman, S. J., & Allen, L. R. (1994). *Managing Tourism Crises: A Guide Book*. Department of Parks, Recreation, and Tourism Management, Clemson University.

Szromek, A. R. (2021). The Role of Health Resort Enterprises in Health Prevention during the Epidemic Crisis caused by COVID-19. *Journal of Open Innovation*, 7(2), 133. doi:10.3390/joitmc7020133

Tomić, N., & Košić, K. (2020). Developing the Spa Assessment Model (SAM) and its application on the Kopaonik-Jastrebac spa zone (Serbia). *Tourism Management Perspectives*, 36(100753). Advance online publication. doi:10.1016/j.tmp.2020.100753

Challenges and Opportunities in the Tourism Sector in the Post-COVID-19 Period

Tse, T. (2006). Crisis management in tourism. In D. Buhalis & C. Costa (Eds.), *Tourism Management Dynamics: Trends, Management, Tools* (pp. 28–38). Elsevier. doi:10.1016/B978-0-7506-6378-6.50014-7

TripAdvisor (2020). *2020 A Year in Travel. Charting the Travel Industry's Path to Recovery*. tripadvisor.com

Ulak, N. (2020). A Preliminary Study of Novel Coronavirus Disease (COVID-19) Outbreak: A Pandemic Leading Crisis in Tourism Industry of Nepal. *Journal of Tourism & Hospitality Education*, 10, 108–131. doi:10.3126/jthe.v10i0.28763

UNWTO. (2013). *Economic Crisis, International Tourism Decline and its Impact on the Poor*. e-unwto.org

UNWTO. (2020a). *International Tourism Highlights. 2020 Edition*. UNWTO.

UNWTO. (2020b). *Understanding Domestic Tourism and Seizing its Opportunities*. e-unwto.org

UNWTO. (2021a). *2020: Worst year in tourism history with 1 billion fewer international arrivals* Available on: <https://www.unwto.org/news/2020-worst-year-in-tourism-history-with-1-billion-fewer-international-arrivals>

UNWTO. (2021b). *UNWTO Panel of Experts October Edition*. UNWTO.

World Bank Group. (2020). *Rebuilding Tourism Competitiveness. Tourism response, recovery and resilience to the COVID-19 crisis*. worldbank.org

World Economic Forum. (2020). *Here's what travelling could be like after COVID-19*. weforum.org

WTTC. (2019). *Crisis Readiness. Are you prepared and resilient to safeguard your people & destinations?* wtcc.org

WTTC. (2020). *To Recovery & Beyond. The Future of Travel & Tourism in the Wake of COVID-19*. oliverwyman.com

Voronkova, L. P. (2018). Virtual Tourism: On the Way to the Digital Economy. *IOP Conference Series. Materials Science and Engineering*, 463, 042096. doi:10.1088/1757-899X/463/4/042096

Xuerui, L., Mehralieyev, F., Liu, Ch., & Schuckert, M. (2019). The roles of social media in tourists' choices of travel components. *Tourist Studies*, 20(1), 27–48. doi:10.1177/1468797619873107

Yehia, Y. (2019). *The Importance of Tourism of Economies and Business*. msu.edu

ADDITIONAL READING

Goodwin, H. (2016). *Responsible Tourism. Using tourism for sustainable development*. Goodfellow Publishers Ltd.

OECD. (2020). *OECD Tourism Trends and Policies 2020*. OECD Publishing. doi:10.1787/6b47b985-

Sharpley, R., & Telfer, D. J. (Eds.). (2015). *Tourism and Development. Concepts and Issues*. Channel View Publications.

UNWTO. (2020). *UNWTO Briefing Note – Tourism and COVID-19, Issue 1 – How are countries supporting tourism recovery?* UNWTO., doi:10.18111/9789284421893

KEY TERMS AND DEFINITIONS

Bleisure: Is a neologism formed by the union of the words business and leisure and therefore identifies the combination of work and leisure time. In particular, it indicates the practice of indulging in moments of relaxation during the business trip.

COVID-19: Is a disease caused by a new strain of coronavirus.

Digitalization: Is the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business.

Domestic Tourism: Can be described as tourism involving residents of one country traveling within their own country. It does not involve the crossing of international borders at entry points.

LOHAS Concept: A demographic defining a particular market segment related to sustainable living, “green” ecological initiatives, and generally composed of a relatively upscale and well-educated population segment.

Security: Is freedom from, or resilience against, potential harm (or other unwanted coercive change) caused by others. Beneficiaries (technically referents) of security may be of persons and social groups, objects and institutions, ecosystems or any other entity or phenomenon vulnerable to unwanted change.

Smart Destination: Is a geographical space (which can range from a neighborhood to a network of cities) where tourism development is planned and executed based on technological infrastructure, allowing local sustainable development while providing quality of the experiences for visitors and the quality of life for locals.

Sustainability: Means meeting our own needs without compromising the ability of future generations to meet their own needs. In addition to natural resources, we also need social and economic resources.

Tourism: Comprises the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year (12 months) for leisure, business or other purposes.

Chapter 15

Municipality Strategic Prospects in the Post–COVID Time

Vladimíra Šilhánková

Czech Technical University in Prague, Czech Republic

Martin Maštálka

 <https://orcid.org/0000-0002-1878-8700>

Faculty of Economics and Administration, University of Pardubice, Czech Republic

ABSTRACT

The municipalities development planning consists of two main streams—the spacial planning and the strategic planning—intents, objectives, and tactics of which are coordinated with various successes and outputs. The strategic planning has been implemented into the East European municipalities' management since the end of the 1990s. It had to respond to many oncoming circumstances. Economic, security, environmental, and other crises, both national and global, occurred. But the COVID-19 disease pandemic has brought wholly new challenges in the life management in the societies all over the world. The chapter intends to investigate how the value priorities within the municipalities strategic objectives changed during the pandemic, taking the Czech Republic (one of the European COVID-19 most affected countries) as an example.

INTRODUCTION

The strategic planning should be the basic instrument for the municipalities (cities, towns, and villages) development, and in many instances, it is the case. Its essence should be to achieve clear improvement in the long term (usually between 20 and 30 years) using analyses and sequential specific steps. It is therefore the long-term planning that enables municipalities and regions not only to set the concept of their development, but also to optimally plan their human and financial resources and use them to efficiently execute the individual intermediate objectives. The objective doesn't have to be necessarily a development, but instead a reduction or an elimination of an activity that occurs in the municipalities but is not desirable or has no promising outcome. The important thing is that the planned and subsequently

DOI: 10.4018/978-1-7998-8339-5.ch015

executed changes result in a demonstrable improvement of the status quo. The matters of the strategic development documents creation are therefore continuously the centre point of the of expert – theorists and the public administration government representatives debates not only in the Czech Republic.

Setting the development strategy is one of the fundamental municipalities' rights and also one of their basic activities. The defined visions and objectives reflect not only intentions and concepts of the municipality's future course, but also the strategic and economic opportunities of their development, and, last but not least, the hierarchy of values and priorities of its inhabitants and other entities. Naturally, in the changing external environment conditions it is not only the development opportunities but also the aforementioned hierarchy of values that alter. The global COVID-19 pandemic entailed radical effects on the deep-seated value schemes, and it is safe to assume that these changes will also be reflected in the strategic topics and development objectives of not only individuals, but at the municipalities level too.

The chapter aims to investigate how the value priorities in the municipalities strategic objectives changed during the pandemic, taking the Czech Republic (one of the European COVID-19 most affected countries) as an example, and eventually to predict the future development, i.e. what topics the municipalities new strategic development prospects will be based on (not only in the Czech Republic).

THE CURRENT STATE OF POST-PANDEMIC STRATEGIC PLANNING RESEARCH

The matter of the strategic planning at the public sector, or at the municipality level, has been theoretically probed over a long period by a number of authors, e.g. Bryson and Roering (1987), more recently e.g. Johnsen (2015), Bryson, Edwards and van Slyke (2018), or Tambovtsev and Rozhdestvenskaya (2020). Many authors also look into the general theory of the strategic planning implementation in the environment of the individual regions and states municipalities. Among them e.g. George (2017) addressing the Flamish environment, Johnsen (2016) studying the situation in Norway, or Isoraiteova (2009) looking into the situation in Latvia, and Abis and Garau (2016) following the situation in Sardinia. In the context of the Czech environment this subject is studied e.g. by Ježek, Šilhánková and Slach (2015), Krbová (2016), or Půček and Koppitz (2012).

The public administration representatives' approach to the strategic planning in the Czech Republic has been studied by Ježek (2015), and he ascertained that „the representatives of the Czech municipalities see the chief purpose of the strategic planning in the fact that they need to know where they are headed in order to prepare for the uncertain future and to clarify where they want to get”. Such has been the reply of 80.6% respondents of Ježek's research. Other reasons for strategic plans making were the key development projects creation and implementation (66.4%), and enhancement of chances to obtain financial resources, most commonly from the structural funds (61.1%). Furthermore Ježek states that “it was an improvement compared to older findings, as there were significantly fewer replies of the sort that the strategy is merely an instrument for obtaining a grant from the state or European sources”. The COVID-19 disease pandemic altered not only “the uncertain future” and its economic status quo, but also the population's hierarchy of values (e.g. Clerc, Dou & Joillet, 2020). It can thus be assumed, that the new strategies will reflect these changes and therefore will have to be revised.

It can be expected that due to the COVID-19 pandemic the strategic planning, and its objectives and priorities in particular, will undergo certain modifications. Though the papers dealing with this subject are not numerous so far, those that have been published indicate certain amendments. It is particularly

Municipality Strategic Prospects in the Post-COVID Time

Ashan (2020) who points out that the global COVID 19 pandemic brings about changes in the urban environment and it is therefore essential to introduce robust strategic planning in the urban environment that could help to overcome these changes. His study focused on Turkish cities recommends to introduce a centralised decision-making with an active participation of the public at the local level, that would be successful in fighting pandemics. So that a healthy urban environment is created with appropriate provision of safety and health care, incl. good quality fresh water, healthy environment, and adaptation strategies to the climate change impact. The aforementioned Clerc, Dou & Joillet (2020) address the projection of the new challenges into the subjects related to the strategic planning as a tool of the Smart City concept implementation.

Numerous authors started to deal with strategic sub-questions, e.g. Gkiotsalitis and Cats (2021) who focused on the issue of the public transport planning in the link to the pandemic impacts. Chofresh et al. (2021) look into the COVID-19 pandemic impacts on the availability of energy sources and the recovery strategies, particularly for the reason of securing the strategic sources for the industry production. Then of course, the pandemic impact on the tourism is a very significant topic on its own, as pointed out by e.g. Do et al. (2021) or Golja (2021). The pandemic had also a considerable impact on the employment or unemployment rates, and the anticipated changes not only in the jobs structure but also in the manner of the job execution. This subject is addressed e.g. by Yawson (2020). However, the overall research of the changes in the values hierarchy of the strategic objectives has not been carried out yet and thus it is not known how these values at the municipalities level will alter, and strategic objectives orientation with them.

The Research Objective

The strategic development documents implemented on the local level have very significant impact to regions, subregions, cities and towns in the Central European context. The EU and national strategies have the wider coverage and spread the ideas and strategies over the regions and countries but there is a local level where everything is implemented. In the Czech Republic the self-governance of the municipalities (cities, towns as well as villages) is granted by the Act No 128/2000 Coll., on Municipalities (the Municipal Order). The Act involves the right of the municipalities to approve and implement the Municipality Development Plan (Strategic Plan). In the case of strategic planning there is no regulation in interconnection between the strategic development plan on local level and regional and state level. This is the difference from the urban (spatial) planning where the principles of the higher documentation must be respected and implemented by the lower-level entities. The similar situation can be observed in Slovakia (Act No 369/1990 Coll., on Municipalities) and in Poland (Act No 16-95/1990 Coll., on Municipal Order).

The implementation of principles and ideas expressed in the development strategies at national and regional level is supported mainly by the subsidy policy as well as by the educational activities and enlightenment. There is no demands for the strategies at the local level that could be claimed by the regional or national bodies. This attitude provides free hand in the local development, but it also makes them responsible for their social, environmental, and economic development. This is how is secured that the goals in the strategic plans reflect the local situation, local needs and local priorities.

The aim of the chapter is to investigate how the value priorities in the municipalities strategic objectives changed during the pandemic, taking the Czech Republic (one of the European COVID-19 most

affected countries) as an example, and eventually to predict the future development, i.e. what topics the municipalities new strategic development prospects will be based on (not only in the Czech Republic).

As mentioned above, the research was performed on the data from the Czech Republic. However, the outcomes of the research are applicable to wider (Central) European context. The Central European region for this research is described as the area of northern part of the former Austrian-Hungarian monarchy (and contemporary Visegrad 4 Countries and Austria). The Czech Republic has firm historical and economic bonds to the Germany as well. The region of Czechia, Slovakia, Austria, Hungary and Slovenia as well as southern part of Poland and South-East Germany have common historical roots from the era of establishing modern state government in the 2nd half of the 19th century. Despite the different historical development of these countries the described bond can be observed in the systems of public governance till nowadays. (Bakos, E., Soukupová, J., & Selesovský, J.,2015; Lankina, T., V., Hudalla, A., & Wollmann, H.,2008). This is why the data gathered from the introduced research can help us to observe how the priorities of the strategic planning actors has changed during the Covid-19 pandemic.

The Covid-19 disease affected all Europe very hard. But the impacts of the pandemic were different in countries across Europe. Czechia was the most affected country in the European Union. As shown at the Figure 1, the cumulative incidence per 100.000 inhabitants of the Covid-19 disease cases was spread across all the regions in the country. The researches assume that this fact will affect the change in priorities the most. It was the reason why the Czech Republic was chosen as an area of interest.

The description of the main principles of the public governance system in the Czech Republic is necessary for the understating of the problematics of the strategic planning in the country. The Czech governance is build on two main pillars – the state government and the self-government. The state governance is divided into five layers, the self governance into just two layers. The 14 regions and 6253 municipalities in the country can decide about their spatial and strategic development as well as about their budgets. The central government has a role of rules-setter and mentor of the regional and municipal bodies (Radvan, M., Mrkývka, P., & Schweig, J., 2021). The central power got stronger last decade which led to the rigid and un-efficient system. It was proved during the Covid-19 pandemic.

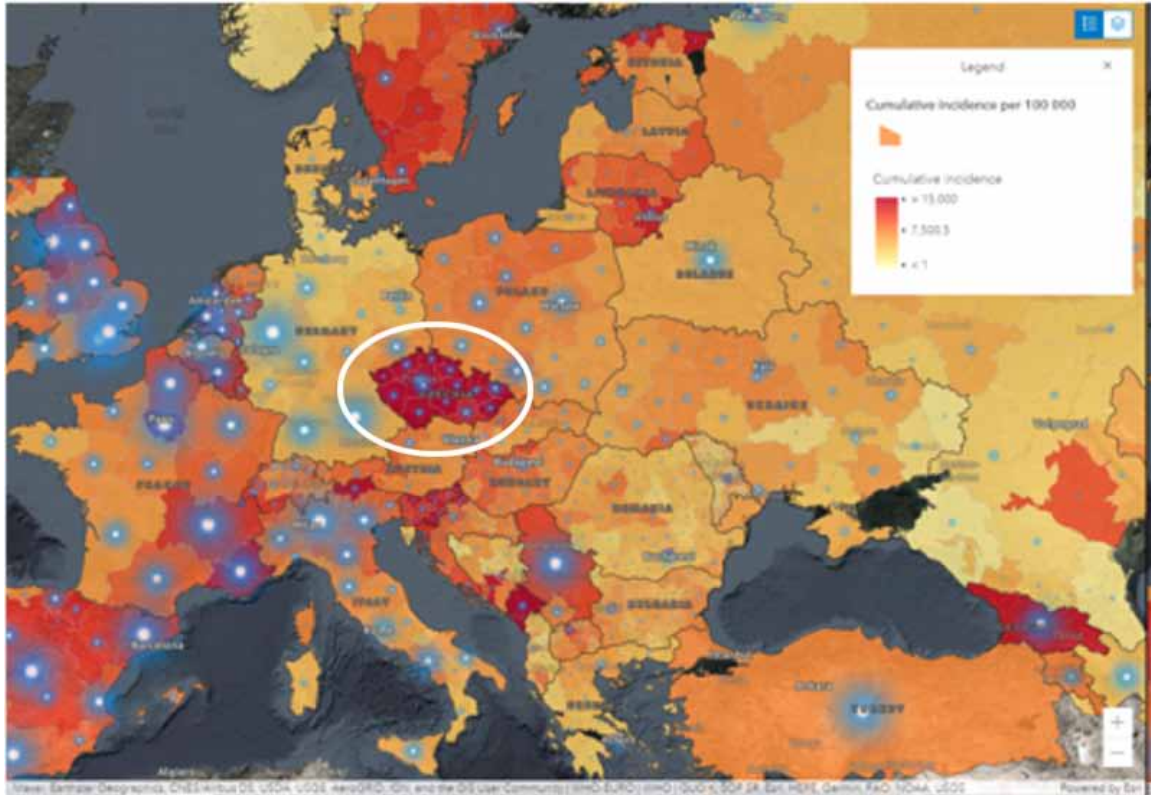
Methodical Approach

The research itself is based on the combination of methods of texts analysis, field data gathering or questionnaire survey, and on the method of comparison allowing the resulting scientific synthesis of the gathered findings.

The basic data source is an own qualitative value preferences survey within the professional public in the field of the strategic development objectives at the level of the municipalities in the Czech Republic. A questionnaire survey was carried out, in which 424 respondents took part, in spring 2021. The professional public, municipalities representatives in particular, were the survey respondents. The municipalities representatives were from both local government positions (mayors and elected municipal representatives), and from the municipal authorities' circles (posts varying from the secretaries to the desk officers). Furthermore, professional strategic planners were approached, and the sample was completed with students in their final year at the relevant universities educational programs. Given the anti-pandemic measures applied by the government of the Czech Republic at the time of the study the survey was carried out electronically or more precisely using Google/Forms. The access to the questionnaire form was secured with a password or with a unique link so that the form was protected against unauthorised records and only the invited survey participants could document their answers. The survey

Municipality Strategic Prospects in the Post-COVID Time

Figure 1. Cumulative incidence per 100.000 inhabitants of the Covid-19 disease cases
(Source: WHO)



instructed the respondent to give his/her opinion by ranking the given topics in the order of importance for the municipality development in the current COVID and the future post- COVID time. The respondents evaluated the selected criteria according to their importance: 1 – the most important, 9 – the least important (the selection of the survey topics is the result of the municipalities current strategic plans in the Czech Republic, as described further down in the text). In each line a development topic was presented, and the respondents indicated always and only one number according to how important they regarded the given topic in the future with respect to the COVID-19 pandemic.

In addition, data from an own research of 2015 (when 100 randomly selected strategic development documents of the Czech Republic municipalities were analysed, more details in Šilhánková & Pondělíček (2016) were used as study basis.

The gathered data were purged from the values significantly out of the scale of the research. All purged data were individually evaluated and after the assessment classified in the research dataset or purged. The data were processed by basic statistic methods, primarily by relative frequency. It means the number of values in the interval related to the whole sample. The relative frequencies were expressed in percent.

THE ANALYSIS OF THE STRATEGIC PLANS DEVELOPMENT TOPICS AT THE CZECH REPUBLIC MUNICIPALITIES

As mentioned above, an analysis of the development topics in the pre-pandemic time was done in 2015, when 100 randomly selected strategic development documents – strategic plans mainly of smaller towns and villages in the Czech Republic, were analysed. The strategic objectives and the related topics of each strategic plan were studied. Out of the examined documents, only 86 contained traceable strategic objectives that were suitable for further analysis. In the sample of 86 documents, the one of the smallest village of Kyjov in the Vysočina region with the population of 123, was analysed. The city of Hradec Králové with the population just under 100,000 was the biggest city in the sample. The period when the strategic plans were made ranged from 2001 (Písek) to 2015 (18 strategic plans). Within this analysis we focused on the type and the number of the strategic objectives set out in the analysed strategic plans. The documents contained between 2 and 30 objectives. The fewest, 2 strategic objectives, were in the 2007 and 2015 plans of the municipalities of Plesná in the Karlovy Vary region (population of 2 000) and Rudná by Praha (population just under 5 000), respectively. The most strategic goals (30) were incorporated in the document of Turnov. More than 20 objectives were also in the documents of Strakonice (25), Mladá Boleslav (22), Praha – Chodov and Neratovice (both 21). On average the analysed documents contained between 6 and 7 objectives, most common however were the documents with 4 objectives (17 documents) and with 5 objectives (15 documents). However, it must be said that the documents with 4 to 8 objectives were further divided into a significant number of sub-objectives (e.g. the strategic plan of Hradec Králové with 39 so called actions and 123 specific objectives). The documents that contain a larger number of objectives usually are not further structurally divided (Šilhánková & Pondělíček, 2016).

In the next step, more important for our work, the frequency of individual topics in the strategic plans was examined. It must be said that none of the topics was included in all the documents. The most frequent were the topics related to the environment (62 documents), transport (54), tourism (52), and the local economy and business support (51). Other frequent topics were the subject of the technical infrastructure (46), culture, sport and leisure time (44), education and schooling (36), health care and social services (35), and with a gap also safety (23). (Šilhánková & Pondělíček, 2016).

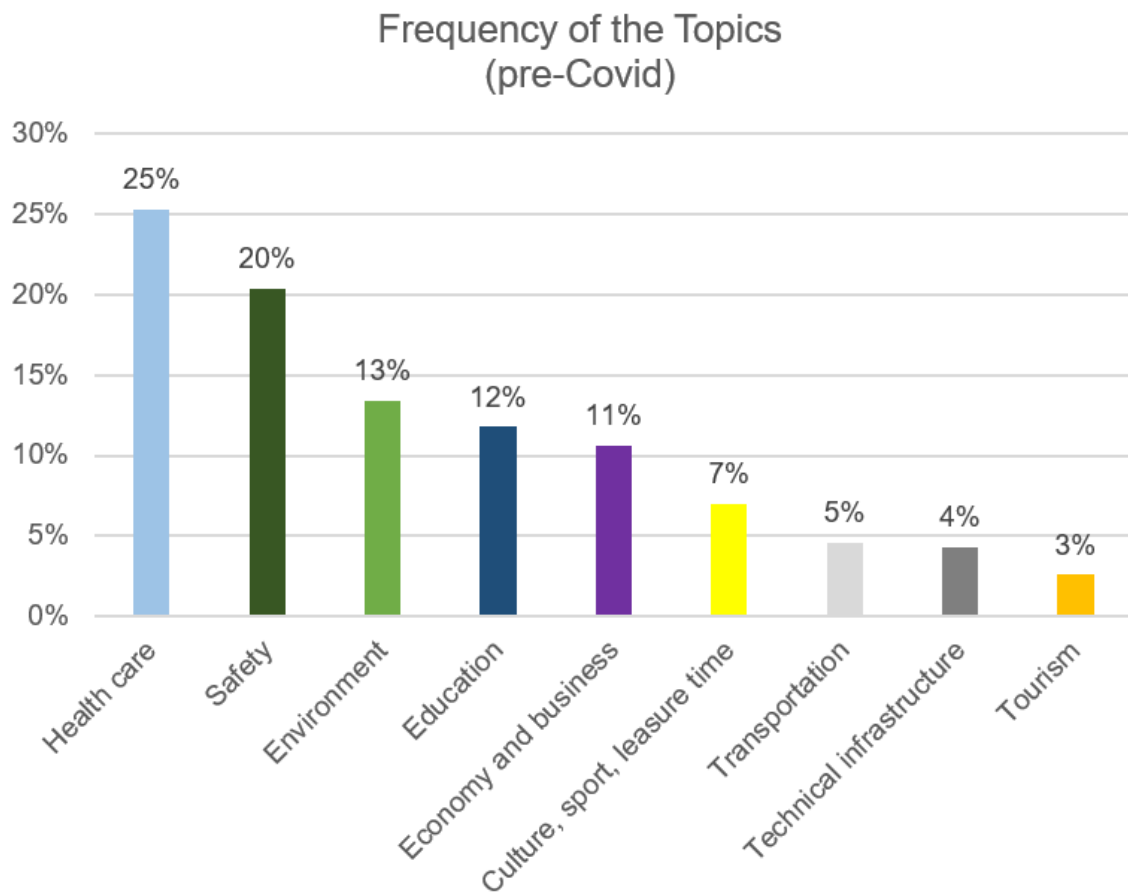
Overall, nine most frequent topics stood out, and therefore from the perspective of the municipalities' development objectives, nine most important topics applied in the pre-pandemic strategic plans of the municipalities in the Czech Republic were (in alphabetical order of their equivalents in the Czech language):

- Safety.
- Tourism.
- Transport.
- Economy and business.
- Culture, sport, leisure time.
- Education.
- Technical infrastructure.
- Health care.
- Environment.

Municipality Strategic Prospects in the Post-COVID Time

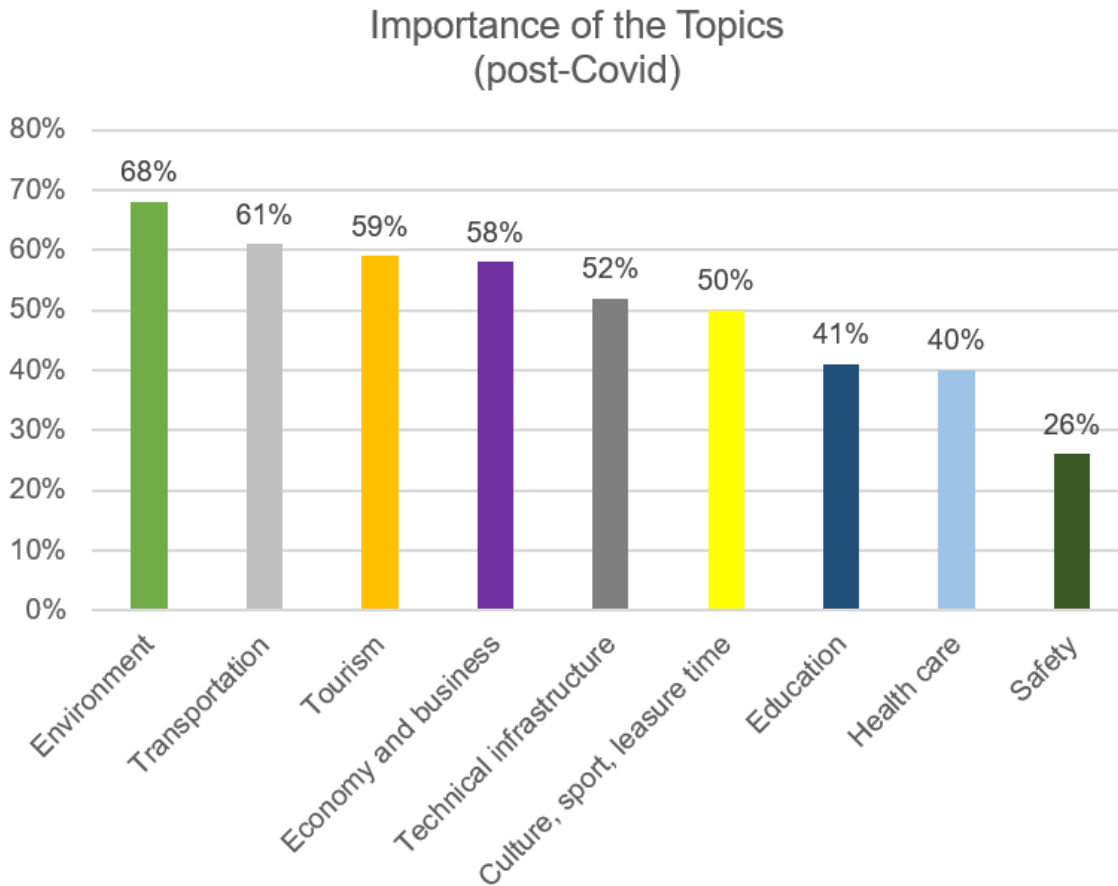
The percentage of the individual topics in the pre-pandemic strategic plans frequency is presented in the Figure 2.

Figure 2. The frequency of the basic topics in the strategic plans developed between 2001 – 2015
Source: Šilhánková & Pondělíček (2016)



The above-described research shows that in the pre-pandemic time environment was the most frequent strategic topic (frequency of 68%), followed with only small gaps by transport (61%), tourism (59%) and local economy and business support (58%). In this time period, health care and safety, respectively, were at the bottom not only from the frequency point of view, with 40% and 26%, respectively, and probably also from importance point of view. The populace therefore felt relatively safe health-wise and in general. The topics related to the environment quality and economic superstructure (the travel comfort and opportunities, the leisure time activities, etc.) were emphasised.

Figure 3. The frequency of the topics' significance for strategic plans in post-pandemic time
Source: own research



SOLUTIONS AND RECOMMENDATIONS

The Shift in the Values Due to the COVID-19 Pandemic

As stated in the methodology section, based on the above findings of the most frequent strategic objectives of the Czech Republic municipalities, it was examined how the professional public would rank nine of the strategic development topics after the COVID-19 experience and its immediate effects. Obviously, in this case it was not possible to look into any concrete documents, as they have not yet been revised due to the time constraints. However, the professional public attitude towards the importance of the individual topics for the municipalities' development and functioning, was reviewed. The findings are presented in the following graph.

The graph displays the percentage share of the topic ranking at the top among the strategic development objectives. It is clear, that at present the key priority is focused on health care, ranked first by the respondents with 25.3%. The topic of safety came in second with 20.4%, and the topic of environment follows as third with 13.4%. It is evident that the subject of health and the related matters of the personal

safety were brought to the forefront of the interest and became the value in the highest demanded. By contrast, the previously preferred tourism ranked last with 2.6% not only due to the constraints were directly linked to the pandemic. During the pandemic, tourism became not only a marginal topic as it virtually came to a halt, but in a way also undesirable as the foreigners were literally perceived as a risk due to the possible transmission of the disease or of its variants. The subject of transport availability also appeared less important, with only 4.6% of preferences, as during the pandemic a wide range of activities happened online. The physical transport itself behind a number of activities was non-essential and, in some cases, even impossible. In this context, the relatively „poor“ ranking of the technical infrastructure topic appears interesting. It was considered important only in 4.3% of cases even though the functioning of the considerable part of the economy depended on it, mainly on a good data connection.

The reversed analysis can also help to paint a clearer picture of the value, or of the development topics preferences. It is the analysis of topics according to the frequency of their marginality, i.e. their ranking at the bottom (when they came in ninth). The overall picture is again presented in the figure 3.

In this case, always and only tourism is clearly viewed as an insignificant strategic development topic, marked as marginal in 42.5% of cases. However, it is interesting that it is not health care but economy and business that were marked as the least marginal with 2.4%. The ranking of other topics from the marginality point of view was very levelled and ranged between 11% (culture, sport, leisure time) and 6.5% (education). The most closely observed topics, i.e. health care (marked as the most important during the pandemic) and environment (dominating during the pre-pandemic time), respectively, appeared marginal only in 7.2% and 6.8%, respectively.

CONCLUSION

Based on the study it is evident that the COVID-19 pandemic affected the development strategies value hierarchy. It is evident the imminent fear for live and survival emphasised the topic of health care and partly related topic of (personal) safety to the detriment of the until then dominating topic of environment. It can be expected, there will be shifts in the individual topics preferences within the strategic planning in the post-COVID 19 period. More emphasis will be given to the matters of health care or health, and to the related matters of hygiene and personal safety. New solutions requirements may emerge from these shifts (Clerc, Dou & Joillet, 2020). These may concern not only the lay-out of the urban public spaces as already pointed out by Ahsan (2020) but also the solutions in the number of shared areas and spaces, be it public transport or leisure time facilities. With the increasing time lag after the pandemic, the re-enhancement of the environment topic may be expected, especially if the climate change impacts and the weather romping will acutely manifest. It cannot, however, be assumed that the populace majority will be willing to deal with this issue to the detriment of their „personal safety“, e.g. by the above mentioned sharing of facilities or space (such as willingness to use environmentally friendly shared tablewear instead of that of single use). The most substantial preference shift is probably evident in tourism. Tourism will take a relatively long time before it gets back into the sunlight, and possibly it will never recover its pre-COVID 19 volume.

There are signals of the trends that can be observed in the presented outputs. They show the change of the priorities and values followed by municipalities. The impact of the changes will be seen in the investment activity of the public sector which will probably give more emphasis to the safety, improve-

ment of the public health system and the stabilization of the local economies after the Covid-19 pandemic as well as after the expected post-pandemic shocks.

However the research was focused to the situation in the Czech Republic, the shifts in the priority and value scale could be observed in the other countries as well. It can be deduced that the shift in the Czech Republic are a part of the wider processes in the European and World scale. The research in the other European countries is a challenge for the further work. Finally, it would be noted that it will be compelling to validate this research results in the hindsight, e.g. in five years time, and to compare them with the actual shifts in the preferences of the municipalities strategic development documents topics that will have occurred in reality.

REFERENCES

- Abis, E. & Garau, C. (2016). An Assessment of the Effectiveness of Strategic Spatial Planning: A Study of Sardinian Municipalities. *European Planning Studies*, 24(1), 139-162. DOI: . doi:10.1080/09654313.2015.1031091
- Ahsan, M. M. (2020). Strategic decisions on urban built environment to pandemics in Turkey: Lessons from COVID-19. *Journal of Urban Management*, 9(3), 281-285. . doi:10.1016/j.jum.2020.07.001
- Bakos, E., Soukupová, J., & Selesovský, J. (2015). The Historical Roots of Local Self-Government in Czech and Slovak Republics. *Lex Localis*, 13(1), 1–19. doi:10.4335/13.1.1-19(2015)
- Bryson, J. M., Edwards, L. H. & Van Slyke, D. M. (2018). Getting strategic about strategic planning research. *Public Management Review*, 20(3), 317-339. . doi:10.1080/14719037.2017.1285111
- Bryson, J. M. & Roering, W. D. (1987). Applying private-sector strategic planning in the public sector. *Journal of the American Planning Association*, 53(1), 9-22. . doi:10.1080/01944368708976631
- Chofreh, A. G. (2021). COVID-19 Shock: Development of strategic management framework for Global Energy. *Renewable & Sustainable Energy Reviews*, 139. . doi:10.1016/j.rser.2020.110643
- Clerc, P., Dou, H., & Juillet, A. (2020). Changing Priorities for Strategic Planning from National to territorial levels. *Foresight and STI Governance*, 14(3), 88-99. doi:10.17323/2500-2597.2020.3.88.99
- Do, B. (2020). Strategic Responses to COVID-19: The case of tour operators in Vietnam. *Tourism and Hospitality Research*. . doi:10.1177/1467358421993902
- George, B. (2017). Does strategic planning “work” in public organizations? Insights from Flemish municipalities. *Public Money & Management*, 37(7), 527-530. . doi:10.1080/09540962.2017.1372116
- Gkiotsalitis, K. & Cats, O. (2021). Public transport planning adaption under the COVID-19 pandemic crisis: Literature review of research needs and directions. *Transport Reviews*, 41(3), 374-392. . doi:10.1080/01441647.2020.1857886
- Golja, T. (2021). The behavior and response of regional destination management organizations in the two recovery phases of tourism destination amid COVID-19 pandemic: The case of Croatia in turismo. *Estudos e Praticas*, 10(1).

Municipality Strategic Prospects in the Post-COVID Time

Isoraite, M. (2009). Towards results - based strategic management in Lithuanian public sector. *Changes in Social and Business Environment Kaunas*, 132-145.

Ježek, J. (2015). Postoje představitelů českých obcí a měst ke strategickému plánování. *Regionální rozvoj mezi teorií a praxí*, 4(4), 113-127. <http://www.regionálnírozvoj.eu/vydani/201504>

Ježek, J., Šilhánková, V., & Slach, O. (2015). *Strategické plánování obcí, měst a regionů: Vybrané problémy, výzvy a možnosti řešení*. Wolters Kluwer.

Johnsen, A. (2015). Strategic management thinking and practice in the public sector: A strategic planning for all seasons? *Financial Accountability & Management*, 31(3), 243-268. . doi:10.1111/faam.12056

Johnsen, A. (2016) Strategic planning and management in local government in Norway: Status after three decades. *Scandinavian Political Studies*, 39(4), 333-365. . doi:10.1111/1467-9477.12077

Krbová, J. (2016). *Strategické plánování ve veřejné správě*. Wolters Kluwer.

Lankina, T. V., Hudalla, A., & Wollmann, H. (2008). *Local Governance in Central and Eastern Europe: Comparing Performance in the Czech Republic, Hungary, Poland and Russia (1st ed.)*. Palgrave Macmillan. doi:10.1057-9780230591745

Půček, M., & Koppitz, D. (2012). *Strategické plánování a řízení pro města, obce a regiony*. Národní síť Zdravých měst ČR.

Radvan, M., Mrkývka, P., & Schweig, J. (Eds.). (2021). *Local Self-Government in the Czech Republic*. In *Local Self-Government in Europe* (pp. 87-118). Institute for Local Self-Government Maribor. <http://www.lex-localis.press/index.php/LexLocalisPress/catalog/view/LocalGovernmentEurope/68/553-1>

Šilhánková, V., & Pondělíček, M. (2016). Ochrana životního prostředí jako "téma" rozvojových strategií našich měst a obcí. In XIX. mezinárodní kolokvium o regionálních vědách. Sborník příspěvků. Masarykova Univerzita. doi:10.5817/CZ.MUNI.P210-8273-2016-82

Tambovtsev, V. L., & Rozhdestvenskaya, I. A. (2020). Strategic planning theory: An institutional perspective. *Terra Economicus*, 18(2), 22-48. doi:10.18522/2073-6606-2020-18-2-22-48

UN General Assembly. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. Available at: <https://www.refworld.org/docid/57b6e3e44.html>

WHO European Region COVID19 Subnational Explorer: Cumulative incidence per 100.000 inhabitants of the Covid-19 disease cases. (2021). Retrieved July 16, 2021, from <https://experience.arcgis.com/experience/3a056fc8839d47969ef59949e9984a71>

Yawson, R. (2020). Strategic flexibility analysis of HRD research and practice post COVID-19 pandemic. *Human Resource Development International*, 23(4), 406-417. . doi:10.1080/13678868.2020.1779169

KEY TERMS AND DEFINITIONS

City Development at Municipal Level: The set of tools and practices used for the development of cities. It consists of the strategic, spatial, and economic tools.

COVID-19 Pandemic: Pandemic of the SARS-CoV-2 disease that appeared in China in 2019 and expanded to the whole World. It affected all aspects of life on the Earth and caused millions of deaths.

Efficient Management of Cities: The efficient management of cities is understood as a knowledge- and data- based maintenance and development of cities regarding the opinions and needs of inhabitants.

Priorities in the Municipalities Strategic Objectives: The strategic plans express the aims and goals of the cities and are the outcome of the strategic planning process.


Quality of Life in the Management of Cities: Quality of life is based on the principles of sustainable development. There are lot of definitions of the quality of life. In this chapter the quality of life proceeds from the 2030 Agenda for Sustainable Development (UN General Assembly, 2015).

Strategic Planning: The set of tools, techniques, and practices that leads to the efficient use of source in the organization/city. In the European Union the participation of local stakeholders is very important for the process.

Chapter 16

Management of Quality, Satisfaction, and Loyalty of Rural Destinations

Astrida Blanařová

 <https://orcid.org/0000-0002-5644-4722>

Ambis a.s., Czech Republic

ABSTRACT

Tourism is a major global industry that, in its heyday, has become significantly concerned with quality and related themes, satisfaction and loyalty. This chapter aims to identify the factors that influence the quality of a rural destination and the associated visitor satisfaction and loyalty. These factors in turn have an impact on destination management, but also other stakeholders such as tourism entrepreneurs in the destination or residents. In 2020, tourism has undergone significant changes due to the pandemic caused by the SARS-CoV-2 virus. For instance, travel abroad was regulated through government regulations, which caused an increase in demand for rural tourism. As the author's research has shown, some quality factors have undergone significant changes. Even the quality management to achieve visitor satisfaction and loyalty has proven to be very important, especially in the sense that by gaining loyalty at this specific time, it can ensure that visitor numbers are maintained even after the pandemic period when the return of and high growth in overseas travel is expected.

INTRODUCTION

Tourism in the Czech Republic has been observing an upward trend in terms of consumption since 2011. In 2011 it was 208 685 million CZK. In 2019, it was almost 100 million more, reaching 308 242 million CZK (CSO, 2021). Due to the SARS-CoV-2 pandemic, consumption in the Czech Republic decreased to the value of 139 000 million CZK (CzechTourism, 2020). The Tourism Satellite Account, which has been collecting data on tourism performance in the Czech Republic since 2003, has never recorded such a low value. The growing importance of tourism is evidenced by the increase in the number of people employed in tourism, which can be observed since 2014. In 2014, 225,006 people were employed in

DOI: 10.4018/978-1-7998-8339-5.ch016

tourism. In 2019, the figure was 239,649 persons. Employment grew mainly in catering establishments, accommodation establishments and rail transport (CSO, 2021). In 2020, the number of employed persons fell to 127,000. The largest falls were recorded in the Prague, Karlovy Vary and South Moravia regions (Czech Tourism, 2020).

The chapter is devoted to rural tourism in the Czech Republic. Rural tourism is specific in terms of the environment in which it takes place, its environmental friendliness, its sustainability, but also because it mainly attracts domestic visitors who come to the destination individually. It is thus a less studied sector because it does not generate the same income from the national economy perspective as mass urban tourism does, in which foreign visitors also participate. In 2019, incoming tourism generated 57% of all tourism revenues in the Czech Republic (CSO, 2021). Typical forms of rural tourism are ecotourism and agro-tourism. However, there are many more forms that are implemented within rural destinations, but again, they are not as frequently mentioned. These include, for example, hippo-tourism, cycling, gastro-tourism, wine tourism or the very typical cottage and chalet tourism in the Czech Republic.

Rural tourism is not separately monitored statistically in the Czech Republic. Since it is a significant part of domestic tourism, statistical data can be partly drawn from this sector. The tourist consumption in terms of domestic tourism has been growing since 2011, from 61 368 million CZK to 91 809 million CZK. Tourist consumption includes the use of TA/TO services, accommodation, boarding, transport, goods etc. (CSO, 2021). The marketing agency CzechTourism (2021) has carried out domestic tourism tracking in the years 2019 and 2020. As part of this tracking, they discovered the following tourist trends: increased interest in walking tourism (from 40% in 2019 increasing to 45% in 2020), increased interest in visits to natural attractions (from 28% to 35%) and an increase in visits to relatives (from 28% to 34%). Increased interest in walking tourism and natural attractions was also noted among day-trippers. Not only positive impacts have been recorded. Negative impacts include a drop in the number of visitors to cultural monuments, which is, however, mainly due to their closure, which was ordered by the state. However, the drop was only 4%, from 40% in 2019 to 36% in 2020. The low percentage of change is related to the fact that cultural monuments were opened in the summer season and visitors tried to take full advantage of this reopening.

As mentioned above, rural tourism is not monitored separately, but it is no less reflected in the data of the Czech Statistical Office and CzechTourism, as the above-mentioned components of domestic tourism (visits to natural attractions, walking tourism, etc.) are clearly part of it. Primary data collection is needed to obtain more specific data on rural tourism. The importance of domestic and also rural tourism was clearly demonstrated in 2020 when travel abroad was made difficult or often impossible due to the pandemic. This is not a marginal part of tourism that is insignificant. As data from the Czech Statistical Office shows, domestic tourism consumption is still growing. It is, therefore, necessary to address the quality of destinations and the services provided in them, as well as the satisfaction and loyalty of visitors, to maintain the growing trend for as long as possible.

In order to make the collection of primary data in the context of rural tourism possible, it is necessary to define the concept of “rural destination” and then incorporate it into the tourism problematics, as not every rural destination meets the conditions for tourism formation. It is difficult to evaluate a rural destination across continents, but often also between countries. To give an example, the Ministry of Home Affairs of India (2018) defines a rural area by the amount of its population, the percentage of people employed in agriculture and the density of the area. It gives a density of up to 400 persons/km². According to the Institute of Health Information and Statistics of the Czech Republic (2017), there is only one place in the Czech Republic with a population density higher than 400 persons/km², and that is

the capital city of Prague. The whole of the Czech Republic would thus be understood as a rural destination. Although population density is used by multinational organizations as central to determining rural destinations (e.g. by the Organization for Economic Cooperation and Development, 1994), the European Commission for Agriculture (1997) criticized population density as a determining factor in defining rural areas (but in the document for the years 2014-2020 “A harmonised definition of cities and rural areas: the new degree of urbanisation”, they also use it). Even within Europe, areas are not determined in the same way when using density as an indicator, as the definitions range from 8 to 150 persons/km². Therefore, it is necessary to focus on areas and research that are conducted in similar conditions as the Czech Republic. According to Perlín (1998), it is possible to compare the Czech countryside with other rural areas in Central Europe. In the Czech Republic, rural areas were defined by the Czech Statistical Office (2012) as areas with less than 5,000 inhabitants. Hungary, for example, has the same number of inhabitants for defining a rural destination (Kulcsár, 2015), which corresponds to Perlín’s statement. When looking at multinational organizations, for instance, Eurostat (2017) also uses this number.

However, a numerical designation is not always sufficient, especially when describing a rural tourism destination. In general, the most accepted definition of a tourism destination is that of Buhalis (2000). He identified 6 components of a destination, referred to as the 6As (Attractions, Accessibility, Amenities, Available packages, Activities, Ancillary services). Scholars agree that a rural tourism destination is a geographically defined area that should be further defined by its physical and technical base and its intangible components (Seaton and Bennett, 1996) or the experiences that the visitor gets in the given area (Goeldner and Ritchie, 2003). A detailed view is provided by Jarábková (2010), according to whom a rural tourism destination is one that offers visitors enough natural, cultural, and historical monuments, has sufficient infrastructure, quality staff and is not affected by industrial activity. To research the quality of a rural tourism destination, the author has developed her own definition based on the earlier data: ‘*A rural tourism destination is an area that is located outside the big cities. The population of each village is up to 5 000. The area is further characterised by a low population density, an economy based on agriculture and traditions, and has a primary tourism offer and infrastructure. The area is not affected by industrial activity*’. (Peruthová, 2018).

Domestic tourism, as well as rural tourism, both saw an increase in the summer season, from July to September, during the 2020 pandemic. In July, there was a loosening and reopening of monuments, museums, and the like. While there was a demand for foreign tours, it cannot be compared to previous years. People stayed more in the Czech Republic and made stays as part of domestic tourism. As an example, the South Moravian Region and a comparison of 2019 and 2020 will be given. The South Moravian Region is predominantly made up of rural tourism destinations and has seen an increase in domestic tourism arrivals by almost 100,000, from 547,600 to 645,300. The number of overnight stays increased from 1,360,800 to 1,675,300. The average length of stay also increased, albeit slightly, from 3.49 days to 3.60 days (Tourist Authority South Moravia, 2020). The number of visitors to individual cultural and natural attractions also increased. To make a comparison, the month of August and the number of visitors to the selected sites in 2019 and 2020 were chosen. The Lednice Castle was visited by 2% more visitors, the Valtice Castle by 38% more visitors, the Lysice Castle by 30% more visitors. As to natural attractions, we can point out, for instance, the cave Výpustek, where the number of visitors increased by 21%, for Sloupsko-Šošůvské caves this was 4%, or for the winery Šobes, this was 119% (Tourist Authority South Moravia, 2020). Of course, an increase in the summer months was not capable of providing for the loss during the other months, but, nevertheless, the summer season at least partially contributed to the economic situations of the sights and regional employment.

BACKGROUND

Quality

The big chapter in tourism is quality. The problematics of quality as such is relatively new, as quality has been studied since about the middle of the 20th century when quality in manufacturing was addressed. In the early 1970s, quality management and quality standards (concerning tourism) made their way into air travel. In the late 1980s, the International Organization for Standardization - ISO created the standard 9000 series that focuses on quality management (Sysel, 2012). In 2005 was created a technical committee ISO/TC 228 which focuses on tourism and related services. The committee has already published 29 standards. In connection with rural tourism and its sustainability, standards can be mentioned, for example: ISO 18065:2015 Tourism and related services - Tourist services for public use provided by Natural Protected Areas Authorities – Requirements or ISO 20401:2018 Tourism and related services - Sustainability management system for accommodation establishments – Requirements (ISO/TC 228, n.d.). ISO standards are still followed today by hotel chains, travel agencies and bus operators. Due to their multinational nature, they are globally recognised and clients often seek out companies that are certified and have management based on ISO standards. ISO standards have an impact on tourism even today when they try to reflect the pandemic situation. For example: ISO/PAS 5643:2021 Tourism and related services - Requirements and guidelines to reduce the spread of Covid-19 in the tourism industry. This standard focuses on 20 branches of tourism, such as transport, travel agencies, accommodation, but also adventure tourism and ecotourism, beaches, theme and leisure parks, etc.

Quality management is relevant to all industries, thus also to tourism. It brings benefits that might be unattainable without quality management. Quality management can help to gain a competitive advantage in the market (López-Toro, Díaz-Muñoz and Pérez-Moreno, 2010). Jovičić and Ivanović (2006) also see an advantage in a possible cost reduction. Cost reduction can be “seen” as, for example, less employee turnover, which is in itself a benefit resulting from quality management, but it can certainly also reduce costs (for example, training new employees all the time costs additional money). Similarly, in quality management, processes can be adjusted to be more efficient and increase work effectiveness (Peruthová, 2018). As to quality in tourism, Hollins and Shinkins (2006) stated that it cannot be accepted at the level of 99.9%, for the reason that the service performed cannot be changed.

The topic of quality raises many questions, whether it is the definition of quality itself (which is a problem throughout the research, as there is generally a problem with a clear definition in tourism), the approach to quality or the standardisation of quality. There are many definitions of quality. The author believes that it is always appropriate to compare the definitions of multinational (world) organisations with those of researchers. She considers that the definitions of multinational organisations are more practically oriented and often addressed to the general public (i.e. they are easy to understand and based on elementary facts). However, these definitions are not always suitable for research, they may be too vague or based on other data than what the researcher needs (see above definitions of tourism destination - transnational and national concepts). Another problem may be a different view of who is “talking” about quality, whether it is the customer or the service provider. Although, ideally, their views of quality should not differ, so that the customer’s requirements are met as much as possible, this difference in perception of quality occurs very often, which is why tools have been developed to compare these views, such as SERVQUAL. Due to the breadth of the topic, the focus will only be on quality from the customer’s perspective.

Management of Quality, Satisfaction, and Loyalty of Rural Destinations

As mentioned above, transnational organisations sometimes try to make the definition easy to grasp. For example, the OECD (2011) clearly fulfils the above by defining quality in terms of “Fitness for use”, or suitable for use by the customer. The OECD further states that the personality of the quality assessor (the customer) plays an important role, as everyone has different preferences, needs and priorities. The definition is taken from W. E. Deming, one of the first people to work on quality. American Society for Quality (ASQ), ‘*Quality denotes an excellence in goods and services, especially to the degree they conform to requirements and satisfy customers*’ (Chandrupatla, 2009). ISO 9000:2015 defines quality as “the degree of fulfilment of requirements by a set of inherent characteristics”.

The above definitions are general definitions of quality but can also be applied in the context of tourism. For example, quality in tourism has been defined by Feigenbaum (1983), who perceives quality in tourism as the set of characteristics of a service that is delivered to the market and meets the expectations of clients. Since the author’s research has focused on destination quality, it is appropriate to focus on defining it in a focused way. Palatková (2006) directly defines tourism destination quality as what the client wants and what the destination can offer to differentiate itself from other destinations. Among the world organisations, the United Nations World Tourism Organisation (UNWTO) is an exception and provides a specific comprehensive definition on destination quality: ‘*Quality of a tourism destination is the result of a process which implies the satisfaction of all tourism product and service needs, requirements and expectations of the consumer at an acceptable price, in conformity with mutually accepted contractual conditions and the implicit underlying factors such as safety and security, hygiene, accessibility, communication, infrastructure and public amenities and services. It also involves aspects of ethics, transparency and respect towards the human, natural and cultural environment*’.

The author sees the problem of destination quality in the fact that it is a complex of influential, partially influential, and uninfluential factors, which the client evaluates as a whole. Influential factors can include, for example, the appearance of the hotel room, the form of catering and so on. Partially influential factors include, for example, the safety of the destination and uninfluential factors include the weather or the mood/attitude of the individual (family, group). Another challenge is that even if two people rate the same thing, their ratings may not always be the same as they have different ideas, experiences, etc. and view the same destination differently. Ryglová, Burian and Vajčnerová, (2011) concluded that a quality destination could be considered as one that “delivers what the customer expected plus something extra”.

Quality dimension

The dimensions of quality are how sets are saturated by subsets in each quality factor. Among the first to address quality dimensions was Gronroos (1984), who identified two basic dimensions, namely technical and functional service quality. Within technical quality, the elements are measurable (room amenities in a hotel, number of meals on a menu, or number of seats on a bus). Functional quality contains elements that are more dependent on the subjective evaluation of the customer (whether the receptionist in the hotel was pleasant or whether the restaurant had a pleasant ambience or smell). According to Gúčík et al. (2016), the overall service quality consists of 70% functional quality and only 30% technical quality. Among the very important approaches to quality dimensions are those established by Parasuraman, Berry and Zeithaml (1988). These are Tangibles, Reliability, Responsiveness, Assurance, Empathy. Their quality dimensions were also reflected in their SERVQUAL service quality assessment tool. The high level of their contribution can be evidenced, for example, by the number of citations of their article that discusses the SERVQUAL dimensions and model: “SERVQUAL: A Multiple- Item Scale for measuring

consumer perceptions of service quality”. This article has more than 17,000 citations on Researchgate.com (Researchgate.com, 2021). Millán and Esteban (2004) modified the SERVQUAL model to assess a specific service of travel agencies. Based on research, they identified 5 dimensions of service quality: operational experience, empathy, reliability, service delivery environment, advice effectiveness, and value-added attributes.

Fernandes and Cruz (2016) focused their research on services in wine tourism and defined 6 dimensions of service quality: environment (atmosphere), service providers, education, entertainment, functional advantage and trust. Buhalis (2000) was the first to address the dimensions of destination quality, not just its individual services. He identified what he called the 6As, or 6 components of a destination: Attractions (natural, cultural, etc.), Accessibility (transport infrastructure), Amenities (accommodation, catering facilities and other services), Available packages, Activities (skiing, swimming) and Ancillary services (post offices, banks and more). Žabkar, Brenčič and Dmitrović (2010) also built on Buhalis and used his 6As in evaluating destinations, but added three more attributes to the quality assessment: perceived quality of the destination offer, visitor satisfaction and behavioural intentions (loyalty, recommendation to friends, etc.)

Among the Czech scientists, who are engaged in research in the field of destination quality, is the collective of Vajčnerová (Rašovská), Ryglová and Šácha, who have established 4 dimensions of destination quality based on their research: destination attractiveness, destination services, destination marketing and management, sustainability and destination cooperation (Vajčnerová, Šácha and Ryglová, 2012).

It is evident from the above-described approaches that although they are all very similar, no two are ever exactly the same. Each research can provide new insights and establish new dimensions, for example, based on the type of destination in which the research takes place or who the visitors/respondents were who participated in the research.

Customer satisfaction and loyalty

Satisfaction is an emotional issue that is very individual. Authors agree that it is about exceeding the client's expectations when visiting a destination, based on which, positive feelings arise (Tribe and Snaith, 1998; Chi and Qu, 2008; Kotler and Keller, 2007). Many pieces of research also show that satisfaction is based on quality (Cerva, 2013; Anderson, Fornell and Lehmann, 1994) and there is a direct influence of destination quality on visitor satisfaction (Ladeira, Santini, Araujo and Sampaio, 2016; Rajaratnam, Nair, Pahlevan Sharif and Munikrishnan, 2015). Della Corte, Sciarelli, Cascella and Del Gaudio (2015) state that satisfaction is the sum of subjective and objective factors or emotions and service/product quality. Peruthová (2018) points out that satisfaction per se is not a profit carrier, but as Chi and Qu (2008) state, it can induce repeat purchase behaviour. This is subsequently already a profit carrier and can be referred to as destination loyalty in the tourism industry. Thus, the goal of the destination is not only quality and satisfaction, but especially the subsequent loyalty that brings further profits. According to Indrová, Houška and Petrů (2011) quality has an impact to loyalty. Loyalty can be defined, for example, as follows “*a loyal customer is one who purchases services from the same provider and spreads referrals or maintains a positive attitude towards the service provider*” Kandampully and Suhartanto (2000). In the tourism industry (and in relation to a destination specifically), loyalty is expressed in two ways, namely repeat visits to the destination or positive reviews (Som, Shirazi, Marzuki and Jusoh, 2011). A review can be in the form of a face to face review (passing on positive feedback to family, friends, etc.) or, very popular today, an online review (on review sites, Facebook, Instagram, etc.). Peruthová (2018)

Management of Quality, Satisfaction, and Loyalty of Rural Destinations

perceives that even if a visitor remains loyal to a destination in the form of positive reviews, they may not return due to a change in “*economic situation, family status based on the political situation in the country*” or due to a pandemic situation.

The relationship between quality, satisfaction, and loyalty is still being investigated by researchers because there are no clear results to show that there are only direct or indirect relationships between these elements. Therefore, there is a need for further research on the issue. Each tourism destination research is different as each destination is specific and unique. Quality, satisfaction, and loyalty in rural tourism destinations are important issues in times of a pandemic. Destinations had the opportunity to gain new loyal clients who could continue to recommend them or visit again in subsequent years. In fact, even those visitors who would normally refuse to holiday in the Czech Republic went to destinations in the Czech Republic. They have now accepted it as a safe alternative to a foreign (unpredictable) holiday, which they were unsure about because the rules of travel were constantly changing and there was also concern about what would happen if they became ill abroad. The conditions in the Czech Republic were thus easy for them to understand and clear. Destinations that already had quality management in place at the time of the pandemic were thus able to achieve better results (higher satisfaction and subsequent loyalty) than destinations without any quality management in place. However, this is currently unproven and these destinations will need to be monitored in the years to come, especially in the post-pandemic period. What was observable, however, was how visitors rated the importance of quality factors in the pre-pandemic and pandemic periods. The author focused her research on this issue and on assessing the relationships between quality, satisfaction and loyalty.

DMO

Destination management should form the imaginary core of the destination. It should be the controlling element to coordinate activities in destinations, to try to ensure that all stakeholders achieve their goals, and it should be destination management that deals with the quality of the destination and the subsequent satisfaction and loyalty of visitors. This is because a destination is made up of many individual parts - service providers, public administration, visitors and locals. Such a diverse group is unable to manage itself and its functionality is also limited. UNWTO (n.d.) states: *‘Destination management calls for a coalition of many organizations and interests working towards a common goal, ultimately being the assurance of the competitiveness and sustainability of the tourism destination. The Destination Management Organization’s (DMO) role should be to lead and coordinate activities under a coherent strategy in pursuit of this common goal’*. A component of destination management that is now proving to be very important is crisis management, which has been mentioned by many authors (Blackman and Ritchie, 2008; Laws, Prideaux and Chon, 2007). Particularly nowadays, when the world is dealing with a pandemic situation, the need for crisis management has proven to be an absolutely indispensable but often very neglected issue.

At European level, DMOs in rural tourism can be guided, for example, ETIS rules (European Tourism Indicator System by European Commission). *“The ETIS is a management, information and monitoring tool specifically intended for tourism destinations. It is designed as a locally owned and led process for collecting and analysing data with the overall objective to assess the impact of tourism on a destination. ETIS aims at helping destinations and the stakeholders within to measure their sustainability management processes, enabling them to monitor their performance and progress over time”* (European Commission, 2016).

In the Czech Republic, attention to destination management has only started in recent years. In 2016, the Categorisation of Destination Management Organisations was launched, the pilot period of which will end in 2021. The categorisation divides organisations into four levels: national, regional, district and local (CzechTourism, 2018). At the national level, there is one entity, the marketing agency CzechTourism. The Czech Republic has 14 regions, of which 10 have a regional destination management organisation. Regional organisations are missing in the Hradec Králové, Liberec, Plzeň and Ústí regions. The categorization was part of the Czech service quality system, which focused on improving quality at the management level. The system is currently down.

QUALITY, SATISFACTION AND LOYALTY RESEARCH

The author has been working on the issue of quality, satisfaction and loyalty since 2015. The aim of the research was to compare the importance of quality attributes before and within the pandemic. Furthermore, to find out what quality factors affect the satisfaction and loyalty of visitors to rural tourism destinations. The research was conducted in two periods to allow for a comparison of results. The first was conducted in 2016 and then another in 2020 when the world was hit by the SARS-CoV-2 pandemic. The research was carried out in the same locations each time, i.e. South Moravia, Vysočina and Šumava. The author proceeded from the fact that these are specific destinations where rural tourism in various forms develops. South Moravia is characterised by cycling, wine tourism and gastro-tourism. Vysočina has probably the largest representation of ecotourism and agro-tourism in the Czech Republic. Šumava is characterised by natural attractions, as it is a national park. In addition, sports activities such as skiing and hiking are represented in Šumava. Visitors to these locations, who came individually but also as part of a group tour, were citizens of the Czech Republic (to study exclusively domestic tourism), over 18 years of age. Respondents were also approached online, where the condition was that they had visited the selected destination in the last two years (research in 2016) and in a given year in the case of respondents in the research in 2020. In both cases, a quota selection based on gender was chosen, where, according to the CSO (2016), the gender distribution of people in the Czech Republic as of 1 January 2016 was 50.8% female and 49.2% male. In 2016, an age quota was also chosen, but this could not be met in 2020 due to the smaller number of respondents.

For the purposes of the research, a definition of a rural tourism destination was established, as stated above: *'A rural tourism destination is an area that is located outside of large cities. The population of each village is up to 5 000. The area is also characterised by low population density, an economy based on agriculture and traditions, and has a primary tourism offer and infrastructure. The area is not affected by industrial activity'* (Peruthová, 2018). To assess the quality of the destinations, it was necessary to determine which quality attributes would be examined. The attributes emerged from the research of Mussalam and Tajeddini (2016), Alegre, Cladera and Sard (2011), Frochot (2005) and Vajčnerová, Šácha and Ryglová (2013). The author has extended the attributes to include others that emerged from her previous work. The attributes evaluated are:

- natural attractions
- cultural attractions
- accommodation
- boarding

Management of Quality, Satisfaction, and Loyalty of Rural Destinations

- activities associated with the stay
- events in the place of stay
- transport accessibility
- local transport
- accessibility of information
- communication before arrival
- friendly welcome by local inhabitants
- destination image
- price of products and services
- level of service staff
- sense of security
- cleanliness of the destination
- the number of visitors to the destination
- uniqueness of the destination
- additional infrastructure
- sustainability of the destination
- distance from the place of stay
- barrier-free access

Attributes were rated on a five-point Likert scale, where 1 was the lowest importance and performance attribute and 5 was the highest importance and performance attribute. The questionnaire contained 12 questions of which 4 were identification questions. Respondents were identified in terms of gender, age, residence and highest educational attainment. In 2016, the sample of respondents was 801. In 2020, the sample of respondents was 100. Smaller sample in 2020 Because the survey was anonymous, it is not possible to compare whether the preferences of specific individuals have changed from 2016 to 2020 due to the pandemic. This is a clear limitation of the research. The research explored the importance of quality attributes to visitors. The data was evaluated using Excel and arithmetic mean and median. It was also investigated whether perceived destination quality has an impact (direct/indirect) on satisfaction and loyalty and whether satisfaction has an impact on loyalty. The following hypotheses were set for the research:

- Perceived quality has an impact on visitor satisfaction.
- Visitor satisfaction affects visitor loyalty to a destination.
- Perceived quality has an impact on visitor loyalty to a destination.

The quality factors were identified through a principal component analysis. The goodness of the appropriateness of the data was verified by the Kaiser-Meyer-Olkin index and Bartlett's test of sphericity. Factor extraction was performed using Kaiser's rule and scatter plot. Factor loadings were calculated and Varimax factor rotation was performed to facilitate factor interpretation. Factor loadings were set at 0.3 and above. Structural modelling in SmartPLS was used to investigate the effect of perceived destination quality on satisfaction and subsequent behaviour. This way of evaluating tourism data is a relatively new approach applied worldwide in recent years (Chin, Nair and Songan, 2016; Aunalal, Kadir, Taba and Hamid, 2017 or Albert da Silva, Costa and Moreira, 2018). The relationships in the model were tested

Figure 1. Age
Source: own research

Age	2016	2020
18 - 26	97	21
27 - 35	121	23
36 - 45	162	10
46 - 55	126	18
56 - 65	129	12
66 +	166	16

using bootstrapping at the 5% significance level. Statistically insignificant relationships were removed from the model according to the level of path coefficients (Peruthová, 2018).

From the point of view of identification of the participants and due to the need to fill the quotas, the number of men and women was determined by the percentage distribution in the Czech Republic, according to the data of the Czech Statistical Office. There were 390 male respondents and 411 female respondents (data collection from 2016). In the 2020 survey, the distribution was 51 females and 49 males. In terms of age distribution, a quota distribution was observed in 2016. In 2020, this was not followed.

In terms of educational attainment, four levels were assessed: primary, secondary without a high school diploma, secondary with a high school diploma, and university.

In the 2016 survey, residents of all 14 regions of the Czech Republic were represented. In 2020, respondents from the Karlovy Vary Region and the Liberec Region were missing. There may be several reasons why these respondents were not in the survey - they travelled more abroad, they have a long commuting distance to their chosen destinations or they were exploring their own region. The reasons are many and can of course be speculated.

Figure 2. Level of education

Source: own research

Level of education	2016	2020
Elementary	14	0
Secondary without maturita exam	85	8
Secondary with maturita exam	416	70
Tertiary	241	22

Assessing the Importance of Quality Attributes

Respondents rated the aforementioned 22 quality attributes on a 5-point Likert scale, where the most significant factor had a value of 5 and the least significant 1.

The most important factors in 2016 were natural attractions, the sense of security and the cleanliness of the destination. For the pandemic year 2020, their importance changed slightly. The most important factors were sense of security from natural attractions and the cleanliness of the destination. In 2016, sense of security in destinations was discussed in relation to terrorism in destinations and air travel. According to the GPI (Global Peace Index, 2021), the Czech Republic was the 9th safest country in the world, down one place from 2020. While this seems absurd in rural destinations, it is likely that for the attribute of safety, people have moved away from a specific destination and thought of it more globally. One possibility is that people in the Czech Republic have not forgotten the natural threats that have managed to affect the summer season in the past, such as floods. In 2020, the sense of security has shifted in visitors' perceptions from terrorism and natural disasters to health. The importance of on-site events has declined. Logically, their importance declined as they could not take place and if they did, they did so with only a minimum of participants. Mass boarding has also declined in importance. Due to pandemic measures (the mandatory wearing of masks in restaurants, limited opening hours, etc.), visitors were more likely to choose accommodation without boarding, which they felt was safer. It is not possible to prove with statistical data that the demand for chalets, cottages, and guesthouses in 2020 was higher than in previous years, but thanks to the knowledge of the market in the Czech Republic, it can be confirmed that this was the case and that demand has indeed increased. Barrier-free access was still at its lowest. This may have been influenced by the small number of respondents in the 66+ age group. The importance of distance to residence also dropped slightly. There has been a reduction in the number of bus and train services in the Czech Republic so that although people were still most likely to travel by car, this option has become even more entrenched at this time.

The quality dimensions or quality factors, which are saturated by individual attributes, have already been mentioned. The point is that there is a possibility that certain attributes are closely related to each other even if this is not apparent at first sight, or the layman might believe that other factors are related to each other than is actually the case. Establishing these factors gives scope for further exploration of the relationships between quality, satisfaction and loyalty. As the author stated above, in each research

Figure 3. Attributes of quality

Source: own research

Attributes of quality	Mean 2016	Median	Stand. Deviation	Mean 2020
Natural attractions	4, 24	5	0, 951	4, 32
Cultural attractions	3, 95	4	0, 960	3, 92
Accommodation	3, 90	4	0, 960	3, 87
Boarding	3, 95	4	0, 893	3, 24
Activities associated with the stay	3, 76	4	1, 042	3, 42
Events in the place of stay	3, 47	4	1, 063	2, 69
Transport accessibility	3, 67	4	1, 000	3, 60
Local transport	3, 10	3	1, 123	2, 98
Accessibility of information	3, 74	4	0, 977	3, 88
Communication before arrival	3, 99	4	0, 989	3, 96
Friendly welcome by local inhabitants	3, 41	3	1, 063	3, 34
Destination image	3, 54	4	0, 978	3, 12
Price of products and services	3, 83	4	0, 933	3, 83
Level of service staff	3, 98	4	0, 909	4, 10
Sense of security	4, 21	4	0, 944	4, 46
Cleanliness of the destination	4, 17	4	0, 910	4, 19
The number of visitors to the destination	3, 33	3	0, 998	3, 65
Uniqueness of the destination	3, 64	4	1, 011	3, 21
Additional infrastructure	3, 41	3	0, 999	3, 23
Sustainability of the destination	3, 47	4	0, 968	3, 45
Distance from the place of stay	2, 82	3	1, 180	2, 79
Barrier-free access	2, 84	3	1, 244	2, 82

the dimensions of quality need to be established anew and individually, as no two pieces of research are exactly the same where the dimensions are the same. In this case, data from 2016 was evaluated, which was more relevant and suitable for further research due to its collection, quotas and quantity. For the data to be analysed further, “it must be polychronic, which it fulfils. Furthermore, the suitability of the data was verified by the Kaiser-Meyer-Olkin index, which gives a scale (0-1) of the degree of suitability of

the data for analysis. The level of appropriateness is set at 0.6 and above (Hinton et al., 2004). Bartlett's test of sphericity was also used, which tests the null hypothesis that the variables are not dependent (World Bank, 2008)" (Peruthová, 2018). Based on the Kaiser-Meyer-Olkin Measure of Sampling Adequacy, it was confirmed that the data could be used for further analysis as the index was = 0.792, thus fulfilling the requirement of a level above 0.6. Bartlett's Test of Sphericity rejected the hypothesis that the variables were independent. When the data proved suitable for factor extraction, the Scree plot and Kaiser Rule were used. The Scree plot would extract only one factor, but the Kaiser Rule factors seven. Since extracting a single factor based on the Scree plot would only cover 20.788% of the variance, it was proceeded to extract using the Kaiser Rule, which would cover 57.895% of the variance. The resulting seven factors are saturated with individual quality attributes. To assign attributes to the factors' factor loadings, "*factor loadings were calculated and Varimax factor rotation was performed to facilitate factor interpretation. Factor loadings were set at 0.3 and above, which according to Foster (2001) and Child (2006) is generally the most used. Attributes are further assigned to factors based on the highest factor loadings*" (Peruthová, 2018). Based on the implementation of the above, the following factors emerged: Assurance and Image, Well-being, Secondary Tourist Resources, Transport Infrastructure, Accessibility and Amenities, Experiences and Primary Tourist Resources.

The first factor, Assurance and Image, was the most significant, covering 11.48% of the total variance. The other factors covered between 8.7% and 6.5% of the total variance. In the fourth table, the quality attributes are ranked according to their importance to visitors. Thus, 7 new quality dimensions emerged from the research on the quality of rural tourism destinations in the Czech Republic.

Factor Assurance and Image saturate attributes that are largely dependent on human activity. For example, even the availability of information is influenced by the human factor when visiting a tourist information centre. All attributes clearly contribute to the formation of the destination image.

The Well-being factor includes intangible elements. Visitor well-being is clearly based on the feeling of safety and cleanliness of the destination. It can be reinforced by the uniqueness of the destination and the associated visitation to the destination. Over-saturated tourism destinations tend to detract from uniqueness and authenticity.

The Secondary tourist resources are based on general tourism terminology. The Primary tourist resources consist of what visitors come for (cultural and natural attractions). The secondary tourist resources consist of accommodation and boarding (Palatková and Zichová, 2014).

Since the fourth factor contains only transport-related attributes, it was logically named "Transport Infrastructure". In the Czech Republic, rural tourist destinations are not always easily accessible by transport. In particular, accessibility by public transport is problematic in this respect.

The fifth factor, "Accessibility and Amenities", is made up of additional infrastructure, which could be, for example, a post office, a bank or a bicycle rental service. Accessibility is only marginal in terms of importance, but this does not mean that it can be completely neglected. Tourism should be as accessible as possible, ideally also for groups of visitors who need wheelchair access (mothers with prams, senior citizens, wheelchair users).

The sixth factor is "Experiences", which saturates the activities associated with the stay, the events at the place of stay and the sustainability of the destination. The seventh factor is "Primary Tourist Resources." As explained for the third factor, the naming came from the attributes that the factor saturates and their terminology.

Figure 4. Correlated quality factors

Source: own research

Assurance and Image	Communitation before arrival	Level of services staff	Accessibility of information	Destination image	Friendly welcome by local inhabitants
Well-being	Sense of security	Cleanliness of the destination	Uniqueness of the destination	Number of visitors to the destination	
Secondary Tourist Resources	Boarding	Accommodation	Price of products and services		
Transport Infrastructure	Transport accessibility	Local transport			
Accessibility and Amenities	Additional infrastructure	Barrier-free access	Distance from the place of stay		
Experiences	Activities associated with the stay	Events in the place of stay	Sustainability of the destination		
Primary Tourist Resources	Natural attractions	Cultural attractions			

Relationships between quality, satisfaction and loyalty in rural tourist destinations in the Czech Republic

As stated earlier, it is not clear whether there are relationships between quality, satisfaction and loyalty and thus further research needs to be conducted. This one aimed to uncover these relationships within rural tourism destinations in the Czech Republic and to identify which quality factors enter into these relationships. Therefore, it was necessary to first establish the dimensions of quality through principal component analysis. Seven dimensions (factors) of quality were identified: assurance and image, secondary tourist resources, well-being, experiences, primary tourist resources, accessibility and amenities, and transport. These went into the structural modelling, which was carried out using SmartPLS software.

Management of Quality, Satisfaction, and Loyalty of Rural Destinations

For better orientation in the model, the attributes in each factor were numbered: Fa_1 natural attractions, Fa_2 cultural attractions, Fa_3 accommodation, Fa_4 boarding, Fa_5 activities associated with the stay, Fa_6 events in the place of stay, Fa_7 transport accessibility of the destination, Fa_8 local transport, Fa_9 accessibility of information, Fa_10 communication before arrival, Fa_11 friendly welcome by local inhabitants, Fa_12 destination image, Fa_13 price of products and services, Fa_14 level of service staff, Fa_15 sense of security, Fa_16 cleanliness of the destination, Fa_17 number of visitors to the destination, Fa_18 uniqueness of the destination, Fa_19 additional infrastructure, Fa_20 sustainability of the destination, Fa_21 distance from the place of stay, Fa_22 barrier-free access.

Circles indicate latent variables and arrows indicate path coefficients. The following quality attributes have been eliminated from the model due to their low significance within 0.05, namely: Accessibility of information, uniqueness of the destination, barrier-free access, distance from the place of stay, and sustainability of the destination. By eliminating these attributes, greater model reliability and better interpretability were achieved. The result of the structural modelling is a model showing the relationships between quality, satisfaction and loyalty, and the coefficients of the trips (regression coefficients). Validation of the relationships was conducted at the 5% significance level. Based on the structural modelling, the direct influence of all seven latent variables on satisfaction was confirmed, explaining 67.9% of the variance. Factors ranked according to the significance of their influence on satisfaction and their saturation:

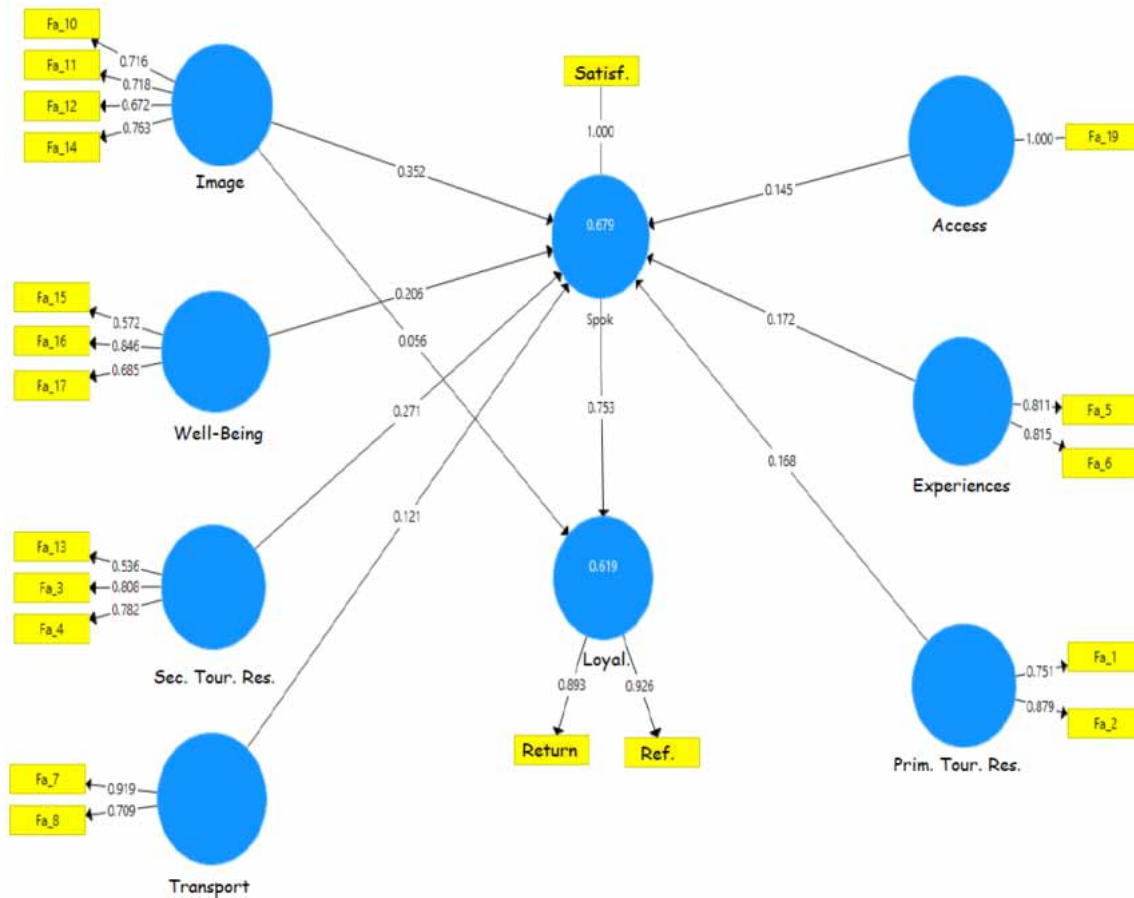
- Assurance and image – level of service staff (14), friendly welcome by local inhabitants (11), communication before arrival (10) destination image (12).
- Secondary tourist resources - accommodation (3), boarding (4), price of products and services (13).
- Well-being – cleanliness of the destination (16), number of visitors to the destination (17) sense of security (15).
- Experiences – events in the place of stay (6) activities associated with the stay (5).
- Primary tourist resources – cultural attractions (2) natural attractions (1)
- Accessibility and amenities – additional infrastructure (19)
- Transport – transport accessibility (7) local transport (8)

The direct effect of satisfaction on loyalty was also confirmed. For clarity of the results, a summary table of direct effects of factors on satisfaction and loyalty, path coefficients, standard deviations and p-values was created” (Peruthová, 2018).

Of the 7 quality factors, only one had a direct effect on visitor loyalty, namely “Assurance and Image”, which was saturated with attributes: level of service staff, friendly welcome by local inhabitants, communication before arrival and destination image. As mentioned above, the attribute of accessibility of information was eliminated from modeling because it did not presented sufficient significance.

Figure 5. Structure model

Source: own research



RECOMMENDATIONS FOR DMO

The CzechTourism agency has created a methodological guide for destination management concerning improvement of destinations. Within the Czech service quality system, DMO categorization and certification was to take place. The author suggests that this methodological guideline be extended by some aspects that are based on her research. The problem, however, arises in the fact that the Czech service quality system is no longer sustainable and its operation ends in December 2021. However, the categorization of DMOs should continue to work. The question currently remains whether the national quality assessment system - the Czech service quality system, will leave the created documents to, for example, the Ministry of Regional Development or CzechTourism. It is not currently clear who will subsequently be in charge of DMO categorization. “CzechTourism’s methodological procedure recommends finding out and monitoring the following parameters: nature of the destination (whether it is a rural destination, urban, spa, etc.), mapping the tourism offer and its quality, mapping the destination and individual objects, identifying profiles of destination visitors and evaluating efficiency functioning of the DMO and its activities” Peruthová (2018). The author found that some important elements monitored

by CzechTourism coincide with its results, namely the monitoring of destination attendance (attribute of the Well-being factor), the entire factors Primary and Secondary offer and events organized at the destination (attribute of the Experiences factor). These factors and attributes have a direct impact on visitor satisfaction, but not on visitor loyalty. The author therefore recommends focusing (either within the method guideline or outside it) on attributes that directly affect loyalty, ie – level of service staff, friendly welcome by local inhabitants, communication before arrival and destination image.

Destination managements can organize various trainings or courses for service workers that could increase their quality. This support could also affect communication before arrival. Concerning inclusion of this element in the methodological guideline, the author proposes to determine the time allowance for the training that the employee should complete. There can also be directly determined courses within which the time allowance will be recognized. A similar system already works in another sector of tourism, so it should not be a problem to incorporate it into the methodological guideline. The author would recommend courses focused on communication and coping with stressful situations. Both courses could increase the quality of service workers. Communication is very important and the worker cannot avoid it, and in the season with increased attendance, the worker can be under a lot of pressure, so he might benefit from proper training in coping with stressful situations. With spread of the pandemic aroused a major problem with tourism staff in this regard. Due to the fact that most of the operations were closed from March to June/July, the employees were either laid off or leaving for other work themselves. After reopening in July, new employees or temporary workers entered the operations, often without education in the field or previous experience. During this time, the workers were exposed to a lot of pressure from visitors and faced higher number of questions. This could have reduced the perceived quality of visitors if the employee did lacked necessary information or was unable to cope properly with the stress.

The image of the destination is a relatively new topic, mentioned by many authors, such as Guzman-Parra, Quintana-García, Benavides-Velasco and Vila-Oblitas, 2016 or Artuger and Cetinsoz, 2017. The author would again incorporate recommendations in guidelines, in this case for data collection using a questionnaire survey from visitors directly in the destination, adding those who have not visited the destination yet. The point is that even a visitor who has never visited certain destination could hear a review of this destination (for example, from his relatives), based on which he has either positive or negative opinion of the destination. As these are rural tourism destinations, the image of the destination is more influenced by word-of-mouth than, for example, outdoor or television advertising. The reasons are, for example, the financial budget or unwanted mass arrivals to the destination, thanks to which it could be exceeded acceptable capacity of the destination. The methodological guideline could include what DMOs should focus on, or a uniform questionnaire could be developed directly for all DMOs. This would facilitate the subsequent comparison of destinations and their management. The surveyed elements should include the following indicators: *“is the destination attractive for tourists, is attractive for natural locations, is attractive for cultural monuments, has a sufficient supply of food at various price levels, has a sufficient supply of accommodation at various price levels, has sufficient transport infrastructure, has quality staff in tourism services, is friendly to visitors, is safe, is crowded with tourists, is clean (air quality, environmental quality) and has sufficient additional infrastructure (bicycle rental, ATM, etc.)”* (Peruthová, 2018).

The proof that all the properties of the “Assurance and Image” factor are interrelated is that they cannot be separated from each other. While discussing the image of the destination, it is necessary to determine the quality of staff and visitors acceptance, in turn, links to local residents. The DMO should allways work with local residents. The breadth of this topic makes it difficult to cover in shortness. Each

destination is different and can have a different composition of the population. DMO should know the composition, which allows it to work with residents. For people of working age, tourism in destinations is often not as annoying as for elderly people. If it is not happening spontaneously, the DMO needs to encourage the working age population of destination to do business in the tourism sector or to let it work in it and prevent going abroad for work. Elderly residents have usually difficulties getting used to the number of strangers in their place of residence. Therefore, it is necessary to introduce them to the benefits resulting from visitors of the destination. With development of destination comes usually development of complementary infrastructure that residents can use. There might be established in the village, for example, a pharmacy, a doctor's office, a post office or a bank, etc. Targeted communication with the local population is vital, but cannot be incorporated into any methodological guideline as a measurable requirement. The current methodological guideline already includes an element of communication, the question is how it is observed and fulfilled. In 2020, when some rural destinations reached their carrying capacity in the summer months, destination management was to strengthen communication with local people, as older people in particular were concerned about their health and the introduction of the virus into the village by visitors. Not all destinations have managed this situation and concerns remain in 2021.

CONCLUSION

This chapter deals with the author's research, which targeted finding ways to evaluate attributes of quality in rural tourism destinations. The attributes and their significance were compared in 2016 and 2020, when tourism fell worldwide due to a pandemic. Importance of some factors, such as safety or cleanliness of the destination, has increased, the importance of events held in destinations has declined. Logically, the effects of the pandemic were also felt in rural tourism destinations. Subsequently, these quality attributes were transformed into dimensions or quality factors that are saturated with individual attributes. Using quality factors and structural modeling, it was studied whether there are direct or indirect relationships between quality, satisfaction and loyalty.

The direct influence of quality on loyalty was proven only for one factor and that was "Assurance and image". This factor was saturated with attributes: level of staff in services, reception by locals, communication before arrival and image of the destination. Subsequently, a recommendation was made for DMO on how to work with this factor so that rural tourism destinations are competitive with other destinations. Although the pandemic stopped all tourism for almost a year, this does not mean that it was impossible to work on it from within and prepare for what would come after the pandemic. If these principles were set during the pandemic, even rural destinations could become competitive units of high quality with satisfied and loyal visitors.

In the Czech Republic, however, not much attention is paid to rural destinations, unless there is a fundamental attractiveness such as a UNESCO monument. Rural tourism is profoundly neglected, which is evident, for example, from the fact that there are no statistic data from these localities. Rural destinations are thus left to fend for themselves. Mostly without professional management and with minimal funding. It will be interesting to observe the development of domestic tourism after the pandemic and compare it with years before and during the pandemic. But we have to wait a few more years to be able to compare them.

REFERENCES

- Albert da Silva, M., Costa, R. A., & Moreira, A. C. (2018). The influence of travel agents and tour operators' perspectives on a tourism destination. The case of Portuguese intermediaries on Brazil's image. *Journal of Hospitality and Tourism Management*, 34, 93–104. doi:10.1016/j.jhtm.2018.01.002
- Alegre, J., Cladera, M., & Sard, M. (2011). Analysing the Influence of Tourist Motivations on Tourist Expenditure at a Sun-And-Sand Destination. *Tourism Economics*, 17(4), 813–832. doi:10.5367/te.2011.0063
- Anderson, E. W., Fornell, C., & Lehmann, D. R. (1994). Customer Satisfaction, Market Share, and Profitability: Findings from Sweden. *Journal of Marketing*, 58(3), 53–66. Advance online publication. doi:10.1177/002224299405800304
- Artuger, S., & Cetinsoz, B. C. (2017). The Impact of Destination Image and the Intention to Revisit: A Study Regarding Arab Tourists. *European Scientific Journal*, 13(5), 82. Advance online publication. doi:10.19044/esj.2017.v13n5p82
- Aunalal, Z. I., Kadir, A. R., Taba, M. I., & Hamid, N. (2017). The Influence of Service Quality Dimensions, Destination Image and Satisfaction to Tourist Loyalty in Maluku Province. *Scientific Research Journal*, 5(6), 71–85.
- Blackman, D., & Ritchie, B. W. (2008). Tourism Crisis Management and Organizational Learning. *Tourism Crisis Management and Organizational Learning*, 23(2-4), 45–57. doi:10.1300/J073v23n02_04
- Buhalis, D. (2000). Marketing the competitive destination of the future. *Tourism Management*, 21(1), 97–116. doi:10.1016/S0261-5177(99)00095-3
- Červová, L. (2013). *Hodnota zákazníka v podnikatelských subjektech cestovního ruchu*. V Liberci: Technická univerzita.
- Chandrupatla, T. R. (2009). *Quality and reliability in engineering*. Cambridge University Press.
- Chi, C. G.-Q., & Qu, H. (2008). Examining the structural relationships of destination image, tourist satisfaction and destination loyalty: An integrated approach. *Tourism Management*, 29(4), 624–636. doi:10.1016/j.tourman.2007.06.007
- Child, D. (2006). *The essentials of factor analysis* (3rd ed.). Continuum.
- Chin, C. H., Lo, M.-C., Nair, V., & Songan, P. (2016). Examining the Effects of Environmental Components on Tourism Destination Competitiveness: The Moderating Impact of Community Support. *Asian Academy Of Management Journal*, 21(Suppl. 1), 75–104. doi:10.21315/aamj2016.21.suppl.1.4
- ČSN EN ISO 9000:2016: *Systémy managementu kvality - Základní principy a slovník*. (2016). Czech Office for Standards, Metrology and Testing.
- Czech Statistical Office. (2017). *Věkové složení obyvatelstva 2016*. Retrieved June 3, 2021, from Dostupné z: <https://www.czso.cz/csu/czso/vekove-slozeni-obyvatelstva-2016>
- Czech Statistical Office. (2021, February 26). *TSA T4 - Spotřeba vnitřního cestovního ruchu v ČR*. Retrieved May 15, 2021, from https://www.czso.cz/csu/czso/tsa_t4_spotreba_vnitrnio_cestovniho_ruchu_v_cr

- Czech Statistical Office. (2021, February 26). *Modul zaměstnanosti cestovního ruchu*. Retrieved May 15, 2021, from https://www.czso.cz/csu/czso/modul_zamestnanosti_cestovniho_ruchu
- Czech Statistical Office. (2021, February 26). *TSA T2 - Spotřeba domácího cestovního ruchu v ČR*. Retrieved May 15, 2021, from https://www.czso.cz/csu/czso/tsa_t2_spotreba_domaciho_cestovniho_ruchu_v_cr
- Czech Statistical Office. (2021, February 26). *Satelitní účet cestovního ruchu*. Retrieved August 9, 2021, from https://www.czso.cz/csu/czso/satelitni_ucet_cestovniho_ruchu
- CzechTourism. (2018). *Kategorizace organizací destinačního managementu*. Retrieved June 3, 2021, from <http://organizace.csks.cz/filemanager/files/file.php?file=13240>
- CzechTourism. (2020). *Analýza dopadů světové pandemie koronaviru (COVID-19) na odvětví cestovního ruchu v ČR v letech 2020 a 2021*. Retrieved June 15, 2021, from https://tourdata.cz/wp-content/uploads/2020/12/Dopady_COVID19_cest_ruch_2020_2021_-_k_27_11_2020.pdf
- CzechTourism. (2021). *DCR kampaň v reakci na COVID19 #světovéČesko*. Retrieved June 15, 2021, from <https://tourdata.cz/wp-content/uploads/2021/03/DCR-a-PCR-ROK-2020-management-summary.pdf>
- Della Corte, V., Sciarelli, M., Cascella, C., & Del Gaudio, G. (2015). Customer Satisfaction in Tourist Destination: The Case of Tourism Offer in the City of Naples. *Journal of Investment Management*, 4(1), 39. Advance online publication. doi:10.11648/j.jim.s.2015040101.16
- European Commission. (2014). *A harmonised definition of cities and rural areas: the new degree of urbanisation*. Retrieved August 12, 2021, from https://ec.europa.eu/regional_policy/en/information/publications/working-papers/2014/a-harmonised-definition-of-cities-and-rural-areas-the-new-degree-of-urbanisation
- European Commission. (2016). *The European Tourism Indicator System: ETIS toolkit for sustainable destination management*. Publications Office of the European Union.
- Eurostat. (2017). *Tourism methodology*. Retrieved January 22, 2017, from <https://ec.europa.eu/eurostat/web/tourism/methodology>
- Feigenbaum, A. V. (1991). *Total Quality Control* (3rd ed.). McGraw-Hill.
- Fernandes, T., & Cruz, M. (2016). Dimensions and outcomes of experience quality in tourism: The case of Port wine cellars. *Journal of Retailing and Consumer Services*, 31(5), 371–379. doi:10.1016/j.jretconser.2016.05.002
- Foster, J. J. (2001). *Data Analysis Using SPSS for Windows Versions 8 - 10: A Beginner's Guide*. Sage. doi:10.4135/9781849208796
- Frochot, I. (2005). A benefit segmentation of tourists in rural areas: A Scottish perspective. *Tourism Management*, 26(3), 335–346. doi:10.1016/j.tourman.2003.11.016
- Global Peace Index 2021: Measuring Peace in a Complex World. (2021). Retrieved August 5, 2021, from <https://www.visionofhumanity.org/wp-content/uploads/2021/06/GPI-2021-web-1.pdf>
- Goeldner, C. H. R., & Brent Ritchie, J. R. (2009). *Tourism: Principles, Practices, Philosophies* (11th ed.). Wiley.

Management of Quality, Satisfaction, and Loyalty of Rural Destinations

Grönroos, C. (1984). A Service Quality Model and its Marketing Implications. *European Journal of Marketing*, 18(4), 36–44. doi:10.1108/EUM0000000004784

Gúčik, M., Gajdošík, T., & Lencséssová, Z. (2016). *Kvalita a spokojnosť zákazníka v cestovnom ruchu*. Wolters Kluwer.

Guzman-Parra, V. F., Quintana-García, C., Benavides-Velasco, C. A., & Vila-Oblitas, J. R. (2015). Trends and seasonal variation of tourist demand in Spain: The role of rural tourism. *Tourism Management Perspectives*, 16, 123–128. doi:10.1016/j.tmp.2015.07.014

Hinton, P. R. (2004). *SPSS explained*. Routledge. doi:10.4324/9780203642597

Hollins, B., & Shinkins, S. (2006). *Managing Service Operations: Design and Implementation*. Sage Publications.

Houška, P., & Petruš, Z. (2019) Evropská ekonomická integrace. IDEa service. ISBN 978-80-85970-92-0

Indrová, J., Houška, P., & Petruš, Z. (2011). *Kvalita ve službách cestovního ruchu*. Oeconomica.

Institute of Health Information and Statistics of the Czech Republic. (2017). *Hustota zalidnění (počet obyvatel na km²)*. Retrieved June 18, 2021, from <https://reporting.uzis.cz/cr/index.php?pg=statisticke-vystupy--demograficke-a-socioeconomicke-ukazatele--pohyb-obyvatelstva--hustota-zalidneni-pocet-obyvatel-na-km2> ISO/PAS5643:2021

ISO/TC 228: Tourism and related services. (n.d.). Retrieved July 19, 2021, from <https://committee.iso.org/sites/tc228/home/projects/published/published.html>

Jarábková, J. (2010). The rural areas – the unutilized potential in light of tourism. *Agricultural Economics*, 56(11), 532–539.

Jovičić, D., & Ivanović, V. (2016). Benchmarking and Quality Managing of Tourist Destinations. *Tourism and Hospitality Management*, 12(2), 123–134. doi:10.20867/thm.12.2.11

Kandampully, J., & Suhartanto, D. (2000). Customer loyalty in the hotel industry: The role of customer satisfaction and image. *International Journal of Contemporary Hospitality Management*, 12(6), 346–351. doi:10.1108/09596110010342559

Kotler, P., & Keller, K. L. (2007). *Marketing management*. Praha: Grada. Začátek formuláře

Kulcsár, N. (2015). Consumer value dimensions of rural tourism in Hungary. *Hungarian Geographical Bulletin*, 64(2), 127–141. doi:10.15201/hungeobull.64.2.4

Ladeira, W. J., Santini, F. de O., Araujo, C. F., & Sampaio, C. H. (2016). *A Meta-Analysis of the Antecedents and Consequences of Satisfaction in Tourism and Hospitality*. doi:10.1080/19368623.2016.1136253

Laws, E., Prideaux, B., & Chon, K. S. (2007). *Crisis management in tourism*. CABI Pub. doi:10.1079/9781845930479.0000

López-Toro, A. A., Díaz-Muñoz, R., & Pérez-Moreno, S. (2010). *An assessment of the quality of a tourist destination: The case of Nerja, Spain*. doi:10.1080/14783360903553164

- Millán, Á., & Esteban, Á. (2004). Development of a multiple-item scale for measuring customer satisfaction in travel agencies services. *Tourism Management*, 25(5), 533–546. doi:10.1016/j.tourman.2003.07.002
- Ministry of Home Affairs. (2012). *Regionální politika a cestovní ruch*. Retrieved Septembře 25, 2017, from <https://www.mmr.cz/cs/Regionalni-politika-a-cestovni-ruch/Cestovni-ruch/ProgramyDotace>
- Ministry of Home Affairs. (2018, Septembře 4). *Census of India - Circular n. 2*. Retrieved June 18, 2021, from <https://censusindia.gov.in/2021-Census/Circular-2-2021.pdf>
- Mussalam, G. Q., & Tajeddini, K. (2016). Tourism in Switzerland: How perceptions of place attributes for short and long holiday can influence destination choice. *Journal of Hospitality and Tourism Management*, 26, 18–26. doi:10.1016/j.jhtm.2015.09.003
- OECD. (2011). *Quality Dimensions, Core Values for OECD Statistics and Procedures for Planning and Evaluating Statistical Activities*. Retrieved May 23, 2021, from <https://www.oecd.org/sdd/21687665.pdf>
- Palatková, M. (2007). *Destinační management a vytváření produktů v cestovním ruchu: Metodika a odpovědnost za aktualizaci dat v destinační m managementu*. Prague: Servis Hospodářské komory Prahy. Retrieved from <https://www.mmr.cz/getmedia/7e3ddbdf-ccb7-4ef2-8633-a99b05b1eb1b/GetFile>
- Palatková, M., & Zichová, J. (2014). *Ekonomika turismu: turismus České republiky* (2nd ed.). Praha: Grada.
- Parasuraman, A. P., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple- Item Scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 49(4), 12–40.
- Perlín, R. (1998). *Venkov, typologie venkovského prostoru*. Retrieved from <http://mvcr.cz/soubor/perlin-pdf.aspx>
- Peruthová, A. (2018). *Hodnocení kvality venkovské destinace cestovního ruchu* (PhD Thesis). Brno.
- Rajaratnam, S. D., Nair, V., Pahlevan Sharif, S., & Munikrishnan, U. T. (2015). Destination quality and tourists' behavioural intentions: Rural tourist destinations in Malaysia. *Worldwide Hospitality and Tourism Themes*, 7(5), 463–472. doi:10.1108/WHATT-06-2015-0026
- Researchgate.com. (2021). Retrieved June 2, 2021, from https://www.researchgate.net/publication/225083802_SERVQUAL_A_multiple-Item_Scale_for_measuring_consumer_perceptions_of_service_quality
- Ryglová, K., Burian, M., & Vajčnerová, I. (2011). *Cestovní ruch - podnikatelské principy a příležitosti v praxi*. Grada.
- Seaton, A. V., & Bennett, M. M. (1996). *The Marketing of Tourism Products: Concepts, Issues and Cases*. International Thomson Business Press.
- Som, A. P. M., Shirazi, S. F. M., Marzuki, A., & Jusoh, J. (2011). A critical analysis of tourist satisfaction and destination loyalty. *Journal Of Global Management*, 2(1), 178–183.
- Sysel, J. (2012). *Historie a současné koncepce řízení kvality*. Retrieved May 18, 2021, from <http://www.citellus.cz/Akademie/Prednasky/Koncepce-rizeni-kvality-a-cestovni-ruch/4-Historie-a-soucasne-koncepce-rizeni-kvality>

Management of Quality, Satisfaction, and Loyalty of Rural Destinations

Tourist Authority South Moravia. (2020). *Jihomoravský kraj*. Retrieved May 18, 2021, from <https://www.mmr.cz/cs/Regionalni-politika-a-cestovni-ruch/Cestovni-ruch/ProgramyDotace>

Tourist Authority South Moravia. (2020, Octobre 16). *Jihomoravský kraj*. Retrieved May 18, 2021, from <https://www.ccrjm.cz/statistiky/>

Tribe, J., & Snaith, T. (1998). From SERVQUAL to HOLSAT: Holiday satisfaction in Varadero, Cuba. *Tourism Management, 19*(1), 25–34. doi:10.1016/S0261-5177(97)00094-0

UNWTO. (n.d.). *Data, Intelligence and Trends*. Retrieved May 21, 2021, from <https://www.unwto.org/archive/competitiveness-market-intelligence>

UNWTO. (n.d.). *Policy and Destination Management*. Retrieved June 3, 2021, from <https://www.unwto.org/policy-destination-management>

Vajčnerová, I., Šácha, J., & Ryglová, K. (2012). Using the principal component analysis for evaluating the quality of a tourist destination. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, 60*(2), 449–458. doi:10.11118/actaun201260020449

Vajčnerová, I., Šácha, J., & Ryglová, K. (2013). The impact of factors influencing destination quality on overall customer satisfaction. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, 61*(7), 2917–2922. doi:10.11118/actaun201361072917

World Bank: Global Economic Prospects 2008. (2008). The World Bank.

Žabkar, V., Brenčič, M. M., & Dmitrović, T. (2010). Modelling perceived quality, visitor satisfaction and behavioural intentions at the destination level: The case of Port wine cellars. *Tourism Management, 31*(4), 537–546. doi:10.1016/j.tourman.2009.06.005

KEY TERMS AND DEFINITIONS

Destination Management Organization: The imaginary core of the destination. It coordinates activities in destination.

Loyalty: The need for visitors to return to the destination or spread positive reviews.

Quality: Meeting the requirements of the visitor.

Rural Destination: Place where produce is grown.

Rural Tourist Destination: Place far away from the cities, suitable for ecotourism, agrotourism, etc.

Satisfaction: Exceeding the expectations of the visitor.

Compilation of References

AAP FactCheck. (2021, January 29). *No, COVID-19 vaccines don't cause infertility*. <https://www.aap.com.au/no-covid-19-vaccines-dont-cause-sterility/>

Abate, M., Christidis, P., & Purwanto, A. J. (2020). Government support to airlines in the aftermath of the COVID-19 pandemic. *Journal of Air Transport Management*, 89, 101931. doi:10.1016/j.jairtraman.2020.101931 PMID:32952317

Abbott, K. W., & Snidal, D. (2001). International 'standards' and international governance. *Journal of European Public Policy*, 8(3), 345–370. doi:10.1080/13501760110056013

Abis, E. & Garau, C. (2016). An Assessment of the Effectiveness of Strategic Spatial Planning: A Study of Sardinian Municipalities. *European Planning Studies*, 24(1), 139-162. DOI: doi:10.1080/09654313.2015.1031091

Abrusci, E., Dubberley, S., & Mcgregor, L. (2020). An 'Infodemic. In *The Pandemic: Human Rights And Covid-19 Misinformation*. In C. Ferstman, & A. Fagan (Eds.), *Covid-19, Law And Human Rights: Essex Dialogues. A Project Of The School Of Law And Human Rights Centre* (pp. 287–296). University of Essex.

Acemoglu, D., Chernozhukov, V., Werning, I., & Whinston, M. D. (2020). A Multi-Risk SIR Model with Optimally Targeted Lockdown. *Cemap working paper, The Institute for Fiscal Studies. Department of Economics, UCL, CWP14(20)*, 1–60.

Aceves, V. D. (2004). *Dirección estratégica*. McGraw-Hill Interamericana.

Ackoff, R. L. (1989). From data to wisdom. *Journal of Applied Systems Analysis*, 16(1), 3–9.

ADB Briefs. (2020). *The economic impact of the COVID-19 outbreak on developing Asia*. No. 128.

Aharoni, Y. (1966). The foreign investment decision process. *The International Executive*, 8(4), 13–14. doi:10.1002/tie.5060080407

Ahasan, R., & Shaharier, M. (2020). Applications of GIS and geospatial analyses in COVID-19 research: A systematic review. *F1000 Research*, 9, 1379. doi:10.12688/f1000research.27544.1

Ahir, H., Bloom, N., & Furceri, D. (2018). The World Uncertainty Index. SSRN *Electronic Journal*. Advance online publication. doi:10.2139/ssrn.3275033

Ahmed Siddiqui, M. Y., Mushtaq, K., Mohamed, M. F., Al Soub, H., Hussein Mohamedali, M. G., & Yousaf, Z. (2020). "Social Media Misinformation"—An Epidemic within the COVID-19 Pandemic. *The American Journal of Tropical Medicine and Hygiene*, 103(2), 920–921. doi:10.4269/ajtmh.20-0592 PMID:32534600

Ahsan, M. M. (2020). Strategic decisions on urban built environment to pandemics in Turkey: Lessons from COVID-19. *Journal of Urban Management*, 9(3), 281-285. . doi:10.1016/j.jum.2020.07.001

Compilation of References

- Albers, S., & Rundshagen, V. (2020). European airlines' strategic responses to the COVID-19 pandemic (January-May, 2020). *Journal of Air Transport Management*, 87, 101863. doi:10.1016/j.jairtraman.2020.101863 PMID:32834690
- Albert da Silva, M., Costa, R. A., & Moreira, A. C. (2018). The influence of travel agents and tour operators' perspectives on a tourism destination. The case of Portuguese intermediaries on Brazil's image. *Journal of Hospitality and Tourism Management*, 34, 93–104. doi:10.1016/j.jhtm.2018.01.002
- Alegre, J., Cladera, M., & Sard, M. (2011). Analysing the Influence of Tourist Motivations on Tourist Expenditure at a Sun-And-Sand Destination. *Tourism Economics*, 17(4), 813–832. doi:10.5367/te.2011.0063
- Ali, W. (2020). *Online and Remote Learning in Higher Education Institutes: A Necessity in Light of COVID-19 Pandemic*. Higher Education Studies. Doi:10.5539/hes.v10n3p19
- Alimadadi, S., Bengtson, A., & Hadjikhani, A. (2018). How does uncertainty impact opportunity development in internationalization? *International Business Review*, 27(1), 161–172. doi:10.1016/j.ibusrev.2017.06.002
- Alon, I. (2020). COVID-19 and International Business: A Viewpoint. *FIB Business Review*, 9(2), 75–77. doi:10.1177/2319714520923579
- Alvarez, F. E., Argente, D., & Lippi, F. (2020). A Simple Planning Problem for COVID-19 Lockdown. *National Bureau of Economic Research, Working Paper 26981*, 1-33.
- Andersen, K. G., Rambaut, A., Lipkin, W. I., Holmes, E. C., & Garry, R. F. (2020). The proximal origin of SARS-CoV-2. *Nature Medicine*, 26(4), 450–452. doi:10.1038/s41591-020-0820-9 PMID:32284615
- Anderson, E. W., Fornell, C., & Lehmann, D. R. (1994). Customer Satisfaction, Market Share, and Profitability: Findings from Sweden. *Journal of Marketing*, 58(3), 53–66. Advance online publication. doi:10.1177/002224299405800304
- Angeles, A. (1993). *The four-fold way: Walking the paths of the warrior, teacher, healer, and visionary*. Harper.
- Angelo, H. (2016). From the city lens toward urbanisation as a way of seeing: Country/city binaries on an urbanising planet. *Urban Studies (Edinburgh, Scotland)*, 54(1), 158–178. doi:10.1177/0042098016629312
- Antilla, J. (1992). Standardization of Quality management and quality assurance: A project viewpoint. *International Journal of Project Management*, 10(4), 208–212. doi:10.1016/0263-7863(92)90079-O
- Antràs, P. (2020). *De-globalisation? Global value chains in the post-covid-19 age*. <https://www.nber.org/papers/w28115>
- Arias, J. (2007). *Experiencias solidarias en la Corporación Universitaria Minuto de Dios - Colombia; reflejo del pensamiento económico de su fundador padre Rafael García-Herreros*. Tesis doctoral no publicada, Mondragón Unibertsitatea, Oñati.
- Arias, J. (2016). Innovación social, concepto ligado a la praxis; caso Parque Científico de Innovación Social de UNIMINUTO - Colombia. In D. Domanski, N. Monge, G. Quitiaquez, & D. Rocha (Eds.), *Innovación Social en Latinoamérica* (pp. 255–297). Corporación Universitaria Minuto de Dios - UNIMINUTO.
- Arias, J., & Chaparro, L. (2018). Apropiar socialmente el conocimiento, el verdadero reto. In R. Ríos (Ed.), *Gerencia e Innovación* (Vol. 1, pp. 1–30). Corporación Universitaria Minuto de Dios - UNIMINUTO - Grupo Editorial Nueva Legislación S.A.S.
- Artuger, S., & Cetinsoz, B. C. (2017). The Impact of Destination Image and the Intention to Revisit: A Study Regarding Arab Tourists. *European Scientific Journal*, 13(5), 82. Advance online publication. doi:10.19044/esj.2017.v13n5p82
- Aruga, K., Islam, M. M., & Jannat, A. (2020). Effects of COVID-19 on Indian Energy Consumption. *Sustainability*, 12(14), 5616. doi:10.3390/s12145616

- Ashrafi-Rizi, H., & Kazempour, Z. (2020). Information Diet in Covid-19 Crisis; a Commentary. *Archives of Academic Emergency Medicine*, 8(1), e30. <https://pubmed.ncbi.nlm.nih.gov/32232215/> PMID:32232215
- Asian Development Bank (Ed.). (2020). *The Economic Impact of the COVID-19 Outbreak on Developing Asia*. <https://www.adb.org/sites/default/files/publication/571536/adb-brief-128-economic-impact-covid19-developing-asia.pdf>
- Aum, S., Lee, S. Y., & Shin, Y. (2020). Inequality of Fear and Self – Quarantine: Is There a Trade – Off between GDP and Public Health? *National Bureau of Economic Research, Working Paper 27100*, 1-31.
- Aunalal, Z. I., Kadir, A. R., Taba, M. I., & Hamid, N. (2017). The Influence of Service Quality Dimensions, Destination Image and Satisfaction to Tourist Loyalty in Maluku Province. *Scientific Research Journal*, 5(6), 71–85.
- Autio, E. (2017). Strategic Entrepreneurial Internationalization: A Normative Framework. *Strategic Entrepreneurship Journal*, 11(3), 211–227. doi:10.1002/ej.1261
- Avery, C., Bossert, W., Clark, A., Ellison, G., & Ellison, S. F. (2020). Policy Implications of Models of the Spread of Coronavirus: Perspectives and Opportunities for Economists. *National Bureau of Economic Research, Working Paper 27007*, 1-45.
- Bakar, N. A., & Rosbi, S. (2020). Effect of Coronavirus disease (COVID-19) to tourism industry. *International Journal of Advanced Engineering Research and Science*, 7(4), 189–193. Advance online publication. doi:10.22161/ijaers.74.23
- Bakos, E., Soukupová, J., & Selesovský, J. (2015). The Historical Roots of Local Self-Government in Czech and Slovak Republics. *Lex Localis*, 13(1), 1–19. doi:10.4335/13.1.1-19(2015)
- Baldwin, R., & di Mauro, W. B. (Eds.). (2020). *Mitigating the COVID Economic Crisis: Act Fast and Do Whatever it Takes*. London, UK: Centre for Economic Policy Research.
- Bardey, D., Fernández, M., & Gravel, A. (2020). *COVID 19: Some Data Analysis*. <https://sites.google.com/view/covid-19somedataanalysis/home>
- Barnová, S., Krásna, S., & Čepelová, S. (2020b). Digital Technologies as a Means of Teachers' Professional Development. *Online Journal for Research and Education*, 18, 11-17.
- Barnová, S., Krásna, S., & Gabrhelová, G. (2019). Application of digital technologies as a factor influencing university students' academic satisfaction. *Proceedings of ICERI2019 Conference*, 11146-11151. 10.21125/iceri.2019.2752
- Barnová, S., Krásna, S., Gabrhelová, G., & Čepelová, S. (2020a). Live-streaming lessons in secondary education during COVID-19 pandemics - challenges and new opportunities. *Proceedings of ICERI2020 Conference*, 6720-6724. 10.21125/iceri.2020.1428
- Barua, S. (2020). *Understanding Coronanomics: The Economic Implications of the Coronavirus (COVID-19) Pandemic*. Draft Manuscript. Advance online publication.
- Bastick, Z. (2021). Would you notice if fake news changed your behavior? An experiment on the unconscious effects of disinformation. *Computers in Human Behavior*, 116, 106633. doi:10.1016/j.chb.2020.106633
- Bathelt, H., & Glückler, J. (2012). *Wirtschaftsgeographie: Ökonomische Beziehungen in räumlicher Perspektive* (3rd ed.). UTB: Vol. 8217. E. Ulmer.
- Baumgartner, R. J. (2014). Managing corporate sustainability and CSR: A conceptual framework combining values, strategies and instruments contributing to sustainable development. *Corporate Social Responsibility and Environmental Management*, 21(5), 258–271. doi:10.1002/csr.1336

Compilation of References

- BCG. (2021). Digital Maturity Consulting and Strategy. *BCG*. <https://www.bcg.com/capabilities/digital-technology-data/digital-maturity>
- Beetham, H., & Sharpe, R. (2014). *Developing Digital Literacies*. <http://www.jisc.ac.uk/fullguide/18655>
- Behsudi, A. (2020). *Wish you were here. Tourism-dependent economies are among those harmed the most by the pandemic. Finance & Development*. International Monetary Fund.
- Beirman, D. (2011). Bounce back: Tourism risk, crisis and recovery management guide. Pacific Asia Travel Association (PATA).
- Berger, Herkenhoff, & Mongey. (2020). An SEIR Infectious Disease Model with Testing and Conditional Quarantine. *National Bureau of Economic Research, Working Paper 26901*, 2-29.
- Bethune & Korinek. (2020). Covid-19 Infection Externalities: Trading Off Lives vs. Livelihoods, *National Bureau of Economic Research, Working Paper 27009*, 1-36.
- Bhaya, A. G. (2020, February 24). *Racist COVID-19 headlines torment Chinese diaspora, says study*. <https://news.cgtn.com/news/2020-02-24/-Racist-COVID-19-headlines-torment-Chinese-diaspora-says-study-Ok2x5vPt6w/index.html>
- Billore, S., & Anisimova, T. (2021). Panic buying research: A systematic literature review and future research agenda. *International Journal of Consumer Studies*, 45(Special Issue), 777–804. Advance online publication. doi:10.1111/ijcs.12669
- Biswas, P. K., & Dymas, R. (Eds.). (2021). *Routledge Studies in the Modern World Economy. Asian foreign direct investment in Europe*. Routledge. doi:10.4324/9781003186601
- Blackman, D., & Ritchie, B. W. (2008). Tourism Crisis Management and Organizational Learning. *Tourism Crisis Management and Organizational Learning*, 23(2-4), 45–57. doi:10.1300/J073v23n02_04
- Blomström, M., Kokko, A., & Globermann, S. (2001). The determinants of host country spillovers from foreign direct investment: A review and synthesis of the literature. In N. Pain (Ed.), *Inward investment, technological change and growth: The impact of multinational corporations on the UK economy* (pp. 34–65). Palgrave. doi:10.1057/9780230598447_2
- Bodenstein, M., Corsetti, G., & Guerrieri, L. (2020). *Social Distancing and Supply Disruptions in a Pandemic*. Finance and Economics Discussion Series 2020-031. Board of Governors of the Federal Reserve System. doi:10.17016/FEDS.2020.031
- Bonet-Moron, J., Ricciulli-Marin, D., Pérez-Valbuena, G., Galvis-Aponte, L., Haddad, E., Araújo, I., & Salgueiro, F. (2020). *Impacto económico regional del COVID 19 en Colombia: Un análisis insumo-producto*. Documentos de Trabajo sobre Economía Regional y Urbana, Banco de la República, No. 288.
- Booking.com. (2020). *Smarter, Kinder, Safer: Booking.com Reveals Its Predictions for the Future of Travel*. Available on: [booking.com/globalresearchreport\(1\).pdf](https://www.booking.com/globalresearchreport(1).pdf)
- Borgo, M., Taylor, A., & Williamson, J. (2003). *Globalization in Historical Perspective*. University of Chicago Press.
- Borkurt, A. (2012). Tourism Industry and Standardization: Possibilities and Opportunities. *Cag University Journal of Social Science*, 9(1).
- Borkurt, A. (2010). Tourism Industry and Standardization: An Impossible Task? *Journal of Cucureva University Institute of Social Science.*, 19(3), 331–344.
- Börzel, T. A., Goltermann, L., & Striebinger, K. (2016). *Roads to Regionalism: Genesis, Design, and Effects of Regional Organizations. The international political economy of new regionalisms series*. Taylor and Francis. doi:10.4324/9781315606675

- Boulos, K., & Geraghty, E. (2020). Geographical tracking and mapping of coronavirus disease COVID-19/severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) epidemic and associated events around the world: How 21st century GIS technologies are supporting the global fight against outbreaks and epidemics. *International Journal of Health Geographics*, 19(1), 8. doi:10.1186/12942-020-00202-8 PMID:32160889
- Brennen, J. S., Simon, F., Howard, P. N., & Nielsen, R. K. (2020, April 7). *Types, Sources, And Claims Of Covid-19 Misinformation*. <https://reutersinstitute.politics.ox.ac.uk/types-sources-and-claims-covid-19-misinformation>
- Brewster, J. (2020, May 10). *A Timeline Of The Covid-19 Wuhan Lab Origin Theory*. <https://www.forbes.com/sites/jackbrewster/2020/05/10/a-timeline-of-the-covid-19-wuhanlab-origin-theory/#25420a935aba>
- British Educational Communications and Technology Agency (BECTA). (2004). *A Review of Research Literature on Barriers on the Uptake of ICT by Teachers*. <https://www.becta.org.uk>
- Broniatowski, D. A., Jamison, A. M., Qi, S., AlKulaib, L., Chen, T., Benton, A., Quinn, S. C., & Dredze, M. (2018). Weaponized Health Communication: Twitter Bots and Russian Trolls Amplify the Vaccine Debate. *American Journal of Public Health*, 108(10), 1378–1384. doi:10.2105/AJPH.2018.304567 PMID:30138075
- Brotherton, B. (1997). The Standardization versus Customisation, Dilemma in Hospitality and Tourism“. *Marketing Intelligence Service*, 8, 121–124.
- Bryson, J. M. & Roering, W. D. (1987). Applying private-sector strategic planning in the public sector. *Journal of the American Planning Association*, 53(1), 9-22. . doi:10.1080/01944368708976631
- Bryson, J. M., Edwards, L. H. & Van Slyke, D. M. (2018). Getting strategic about strategic planning research. *Public Management Review*, 20(3), 317-339. . doi:10.1080/14719037.2017.1285111
- Buber, M. (1965). *Between man and man* (R. G. Smith, Trans.). Macmillan.
- Buckley, P. J., & Casson, M. C. (1976). *The Future of the Multinational Enterprise*. Academic Press.
- Buhalis, D. (2000). Marketing the competitive destination of the future. *Tourism Management*, 21(1), 97–116. doi:10.1016/S0261-5177(99)00095-3
- Burki, T. (2019). Vaccine misinformation and social media. *Lancet*, 1(6), 258–e259. doi:10.1016/S2589-7500(19)30136-0
- Buxbaum, P. (2016). *How Countries Benefit from International Standards*. Global Trade. <https://www.globaltrademag.com/how-countries-benefit-from-international-standards/>
- Cai, L. A., Gartner, W. C., & Munar, A. M. (2009). *Tourism Branding: Communities in Action*. Emerald Group Publishing Limited.
- Capra, F. (1996). *The web of life: A new scientific understanding of living systems*. Anchor.
- Cardenas, M., & Martinez, H. (2020). COVID – 19 in Colombia. Impact and Policy Responses. *Center for Global Development*, (Jul), 1–18.
- Carfi, D. (2009). *Globalization and differentiable general sum game*. https://www.researchgate.net/publication/289523221_Globalization_and_differentiable_general_sum_game
- Carlock, R. S., & Ward, J. L. (2001). *Strategic planning for the family business: Parallel planning to unify the family and business*. Palgrave. doi:10.1057/9780230508750
- Carson, R. (1962). *Silent spring—III*. Academic Press.

Compilation of References

Casadena, M., Marimon, T., & Mori, A. (2010). The future of standardized quality management in tourism: Evidence from the Spanish tourist sector. *Service Industries Journal*, 30(14).

CDC, Centres for Disease Control and Prevention. (2021). <https://www.cdc.gov/coronavirus/2019-ncov/index.html>

CEN, European Committee for Standardization. (2021). <https://www.cen.eu>

Centre for the Promotion of Imports from developing countries. (2020). *The European market potential for diaspora tourism*. The European market potential for diaspora tourism. CBI.

Černý, M. (2018). Pedagogicko-psychologické otázky online vzdělávání [Pedagogico-psychological aspects of online education]. Brno: Masarykova univerzita.

Cerulli, G., & Ventura, M. (2017). *Estimation of pre and post-treatment Average Treatments Effects (ATEs) with binary time-varying treatment using STATA*. <https://journals.sagepub.com/doi/10.1177/1536867X19874224>

Červová, L. (2013). *Hodnota zákazníka v podnikatelských subjektech cestovního ruchu*. V Liberci: Technická univerzita.

Cha, A. E., & Cohen, R. A. (2020). Reasons for being uninsured among adults aged 18–64 in the United States, 2019. NCHS Data Brief, no 382. Hyattsville, MD: National Center for Health Statistics.

Chandrupatla, T. R. (2009). *Quality and reliability in engineering*. Cambridge University Press.

Chang, R., & Velasco, A. (2020). Economic Policy Incentives to Preserve Lives and Livelihoods. *National Bureau of Economic Research, Working Paper 27020*, 1-23.

Chang, S., Liao, C., & Meng, I. (2021). *Asia Market Outlook 2021: Attractive Opportunities As Economies Rebound*. PIMCO. <https://global.pimco.com/en-gbl/insights/viewpoints/asia-market-outlook-2021-attractive-opportunities-as-economies-rebound>

Chari, V. V., Kirpalani, R., & Phelan, C. (2020). The Hammer and the Scalpel: On the Economics of Indiscriminate versus Targeted Isolation Policies during Pandemics. *National Bureau of Economic Research, Working Paper 27232*, 1-27.

Chaturvedi, A. (2021). Israel launches Covid-19 tracking bracelet for travellers: All you need to know. *Hindustan Times*. <https://www.hindustantimes.com/world-news/israel-launches-covid-19-tracking-bracelet-for-travellers-101614678460371.html>

Chaves, A. (2020). Análisis sobre la evolución del COVID – 19 en Colombia: ¿se alcanzará el pico de contagio? *Revista Tiempo & Economía*, 8(1). <https://revistas.utadeo.edu.co/index.php/TyE/article/view/1672>

Cheah, C. S., Wang, C., Ren, H., Zong, X., Cho, H., & Xue, X. (2020). COVID-19 Racism and Mental Health in Chinese American Families. *Pediatrics*, 146(5), e2020021816. doi:10.1542/peds.2020-021816 PMID:32873719

Cheng, C. C., Chang, Y. Y., Tsai, M. C., Chen, C. T., & Tseng, Y. C. (2019). An evaluation instrument and strategy implications of service attributes in LOHAS restaurants. *International Journal of Contemporary Hospitality Management*, 31(1), 194–216. doi:10.1108/IJCHM-06-2017-0361

Chi, C. G.-Q., & Qu, H. (2008). Examining the structural relationships of destination image, tourist satisfaction and destination loyalty: An integrated approach. *Tourism Management*, 29(4), 624–636. doi:10.1016/j.tourman.2007.06.007

Child, D. (2006). *The essentials of factor analysis* (3rd ed.). Continuum.

Chin, C. H., Lo, M.-C., Nair, V., & Songan, P. (2016). Examining the Effects of Environmental Components on Tourism Destination Competitiveness: The Moderating Impact of Community Support. *Asian Academy Of Management Journal*, 21(Suppl. 1), 75–104. doi:10.21315/aamj2016.21.suppl.1.4

- Chirisa, I., Mutambisi, T., Chivenge, M., Mbasera, M., Sidambe, M., Muchenje, B., Mukwashi, T., Mabaso, E., Ncube, R., & Zengeni, D. (2020). Scope for Virtual Tourism in the Times of COVID-19 in Selected Africal Destinations. *Journal of Social Sciences*, 64(1-3), 1–13. doi:10.31901/24566756.2020/64.1-3.2266
- Chofreh, A. G. (2021). COVID-19 Shock: Development of strategic management framework for Global Energy. *Renewable & Sustainable Energy Reviews*, 139. . doi:10.1016/j.rser.2020.110643
- Choo, C. W. (1995). *Information Management for the Intelligent Organization: Roles and Implications for the Information Professions*. National Computer Board of Singapore. <http://choo.fis.utoronto.ca/fis/respub/dlc95.html>
- Chopra, K. K., & Arora, V. K. (2020). Covid-19 and social stigma: Role of scientific community. *The Indian Journal of Tuberculosis*, 67(3), 284–285. doi:10.1016/j.ijtb.2020.07.012 PMID:32825854
- Choy, D., Deng, F., Chai, C. S., Koh, H. L. J., & Tsai, P. S. (2016). Singapore primary and secondary students' motivated approaches for learning: A validation study. *Learning and Individual Differences*, 45, 282–290. doi:10.1016/j.lindif.2015.11.019
- Chumakov, A. N. (2012). *Social Aspects of Globalization (From a Globalistics Viewpoint)*. Globalistics and Globalization Studies.
- Clerc, P., Dou, H., & Juillet, A. (2020). Changing Priorities for Strategic Planning from National to territorial levels. *Foresight and STI Governance*, 14(3), 88-99. doi:10.17323/2500-2597.2020.3.88.99
- Cleverciti. (2021). European smart tourism destinations to watch and learn from. Smart Parking for Smart Cities.
- Clow, K. E. (2005). Standardization. *Concise Encyclopaedia of Advertising*, 162.
- Coban, G., & Aydin, Ş. (2020). A New Concept in Tourism: Smart Tourism Destinations. In E. Çeltek (Ed.), *Handbook of Research on Smart Technology Applications in the Tourism Industry*. IGI Global. doi:10.4018/978-1-7998-1989-9.ch019
- Cochrane, T., & Antonczak, L. (2015). *Developing students' professional digital identity*. Paper presented at 11th International Conference on Mobile Learning, Madeira, Portugal.
- Colbert, A., Yee, N., & George, G. (2016). The Digital Workforce and the Workplace of the Future. *Academy of Management Journal*, 59(3), 731–739. doi:10.5465/amj.2016.4003
- Cole, J., & Dodds, K. (2021). Unhealthy geopolitics? Bordering disease in the time of coronavirus. *Geographical Research*, 59(2), 169–181. doi:10.1111/1745-5871.12457
- COMCEC. (2017). *Risk & Crisis Management in Tourism Sector: Recovery From Crisis in the OIC Member Countries*. Available on: sbb.gov.tr
- Cordovez, J., Santos, M., Bravo, C., & Cascante, J. (2020). *¿Es la prolongación de la cuarentena la solución al problema?: Modelación COVID 19 en Bogotá*. Grupo de Biología Matemática y Computacional – BIOMAC, Universidad de los Andes. https://uniandes.edu.co/sites/default/files/asset/document/modelo_matematico.pdf
- Corporate Finance Institute. (2020). *Uncertainty: Definition, Example, and Role in Investing*. <https://onlinelibrary.wiley.com/doi/pdf/10.1002/j.2334-5837.2005.tb00685.x>
- Corver, Q., & Elkhuisen, G. (2014). A Framework for Digital Business Transformation. *Cognizant Business Consulting Benelux*. <https://www.cognizant.com/InsightsWhitepapers/a-framework-for-digital-business-transformation-codex-1048.pdf>
- Costica, D. (2020). *Tracking mobile devices to fight coronavirus*. Briefing European Parliamentary Research Service. [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/649384/EPRS_BRI\(2020\)649384_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/649384/EPRS_BRI(2020)649384_EN.pdf)

Compilation of References

- Council of the European Union. (2020). *Reading References: Council Library - Disinformation and COVID-19*. <https://www.consilium.europa.eu/media/45180/reading-list-covid-19-disinformation-20200717.pdf>
- ČSN EN ISO 9000:2016: *Systémy managementu kvality - Základní principy a slovník*. (2016). Czech Office for Standards, Metrology and Testing.
- Cuervo-Cazurra, A., Ciravegna, L., Melgarejo, M., & Lopez, L. (2018). Home country uncertainty and the internationalization-performance relationship: Building an uncertainty management capability. *Journal of World Business*, 53(2), 209–221. doi:10.1016/j.jwb.2017.11.002
- CWA 5643-2, CEN Workshop Agreement. (2021). *Tourism and related services – Requirements and guidelines to reduce the spread of Covid-19 in the tourism Industry -European visual identity*. Retrieved 06/15/21 from: <https://www.cen.eu/news/brief-news/Pages/NEWS-2021-015.aspx>
- Czech Statistical Office. (2017). *Věkové složení obyvatelstva 2016*. Retrieved June 3, 2021, from Dostupné z: <https://www.czso.cz/csu/czso/vekove-slozeni-obyvatelstva-2016>
- Czech Statistical Office. (2021, February 26). *Modul zaměstnanosti cestovního ruchu*. Retrieved May 15, 2021, from https://www.czso.cz/csu/czso/modul_zamestnanosti_cestovniho_ruchu
- Czech Statistical Office. (2021, February 26). *Satelitní účet cestovního ruchu*. Retrieved August 9, 2021, from https://www.czso.cz/csu/czso/satelitni_ucet_cestovniho_ruchu
- Czech Statistical Office. (2021, February 26). *TSA T2 - Spotřeba domácího cestovního ruchu v ČR*. Retrieved May 15, 2021, from https://www.czso.cz/csu/czso/tsa_t2_spotreba_domaciho_cestovniho_ruchu_v_cr
- Czech Statistical Office. (2021, February 26). *TSA T4 - Spotřeba vnitřního cestovního ruchu v ČR*. Retrieved May 15, 2021, from https://www.czso.cz/csu/czso/tsa_t4_spotreba_vnitriho_cestovniho_ruchu_v_cr
- CzechTourism. (2018). *Kategorizace organizací destinačního managementu*. Retrieved June 3, 2021, from <http://organizace.csks.cz/filemanager/files/file.php?file=13240>
- CzechTourism. (2020). *Analýza dopadů světové pandemie koronaviru (COVID-19) na odvětví cestovního ruchu v ČR v letech 2020 a 2021*. Retrieved June 15, 2021, from https://tourdata.cz/wp-content/uploads/2020/12/Dopady_COVID19_cest_ruch_2020_2021_-_k_27_11_2020.pdf
- CzechTourism. (2021). *DCR kampaň v reakci na COVID19 #světověČesko*. Retrieved June 15, 2021, from <https://tourdata.cz/wp-content/uploads/2021/03/DCR-a-PCR-ROK-2020-management-summary.pdf>
- Czekaj, J. (2012). *Podstawy zarządzania informacją* [Fundamentals of Information Management]. Wydawnictwo Uniwersytetu Ekonomicznego.
- D'Alessio, F. (2008). *El proceso estratégico: Un enfoque de gerencia*. Pearson Educación de México S.A. De C.V.
- Dabla-Norris, E., Kochhar, K., Suphaphiphat, N., Ricka, N., & Tsounta, E. (2015). *Causes and consequences of income inequality: A global perspective*. IMF. <https://www.imf.org/external/pubs/ft/sdn/2015/sdn1513.pdf>
- DANE. (2021) *Nota metodológica Índice de vulnerabilidad por manzana*. Departamento Administrativo Nacional de Estadística. https://www.dane.gov.co/files/comunicados/Nota_metodologica_indice_de_vulnerabilidad.pdf
- DANE. (2021). *Map of vulnerability Colombia Coronavirus*. <https://coronaviruscolombia.gov.co/Covid19/estadisticas-covid-19/mapa-vulnerabilidad.html>
- data.europa.eu . (2021). *The Impact of COVID-19 on the International Tourism Industry*. Available on: data.europa.eu

- Datta, R., & Litt, T. D. (2020). Infodemic With Misinformation And Disinformation In Pandemic Covid-19 Situation: A Global Case Study. *International Journal of Advance Research and Innovative Ideas in Education*, 6(4), 1732–1743. doi:16.0415/IJARIII-12532
- De Carolis, A., Macchi, M., Negri, E., & Terzi, S. (2017). Guiding manufacturing companies towards digitalisation a methodology for supporting manufacturing companies in defining their digitalisation roadmap. In *2017 International Conference on Engineering, Technology and Innovation (ICE/ITMC)* (pp. 487-495). IEEE. 10.1109/ICE.2017.8279925
- Della Corte, V., Sciarelli, M., Cascella, C., & Del Gaudio, G. (2015). Customer Satisfaction in Tourist Destination: The Case of Tourism Offer in the City of Naples. *Journal of Investment Management*, 4(1), 39. Advance online publication. doi:10.11648/j.jim.s.2015040101.16
- Denisov, I., Petrenko, Y., Koretskaya, I., & Benčič, S. (2021). The gameover in universities education management during the pandemic covid-19: Challenges to sustainable development in a digitalized environment. *Sustainability*, 13(7398), 1-23.
- Dewey, J. (1963). *Experience and Education*. Macmillan. (Original work published 1938)
- Dicken, P. (2007). *Global Shift Mapping the Changing Contours of the World Economy*. Sage Publications.
- Do, B. (2020). Strategic Responses to COVID-19: The case of tour operators in Vietnam. *Tourism and Hospitality Research*. . doi:10.1177/1467358421993902
- Doliński, D. (2002). Wpływ społeczny a jakość życia [Social influence and quality of life]. *Psychologia Jakości Życia*, 1(1), 35-52. <https://depot.ceon.pl/handle/123456789/1910>
- Dominici, G., & Guzzo, R. (2010). customer Satisfaction in the Hotel Industry: A Case Study from Sicily. *International Journal of Marketing Studies*, 2(2), 3–12. doi:10.5539/ijms.v2n2p3
- Douglas, K. M., & Sutton, R. M. (2008). The Hidden Impact of Conspiracy Theories: Perceived and Actual Influence of Theories Surrounding the Death of Princess Diana. *The Journal of Social Psychology*, 148(2), 210–222. doi:10.3200/SOCP.148.2.210-222 PMID:18512419
- Dreher, A. (2006). Does globalization affect growth? Empirical evidence from a new index. *Applied Economics*, 38.
- Dudas, T., & Dudasova, M. (2016). Growth of Chinese investments in Europe after the global economic crisis of 2008-2009. *Economic Annals-XXI*, 160(7-8), 9–13. doi:10.21003/ea.V160-02
- Dudas, T., & Rajnoha, R. (2020). Chinese high-tech foreign direct investments in the EU – trends and policy responses. *Problems and Perspectives in Management*, 18(2), 316–328. doi:10.21511/ppm.18(2).2020.26
- Dumbrava, C. (2020). *Tracking mobile devices to fight coronavirus*. Breafing European Parliamentary Research Service. [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/649384/EPRS_BRI\(2020\)649384_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/649384/EPRS_BRI(2020)649384_EN.pdf)
- Dumbrava, C. (2020). *Tracking mobile devices to fight coronavirus*. Briefing European Parliamentary Research Service. [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/649384/EPRS_BRI\(2020\)649384_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/649384/EPRS_BRI(2020)649384_EN.pdf)
- Dunning, J. H. (1981). Explaining the international direct investment position of countries: Towards a dynamic or development approach. *Weltwirtschaftliches Archiv*, 117(1), 30–64. doi:10.1007/BF02696577
- Dwyer, L., Edwards, D., Mistilis, N., Roman, O., Scott, N., & Cooper, Ch. (2008). *Megatrends underpinning tourism to 2020: Analysis of key drivers for change*. CRC for Sustainable Tourism Pty Ltd.
- Ecker, U. K., Hogan, J. L., & Lewandowsky, S. (2017). Reminders and repetition of misinformation: Helping or hindering its retraction? *Journal of Applied Research in Memory and Cognition*, 6(2), 185–192. doi:10.1016/j.jarmac.2017.01.014

Compilation of References

Edwards, A. R. (2015). *The heart of sustainability: Restoring ecological balance from the inside out*. New Society Publishers.

Ehrenfeld, J. R. (2008). *Sustainability by design: A subversive strategy for transforming our consumer culture*. Yale University Press.

Eichenbaum, M. S., Rebelo, S., & Trabandt, M. (2020). The Macroeconomics of Epidemics. *National Bureau of Economic Research, Working Paper 26882*, 1-41.

Ergüven, M., & Yilmaz, A. (2016). The first global lifestyle “LOHAS”: A study in Thrace. *The Journal of Academic Social Science Studies*, 51, 265–275. doi:10.9761/JASSS3715

Ermer, E., Cosmides, L., & Tooby, J. (2008). Relative status regulates risky decision making about resources in men: Evidence for the co-evolution of motivation and cognition. *Evolution and Human Behavior*, 29(2), 106–118. doi:10.1016/j.evolhumbehav.2007.11.002 PMID:19255605

Espinosa, S. (2021). Propuesta de un modelo para el análisis de programas académicos y la toma de decisiones en la Corporación Universitaria Minuto de Dios – UNIMINUTO. Tesis de Maestría no publicada, Università degli Studi di Bari Aldo Moro, Bari - Italia.

EURISY. (2020). *What we can learn from the Coronavirus crisis with satellite data*. https://www.eurisy.eu/what-we-can-learn-from-the-corona-crisis-with-satellite-data_46/

EUROCONTROL (2021). *COVID-19 - Grounded aircraft in the EUROCONTROL area: Aviation Intelligence Unit Portal*. EUROCONTROL. https://ansperformance.eu/covid/acft_ground/

EUROCONTROL. (2021). *Comprehensive Assessment of COVID-19's Impact on European Air Traffic*. EUROCONTROL. <https://www.eurocontrol.int/publication/eurocontrol-comprehensive-assessment-covid-19s-impact-european-air-traffic>

Europe, A. C. I. (2021). *ACI Europe welcomes global airport industry long-term carbon goal*. Airports Council International Europe. ACI Europe. <https://www.aci-europe.org/press-release/323-aci-europe-welcomes-global-airport-industry-long-term-carbon-goal.html>

Europe, A. C. I. (2021). *Recovery Fund at odds with EU green airport agenda*. ACI Europe. <https://www.aci-europe.org/press-release/308-recovery-fund-at-odds-with-eu-green-airport-agenda.html>

European Commission - Joint Research Centre. (2017). *The European Framework of Digital Competences of Teachers*. Academic Press.

European Commission. (2010). *Digital Literacy Review*. https://ec.europa.eu/information_society/europe/i2010/docs/digital_literacy/digital_literacy_review.pdf

European Commission. (2014). *A harmonised definition of cities and rural areas: the new degree of urbanisation*. Retrieved August 12, 2021, from https://ec.europa.eu/regional_policy/en/information/publications/working-papers/2014/a-harmonised-definition-of-cities-and-rural-areas-the-new-degree-of-urbanisation

European Commission. (2016). *The European Tourism Indicator System: ETIS toolkit for sustainable destination management*. Publications Office of the European Union.

European Commission. (2021). *Database - International trade in goods - Eurostat*. <https://ec.europa.eu/eurostat/web/international-trade-in-goods/data/database>

European Commission. (2021). *European Capitals of Smart Tourism. Available on: An EU initiative to reward innovative and smart tourism in European Cities!* europea.eu

- European Commission. (2021). *Mobile contact tracing apps in EU Member States*. https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/travel-during-coronavirus-pandemic/mobile-contact-tracing-apps-eu-member-states_en
- European Commission. (2021). *News*. European Commission. https://ec.europa.eu/commission/presscorner/detail/en/IP_21_1047
- European Council. (2020). *Eureka*. Retrieved from https://consilium-eureka.hosted.exlibrisgroup.com/primo-explore/search?vid=32CEU_VU1
- European External Action Service. (2020, May 20). *EEAS Special Report Update: Short Assessment of Narratives and Disinformation Around The Covid-19 Pandemic*. <https://euvsdisinfo.eu/eeas-special-report-update-short-assessment-of-narratives-and-disinformation-around-the-covid19-pandemic-updated-23-april-18-may/>
- European Tourism Covid-19 Safety Seal. (2021). *Visual identity*. Retrieved 06/15/21 from: <https://www.cen.eu/work/products/labels/pages/default.aspx>
- Eurostat. (2017). *Tourism methodology*. Retrieved January 22, 2017, from <https://ec.europa.eu/eurostat/web/tourism/methodology>
- Fallon, G. (2020). From digital literacy to digital competence: The teacher Digital competency (TDC) framework. *Educational Technology Research and Development*, 2020(68), 2449–2472. doi:10.1007/11423-020-09767-4
- Farboodi, M., Jarosch, G., & Shimer, R. (2020). Internal and External Effects of Social Distancing in a Pandemic. *Becker Friedman Institute for Economics. University of Chicago Working Paper, Technical Report 2020-47 2020*, 1-36.
- Fassmann, M., Mayant, M., Pavelka, T., Švihlíková, I., Hejduk, R., Smejkalová, K., Středula, J. (2019). *Šance na přiblížení českých mezd vyspělé EU* [Chances of Czech wage convergence towards developed EU]. ČMKOS.
- Feigenbaum, A. V. (1991). *Total Quality Control* (3rd ed.). McGraw-Hill.
- Felbermayr, G., & Görg, H. (2020). Die Folgen von Covid-19 für die Globalisierung. *Perspektiven der Wirtschaftspolitik*, 21(3), 263–272. doi:10.1515/pwp-2020-0025
- Fernandes, T., & Cruz, M. (2016). Dimensions and outcomes of experience quality in tourism: The case of Port wine cellars. *Journal of Retailing and Consumer Services*, 31(5), 371–379. doi:10.1016/j.jretconser.2016.05.002
- Fernández-Villaverde & Jones. (2020). Estimating and Simulating a SIRD Model of COVID-19 for Many Countries, States, and Cities. *National Bureau of Economic Research, Working Paper 27128*, 1-58.
- Ferretti, L., Wymant, C., Kendall, M., Zhao, L., Nurtay, A., Abeler-Dörner, L., Parker, M., Bonsall, D., & Fraser, C. (2020). *Quantifying SARS-CoV-2 transmission suggests epidemic control with digital contact tracing*. <https://science.sciencemag.org/content/368/6491/eabb6936>
- Flickinger, D. (2018). Learning with hearts in the trees (Transformation, Reflective, Education, Enlightenment, Sustainability): A Transdisciplinary Inquiry Into Teaching Caring Sustainability to Children. California Institute of Integral Studies: 10844964.
- Flickinger, D. (2019). Debby's miracle. In J. Watson (Ed.), *Miracles and mysteries witnessed by nurses* (pp. 103–111). Lotus Library.
- Ford, T., Colwell, R., Rose, J., Morse, S., Rogers, D., & Yates, T. (2009). *Using Satellite Images of Environmental Changes to Predict Infectious Disease Outbreaks*. Emerging Infectious Diseases. www.cdc.gov/eid
- Foster, J. J. (2001). *Data Analysis Using SPSS for Windows Versions 8 - 10: A Beginner's Guide*. Sage. doi:10.4135/9781849208796

Compilation of References

- Freeman, C. P. (2018). China's 'regionalism foreign policy' and China-India relations in South Asia. *Contemporary Politics*, 24(1), 81–97. doi:10.1080/13569775.2017.1408168
- Freire, P. (1970). Pedagogy of the oppressed (M. B. Ramos, Trans.). *Continuum*, 72, 43–70.
- French, M., & Monahan, T. (2020). Dis-Ease Surveillance: How Might Surveillance Studies Address Covid-19? *Surveillance & Society*, 18(1), 1–11. <https://ojs.library.queensu.ca/index.php/surveillance-and-society/article/view/13985/9169>. doi:10.24908s.v18i1.13985
- Frk, B. (2010). E-learning a online vzdelávanie dospelých [E-learning and online education of adults]. *PEDAGOGIKA SK 2010*, 1(3), 107-122. <https://www.casopispedagogika.sk/studie/e-learning-a-online-vzdelavanie-dospelych.html>
- Frochot, I. (2005). A benefit segmentation of tourists in rural areas: A Scottish perspective. *Tourism Management*, 26(3), 335–346. doi:10.1016/j.tourman.2003.11.016
- Fredericks, L. (2021). The Complete Guide to Virtual Tourism in 2021. *Virtual Tourism: The Complete 2021 Guide*.
- Fueglistaller, U., Müller, C. A., & Volery, T. (2012). *Entrepreneurship: Modelle, Umsetzung, Perspektiven ; mit Fallbeispielen aus Deutschland, Österreich und der Schweiz* (3. Aufl). Gabler.
- Fullan, M. Q. (2020). *Reinventar la educación: el futuro del aprendizaje*. Informe de situación colaborativo entre New Pedagogies for Deep Learning y Microsoft Education. Retrieved from <http://aka.ms/HybridLearningPaper>
- Gagliardi, N. (2020). *COVID data tracking: best dashboards and other tools parsing cases, hospitalizations, and more*. <https://www.zdnet.com/article/covid-data-tracking-best-dashboards-and-other-tools-parsing-cases-hospitalizations-and-more/>
- García, I. F., & Ragione, S. D. (2020, May 15). *The effect of COVID-19 disinformation across Europe. A case study on Italy and Spain*. <https://www.thenewfederalist.eu/the-effect-of-covid-19-disinformation-across-europe?lang=fr>
- Garrett, L. (2020). Covid-19: The Medium Is The Message. *Lancet*, 395(10228), 942–943. doi:10.1016/S0140-6736(20)30600-0 PMID:32171075
- Garriga, C., Manuelli, R., & Sanghi, S. (2020). Optimal Management of an Epidemic: Lockdown, Vaccine and Value of Live. *HCEO Working Paper Series. The University of Chicago*, (May), 1–57.
- George, B. (2017). Does strategic planning “work” in public organizations? Insights from Flemish municipalities. *Public Money & Management*, 37(7), 527-530. . doi:10.1080/09540962.2017.1372116
- Gerstl, A., & Wallenböck, U. (Eds.). (2021). *Rethinking Asia and international relations. China's Belt and Road Initiative: Strategic and economic impacts on Central Asia, Southeast Asia and Central Eastern Europe*. Routledge.
- Gibbs, P. (Ed.). (2015). *Transdisciplinary professional learning and practice*. Springer International., doi:10.1007/978-3-319-11590-0
- Gigerenzer, G., & Goldstein, D. (1996). Reasoning the fast and frugal way: Models of bounded rationality. *Psychological Review*, 103(4), 650–669. doi:10.1037/0033-295X.103.4.650 PMID:8888650
- Gilbert, D. T., Tafarodi, R. W., & Malone, P. S. (1993). You can't not believe everything you read. *Journal of Personality and Social Psychology*, 65(2), 221–233. doi:10.1037/0022-3514.65.2.221 PMID:8366418
- Gill, M., & VanBoskirk, S. (2016). *The digital maturity model 4.0. Benchmarks: digital transformation playbook*. https://dixital.cec.es/wp-content/uploads/presentacions/presentacion_06.pdf
- Gilligan, C. (1982). *In a different voice*. Harvard University Press.

- Gilster, P. (1997). *Digital Literacy*. Wiley.
- Gkiotsalitis, K. & Cats, O. (2021). Public transport planning adaption under the COVID-19 pandemic crisis: Literature review of research needs and directions. *Transport Reviews*, 41(3), 374-392. . doi:10.1080/01441647.2020.1857886
- Global Peace Index 2021: Measuring Peace in a Complex World. (2021). Retrieved August 5, 2021, from <https://www.visionofhumanity.org/wp-content/uploads/2021/06/GPI-2021-web-1.pdf>
- Goban-Klas, T. (2020). The Media in the “Liquid” Coronavirus Pandemic of 2020. Communication During Lockdown: Separate but Together. *Studia Medioznawcze*, 21(4), 718–733. doi:10.33077/uw.24511617.ms.2020.4.288
- Goeldner, C. H. R., & Brent Ritchie, J. R. (2009). *Tourism: Principles, Practices, Philosophies* (11th ed.). Wiley.
- Goeldner, C. H. R., & Ritchie, J. R. B. (2009). *Tourism: Principles, Practices, Philosophies*. John Wiley & Sons, Inc.
- Golja, T. (2021). The behavior and response of regional destination management organizations in the two recovery phases of tourism destination amid COVID-19 pandemic: The case of Croatia in turismo. *Estudos e Praticas*, 10(1).
- Greene, J. A., Seung, B. Y., & Copeland, D. Z. (2014). Measuring critical components of digital literacy and their relationships with learning. *Computers & Education*, 76, 55–69. doi:10.1016/j.compedu.2014.03.008
- Greene, M. (1995). *Releasing the imagination: Essays on education, the arts, and social change*. Jossey-Bass.
- Gregory, J. (2021, May 13). Expanding into Asia - Best 8 Asian Markets for Expansion. *New Horizons Global Partners*.
- Gregory, V., Menzio, G., & Wiczer, D. (2020). Pandemic Recession: L or V – Shaped? *National Bureau of Economic Research, Working Paper 27105*, 1-21.
- Greiff, S., Wüstenberg, S., Holt, D. V., Goldhammer, F., & Funke, J. (2013). Computer-based assessment of complex problem solving: Concept, implementation, and application. *Educational Technology Research and Development*, 61(3), 407–421. doi:10.1007/11423-013-9301-x
- Grillenberger, A., & Romeike, R. (2018). Developing a theoretically founded data literacy competency model. In *Proceedings of the 13th Workshop in Primary and Secondary Computing Education* (pp. 1-10). 10.1145/3265757.3265766
- Grönroos, C. (1984). A Service Quality Model and its Marketing Implications. *European Journal of Marketing*, 18(4), 36–44. doi:10.1108/EUM0000000004784
- GTAI. (2020). *Asien-Pazifik: Motor der Weltwirtschaft*. <https://www.gtai.de/gtai-de/trade/specials/asien-pazifik>
- Gúčik, M., Gajdošík, T., & Lencséssová, Z. (2016). *Kvalita a spokojnosť zákazníka v cestovnom ruchu*. Wolters Kluwer.
- Guo, Y. R., Cao, Q. D., Hong, Z. S., Tan, Y.-Y., Chen, S.-D., Jin, H.-J., Tan, K.-S., Wang, D.-Y., & Yan, Y. (2020). The origin, transmission and clinical therapies on coronavirus disease 2019 (COVID-19) outbreak – an update on the status. *Military Medical Research*, 7(1), 11. doi:10.1186/40779-020-00240-0 PMID:32169119
- Gussarova, A., Aminjonov, F., & Khon, Y. (2017). *The Eurasian Economic Union and the Silk Road Economic Belt: Competition or Convergence? Implications for Central Asia*. Kazakhstan. Friedrich Ebert Stiftung.
- Guzman-Parra, V. F., Quintana-García, C., Benavides-Velasco, C. A., & Vila-Oblitas, J. R. (2015). Trends and seasonal variation of tourist demand in Spain: The role of rural tourism. *Tourism Management Perspectives*, 16, 123–128. doi:10.1016/j.tmp.2015.07.014
- Ha, T. (2019). *Digital Acceleration Index Background*. <https://form.gov.sg/5d9c5ac>

Compilation of References

Hagger, H., & McIntyre, D. (2006). *Learning Teaching From Teachers: Realising The Potential Of School-Based Teacher Education*. McGraw-Hill Education.

Halbfinger, A., Kershner, I., & Bergman, R. (2021). To Track Coronavirus, Israel Moves to Tap Secret Trove of Cell-phone Data. *The New York Times*. <https://www.nytimes.com/2020/03/16/world/middleeast/israel-coronavirus-cellphone-tracking.html>

Handszuh, H. (2004). *Communicating Quality to Tourism Consumers. European Seminar-Workshop on Tourism Quality Systems*. WTO.

Hanemann, T., & Huotari, M. (2018). *EU-China FDI: Working towards reciprocity in investment relations*. Rhodium Group; Merics. https://merics.org/sites/default/files/2020-04/180723_MERICS-COFDI-Update_final_0.pdf

Hargreaves, A., & Goodson, I. (2006). Educational change over time? The sustainability and non-sustainability of three decades of secondary school change and continuity. *Educational Administration Quarterly*, 42(1), 3–41. doi:10.1177/0013161X05277975

Harris, S., & Wheeler, C. (2005). Entrepreneurs' relationships for internationalization: Functions, origins and strategies. *International Business Review*, 14(2), 187–207. doi:10.1016/j.ibusrev.2004.04.008

Hartungi, R. (2006). Could developing countries take the benefit of globalisation? *International Journal of Social Economics*, 33(11), 728–743.

Hatano, G., & Oura, Y. (2003). Commentary: Reconceptualizing school learning using insight from expertise. *Educational Researcher*, 32(8), 26–29. doi:10.3102/0013189X032008026

Hayes, A. (2005). *Guide to Mergers and Acquisitions*. Investopedia. <https://www.investopedia.com/terms/m/mergersandacquisitions.asp>

Haythornthwaite, C., & Andrews, R. (2013). *E-Learning - Theory and Practice*. SAGE Publications Ltd.

Heinzen, T. (2018). Social Influence: Conformity, Social Roles, and Obedience. In T. Heinzen & W. Goodfriend (Eds.), *Social Psychology* (pp. 1-32). SAGE Publication. https://us.sagepub.com/sites/default/files/07_heinzen_social_influence_0.pdf

Herrera-Peco, I., Jiménez-Gómez, B., Romero Magdalena, C. S., Deudero, J. J., García-Puente, M., Benítez De Gracia, E., & Ruiz Núñez, C. (2021). Antivaccine Movement and COVID-19 Negationism: A Content Analysis of Spanish-Written Messages on Twitter. *Vaccines*, 9(6), 656. doi:10.3390/vaccines9060656 PMID:34203946

Hinton, P. R. (2004). *SPSS explained*. Routledge. doi:10.4324/9780203642597

History.com (Ed.). (2009, November 9). *Alexis de Tocqueville*. <https://www.history.com/topics/france/alexis-de-tocqueville>

Hollins, B., & Shinkins, S. (2006). *Managing Service Operations: Design and Implementation*. Sage Publications.

Hornstein, A. (2020). Social Distancing, Quarantine, Contact Tracing, and Testing: Implications of an Augmented SEIR-Model. *Technical Report. Federal Reserve Bank of Richmond*, 20(May), 1–38. doi:10.21144/wp20-04

Hossain, M. (2021). The effect of the Covid-19 on sharing economy activities. *Journal of Cleaner Production*, 280, 124782. doi:10.1016/j.jclepro.2020.124782 PMID:33106734

Houška, P., & Petrů, Z. (2019) *Evropská ekonomická integrace*. IDEa service. ISBN 978-80-85970-92-0

Hozák, R. (2019). *Vzdelávanie budú Cnosti. Metodika "Integrované digitálne technológie"* [Education will be Virtues. Methodology "Integrated digital technologies"]. Book & Book.

- Huang, R. H., Liu, D. J., Tlili, A., Zang, J. F., & Wang, H. H. (2020). *Handbook on Facilitating Flexible Learning During Educational Disruption: The Chinese Experience in Maintaining Undisrupted Learning in Covid-19 Outbreak*. Smart Learning Institute of Beijing Normal University.
- Huang, W. J., Norman, W. C., Ramshaw, G. P., & Haller, W. J. (2015). Transnational leisure experience of second-generation immigrants: The case of Chinese-Americans. *Journal of Leisure Research*, 47(1), 102. doi:10.1080/00222216.2015.11950353
- Humphrey, J., & Schmitz, I. T. (2002). How Does Insertion in Global Value Chains Affect Upgrading in Industrial Clusters? *Regional Studies*, 36(9), 1017–1027. doi:10.1080/0034340022000022198
- Huntington, S. (2011). *The Clash of Civilizations and the Remaking of World Order*. Simon & Schuster.
- Hurwicz, L. (1962). On the Structural Form of Interdependent Systems. In *Logic, Methodology and Philosophy of Science*, Vol. 44 of *Studies in Logic and the Foundations of Mathematics* (pp. 232 – 239). Elsevier.
- IAPP-International Association of Privacy Professionals. (2021). *Algunas aplicaciones que están siendo utilizadas en América Latina para tratar de controlar la propagación del COVID-19*. <https://iapp.org/news/a/algunas-aplicaciones-que-estan-siendo-utilizadas-en-america-latina-para-tratar-de-controlar-la-propagacion-del-covid-19/>
- IATA. (2021). *2020 Worst Year in History for Air Travel Demand*. IATA. <https://www.iata.org/en/pressroom/pr/2021-02-03-02/>
- IATA. (2021). *Airlines Unable to Cut Costs Deep Enough to Save Jobs*. IATA. <https://www.iata.org/en/pressroom/pr/2020-10-27-02>
- IATA. (2021). *Here is how aviation can reach its climate change targets*. IATA. <https://www.iata.org/en/programs/environment/sustainable-flying-blog/waypoint-2050/>
- IATA. (2021). *IATA Economics*. IATA. <https://www.iata.org/en/publications/economics/?Search=&EconomicsL1=149&EconomicsL2=150#searchForm>
- IATA. (2021). *Reconnecting the World*. IATA. <https://www.iata.org/en/programs/covid-19-resources-guidelines/reconnecting-the-world>
- Indrova, J., Houska, P., & Petru, Z. (2011). *Kvalita ve službách cestovního ruchu*. ISO (International Organization for Standardization).
- Indrová, J., Houška, P., & Petru, Z. (2011). *Kvalita ve službách cestovního ruchu*. Oeconomica.
- Institute of Health Information and Statistics of the Czech Republic. (2017). *Hustota zalidnění (počet obyvatel na km²)*. Retrieved June 18, 2021, from <https://reporting.uzis.cz/cr/index.php?pg=statisticke-vystupy--demograficke-a-socioekonomicke-ukazatele--pohyb-obyvatelstva--hustota-zalidneni-pocet-obyvatel-na-km2> ISO/PAS5643:2021
- International Institute for Sustainable Development, Deloitte, Touche, & Business Council for Sustainable Development. (1992). *Business Strategy for Sustainable Development: Leadership and Accountability for the '90s*. International Institute for Sustainable Development.
- International Institute of Green Finance (IIGF). (2021). *Databases for the Belt and Road Initiative (BRI)*. <https://green-bri.org/databases-for-the-belt-and-road-initiative-bri/>
- International Training Centre of the International Labour Organization. (2021). *Building Sustainable, Responsible and Inclusive Tourism Post COVID-19*. itcilo.org
- Investopedia. (2007, August 21). *Economic Shock*. <https://www.investopedia.com/terms/e/economic-shock.asp>

Compilation of References

- IQUII. (2017). The evolution of the Digital Transformation between System Integration and Omnicanality. *Medium*. <https://medium.com/iqiii/the-evolution-of-the-digital-transformation-between-system-integration-and-omnicanality-95744ef960a8>
- Islam, M. S., Sarkar, T., Khan, S. H., Mostofa Kamal, A. H., Hasan, S., Kabir, A., Yeasmin, D., Islam, M. A., Amin Chowdhury, K. I., Anwar, K. S., Chughtai, A. A., & Seale, H. (2020). COVID-19–Related Infodemic and Its Impact on Public Health: A Global Social Media Analysis. *The American Journal of Tropical Medicine and Hygiene*, 103(4), 1621–1629. doi:10.4269/ajtmh.20-0812 PMID:32783794
- ISO 21902:2021. Tourism and related services – Accessible tourism for all – Requirements and recommendations. Retrieved 08/15/21 from: <https://www.iso.org/standard/72126.html>
- ISO/PAS 5643:2021 Tourism and related services — Requirements and guidelines to reduce the spread of Covid-19 in the tourism industry, Geneva, Switzerland ISO/ TC 228 Tourism and related services. <https://www.iso.org/committee/375396.html>
- ISO/TC 228: Tourism and related services. (n.d.). Retrieved July 19, 2021, from <https://committee.iso.org/sites/tc228/home/projects/published/published.html>
- Isoraite, M. (2009). Towards results - based strategic management in Lithuanian public sector. *Changes in Social and Business Environment Kaunas*, 132-145.
- Jackson, A. (2020). *Emerging Innovative Thoughts on Globalization amidst the Contagion of COVID-19*. https://link.springer.com/content/pdf/10.1007%2F978-3-319-71059-4_131-1.pdf
- Jain, S. C. (1990). *International Marketing Management*. Pws-Kent Publishing.
- Jaiswal, J., Loschiavo, C., & Perlman, D. C. (2020). Disinformation, Misinformation and Inequality-Driven Mistrust in the Time of COVID-19: Lessons Unlearned from AIDS Denialism. *AIDS and Behavior*, 24(10), 2776–2780. doi:10.1007/10461-020-02925-y PMID:32440972
- Janssen, J., Stoyanov, S., Ferrari, A., Punie, Y., Pannekeet, K., & Sloep, P. (2013). Experts' views on digital competence: Commonalities and differences. *Computers & Education*, 68, 473–481. doi:10.1016/j.compedu.2013.06.008
- Jarábková, J. (2010). The rural areas – the unutilized potential in light of tourism. *Agricultural Economics*, 56(11), 532–539.
- Javorcik, B. (2020). Global supply chains will not be the same in the post-COVID-19 world. In R. E. Baldwin & S. J. Evenett (Eds.), *COVID-19 and trade policy: Why turning inward won't work* (pp. 111–116). CEPR Press.
- Jeníček, V. (2002). *Globalizace světového hospodářství* [Globalization of the World Economy]. C. H. Beck.
- Jesse, G. R. (2015). *Smartphone and App Usage Among College Students: Using Smartphones Effectively for Social and Educational Needs*. <http://proc.iscap.info/2015/pdf/3424/pdf>
- Ježek, J. (2015). Postoje představitelů českých obcí a měst ke strategickému plánování. *Regionální rozvoj mezi teorií a praxí*, 4(4), 113-127. <http://www.regionálnírozvoj.eu/vydani/201504>
- Ježek, J., Šilhánková, V., & Slach, O. (2015). *Strategické plánování obcí, měst a regionů: Vybrané problémy, výzvy a možnosti řešení*. Wolters Kluwer.
- Jing, Y. (2021). Seeking opportunities from crisis? China's governance responses to the COVID-19 pandemic. *International Review of Administrative Sciences*.
- JISC. (2013). *Digital Literacy*. <https://www.jisc.ac.uk/rd/projects/digital-literacies>

- Johanson, J., & Vahlne, J.-E. (2009). The Uppsala internationalization process model revisited: From liability of foreignness to liability of outsidership. *Journal of International Business Studies*, 40(9), 1411–1431. doi:10.1057/jibs.2009.24
- Johnsen, A. (2015). Strategic management thinking and practice in the public sector: A strategic planning for all seasons? *Financial Accountability & Management*, 31(3), 243-268. . doi:10.1111/faam.12056
- Johnsen, A. (2016) Strategic planning and management in local government in Norway: Status after three decades. *Scandinavian Political Studies*, 39(4), 333-365. . doi:10.1111/1467-9477.12077
- Johnson, C. A. (2012). *The Information Diet: A Case for Conscious Consumption*. O'Reilly Media.
- Jovanović, M. N., Damjanović, J., & Njegić, J. (2018). Euro-Asian overland transport links: prospects and challenges. In B. A. Blonigen & W. W. Wilson (Eds.), *Handbook of international trade and transportation* (pp. 602–627). Edward Elgar Publishing. doi:10.4337/9781785366154.00031
- Jovičić, D., & Ivanović, V. (2016). Benchmarking and Quality Managing of Tourist Destinations. *Tourism and Hospitality Management*, 12(2), 123–134. doi:10.20867/thm.12.2.11
- Kandampully, J., & Suhartanto, D. (2000). Customer loyalty in the hotel industry: The role of customer satisfaction and image. *International Journal of Contemporary Hospitality Management*, 12(6), 346–351. doi:10.1108/09596110010342559
- Kaushal, V., & Srivastava, S. (2021). Hospitality and tourism industry amid COVID-19 pandemic: Perspectives on challenges and learning from India. *International Journal of Hospitality Management*, 92, 102707. doi:10.1016/j.ijhm.2020.102707 PMID:33024348
- Khan, N., Hassan, A. Ul, Fahad, S., & Naushad, M. (2020). Factors Affecting Tourism Industry and Its Impacts on Global Economy of the World. SSRN.
- Kharpal, A. (2020) *Use of surveillance to fight coronavirus raises concerns about government power after pandemic ends*. CNBS. <https://www.cnbc.com/2020/03/27/coronavirus-surveillance-used-by-governments-to-fight-pandemic-privacy-concerns.html>
- Knight, G. A., & Liesch, P. W. (2016). Internationalization: From incremental to born global. *Journal of World Business*, 51(1), 93–102. doi:10.1016/j.jwb.2015.08.011
- Kořataj, B. M., Kořataj, W. P., Karwat, I. D., Sobieszczanski, J., & Panasiuk, L. (2020). Anti-vaccine movements – health care, ignorance or a diversion aimed at destabilizing the health situation? Part 2. Contemporary conditions for the functioning and development of anti-vaccination movements. *Annals of Agricultural and Environmental Medicine*, 27(4), 553–561. doi:10.26444/aaem/126014 PMID:33356060
- Kořataj, W. P., Kořataj, B., Panasiuk, L., Sobieszczanski, J., & Karwat, I. D. (2020). Anti-vaccine movements – a form of social activity for health care, ignorance or diversion aimed at destabilizing the health situation? Part 1. Epidemiological safety. Vaccinations – pros and cons. *Annals of Agricultural and Environmental Medicine*, 27(4), 544–552. doi:10.26444/aaem/126013 PMID:33356059
- Komisar, L. (2011). *Interview with Joseph Stiglitz*. The Progressive. <https://archive.globalpolicy.org/social-and-economic-policy/the-three-sisters-and-other-institutions/internal-critics-of-the-world-bank-and-the-imf/50588-interview-with-joseph-stiglitz.html>
- Korolev, I. (2021). Identification and Estimation of the SEIRD Epidemic Model for COVID-19. *Journal of Econometrics*, 63-85.
- Kotler, P., & Keller, K. L. (2007). *Marketing management*. Praha: Grada. Začátek formuláře

Compilation of References

- Kozhevina, O. V., Trifonov, P. V., Ksenofontov, A. A., & Perednikh, L. V. (2020). The strategic management of sustainable industrial development in transition to Industry 4.0. In *Growth Poles of the Global Economy: Emergence, Changes and Future Perspectives* (pp. 1295-1304). Springer. doi:10.1007/978-3-030-15160-7_132
- KPMG. (2015). *Are You Ready for Digital Transformation? Measuring Your Digital Business Aptitude*. <https://assets.kpmg/content/dam/kpmg/pdf/2016/04/measuring-digital-business-aptitude.pdf>
- Kratz, A., Zenglein, M. J., & Sebastian, G. (2021, June 16). *Chinese FDI in Europe: 2020 Update*. Merics; Rhodium Group. <https://merics.org/en/report/chinese-fdi-europe-2020-update>
- Krbová, J. (2016). *Strategické plánování ve veřejné správě*. Wolters Kluwer.
- Kristóf, Z. (2020). International Trends of Remote Teaching Ordered in Light of the Coronavirus (COVID-19) and its Most Popular Video Conferencing Applications that Implement Communication. *Central European Journal of Educational Research*, 2(2), 84–92. doi:10.37441/CEJER/2020/2/2/7917
- Kritikos, M. (2020). *Ten technologies to fight coronavirus*. European Parliamentary Research Service. [https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/641543/EPRS_IDA\(2020\)641543_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/641543/EPRS_IDA(2020)641543_EN.pdf)
- Kucinskas, S., Arroyo, F., Bullano, F., & Rondón-Moreno, C. (2020). *Tracking R of COVID-19: A New Real-Time Estimation Using the Kalman Filter*. <https://ssrn.com/abstract=3581633>.
- Kulcsár, N. (2015). Consumer value dimensions of rural tourism in Hungary. *Hungarian Geographical Bulletin*, 64(2), 127–141. doi:10.15201/hungeobull.64.2.4
- Kumar, P. (2021). Impact of Covid-19 Pandemic on Indian Tourism & Hospitality Industry. *World Wide Journal of Multidisciplinary Research and Developmet.*, 7(9), 22–26.
- Kunwar, R. R. (2016). Tourism crisis and disaster management. *The Gaze: Journal of Tourism and Hospitality*, 7(1), 1–36. doi:10.3126/gaze.v7i0.15118
- Kutschker, M., & Schmid, S. (2011). *Internationales Management* (7th ed.). Oldenbourg.
- Kvitkova, Z., & Petru, Z. (2021). Domestic Tourism as a Factor of Survival and Recovery of Tourism in the V4 Countries (a comparative study). *Conference: 21st International Joint Conference Central and Eastern Europe in the Changing Business Environment: Proceedings*. 10.18267/pr.2021.krn.4816.13
- Kwan, V., Wardle, C., & Webb, M. (2020, March 10). *Tips for reporting on Covid-19 and slowing the spread of misinformation*. <https://firstdraftnews.org/articles/tips-for-reporting-on-covid-19-coronavirus-and-slowing-the-spread-of-misinformation/>
- Ladeira, W. J., Santini, F. de O., Araujo, C. F., & Sampaio, C. H. (2016). *A Meta-Analysis of the Antecedents and Consequences of Satisfaction in Tourism and Hospitality*. doi:10.1080/19368623.2016.1136253
- Lall, S. (1993). Promoting Technology Development: The Role of Technology Transfer and Indigenous Effort. *Third World Quarterly*, 14(1), 95–108. doi:10.1080/01436599308420315
- Lam, J. (2003). *Enterprise Risk Management: From Incentives to Controls*. John Wiley & Sons.
- Lamy, P. (2010). *The Doha round marks a transition from the old governance of the old trade order to the new governance of a new trade order*. WTO. https://www.wto.org/english/news_e/sppl_e/sppl173_e.htm
- Lau, S. K., & Chan, J. F. (2015). Coronaviruses: Emerging and re-emerging pathogens in humans and animals. *Virology Journal*, 12(1), 209. doi:10.118612985-015-0432-z PMID:26690088

- Laws, E., Prideaux, B., & Chon, K. S. (2007). *Crisis management in tourism*. CABIPub. doi:10.1079/9781845930479.0000
- Lewandowsky, S., Ecker, U. K., Seifert, C. M., Schwarz, N., & Cook, J. (2012). Misinformation and its correction: Continued influence and successful debiasing. *Psychological Science in the Public Interest*, 13(3), 106–131. doi:10.1177/1529100612451018 PMID:26173286
- Lewis, D. (2020). Why many countries failed at COVID contact-tracing—but some got it right. *Nature*. <https://www.nature.com/articles/d41586-020-03518-4#:~:text=The%20reasons%20for%20the%20failures,proved%20ill%20Dequipped%20to%20respond.&text=And%20overstretched%20contact%2Dtracers%20have,deployed%20to%20fight%20the%20pandemic>
- Lezina, T., Stoianova, O., Ivanova, V., & Gadasina, L. (2019). Assessment the Company's Readiness for Digital Transformation: Clarifying the Issue. In *International Conference on Digital Economy* (pp. 3-14). Springer. 10.1007/978-3-030-30874-2_1
- Li Sun, S. (2009). Internationalization Strategy of MNEs from Emerging Economies: The Case of Huawei. *Multinational Business Review*, 17(2), 129–156. doi:10.1108/1525383X200900013
- Liesch, P. W., Welch, L. S., & Buckley, P. J. (2011). Risk and Uncertainty in Internationalisation and International Entrepreneurship Studies. *Management International Review*, 51(6), 851–873. doi:10.1007/11575-011-0107-y
- Lin, Z., & Meissner, C. (2020). Health vs Wealth? Public Health Policies and the Economy During Covid 19. *National Bureau of Economic Research, Working Paper 27099*, 1-64.
- Linton, O., & Li, S. (2020). *When will the COVID-19 pandemic peak?* Cambridge Working Papers in Economics: 2025.
- Lin, W.-T., & Liu, Y. (2012). Successor characteristics, change in the degree of firm internationalization, and firm performance: The moderating role of environmental uncertainty. *Journal of Management & Organization*, 18(1), 16–35. doi:10.5172/jmo.2012.18.1.16
- Li, T. E., & McKercher, B. (2016). Developing a typology of diaspora tourists: Return travel by Chinese immigrants in North America. *Tourism Management*, 56, 106–113. doi:10.1016/j.tourman.2016.04.001
- Liu, L., Moon, H., & Schorfheide. (2020). Panel Forecast of Country-Level Covid- 19 Infections. *National Bureau of Economic Research, Working Paper 27248*, 1-25.
- Loebbecke, C., & Picot, A. (2015). Reflections on societal and business model transformation arising from digitisation and big data analytics: A research agenda. *The Journal of Strategic Information Systems*, 24(3), 149–157. doi:10.1016/j.jsis.2015.08.002
- Logan, V. (2018). *Fostering data literacy and information as a second language: A Gartner trend insight report*. <https://www.gartner.com/en/doc/3860965-fostering-data-literacy-and-information-as-a-second-language-a-gartner-trend-insight-report>
- Lopez, G. (2019, November 18). The Walmart shooting is part of a typical week in America. *Vox*. <https://www.vox.com/2019/11/18/20970841/duncan-oklahoma-walmart-shooting-gun-violence>
- López-Toro, A. A., Díaz-Muñoz, R., & Pérez-Moreno, S. (2010). *An assessment of the quality of a tourist destination: The case of Nerja, Spain*. doi:10.1080/14783360903553164
- Losee, R. M. (1997). A discipline independent definition of information [Abstract]. *Journal of the American Society for Information Science*, 48(3), 254–269. doi:10.1002/(SICI)1097-4571(199703)48:3<254::AID-ASI6>3.0.CO;2-W

Compilation of References

- Ludovic, J., Bourdin, S., Nadou, F., & Noiret, G. (2020). Economic globalization and the COVID-19 pandemic: Global spread and inequalities. *Bulletin of the World Health Organization*.
- Ludvigson, S., Ma, S., & Ng, S. (2020). Covid19 and the Macroeconomic Effects of Costly Disasters. *National Bureau of Economic Research, Working Paper 26987*, 1-22.
- Luhrman, D. (2003). *Crisis guidelines for the tourism industry*. Asia Pacific Ministerial Summit on Crisis Management.
- Lüning, J. (1992). *Direktinvestitionen und Standortverhalten von multinationalen Unternehmen: Eine theoretische und empirische Analyse für die Region Wien. Forschungsergebnisse der Wirtschaftsuniversität Wien*. Service Fachverlag.
- Lu, R., Zhao, X., Li, J., Niu, P., Yang, B., Wu, H., Wang, W., Song, H., Huang, B., Zhu, N., Bi, Y., Ma, X., Zhan, F., Wang, L., Hu, T., Zhou, H., Hu, Z., Zhou, W., Zhao, L., ... Tan, W. (2020). Genomic characterisation and epidemiology of 2019 novel coronavirus: Implications for virus origins and receptor binding. *Lancet*, 395(10224), 565–574. doi:10.1016/S0140-6736(20)30251-8 PMID:32007145
- Mair, J., Ritchie, B. W., & Walter, G. (2016). Towards a research agenda for post-disaster and post-crisis recovery strategies for tourism destinations: A narrative review. *Current Issues in Tourism*, 19(1), 1–26. doi:10.1080/13683500.2014.932758
- Malecki, K. M., Keating, J. A., & Safdar, N. (2020). Crisis Communication and Public Perception of COVID-19 Risk in the Era of Social Media. *Clinical Infectious Diseases*, 72(4), 697–702. doi:10.1093/cid/ciaa758 PMID:32544242
- Malik, M. F., Anuar, M. A., Khan, S., & Khan, F. (2014). Mergers and acquisitions: A conceptual review. *International Journal of Accounting and Financial Reporting*, 4(2), 520. doi:10.5296/ijaf.v4i2.6623
- Mandinach, E. B., & Gummer, E. S. (2013). A Systemic View of Implementing Data Literacy in Educator Preparation. *Educational Researcher*, 42(1), 30–37. doi:10.3102/0013189X12459803
- Manzi, L. (2020). *The disinformation escalation during the pandemic and how to contain it*. <https://rosanjose.iom.int/site/en/blog/disinformation-escalation-during-pandemic-and-how-contain-it>
- Marcus, J. (2020, May 1). *Coronavirus: Trump stands by China lab origin theory for virus*. <https://www.bbc.com/news/world-us-canada-52496098>
- Maréchal, N., MacKinnon, R., & Dheere, J. (2020). *Getting to the Source of Infodemics: It's the Business Model. A Report from Ranking Digital Rights*. <https://www.newamerica.org/oti/reports/getting-to-the-source-of-infodemics-its-the-business-model/>
- Markel, H., & Stern, A. M. (2020). The Foreignness of Germs: The Persistent Association of Immigrants and Disease in American Society. *The Milbank Quarterly*, 80(4), 757–788. doi:10.1111/1468-0009.00030 PMID:12532646
- Matt, C., Hess, T., & Benlian, A. (2015). Digital transformation strategies. *Business & Information Systems Engineering*, 57(5), 339–343. doi:10.1007/12599-015-0401-5
- Matúšová, S. (2021). *Managerial Competencies and Innovations in Education in Post-Covid 19*. Bratislava: Vysoká škola ekonómie a manažmentu verejnej správy, International Project 3/2021 – M.
- McCausland, T. (2020). Covid-19's Impact on Globalization and Innovation. *Research Technology Management*, 63(6), 54–59. doi:10.1080/08956308.2020.1813506
- Mccloskey, B., & Heymann, D. L. (2020). SARS to novel coronavirus - old lessons and new lessons. *Epidemiology and Infection*, 148, E22. doi:10.1017/S0950268820000254 PMID:32019614
- McDougall, P. P., & Oviatt, B. M. (2000). International Entrepreneurship: The Intersection of two Research Paths. *Academy of Management Journal*, 43(5), 902–906.

- McGrew, A., & Lewis, P. (2013). *Global Politics: Globalization and the Nation-State*. John Wiley & Sons.
- McKinsey & Company (Ed.). (2019). *Asia's future is now*. <https://www.mckinsey.com/~media/mckinsey/featured%20insights/asia%20pacific/asias%20future%20is%20now/asias-future-is-now-final.pdf>
- McKinsey & Company. (2020). *Nine scenarios for the COVID-19 economy*. <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/nine-scenarios-for-the-covid-19-economy>
- McKinsey & Company. (2021). *The coronavirus effect on global economic sentiment*. <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-coronavirus-effect-on-global-economic-sentiment>
- McManus, H., & Hastings, D. (2006). A framework for understanding uncertainty and its mitigation and exploitation in complex systems. *IEEE Engineering Management Review*, 34(3), 81.
- Mead, W. R. (2020, February 3). *China Is the Real Sick Man of Asia*. <https://www.wsj.com/articles/china-is-the-real-sick-man-of-asia-11580773677>
- Medical Device Network. (2021). *Medical tourism market set to recover from the COVID-19 pandemic*. medicaldevice-network.com
- Melin, L. (1992). Internationalization as a Strategy Process. *Strategic Management Journal*, 13, 99–118.
- Menoni, S., & Margottini, C. (2011). *Inside Risk: A Strategy for Sustainable Risk Mitigation*. Springer Milan. doi:10.1007/978-88-470-1842-6
- Merriam-Webster's Dictionary. (n.d.). Rugged individualism. *Merriam-Webster.com*. Retrieved June 20, 2021, from <https://www.merriam-webster.com/dictionary/rugged%20individualism>
- Mian, A., & Khan, S. (2020). Coronavirus: The spread of misinformation. *BMC Medicine*, 10(1), 1–2. doi:10.1186/12916-020-01556-3 PMID:32188445
- Millán, Á., & Esteban, Á. (2004). Development of a multiple-item scale for measuring customer satisfaction in travel agencies services. *Tourism Management*, 25(5), 533–546. doi:10.1016/j.tourman.2003.07.002
- Milner, G. (2020). *Creating the Dashboard for the Pandemic*. ESRI. <https://www.esri.com/about/newsroom/arcuser/johns-hopkins-covid-19-dashboard/>
- Minetto, R., Pamplona, M., Rotich, G., & Sudeep, S. (2020). Measuring Human and Economic Activity from Satellite Imagery to Support City-Scale Decision-Making during COVID-19 Pandemic. *IEEE Transactions on Big Data*. <https://arxiv.org/abs/2004.07438>
- Ministry of Commerce PRC. (2020). 中国已与138个国家、31个国际组织签署201份共建一带一路合作文件. <http://sg.mofcom.gov.cn/article/ydyl/202011/20201103016788.shtml>
- Ministry of Home Affairs. (2012). *Regionální politika a cestovní ruch*. Retrieved Septembere 25, 2017, from <https://www.mmr.cz/cs/Regionalni-politika-a-cestovni-ruch/Cestovni-ruch/ProgramyDotace>
- Ministry of Home Affairs. (2018, Septembere 4). *Census of India - Circular n. 2*. Retrieved June 18, 2021, from <https://censusindia.gov.in/2021-Census/Circular-2-2021.pdf>
- Miroudot, S. (2020). Resilience versus robustness in global value chains: Some policy implications. In R. E. Baldwin & S. J. Evenett (Eds.), *COVID-19 and trade policy: Why turning inward won't work* (pp. 117–130). CEPR Press.
- Montuori, A. (2005). Gregory Bateson and the promise of transdisciplinarity. *Cybernetics & Human Knowing*, 12(1–2), 147–158. <https://pdfs.semanticscholar.org/af57/4ea4faa818c61c8db8a1fe7a4ed61987845c.pdf>

Compilation of References

- Mussalam, G. Q., & Tajeddini, K. (2016). Tourism in Switzerland: How perceptions of place attributes for short and long holiday can influence destination choice. *Journal of Hospitality and Tourism Management*, 26, 18–26. doi:10.1016/j.jhtm.2015.09.003
- Nadeem, A., Abedin, B., Cerpa, N., & Chew, E. (2018). *Digital transformation & digital business strategy in electronic commerce-the role of organisational capabilities*. doi:10.4067/S0718-18762018000200101
- Naughton, J. (2020, March 14). *Fake News About Covid-19 Can Be As Dangerous As The Virus*. <https://www.theguardian.com/commentisfree/2020/mar/14/fake-news-about-covid-19-can-be-as-dangerous-as-the-virus>
- Negash, H. (2015). *The Contemporary Globalization and Its Impact on the Role of States. Research on Humanities and Social Sciences. International Institute for Science, Technology and Education (IISTE)*. E-Journals.
- Newman, N., Fletcher, R., Schulz, A., Andi, S., & Nielsen, R. K. (2020). *Reuters Institute Digital News Report 2020*. Reuters Institute for the Study of Journalism. Retrieved from https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2020-06/DNR_2020_FINAL.pdf
- Ng, W. (2012). Can we teach digital natives digital literacy? *Computers & Education*, 59(3). doi:10.1016/j.compedu.2012.04.016
- Noddings, N. (2005a). The challenge to care in schools: An alternative approach to education. *Advances in Contemporary Educational Thought*, 8.
- Noddings, N. (1984). *Caring: A feminine approach to ethics and moral education*. University of California Press.
- Noddings, N. (2013). *Education and Democracy in the 21st Century*. Teachers College Press.
- Noddings, N. (Ed.). (2005b). *Educating citizens for global awareness*. Teachers College Press.
- Noelle-Neumann, E. (1993). *The Spiral of Silence: Public Opinion - Our Social Skin*. Chicago: The University of Chicago Press.
- Northflash. (2017). *LOHAS: The biggest market you have never heard of*. Available on: <https://northflash.com/lohas-the-biggest-market-you-have-never-heard-of/>
- Novelli, M., Klute, M., & Dolezal, C. (2017). The ASEAN Community-based Tourism Standards: Looking Beyond Certification. *Tourism Planning & Development*, 14(2), 260–281. doi:10.1080/21568316.2016.1243146
- Noy, I., Doan, N., Ferrarini, B., & Park, D. (2020). Measuring the Economic Risk of COVID-19. *Global Policy*, 11(4), 413–423.
- O'Reilly, J., Lain, D., Sheehan, M., Smale, B., & Stuart, M. (2011). Managing uncertainty: The crisis, its consequences and the global workforce. *Work, Employment and Society*, 25(4), 581–595.
- OECD (2020). *Tourism Policy Responses to the coronavirus (COVID-19)*. oecd.org
- OECD. (1996). *Benchmark definition of foreign direct investment* (3rd ed.). OECD Publications.
- OECD. (2008). Globalisation, SMEs and Tourism Development. In *Tourism in OECD Countries 2008: Trends and Policies*. OECD Publishing doi:10.1787/9789264039773-en
- OECD. (2011). *Quality Dimensions, Core Values for OECD Statistics and Procedures for Planning and Evaluating Statistical Activities*. Retrieved May 23, 2021, from <https://www.oecd.org/sdd/21687665.pdf>
- OECD. (2013). *OECD Glossary of Statistical Terms: Globalisation Definition*. <https://stats.oecd.org/glossary/detail.asp?ID=1121>

- OECD. (2014). *Measuring Innovation in Education: A New Perspective*. OECD Publishing. doi:10.1787/9789264215696-
- OECD. (2020). *Foreign direct investment flows in the time of COVID-19*. <https://www.oecd.org/coronavirus/policy-responses/foreign-direct-investment-flows-in-the-time-of-covid-19-a2fa20c4/>
- OECD. (2020). OECD Tourism Trends and Policies 2020. Advance online publication. doi:10.1787/6b47b985-en
- Ollove, M., & Vestal, C. (2020). *Contact Tracing Hampered by Testing Delays, Unanswered Phone Calls — and Lack of Trust*. <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2020/07/16/contact-tracing-hampered-by-testing-delays-unanswered-phone-calls-and-lack-of-trust>
- Organisation for Economic Co-operation and Develop. (2020, April 28). *Protecting online consumers during the COVID-19 crisis*. https://read.oecd-ilibrary.org/view/?ref=130_130819-ay45n5rn74&title=Protecting-online-consumers-during-the-COVID-19-crisis
- Ougaard, M. (2004). *Political globalization. International political economy series*. Palgrave Macmillan.
- Öztürk, İ. (2019). *The belt and road initiative as a hybrid international public good* (125/2019). Duisburg. University of Duisburg-Essen, Institute of East Asian Studies (IN-EAST).
- Pack, F. L., & Saggi, K. (1997). Inflows of Foreign Technology and Indigenous Technological Development. *Review of Development Economics*, (1), 81–98.
- PAHO. (2021). *Geo-Hub COVID-19 - Information System for the Region of the Americas*. <https://paho-covid19-response-who.hub.arcgis.com/>
- Palatková, M. (2007). *Destinační management a vytváření produktů v cestovním ruchu: Metodika a odpovědnost za aktualizaci dat v destinační m managementu*. Prague: Servis Hospodářské komory Prahy. Retrieved from <https://www.mmr.cz/getmedia/7e3ddbdf-ccb7-4ef2-8633-a99b05b1eb1b/GetFile>
- Palatková, M., & Zichová, J. (2014). *Ekonomika turismu: turismus České republiky* (2nd ed.). Praha: Grada.
- Paliwoda, S. (1995). *International Marketing* (2nd ed.). Butterworth-Heineman Ltd.
- Paolinelli I. (2021). *The Impact of Covid-19 on Tourism and the New 2021 Travel Trends*. ecobnb.com
- Parasuraman, A. P., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-Item Scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 49(4), 12–40.
- Pechlaner, H., & Thees, H. (2020). *Is the Silk Road a Road of Fear? Challenges of Global Transformation | global-e*. Re-Globalization. <https://www.21global.ucsb.edu/global-e/april-2020/silk-road-road-fear-challenges-global-transformation>
- Peelen, E., & Beltman, R. (2013). *Customer Relationship Management*. Pearson.
- Peng, Y., Zhu, W., Zhao, Y., Xu, C., Huang, Q., Lu, H., Zheng, Q., Huang, T., & Gao, W. (2017). Cross-media analysis and reasoning: Advances and directions. *Frontiers of Information Technology & Electronic Engineering*, 18(1), 44–57.
- Pennycook, G., Mcphetres, J., Zhang, Y., Lu, J. G., & Rand, D. G. (2020). Fighting Covid-19 Misinformation On Social Media: Experimental Evidence For A Scalable Accuracy-Nudge Intervention. *Psychological Science*, 31(7), 770–780. doi:10.1177/0956797620939054 PMID:32603243
- Perlín, R. (1998). *Venkov, typologie venkovského prostoru*. Retrieved from <http://mvcr.cz/soubor/perlin-pdf.aspx>
- Peruthová, A. (2018). *Hodnocení kvality venkovské destinace cestovního ruchu* (PhD Thesis). Brno.

Compilation of References

- Pfenninger, S. (2013, March 19). *The discovery of sustainability* [blog post]. <https://www.pfenninger.org/posts/the-discovery-of-sustainability>
- Pieper, M. (2020). The new silk road heads north: Implications of the China-Mongolia-Russia economic corridor for Mongolian agency within Eurasian power shifts. *Eurasian Geography and Economics*, 1–24.
- Piranty, S. (2020, April 9). *Coronavirus fuels a surge in fake medicines*. <https://www.bbc.com/news/health-52201077>
- Pitoňáková, S. (2020). Slovak media in the time of corona crisis – pandemics in the media and the media in pandemics. *Dot.comm*, 8(2), 55–67.
- Pool, C. R. (1997). A new digital literacy: A conversation with Paul Gilster. *Educational Leadership*, 55(3), 6–11.
- Porter, M. E. (2008). *On competition* (Updated and expanded ed.). Harvard Business School Pub.
- Porter, M. (1987). *Ventaja competitiva, creación y sostenibilidad de un rendimiento superior*. Ediciones Pirámide.
- Potancok, M. (2019). Role of data and intuition in decision making processes. *Journal of Systems Integration*, 10(3), 31–34. doi:10.20470/jsi.v10i3.377
- Pramana, S., Paranartha, D. Y., Ermawan, G. Y., Deli, N. F., & Srimulyani, W. (2021). Impact of COVID-19 pandemic on tourism in Indonesia. *Current Issues in Tourism*, 1–21. Advance online publication. doi:10.1080/13683500.2021.1968803
- Prorok, V. (2012). *Tvorba rozhodování a analýza v politice* [Decision making and analysis in politics]. Grada Publishing.
- Publications Office of the European Union. (2021). *Lex Access to European Union law*. Publications Office of the European Union. <https://eur-lex.europa.eu/legal-content/cs/TXT/?uri=CELEX%3A62020TJ0665>
- Půček, M., & Koppitz, D. (2012). *Strategické plánování a řízení pro města, obce a regiony*. Národní síť Zdravých měst ČR.
- PWC. (Ed.). (2021). *Global Crisis Survey 2021: Building resilience for the future*. PWC.
- Rachinger, M., Rauter, R., Müller, C., Vorraber, W., & Schirgi, E. (2019). Digitalisation and its influence on business model innovation. *Journal of Manufacturing Technology Management*, 30(8), 1143–1160. Advance online publication. doi:10.1108/JMTM-01-2018-0020
- Radio Farda. (2020, February 22). *Iran Cleric Blames Trump For Coronavirus Outbreak In Religious City*. <https://en.radiofarda.com/a/iran-cleric-blames-trump-for-coronavirus-outbreak-in-religious-city/30449087.html>
- Radvan, M., Mrkývka, P., & Schweig, J. (Eds.). (2021). Local Self-Government in the Czech Republic. In *Local Self-Government in Europe* (pp. 87–118). Institute for Local Self-Government Maribor. <http://www.lex-localis.press/index.php/LexLocalisPress/catalog/view/LocalGovernmentEurope/68/553-1>
- Rahman, T., & Aziz, A. A. Z. (2021). From Digital Literacy to Digital Intelligence. In *4th International Conference on Sustainable Innovation 2020–Social, Humanity, and Education (ICoSIHES 2020)* (pp. 154–159). Atlantis Press.
- Rainoldi, M., Driescher, V., Lisnevskaya, A., Zvereva, D., Stavinska, A., Relota, J., & Egger, R. (2017). Virtual reality: An innovative tool in destinations. *The Gaze Journal of Tourism and Hospitality*, 9, 53–68. doi:10.3126/gaze.v9i0.19721
- Rajaratnam, S. D., Nair, V., Pahlevan Sharif, S., & Munikrishnan, U. T. (2015). Destination quality and tourists' behavioural intentions: Rural tourist destinations in Malaysia. *Worldwide Hospitality and Tourism Themes*, 7(5), 463–472. doi:10.1108/WHATT-06-2015-0026
- Ratten, V. (2020). Coronavirus (covid-19) and entrepreneurship: Changing life and work landscape. *Journal of Small Business and Entrepreneurship*, 32(5), 503–516.

- Ray, P. H., & Anderson, S. R. (2000). *The cultural creatives: How 50 million people are changing the world*. Three Rivers Press.
- Redecker, C. (2017). *European Framework of Digital competence of Educators: DigCompEdu*. Publications Office of the European Union. doi:10.2760/159770
- Reinicke, C. (2021, June 2). How the pandemic and a rise in targeted hate crimes has shifted spending for Asian Americans. *NBC*. <https://www.nbcnews.com/news/asian-america/pandemic-rise-targeted-hate-crimes-shifted-spending-asian-americans-rcna1097>
- Researchgate.com. (2021). Retrieved June 2, 2021, from https://www.researchgate.net/publication/225083802_SERVQUAL_A_multiple-Item_Scale_for_measuring_consumer_perceptions_of_service_quality
- Rice, D. (2004). *Standardization Efforts Taking Off*. Lodging Hospitality.
- Richardson, B., & Richardson, R. (1996). *Planeacion de Negocios: Un Enfoque de Administracion Estrategica* (R. Iniestra, Trans.). CECSA.
- Ridsdale, C., Rothwell, J., Smit, M., Ali-Hassan, H., Bliemel, M., Irvine, D., Kelley, D., Matwin, S., & Wuetherick, B. (2015). *Strategies and best practices for data literacy education: Knowledge synthesis report*. <https://dalspace.library.dal.ca/bitstream/handle/10222/64578/Strategies%20and%20Best%20Practices%20for%20Data%20Literacy%20Education.pdf>
- Rocca, R. A. (2015). Tourism mobility. Best practices and conditions to improve urban livability. *TeMA- Journal of Land Use, Mobility and Environment*, 8(3), 1–330. doi:10.6092/1970-9870/2814
- Rodrik, D. (2019). Globalization's Wrong Turn. And How It Hurt America. *Foreign Affairs*.
- Roland Berger. (2020). *Managing The Coronavirus Crisis*. <https://www.rolandberger.com/en/Insights/Global-Topics/Coronavirus-business-response/>
- Rubin, V. L. (2010). On deception and deception detection: Content analysis of computer-mediated stated beliefs. *ASIS&T '10: Proceedings of the 73rd ASIS&T Annual Meeting on Navigating Streams in an Information Ecosystem*, 47, 1–10. <https://dl.acm.org/doi/10.5555/1920331.1920377>
- Rugman, A. (1980). A new theory of the multinational-enterprise-internationalization versus internalization. *The Columbia Journal of World Business*, 15(1), 23–33.
- Ryanair. (2021). *Ryanair Reports Full Year Loss Of €815m As Traffic Falls 81% Due To Covid-19 Travel Restrictions*. Ryanair. <https://corporate.ryanair.com/news/ryanair-reports-full-year-loss-of-e815m-as-traffic-falls-81-due-to-covid-19-travel-restrictions/?market=cz>
- Ryglová, K., Burian, M., & Vajčnerová, I. (2011). *Cestovní ruch - podnikatelské principy a příležitosti v praxi*. Grada.
- Sanchez, M. A., & Zuntini, J. I. (2018). Organizational readiness for the digital transformation: A case study research. *Revista Gestão & Tecnologia*, 18(2), 70–99. doi:10.20397/2177-6652/2018.v18i2.1316
- Sandoff, M. (2005). Customization and Standardization in hotels – a paradox or not? *International Journal of Contemporary Hospitality Management*, 17(6), 529–535. doi:10.1108/09596110510612167
- Sandoff, M. (2009). A transnational Approach to customer loyalty. *International Journal of Contemporary Hospitality Management*, 21(3), 239–250. doi:10.1108/09596110910948279
- Santangelo, G. D., & Meyer, K. E. (2017). Internationalization as an evolutionary process. *Journal of International Business Studies*, 48(9), 1114–1130.

Compilation of References

- Sardarizadeh, S., & Robinson, O. (2020, April 26). *Coronavirus: US and China trade conspiracy theories*. <https://www.bbc.com/news/world-52224331>
- Sarkar, S. (2000). On the investment–uncertainty relationship in a real options model. *Journal of Economic Dynamics & Control*, 24(2), 219–225.
- Sasidharan, V., Sirokaya, E., & Kerstetter, D. (2002). Developing countries and tourism ecolabels. *Tourism Management*, 23(2), 161–174. doi:10.1016/S0261-5177(01)00047-4
- Savic, B. (2021). *Asia leads the global economy out of 2020's record FDI inflow slump*. Asia Business News. <https://www.asiabriefing.com/news/2021/02/asia-leads-the-global-economy-out-of-2020s-record-fdi-inflow-slump/>
- Schätzl, L. (2001). *Wirtschaftsgeographie 1: Theorie* (8th ed.). UTB für Wissenschaft Uni-Taschenbücher Geographie, Wirtschaftswissenschaften: Vol. 782. Schöningh.
- Schätzl, L., & Liefner, I. (2012). *Theorien der Wirtschaftsgeographie* (10., Aufl.). UTB: Vol. 782. UTB.
- Schumacher, A., Erol, S., & Sihm, W. (2016). A maturity model for assessing Industry 4.0 readiness and maturity of manufacturing enterprises. *Procedia CIRP*, 52, 161–166. doi:10.1016/j.procir.2016.07.040
- Schumann, C. A., & Tittmann, C. (2015). Digital business transformation in the context of knowledge management. In *European Conference on Knowledge Management* (p. 671). Academic Conferences International Limited.
- Seaton, A. V., & Bennett, M. M. (1996). *The Marketing of Tourism Products: Concepts, Issues and Cases*. International Thomson Business Press.
- Sederholm, T., Jääskeläinen, P., & Huhtinen, A.-M. (2021). Coronavirus as a Rhizome: The Pandemic of Disinformation. *International Journal of Cyber Warfare & Terrorism*, 11(2), 43–55. doi:10.4018/IJCWT.2021040104
- Seigel, S. (1997). Teachers of service-learning. In R. Wade (Ed.), *Community service-learning: A guide to including service in the public school curriculum* (pp. 197–213). Academic Press.
- Seigel, S., & Rockwell, V. (1993). Democratic education, student empowerment, and community service: Theory and practice. *Equity & Excellence in Education*, 26(2), 65–70. doi:10.1080/1066568930260215
- Serdyukov, P. (2017). Innovation in education: what works, what doesn't, and what to do about it? *Journal of Research in Innovative Teaching & Learning*, 10(1), 4-33.
- Serrano & Kazda. (2021). COVID-19 Grounded Aircraft - Parking and Storing. *Communications - Scientific Letters of the University of Zilina*, 23(2), A103-A115. doi:10.26552/com.C.2021.2.A103-A115
- Serrano, F., & Kazda, A. (2020). The future of airport post COVID-19. *Journal of Air Transport Management*, 89, 101900. doi:10.1016/j.jairtraman.2020.101900 PMID:32834696
- Severo, E. A., De Guimarães, J. C. F., & Dellarmelin, M. L. (2021, March). Impact of the COVID-19 pandemic on environmental awareness, sustainable consumption and social responsibility: Evidence from generations in Brazil and Portugal. *Journal of Cleaner Production*, 286, 1. doi:10.1016/j.jclepro.2020.124947 PMID:33173257
- Sforza, A., & Steininger, M. (2020). *Globalization in the Time of COVID-19*. Academic Press.
- Sforza, A., & Steininger, M. (2020). *Globalization in the time of COVID-19*. <https://www.cesifo.org/en/publikationen/2020/working-paper/globalization-time-covid-19>

- Shah, F. A., Yusaff, R. M., Hussain, A., & Hussain, J. (2012). A critical review of multinational companies, their structures and strategies and their link with international human resource management. *Journal of Business and Management*, 3(5), 28–37.
- Shaluf, I. M., & Said, A. M. (2003). A review of disaster and crisis. *Disaster Prevention and Management: An International Journal*.
- Sharma, R. (2020, March 2). *Coronavirus Conspiracy Theories: Why There's So Much Misinformation Around Covid-19, And Why The Fake News Is So Damaging*. <https://inews.co.uk/news/coronavirus-conspiracy-theories-covid-19-outbreak-misinformations-fake-news-403916>
- Sharpe, R. J., & Beetham, H. (2010). *Understanding students' uses of technology for learning: Towards creative appropriation*. <https://radar.brookes.ac.uk/radar/items/4887c90b-adc6-db4f-397f-ea61e53739e0/1/>
- Shrestha, N. (2020). The impact of COVID-19 on globalization. *One Health*, 11.
- Siddiq, F., Scherer, R., & Tondeur, J. (2016). Teachers' emphasis on developing students' digital information and communication skills (TEDDICS): A new construct in 21st century education. *Computers & Education*, 92, 1–14. doi:10.1016/j.compedu.2015.10.006
- Sidhu, I. (2019). *Innovation Engineering: A Practical Guide to Creating Anything New*, Sidhu. Ikhlaq.
- Siedschlag, I., & Zhang, X. (2015). Internationalisation of firms and their innovation and productivity. *Economics of Innovation and New Technology*, 24(3), 183–203.
- Sigala, M. (2020). Tourism and COVID-19: Impacts and Implications for advancing and resetting industry and research. *Journal of Business Research*, 117, 312–321. doi:10.1016/j.jbusres.2020.06.015 PMID:32546875
- Šilhánková, V., & Pondělíček, M. (2016). Ochrana životního prostředí jako “téma” rozvojových strategií našich měst a obcí. In XIX. mezinárodní kolokvium o regionálních vědách. Sborník příspěvků. Masarykova Univerzita. doi:10.5817/CZ.MUNI.P210-8273-2016-82
- Sitzman, K., & Watson, J. (2017). *Watson's caring in the digital world: A guide for caring when interacting, teaching, and learning in cyberspace*. Springer.
- Smith, M., Macleod, N., & Robertson, H. (2011). *Key Concepts in Tourism Studies*. SAGE Publications Ltd.
- Smith, M., & Puczko, L. (2009). *Health and Wellness Tourism*. Elsevier.
- Smith, M., & Puczko, L. (2014). *Health, Tourism and Hospitality. Spas, wellness and medical travel*. Routledge. doi:10.4324/9780203083772
- Sokol, S., & Staff, T. (2020). Health Ministry Launches Revamped COVID-19 Tracking App. *The Times of Israel*. <https://www.timesofisrael.com/health-ministry-launches-revamped-covid-19-tracking-app/>
- Som, A. P. M., Shirazi, S. F. M., Marzuki, A., & Jusoh, J. (2011). A critical analysis of tourist satisfaction and destination loyalty. *Journal Of Global Management*, 2(1), 178–183.
- Song, L., & Zhou, Y. (2020). The COVID-19 Pandemic and Its Impact on the Global Economy: What Does It Take to Turn Crisis into Opportunity? *China & World Economy*, 28(4), 1–25.
- Song, S. J., & Yoo, M. (2016). The Role of Social Media during the Pre-purchasing Stage. *Journal of Hospitality and Tourism Technology*, 7(1), 84–99. doi:10.1108/JHTT-11-2014-0067

Compilation of References

- Sönmez, S. F., Backman, S. J., & Allen, L. R. (1994). *Managing Tourism Crises: A Guide Book*. Department of Parks, Recreation, and Tourism Management, Clemson University.
- Stabryła, A. (2018). Podstawy organizacji i zarządzania. Podejścia i koncepcje badawcze [Fundamentals of organization and management. Research approaches and concepts]. In J. Niałkiewicz, B. Bińczycki, & T. Małkus (Eds.), *Zarządzanie w warunkach globalizacji* [Management in the conditions of globalization] (pp. 404–416). Wydawnictwo Uniwersytetu Ekonomicznego w Krakowie.
- Staff Reporter. (2020, April 7). *Twelve Taken Ill After Consuming 'Coronavirus Shaped' Datura Seeds*. <https://www.thehindu.com/news/national/andhra-pradesh/twelve-taken-ill-after-consuming-coronavirus-shaped-datura-seeds/article31282688.ece>
- Staff, T. (2021). *High Court limits Shin Bet coronavirus surveillance to those who won't cooperate*. <https://www.timesofisrael.com/high-court-limits-shin-bet-coronavirus-surveillance-to-those-who-wont-cooperate/>
- Standard Chartered Bank. (Ed.). (2021). *Borderless Business report*. https://www.sc.com/en/banking/europe-americas/?utm_source=press&utm_medium=referral&utm_campaign=EACampaignAug20
- Steger, M. B. (2017). *Globalization: A very short introduction* (4th ed.). Oxford University Press.
- Sterling, S. (2010). *Sustainability education: Perspectives and practice across higher education*. Taylor & Francis. doi:10.4324/9781849776516
- Stock, J. H. (2020). Data Gaps and the Policy Response to the Novel Coronavirus, *National Bureau of Economic Research, Working Paper 26902*, 1-10.
- Strenáčiková, M. (2020). Vzdelávanie v čase pandémie. *Equilibria* 2020.
- Strombach, S., & Sarmeier, A. (2013). Knowledge dynamics in setting sustainable standards in tourism – the case of “Fair Trade in Tourism South Africa”. *Current Issues in Tourism*, 16(7-8), 736–752. doi:10.1080/13683500.2013.785485
- Surmeier, A. (2020). Dynamic capability building and social upgrading in tourism – Potential and limits of sustainability standards. *Journal of Sustainable Tourism*, 28(10), 1498–1518. doi:10.1080/09669582.2020.1744615
- Süßel, C. (2021, February 10). *Corona trocknet Investitionsflüsse aus*. GTAI. <https://www.gtai.de/gtai-de/trade/wirtschaftsumfeld/bericht-wirtschaftsumfeld/welt/corona-trocknet-investitionsfluesse-aus-609644>
- Švihlíková, I. (2010). *Globalizace a krize. Souvislosti a scénáře* [Globalisation and crisis. Connections and scenarios]. Grimmer.
- Švihlíková, I. (2014). *Přelom. Od Velké recese k Velké transformaci* [The milestone. From Great Recession to Great Transformation]. Inaque.sk.
- Sweeney, A. E. (1980). Quality Standards in Tourism. *International Journal of Tourism Management*, 1(4).
- Syrovátka, J., Pinkas, Š., Novák, A., & Urhová, D. (2020). *Infodemic: Coronavirus and Conspiracies in the Czech Republic*. Praga: Prague Institute of Security Studies (PSSI). <https://www.pssi.cz/publications/11-new-case-study-of-disinformation-related-to-coronavirus>
- Sysel, J. (2012). *Historie a současné koncepce řízení kvality*. Retrieved May 18, 2021, from <http://www.citellus.cz/Akademie/Prednasky/Koncepce-rizeni-kvality-a-cestovni-ruch/4-Historie-a-soucasne-koncepce-rizeni-kvality>

- Szocska, M., Pollner, P., Schiszler, I., Tamas, J., Tamas, P., McKee, M., Asztalos, A., Bencze, L., Kapronczay, M., Petrecz, P., Toth, B., Szabo, A., Weninger, A., Ader, K., Bacskai, P., Karaszi, P., Terplan, G., Tuboly, G., Sohonyai, A., ... Gaal, P. (2021). Countrywide population movement monitoring using mobile devices generated (big) data during the COVID-19 crisis. *Scientific Reports*, *11*(1), 5943. doi:10.103841598-021-81873-6 PMID:33723282
- Szromek, A. R. (2021). The Role of Health Resort Enterprises in Health Prevention during the Epidemic Crisis caused by COVID-19. *Journal of Open Innovation*, *7*(2), 133. doi:10.3390/joitmc7020133
- Taleb, N. N. (2013). *Antifrágil, las cosas que se benefician del desorden*. Barcelona: Espasa Libros, S.L.U.
- Taleb, N. N. (2011). *El Cisne negro*. Editorial Nomos S.A.
- Tambovtsev, V. L., & Rozhdestvenskaya, I. A. (2020). Strategic planning theory: An institutional perspective. *Terra Economicus*, *18*(2), 22-48. doi:10.18522/2073-6606-2020-18-2-22-48
- Taxi, J. J., Pereira-Moliner, J., Molina-Arazín, J. F., & Lopez-Gamero, M. D. (2020). Quality standards and competition advantage: The role of human issues in tourism organizations. *Current Issues in Tourism*, *23*(20), 2515–2532. doi:10.1080/13683500.2019.1653833
- Tayler, W. (2010). The balanced scorecard as a strategy-evaluation tool: The effects of implementation involvement and a causal-chain focus. *The Accounting Review*, *85*(3), 1095–1117. doi:10.2308/accr.2010.85.3.1095
- The Council of the EU. (2006). *Document on Key Competences for Lifelong Learning*. Author.
- The Council of the EU. (2018). *The Council Recommendation of 22 May 2018 on key competences for lifelong learning*. Official Journal. 2018 (2018 / C 189/01).
- The Economist Intelligence Unit. (Ed.). (2021). Regional Comprehensive Economic Partnership: Set to strengthen Asian supply chains? In *Asia-Pacific Trade and Investment Trends 2020/2021: Foreign Direct Investment Trends and Outlook in Asia and the Pacific*. Author.
- Tirole, J. (2014). Market Failures and Public Policy [Paper presentation]. Nobel Prize Lecture, Stockholm, Sweden.
- Toda, A. A. (2020). *Susceptible-Infected-Recovered (SIR) Dynamics of COVID-19 and Economic Impact*. <https://arxiv.org/pdf/2003.11221.pdf>
- Tomić, N., & Košić, K. (2020). Developing the Spa Assessment Model (SAM) and its application on the Kopaonik-Jastrebac spa zone (Serbia). *Tourism Management Perspectives*, *36*(100753). Advance online publication. doi:10.1016/j.tmp.2020.100753
- Toner, C. (2006). *FSA denies pushing for standardization*. Mortgage Strategy.
- Tourist Authority South Moravia. (2020). *Jihomoravský kraj*. Retrieved May 18, 2021, from <https://www.mmr.cz/cs/Regionalni-politika-a-cestovni-ruch/Cestovni-ruch/ProgramyDotace>
- Tourist Authority South Moravia. (2020, Octobre 16). *Jihomoravský kraj*. Retrieved May 18, 2021, from <https://www.ccrjm.cz/statistiky/>
- Tribe, J., & Snaith, T. (1998). From SERVQUAL to HOLSAT: Holiday satisfaction in Varadero, Cuba. *Tourism Management*, *19*(1), 25–34. doi:10.1016/S0261-5177(97)00094-0
- TripAdvisor (2020). *2020 A Year in Travel. Charting the Travel Industry's Path to Recovery*. tripadvisor.com
- Tse, T. (2006). Crisis management in tourism. In D. Buhalis & C. Costa (Eds.), *Tourism Management Dynamics: Trends, Management, Tools* (pp. 28–38). Elsevier. doi:10.1016/B978-0-7506-6378-6.50014-7

Compilation of References

- Tukamuhabwa, B. R., Stevenson, M., Busby, J., & Zorzini, M. (2015). Supply chain resilience: Definition, review and theoretical foundations for further study. *International Journal of Production Research*, 53(18), 5592–5623.
- Türk, C. N. N. (2020, March 25). *9 Kişi Daha Saf Alkolden Öldü* [9 More People Died From Pre Alcohol]. <https://www.cnturk.com/video/turkiye/9-kisi-daha-saf-alkolden-oldu>
- Ulak, N. (2020). A Preliminary Study of Novel Coronavirus Disease (COVID-19) Outbreak: A Pandemic Leading Crisis in Tourism Industry of Nepal. *Journal of Tourism & Hospitality Education*, 10, 108–131. doi:10.3126/jthe.v10i0.28763
- UN General Assembly. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. Available at: <https://www.refworld.org/docid/57b6e3e44.html>
- UNCTAD. (2009). World investment report 2009: Transnational corporations, agricultural production and development. World investment report: Vol. 2009. United Nations Conference on Trade and Development (UNCTAD).
- UNCTAD. (2020). *Covid-19 will likely transform global production, says UN report*. <https://unctad.org/news/covid-19-will-likely-transform-global-production-says-un-report>
- UNCTAD. (2021). *Statistics*. <https://unctad.org/statistics>
- UNCTAD. (Ed.). (2020). *International SDG Investment Flows to Developing Economies down by one third due to Covid-19*. https://unctad.org/system/files/official-document/diaemisc2020d3_en.pdf
- UNESCO. (2011). *ICT competency standards for teachers (version 2)*. Paris: UNESCO.
- UNESCO. (2020). *COVID-19 Educational Disruption and Response*. <https://en.unesco.org/covid19/educationresponse>
- UNIMINUTO. (2020). *Informe de Gestión UNIMINUTO 2020*. Corporación Universitaria Minuto de Dios.
- UNIMINUTO. (2020). *Plan de Desarrollo UNIMINUTO 20 - 25, Aprendizajes para la transformación*. Corporación Universitaria Minuto de Dios - UNIMINUTO.
- United Nations Educational Scientific and Cultural Organization (UNESCO). (2020). *Combating the disinfodemic: Working for truth in the time of COVID-19*. <https://en.unesco.org/covid19/disinfodemic>
- United Nations. (1972, June) *Declaration of the United Nations conference of the human environment*. United Nations. Retrieved from <http://www.un-documents.net/aconf48-14r1.pdf>
- United Nations. (1987, March). *Report of the United Nations conference on environment and development: Our common future*. United Nations. Retrieved from <http://www.un-documents.net/ourcommon-future.pdf>
- United Nations. (2021). *Carbon Neutrality by 2050: the World's Most Urgent Mission Secretary-General*. United Nations. <https://www.un.org/sg/en/content/sg/articles/2020-12-11/carbon-neutrality-2050-the-world%E2%80%99s-most-urgent-mission>
- University of Oxford & Blavatnik School of Government. (2020). *Variation in Government Response to COVID – 19*. BSG-WP – 2020/032: <https://www.bsg.ox.ac.uk/research/publications/variation-government-responses-covid-19>
- University of Oxford. (2020). *Our World in Data. Coronavirus Pandemic (COVID – 19)*. <https://ourworldindata.org/coronavirus>
- UNWTO. (1995). *GATS & Tourism*. Agreeing on Trade and Tourism, Implications of the General Agreement on Trade in Services.
- UNWTO. (1997). *International Tourism: A Global Perspective*. UNWTO.

- UNWTO. (2013). *Economic Crisis, International Tourism Decline and its Impact on the Poor*. e-unwto.org
- UNWTO. (2020). *COVID-19 Tourism Recovery Technical Assistance Package*. https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2020-05/COVID-19-Tourism-Recovery-TA-Package_8%20May-2020.pdf
- UNWTO. (2020a). *International Tourism Highlights. 2020 Edition*. UNWTO.
- UNWTO. (2020a). *UNWTO priorities for tourism recovery*. <https://www.unwto.org/restarting-tourism>
- UNWTO. (2020b). *Global guidelines to restart tourism*. <https://www.unwto.org/restarting-tourism>
- UNWTO. (2020b). *Understanding Domestic Tourism and Seizing its Opportunities*. e-unwto.org
- UNWTO. (2021a). *2020: Worst year in tourism history with 1 billion fewer international arrivals* Available on: <https://www.unwto.org/news/2020-worst-year-in-tourism-history-with-1-billion-fewer-international-arrivals>
- UNWTO. (2021a). *2020: Worst Year in Tourism History with 1 Billion fewer International Arrivals*. <https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2021-01/210128-barometer-en.pdf?Gal1QTYG.Ky9LDZ2tDKc.iRZkinJeuH>
- UNWTO. (2021b). *Tourism Numbers Down 83% but Confidence Slowly Rising*. <https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2021-06/210602-unwto-barometer-en.pdf?rNy0Q9kCCLL.4MgS3dLlc8vpDxNCUt7LY>
- UNWTO. (2021b). *UNWTO Panel of Experts October Edition*. UNWTO.
- UNWTO. (2021c). *International Tourism Highlights, 2020 Edition*. <https://www.e-unwto.org/doi/book/10.18111/9789284422456>
- UNWTO. (n.d.). *Data, Intelligence and Trends*. Retrieved May 21, 2021, from <https://www.unwto.org/archive/competitiveness-market-intelligence>
- UNWTO. (n.d.). *Policy and Destination Management*. Retrieved June 3, 2021, from <https://www.unwto.org/policy-destination-management>
- US Geological Survey. (2006). *Rates, Trends, Causes, and Consequences of Urban Land-Use Change in the United States*. Professional Paper 1726.
- Vaezi, A., & Javanmard, S. H. (2020). Infodemic and Risk Communication in the Era of CoV-19. *Advanced Biomedical Research*, 9(1), 10. doi:10.4103/abr.abr_47_20 PMID:32309248
- Vajčnerová, I., Šácha, J., & Ryglová, K. (2012). Using the principal component analysis for evaluating the quality of a tourist destination. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 60(2), 449–458. doi:10.11118/actaun201260020449
- Vajčnerová, I., Šácha, J., & Ryglová, K. (2013). The impact of factors influencing destination quality on overall customer satisfaction. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 61(7), 2917–2922. doi:10.11118/actaun201361072917
- Van Damme, I., & Smets, K. (2014). The power of emotion versus the power of suggestion: Memory for emotional events in the misinformation paradigm. *Emotion (Washington, D.C.)*, 14(2), 310–320. doi:10.1037/a0034629 PMID:24219394
- van der Marel, E. (2020). *Globalization isn't in decline, it's changing*. ECIPE. <https://ecipe.org/publications/globalization-is-changing/>
- Van Dijk, J. A. G. M. (2013). A theory of the digital divide. In *The Digital Divide: The Internet and Social Inequality in International Perspective* (pp. 29–51). Routledge.

Compilation of References

- Van Laar, E., Van Deursen, A. J., Van Dijk, J. A., & De Haan, J. (2017). The relation between 21st-century skills and digital skills: A systematic literature review. *Computers in Human Behavior*, 72, 577–588. doi:10.1016/j.chb.2017.03.010
- VandenBos, G., Knapp, S., & Doe, J. (2001). *Role of reference elements in the selection of resources by psychology undergraduates*. <http://jbr.org/articles.html>
- Vequist, D. G. (2021). The Continuation of Care in Cross-Border Health Travel: Implication for Medical Tourism Standards. *Journal of Healthcare Management Standards*, 1(1). doi:10.4018/JHMS.2021010101
- Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems*, 28(2), 118–144. doi:10.1016/j.jsis.2019.01.003
- Visual identity of the European Tourism Covid-19 Safety Seal. (2021). Retrieved 02/12/21 from: <https://www.cen.eu/work/products/Labels/Pages/Tourism.aspx>
- Vogt, F., & Rogalla, M. (2009). Developing Adaptive Teaching Competency through coaching. *Teaching and Teacher Education*, 25(8), 1051–1060. doi:10.1016/j.tate.2009.04.002
- Voronkova, L. P. (2018). Virtual Tourism: On the Way to the Digital Economy. *IOP Conference Series. Materials Science and Engineering*, 463, 042096. doi:10.1088/1757-899X/463/4/042096
- Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science*, 359(6380), 1146–1151. doi:10.1126/science.aap9559 PMID:29590045
- Vrajlal, A. (2020, January 31). *Chinese-Australians Facing Racism After Coronavirus Outbreak*. https://www.huffingtonpost.com.au/entry/coronavirus-australia-racism_au_5e33a522c5b6f2623326d72b
- VUCA-WORLD. (2020, August 16). *Leadership skills & strategies*. <https://www.vuca-world.org/>
- Walker, B., & Salt, D. (2012). *Resilience thinking: Sustaining ecosystems and people in a changing world*. Island Press.
- Walker, S. (2012). *Sustainability by design: Explorations in theory and practice*. Routledge. doi:10.4324/9781849772747
- Wang, Z., & Sun, Z. (2020). From Globalization to Regionalization: The United States, China, and the Post-Covid-19 World Economic Order. *Journal of Chinese Political Science*, 1–19.
- Wang, M. J. (2008). Cybergogy for engaged learning. *Journal of Open and Distance Education in China*, 14(2), 14–22.
- Wang, S., Shuizi, D., & Li, X. (2020, June). A New System for Surveillance and Digital Contact Tracing for COVID-19: Spatiotemporal Reporting Over Network and GPS. *JMIR mHealth and uHealth*, 8(6), e19457. doi:10.2196/19457 PMID:32499212
- Wardle, C. (2019). *First Draft's 'Essential Guide to Understanding Information Disorder*. firstdraftnews.org/wp-content/uploads/2019/10/Information_Disorder_Digital_AW.pdf?x76701.
- Watson, J. (1979). Nursing: The philosophy and science of caring. *Nursing Administration Quarterly*, 3(4), 86–87. doi:10.1097/00006216-197900340-00010
- Watson, J. (2005). *Caring science as sacred science*. F. A. Davis Company.
- Watson, J. (2008). *The philosophy and science of caring* (Rev. ed.). University Press of Colorado.
- We are social. (2021). *Digital 2021 Global Overview Report*. <https://wearesocial.com/digital-2021>
- Weber, A. (2020). *Digitalisation for Value Creation*. Springer., doi:10.1007/978-3-030-36229-4

- Wells, J. (2013). *Complexity and sustainability*. Routledge.
- Westhead, P., Wright, M., & Ucbasaran, D. (2007). Issues Surrounding the Internationalization of SMEs: Implications for Policy Makers and Researchers. In G. I. Susman (Ed.), *Small and medium-sized enterprises and the global economy*. Edward Elgar.
- White, D. (2005). *European Standardization: No Panaceas in Sight*. Security Industry News.
- Whitelaw, S., Mamas, A., Topol, E., & Van Spall, H. (2020). Applications of digital technology in COVID-19 pandemic. *The Lancet. Digital Health*, 2(8), e435–e440. doi:10.1016/S2589-7500(20)30142-4 PMID:32835201
- WHO European Region COVID19 Subnational Explorer: Cumulative incidence per 100.000 inhabitants of the Covid-19 disease cases. (2021). Retrieved July 16, 2021, from <https://experience.arcgis.com/experience/3a056fc8839d47969ef59949e9984a71>
- WHO. (2020). https://www.who.int/health-topics/coronavirus#tab=tab_1
- Wilson, T. (2002). The nonsense of ‘knowledge management. *Information Research*, 8(1). <http://informationr.net/ir/8-1/paper144.html>
- Witt, M. A. (2019). De-globalization: Theories, Predictions, and Opportunities for International Business Research. *Journal of International Business Studies*.
- Wizz Air. (2021). *Investors information corporatae webside*. Wizz Air. <https://wizzair.com/en-gb/information-and-services/investor-relations/investors/traffic-statistics>
- Wolf, M. (2018). *Why so little has changed since the financial crash*. Financial Times. <https://www.ft.com/content/c85b9792-aad1-11e8-94bd-cba20d67390c>
- World Bank Group. (2020). *Rebuilding Tourism Competitiveness. Tourism response, recovery and resilience to the COVID-19 crisis*. worldbank.org
- World Bank. (2020a). *Guidance Note: Remote Learning & COVID-19*. Retrieved from: <http://documents.worldbank.org>
- World Bank. (2020b). *Remote Learning and COVID-19. The use of educational technologies at scale across and education system as a result of massive school closings in response to the COVID-19 pandemic to enable distance education and online learning*. Author.
- World Bank: *Global Economic Prospects 2008*. (2008). The World Bank.
- World Economic Forum. (2020). *Here’s what travelling could be like after COVID-19*. weforum.org
- World Economic Forum. (2020). *These satellite pictures show the impact of the Coronavirus*. <https://www.weforum.org/agenda/2020/03/coronavirus-before-and-after>
- World Economic Forum. (2021, February 8). *Foreign direct investments could contract by 40% this year, hitting developing countries hardest*. <https://www.weforum.org/agenda/2020/06/coronavirus-covid19-economics-fdi-investment-united-nations/>
- World Health Organization (WHO). (2020a). *Munich Security Conference*. <https://www.who.int/director-general/speeches/detail/munich-security-conference>
- World Health Organization (WHO). (2020b). *Coronavirus Disease (Covid-19) Advice For The Public: Mythbusters*. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters#thermal-scanners>

Compilation of References

- World Health Organization (WHO). (2020c, May 18). *Resolution WHA73/CONF./1 Rev.1*. https://apps.who.int/gb/ebwha/pdf_files/WHA73/A73_CONF1Rev1-en.pdf
- World Health Organization (WHO). (2020d, January). *Risk communication and community engagement readiness and initial response for novel coronaviruses (nCoV). Interim guidance*. <https://apps.who.int/iris/bitstream/handle/10665/330377/WHO-2019-nCoV-RCCE-v2020.1-eng.pdf>
- World Health Organization. (2020e, March 16). *Risk Communication and Community Engagement (RCCE) Action Plan Guidance COVID-19 Preparedness and Response*. [https://www.who.int/publications/i/item/risk-communication-and-community-engagement-\(rcce\)-action-plan-guidance](https://www.who.int/publications/i/item/risk-communication-and-community-engagement-(rcce)-action-plan-guidance)
- World Health Organization. (n.d.). *Globalization*. www.who.int/topics/globalization/en/
- World Ocean Review. (2015). *What is sustainability? Concepts for a better world*. <https://worldoceanreview.com/en/wor-4/concepts-for-a-better-world/what-is-sustainability/>
- World Trade Organization. (2020). *World Trade Statistical Review 2020*. Author.
- World Trade Organization. (2021). *World trade primed for strong but uneven recovery after COVID 19 pandemic shock*. https://www.wto.org/english/news_e/pres21_e/pr876_e.htm
- World, A. C. I. (2021). *ACI Airport Health Accreditation Programme*. ACI World. <https://aci.aero/about-aci/priorities/health/aci-airport-health-accreditation-programme/>
- Wright, V. (Interviewer), & Wright, C. (Interviewee). (2019). *Bonus Episode – Fake News and Why It Matters* [Interview transcript]. <https://www.apa.org/research/action/speaking-of-psychology/fake-news>
- WTO. (2020). *World trade statistical review*. WTO.
- WTO. (n.d.). *About WTO*. https://www.wto.org/english/thewto_e/thewto_e.htm
- WTTC. (2019). *Crisis Readiness. Are you prepared and resilient to safeguard your people & destinations?* wtcc.org
- WTTC. (2020). *'Safe Travels': Global Protocols & Stamp for the New Normal*. Retrieved 02/12/21 from: <https://wtcc.org/COVID-19/Safe-Travels-Global-Protocols-Stamp>
- WTTC. (2020). *To Recovery & Beyond. The Future of Travel & Tourism in the Wake of COVID-19*. oliverwyman.com
- Wulf, J., Mettler, T., & Brenner, W. (2017). Using a digital services capability model to assess readiness for the digital consumer. *MIS Quarterly Executive*, 16(3), 171–195.
- Xiao, Y., & Fan, Z. (2020). *10 Technology Trends to Watch in the COVID 19 Pandemic*. World Economic Forum. <https://www.weforum.org/agenda/2020/04/10-technology-trends-coronavirus-covid19-pandemic-robotics-telehealth/>
- Xuerui, L., Mehralieyev, F., Liu, Ch., & Schuckert, M. (2019). The roles of social media in tourists' choices of travel components. *Tourist Studies*, 20(1), 27–48. doi:10.1177/1468797619873107
- Xu, Z., Elomri, A., Kerbache, L., & El Omri, A. (2020). Impacts of COVID-19 on Global Supply Chains: Facts and Perspectives. *IEEE Engineering Management Review*, 48(3), 153–166.
- Yawson, R. (2020). Strategic flexibility analysis of HRD research and practice post COVID-19 pandemic. *Human Resource Development International*, 23(4), 406-417. . doi:10.1080/13678868.2020.1779169
- Yehia, Y. (2019). *The Importance of Tourism of Economies and Business*. msu.edu

- Yu, N., Pan, S., Yang, C.-C., & Tsai, J.-Y. (2020). Exploring the Role of Media Sources on COVID-19–Related Discrimination Experiences and Concerns Among Asian People in the United States: Cross-Sectional Survey Study. *Journal of Medical Internet Research*, 22(11), e21684. doi:10.2196/21684 PMID:33108307
- Žabkar, V., Brenčič, M. M., & Dmitrović, T. (2010). Modelling perceived quality, visitor satisfaction and behavioural intentions at the destination level: The case of Port wine cellars. *Tourism Management*, 31(4), 537–546. doi:10.1016/j.tourman.2009.06.005
- Zahra, S. A. (2021). International entrepreneurship in the post Covid world. *Journal of World Business*, 56(1), 101143.
- Zahra, S. A., & George, G. (2002). International Entrepreneurship: The Current Status of the Field and Future Research Agenda. In M. A. Hitt (Ed.), *Strategic Management Society book series. Strategic entrepreneurship: Creating a new mindset* (pp. 253–288). Blackwell.
- Zheng, J., Geng, J., & Hoce, F. (2020). Analysis of the Current Station of China’s Tourism. Safety Standards and Suggestions for Improvement. *ICEME 2020. 2020 The 11th International Conference on E-business. Movement and Economics*, 254-259.
- Zuleta, H. (2020). *Recesión y recuperación en tiempos del Coronavirus. ¿Es el momento de reformas profundas? Foco Económico*. <https://focoeconomico.org/2020/06/09/recesion-y-recuperacion-en-tiempos-del-coronavirus-es-el-momento-de-reformas-profundas/>
- Zuleta, H., Alvarez, A., León, D., Medellín, M., & Zambrano, A. (2020). *El coronavirus en Colombia: Vulnerabilidad y opciones de política*. PNUD LAC C19 PDS No. 1.

About the Contributors

Gabriela Antořová, Ph.D., is the Professor of Economics of the University College of Business in Prague and Strategic management and innovation processes in the MIAS School of Business in Prague, Czech Technical University, Czech Republic. Her work has attracted the best research paper awards in the Second International Congress of Innovation and Sustainability in Latin America. She is a research member of the CITUR and Academia Europa Nostra. Research interests: strategic planning, management and tourism development, social innovation process, innovation of internationalization, sustainability.

* * *

Jefferson Enrique Arias Gomez is a Business Administrator from the Pedagogical and Technological University of Tunja, Specialist in Social Management at UNIMINUTO. He completed his Doctorate in Business Management at the University of Mondragón, Spain and his Post-doctorate in Education at the Santo Tomás University. At UNIMINUTO he has served as Director of the Business Administration program, Dean of the Faculty of Business Sciences, Academic Vice-rector, Manager of the Social Innovation Science Park and currently as Rector of the Bogotá - Presential Academic Programs Campus. He has deepened his academic and research work in topics such as microfinance, solidarity economy, organization management, entrepreneurship and social innovation, among others. Titular Professor at Uniminuto. Author of books resulting from research processes and academic books. National and international speaker and professor at different universities in Colombia.

Silvia Liliana Espinosa Acevedo is an Industrial Engineer from the Industrial de Santander University (Colombia, 1999) and a Marketing Specialist from Los Andes University (Colombia, 2010). Currently, is a candidate for a MS's degree in Senior Management at the University of Bari (Italy). She is the Director of Planning and Development of the UNIMINUTO Bogotá - Presential Academic Programs Campus (Colombia), oversees the strategic planning and the information management process. She also leads the Quality Management System (QMS), the Risk Management System and the Customer Experience Area in this campus of UNIMINUTO.

Astrida Blanařová, PhD, is the assistant professor at Ambis a.s. in the Czech Republic (Prague, Brno). In the academic environment, she deals with tourism, especially the topic of quality and destination management. She is a member of the Society of Scientific Experts on Tourism. In the past, she worked as the CEO of a travel agency. She still works as a tourist guide.

Debby Flickinger, originally from Boston, Massachusetts, now lives in California and is an affiliated faculty in the Ph.D. Interdisciplinary Program at Union Institute and University (UIU) teaching graduate courses on social justice, engaging differences, and sustainability through a caring science lens. She facilitates workshops, participates on panels and does presentations on Caring Sustainability™, Caring Science Theory, Critical Race Theory, and Social Justice around the globe. She has contributed a chapter in *Miracles and Mysteries Witnessed by Nurses*, a collection of stories edited by Jean Watson, Ph.D. In addition, she is certified as a Caritas, an Eco-therapist, and a Sustainability Coach.

Krzysztof Gajdka, PhD, in addition to his academic activities, works as an expert in the field of media communication. He is actively involved in advising on external political and electoral media communication for the most important Polish political entities.

Arias Gomez completed his PhD in Applied Economic Analysis at the University of Seville, Spain. He worked in the Central Bank of Colombia, National Statistical Institute and Ministry of Finance, Universidad Externado de Colombia, University de la Salle and Catholic University. He is currently working at the Institute of Economic Studies, Masaryk Institute of Advanced Studies, Czech Technical University in Prague and at University College of Business in Prague, Department of Economics, and has published articles in the field of Regional economics, Macroeconomics, New Economic Geography and Economic Theory, focusing on the research topics of Regional Economics, Manufacturing, Localization and New Economic Geography.

Iveta Hamarneh, Ph.D. is actively involved in promoting the Tourism sector in the Czech Republic through membership in the Czech Travel Press, the Association of Scientific Experts in the Tourism sector, the European Regions for Competitive and Sustainable Tourism, and the Association for Tourism and Leisure Education. Dr. Hamarneh regularly attends tourism conferences and is actively involved in Erasmus activities. In 2014 Dr. Hamarneh was assigned as the Head of the Department of Tourism Economy at the University College of Business in Prague until October 1, 2017, when Dr. Hamarneh was appointed as the Vice-Rector for study at the University until now. From 1994 until 2000, Dr. Hamarneh was the program coordinator of the EU project “M.A. Degree in the Economics of International Trade and European Integration“ at the University of Economics in Prague; it was designed for students of Economics and Business studies pursuing their Master’s degree.

Petr Houška, Ph.D., graduated from the University of Economics in Prague (Czech Republic). He finished his doctoral studies at the Presov University in Presov (Slovakia). Currently is working as an assistant professor at the University College of Business in Prague. His lecturing and research activities focus on international economic integration, quality, and management in tourism. He was used to working as an accredited expert in WTO on behalf of the Czech Republic, cooperates with the Czech Agency for Standardisation and International Standardisation Organisation (ISO), in technical committee (TC 228) for tourism and related services. He participated as a nominated Czech expert in many working groups, which created international standards in tourism. He is also an author and co-author of many articles and books in tourism.

Vladimir Krajčík, Ph.D, graduated at Faculty of Science at Palacky University in 1985 and then he continued as a teacher at Secondary Chemistry School in Ostrava. He passed the rigorous exam at Palacky

About the Contributors

University as well as getting degree in informatics at the new established Department of Informatics. Since 1990s he has been running his business in information technologies and his university degree he has increased studying of Managerial informatics at Faculty of Economy at Technical University Ostrava, passing by dissertation thesis. Since 1994 he has managed number of private institutions, at first as a information manager in the Business Development Institute Ltd. He is a co-founder of Business Secondary School and the Professional Higher School of Business as well as University College of Business in Prague, where he has nowadays worked as a Rector. His professional experience and managerial skills of information technologies he has improved in managing of nine important projects, including three international ones, he has operated as an expert and consultant in over 15 projects. He has published in problematic of information system management and their methods. He is an author of 4 monographs, 36 scientific articles and 48 lectures notes in international conferences. He is also the author of three university scripts.

Martin Maštálka graduated his Ph.D. from the urban design at the Faculty of Architecture of the Brno University of technology (the Czech Republic). He has started his career as an employee of the City of Hradec Králové, department of the Strategic City Development. Later he left the public administration and started to teach at the University of Pardubice (the Czech Republic), Faculty of Economics and Administration. He has been lecturing urbanism, urban design, spatial and strategic planning, and regional development. He has also been participating in many national and international projects (Horizon 2020, URBACT, Erasmus+...). He cooperates with public administration on local and regional level.

Silvia Matúšová majored in Educational Psychology and completed PhD in Education at Comenius University in Bratislava (Slovak Republic). She worked in sector of education (National Institute for In-service Training of Teachers, National Institute of Education), followed by work in governmental bodies (Government Office, Ministry of Finance of the Slovak Republic). In 2010 she affiliated faculty at Catholic University in Ružomberok, teaching courses on psychology, since 2013 at University of Economics and Management in Bratislava courses on public administration, intercultural management, and graduate courses on Supplementary Pedagogical Study program. As Associate Professor, her research activities focus on adult education, online education, and human resources development. She was a member of the Accreditation Council for Continuing Education of Teachers at the Ministry of Education (2011-2016). Since 2019 the member of Editorial Board of Central European Journal of Educational Research, University of Debrecen, Hungary.

Aleksandra Mirek-Rogowska has a master's degree in Journalism and Social Communication and Polish Language, PhD student in the discipline of Social Communication and Media. The area of interest oscillates around topics in the field of Public Relations, Marketing, Advertising, media communication, as well as media history.

Lenka Nigrinová graduated from the University of Economics in Prague. She majored in International Relations at the Faculty of Social Sciences, Charles University. She studied the doctoral study program in International Economic Relations at the University of Economics in Prague. Currently is teaching at the University College of Business in Prague. Focuses on international relations and international trade. She has cooperated on several scientific projects. Recently, it was the project Comparative Methodology and its Application by Examining the Specific International Business Environment (Case study of China).

Ota Novotný, Ph.D, has over twenty years of practical experience in data and business analytics. He helps people understand the importance and principles of data analytics in both academic and business projects and shows them how to use it in their professional lives. He has already supported thousands of people, helping them to familiarize themselves with this modern and increasingly promising area of interest, and a large proportion of them have chosen data analytics as their career paths. He is always looking for new ways to harness the potential of data and the associated data analytics for modern business. He is the author or co-author of a number of books, conference papers, and articles in professional journals. In the last four years, he has also devoted his time to the xPORT Business Accelerator, which is a modern startup business center by the Prague University of Economics and Business. He has been awarded the Associate Professor degree, as well as a Ph.D. in Informatics at the Prague University of Economics and Business, where he defended his thesis related to the role and deployment of data analytics in corporate governance.

Zdenka Petřů graduated from the University of Economics in Prague (Czech Republic). For many years, she is working as an assistant professor at the department of tourism at Prague University of Economics and Business (Czech Republic). She has also lots of practical experiences from tourism industry-tour operator's business. Her lecturing and research activities focus on international tourism, management and marketing in tourism, especially travel agencies business. She is cooperating with tourism industry and many international organisations. She cooperates with the Czech Agency for Standardisation and International Standardisation Organisation (ISO), in technical committee (TC 228) for tourism and related services. She participated as a nominated Czech expert in many working groups, which created international standards in tourism. She is also an author and co-author of many articles and books in tourism.

Martin Potančok supports data-inspired decisions in commercial and research projects. He has experience in software development and analytics. He has worked as a business analyst and project manager on software projects delivering mainly budgeting and reporting systems for international companies. Recently, he has been working as a business analyst on data and analytics projects. At the Prague University of Economics and Business, he is in charge of data activities and research projects organized in cooperation with the Faculty of Informatics and Statistics. Specifically, he has been part of the team organizing the Data Festival, Data & Business activities, and projects to expand business capabilities using IT and analytics. He received the Josef Hlávka Award in 2015 and holds a PhD in Applied Informatics from the Prague University of Economics and Business.

Susan Seigel, Ed.D., living in Amherst, Massachusetts, has 40 years of teaching experience in both public and higher education. Currently as an affiliated professor in the Ph.D. Interdisciplinary Program at Union Institute and University, her career has been focused on racial and ethnic equality and social justice. She was an original member of Educators for Social Responsibility (ESR) and a presenter for A World of Difference an anti-bias education institute sponsored by the Anti-Defamation League (ADL). Her work is recognized in the field of community service learning, critical pedagogy, and curriculum development for collaborative and social activist education. She has presented her work in several national American Education Research Association (AREA) conferences. Internationally, she has recently presented in The 26th Nordic Intercultural Communication (NIC) conference in Valmiera, Latvia. Her work continues to focus on international sustainable collaboration for social justice through education.

About the Contributors

Vladimíra Šilhánková, Ph.D. Research and teaching staff, whose main place is at Czech Technical University of Prague, Masaryk Institute of Advanced Studies, Czech Republic, where she is also the head of Institute of Public Administration and Regional Studies. She has published regularly in many journals and has lectured at professional conferences in the Czech Republic and abroad. She worked on a number of research projects in the field of urban planning and strategic planning and development, e.g., suburbanization, reconversion, and revival of brownfields as well as. climate change impacts on cities, sustainability, and urban security, including tourism, security and safety, and sustainable tourism. Newly, she focused on the impact of the Covid-19 pandemic on regional development.

Iлона Švihlíková, Ph.D. majored in International Trade at the University of Economics in Prague. Focuses on globalization, commodity prices, convergence policies. Is member of the National Economic Council of the Government. Author of five monographs. Currently works as vice-rector at the University College of Business in Prague.

Hannes Thees M.Sc. is Ph.D. Candidate and research associate at the Catholic University of Eichstätt-Ingolstadt, Chair of Tourism and Center for Entrepreneurship. He obtained a double Masters degree in Tourism and Regional Planning at the Catholic University of Eichstätt-Ingolstadt and the University of Oulu in September 2016. Hannes Thees gained working experience at tour operation and destination management. His main fields of research are sharing economy, destination governance, technological development in tourism and regional cooperation. Since 2017 Hannes Thees took part in research on the New Silk Road and the role of transit countries.

Jan Zýka, Ph.D. has been working as the head of the Department of Air Transport at the University of Business in Prague with specialisation with Air Traffic Services, Air Transport, Aviation Security and Aviation Ergonomics.

Index

A

Additive Manufacturing 148, 153
 air transport 200-202, 205-211
 Airline Alliances 209, 211
 airlines 200, 202-204, 210-211, 220, 235-236
 airport 103, 106-107, 200-206, 209-211, 235, 241
 Airports Council International 204, 209-211
 Alternation Model 75, 81, 84
 Altruistic 8, 15
 analysis 16-19, 21, 23, 25-26, 29, 32, 35, 43, 46, 48,
 50-51, 53, 59, 69, 78, 82, 86-90, 92, 99-100,
 104-105, 109-110, 115-116, 118, 124, 126, 133,
 135, 138, 154, 160, 162, 170, 174, 196-197, 219,
 226, 228, 237, 252, 254, 257, 259, 269, 273-274,
 279-280, 282-283
 ATE 114, 126, 128, 137

B

Biosafety Protocol 84
 Bleisure 248
 brand 24, 228, 241, 243
 bubble 138, 144-145

C

Capital District (Bogotá) 84
 Caregiver 6, 15
 Caring-For 15
 Caritas 7-10, 15
 Category or Class 215, 228
 certification 215, 217, 226, 228, 276
 change 1, 5, 12-14, 16, 22, 24-25, 41, 55, 64, 71, 80,
 95, 113, 133, 139-144, 146-147, 149-151, 156,
 159, 167, 171, 173, 177, 187, 196, 202-204, 207,
 210, 226, 235, 237-238, 240-241, 248, 251-252,
 257, 262, 267
 China 38-39, 47-48, 51, 73, 88-89, 96, 108-109, 114,

142-144, 146-148, 150-151, 154, 162-165, 168-
 170, 172, 175-176, 181, 184, 189-192, 195, 198,
 201, 213, 228, 231-232, 236, 260
 City Development 249, 260
 City Development at Municipal Level 260
 City Management 249
 City Planning 249
 collaboration 1, 5, 8, 11-12, 18, 24, 31, 40-41, 44, 55,
 59, 65-66, 69, 88, 208, 217, 219, 221
 community 1, 6-8, 11-12, 14-15, 34, 39, 41, 45, 50, 52,
 75, 77, 82, 84-85, 206, 235, 243, 279
 confirmation 6-7, 15, 103
 Contagious 114, 137, 231
 containment measures 114-118, 120, 125, 127-128,
 134, 137, 237
 Contingency Actions 82, 84
 COVID Crisis 200, 211
 COVID effects 75
 COVID-19 1, 3, 12, 31-53, 56, 71-73, 75, 77, 79,
 81-82, 84, 86-87, 90, 92, 94, 97-99, 101, 103,
 105, 107-112, 114-124, 127-131, 133-136, 138,
 146-147, 151-152, 154-155, 159-163, 165-176,
 181, 183-184, 186-188, 190-198, 200-203, 205,
 207-215, 217-228, 230-253, 256-260, 264, 280
 crisis 32, 36, 40-42, 44, 47-48, 51, 73, 89, 97-98,
 100, 102, 109, 112, 118, 133, 135, 140, 144-146,
 151-152, 155, 159-160, 162-163, 166-169, 171-
 172, 174-175, 177, 182, 185, 188-189, 191-192,
 194, 196, 198, 200-203, 205, 207-211, 217-220,
 223-225, 230-233, 236-239, 244-247, 258, 267,
 279, 281
 culture 1, 3, 5, 8-13, 15, 20, 24, 35, 84, 119, 167, 182,
 233, 254, 257
 Curfew 89, 93, 98, 113
 Czech Republic 16, 31, 49, 86, 99, 105, 138-139, 141,
 143, 150, 181, 187, 200, 212, 229-230, 249-254,
 256, 258-259, 261-263, 267-268, 270-271, 273-
 274, 278, 281

Index

D

Dashboard 86, 88, 90-93, 98-99, 101-102, 112-113
data 4, 13, 16-19, 21-24, 26-30, 33, 36, 40-41, 43-44,
55-56, 59, 82, 87-90, 92-99, 101, 103, 107-110,
112, 114-116, 122, 125, 135-136, 149, 151,
154-155, 159-160, 163-165, 169, 171, 182, 191,
202, 206-207, 209, 217, 219, 231, 234, 236, 245,
252-253, 257, 261-264, 267, 269-273, 277-278,
280, 283
data literacy 16, 18-19, 22-23, 27-29, 55, 59
Decarbonization Programs 211
deglobalization 148, 181, 188, 199
destination management 215, 219-220, 230, 241, 258,
261, 267-268, 276, 278, 280, 283
Destination Management Organization 267, 283
dialogue 5-7, 10, 15, 54, 68, 81, 152, 218
Difference in Differences 137
digital competencies 18, 52-53, 58-59, 68
digital literacy 16-18, 24, 26-29, 55, 57, 60, 63, 65,
69, 72
digital media 18, 32, 36, 51
Digital transformation (DT) 16, 29
digitalization 148-149, 166-167, 230, 237, 239, 241,
243-244, 248
disinformation 32-33, 36, 38, 41-42, 44-48, 50-51
distance learning 52-53, 68, 73, 88
division of labour 138-143, 148-150
domestic tourism 220, 226, 230-231, 237-239, 247-
248, 262-263, 268, 278

E

Educational Institutions 52, 75
educators 5, 52, 54, 58-59, 61, 63-65, 67-69, 73
efficient management of cities 260
E-Learning (Electronic Learning) 73
EU 45-46, 54-55, 58-59, 72-73, 97-98, 111-112,
145-146, 149-150, 152, 161-165, 168-169, 171,
188-189, 192, 195, 200, 202, 204-211, 225-226,
228, 236, 240, 245, 251, 259, 280
EU Rehabilitation and Resilience Facility (RRF) 204,
211

F

Fake News 31-35, 44, 48-51
financial crises 138, 141, 144, 151, 158
financialization 144-145, 153
Fluctuations in Demand 201, 211
foreign direct investment (FDI) 176-177, 185

G

Geographic Information Systems 86, 99
GIS (Geographic Information System) 98, 113
global industry 200, 208, 261
global value chains 142, 147, 154-156, 162, 168, 170,
172, 174, 177, 188, 197-199
globalization 49, 138-142, 144-147, 149-156, 163,
166-170, 173, 175-176, 181-190, 192-199, 201,
212-213, 224, 242
Gradual, Progressive, and Safe Return 84
Great Recession 138, 140, 142, 144-146, 150-153

H

higher education 14, 52-53, 58, 64-66, 69, 71, 77-78,
80, 234
higher education institutions 52, 69

I

ICT technologies 52
imagery 39, 42, 89, 98-100, 105, 109-110, 112-113
imagery processing 99, 109
information 8, 17-19, 23-24, 27-45, 47-51, 53-59, 65-
67, 69, 72, 74, 78, 80-82, 84-90, 92-96, 98-99,
101, 103-106, 110, 113-114, 116, 119-122, 124,
129, 131-132, 137, 149, 151, 155, 159-160, 174,
177, 181-182, 184-185, 187-188, 192, 206, 211,
214-215, 218-222, 232-234, 237-239, 241, 262,
267, 269, 273, 275, 277, 280-281
information management 31-32, 35-36, 40, 43, 45,
51, 82
information package 31-32
Information System 31, 36, 69, 98, 113
innovations 52, 57-58, 62, 64, 68, 72, 85, 87, 96, 155,
183, 234
institutional sustainability 75
integration 24, 27-28, 56, 60, 63-64, 139, 143, 157,
162, 181-188, 191, 194-196, 198-199
International Civil Aviation Organization (ICAO)
203, 211
international cooperation 84, 149, 154, 162, 166, 168,
170, 192-193, 200-201, 203, 205-206, 209
international standardization 212-214, 216-217, 224-
225
internationalization 154-157, 159-161, 163, 166-177,
181, 183, 215
ISO 212-213, 216-217, 221-224, 226, 228-229, 264-
265, 279, 281

K

Key Performance Indicator (KPI) 30

L

labour income share 140, 151, 153
 labour saving technology 138
 local development 251
 local government 43, 81, 252, 259
 lockdown 35-36, 40, 46, 66-67, 86-87, 93, 98, 106, 110,
 113-114, 127, 134, 136-137, 154-155, 221, 240
 LOHAS Concept 233, 248
 loyalty 227, 244, 261-262, 266-269, 271, 274-275,
 277-279, 281-283

M

malinformation 32-33, 50-51
 management 11, 19, 23-28, 31-32, 35-36, 40, 43-45,
 49-51, 53, 59, 64, 66-67, 72, 75, 77-83, 109, 134,
 136, 156-157, 159, 161, 165-167, 171, 173-176,
 185, 191, 198, 206, 210-211, 214-215, 217,
 219-220, 222, 225-228, 230, 232-234, 239-241,
 244-247, 249, 258-261, 264, 266-268, 276-283
 mapping 86-87, 89-90, 97, 197, 276
 media management 31, 44, 233
 Mergers and Acquisitions 155, 157, 160, 172-173, 177
 metadata 23, 30, 101
 Misinformation 32-33, 39, 43-45, 47-51
 mistrust 39, 43, 47
 Mobile-app 86
 modeling 6, 15, 193, 275, 278
 monitoring 25, 36, 42, 78, 82, 86, 96, 98-99, 104,
 109-110, 125, 167, 177, 196, 219, 267, 276-277
 multinational companies 142, 154, 156-159, 175, 177,
 181-185, 187
 Multinational Company 199
 municipality 90, 249-251, 253

N

National University System, UNIMINUTO 81, 84
 neoliberalism 138, 151, 153
 network externalities 104, 109, 113

O

Offline Training 73
 online education 52-54, 56, 64-74
 Operation continuity 75

P

pandemic 1, 3-5, 12, 14, 19, 31-32, 34-36, 38-50, 52-
 53, 56, 63-66, 68, 71-73, 77-79, 81-82, 84, 86-
 90, 92-94, 96-101, 106, 109-110, 112, 114-117,
 119-125, 128, 132-138, 143, 146-151, 154-155,
 159-173, 175-176, 181, 184, 186-188, 190-197,
 199, 201, 205, 210-213, 217-218, 220, 222, 224,
 226, 228, 230-231, 233-244, 246-247, 249-253,
 256-264, 267-269, 271, 277-278
 pedagogy 6, 13, 52, 58, 61, 64, 69
 people 1-5, 9, 12-13, 15-17, 19-21, 24-25, 32-36, 38-43,
 50, 54, 56, 76, 79, 84, 89-90, 92-96, 98, 100, 103,
 105, 109, 113, 115, 118-120, 123, 125, 128, 134,
 137, 144, 156, 167, 169, 182-184, 187, 190-191,
 193, 195, 215, 217, 220, 225, 231, 234-235, 237-
 242, 244, 246-247, 261-263, 265, 268, 271, 278
 Planning Gap 84
 priorities in the municipalities strategic objectives
 250-251, 260
 processes 7-10, 16-17, 20, 24-25, 28, 34-36, 43, 51-53,
 75, 77-78, 80, 82, 85, 105, 151, 154, 156, 159-160,
 168, 177, 181-182, 184-186, 193, 195, 199, 204,
 216, 219, 222, 235, 238, 258, 264, 267
 Public Support 200

Q

quality 11, 23-24, 43, 45, 53, 57, 64, 68-69, 77, 80,
 160, 168, 182, 212-217, 221, 224-229, 234, 239,
 248, 251, 255, 260-269, 271-283
 quality labels 215, 228-229
 Quality of Life in the Management of Cities 260

R

Reactivation 81, 84
 regionalization 150, 154, 167-168, 176, 181, 186, 192,
 194-196, 199
 Remote Learning 54, 71, 73-74
 rendering 17, 87-88, 92, 98-99, 113
 Required Mindset and Skillset 16
 Reshoring 148-149, 153
 Resilient Development 154
 resilient trade networks 166-167, 177
 response capacity 114-115, 122, 124, 137
 response indicator 114, 128, 137
 Responsible Tourism 219, 230, 247
 Risk Communication 31, 41, 49-50
 Risk Management 81, 83
 rural destination 261-263, 276, 283

Index

Rural Tourist Destination 283

S

SARS-CoV-2 38, 40, 44, 79, 82, 97, 190, 211, 213, 223, 228, 231, 260-261, 268

satellite images 99-100, 106, 112

satisfaction 54, 71, 84, 182, 215, 225, 261-262, 265-269, 271, 274-275, 277-283

security 4, 7, 23, 29, 32, 36, 40, 42, 49-50, 56, 59, 69, 81, 84, 88, 101, 137, 182, 195-196, 209, 212, 214, 216, 218, 224-225, 228, 238, 241, 248-249, 265, 269, 271, 275

Service-Orientated Culture 84

Smart Destination 230, 234, 248

social change 1, 13-14

Social Innovation Science Park 77, 84

social media 32, 37-39, 41, 43-49, 51, 57, 70, 96, 222, 232, 241, 246-247

Stake Out 84

standard 19, 73, 94, 122, 142-145, 149-150, 162, 166, 175, 201, 215-217, 221-224, 226, 228-229, 264, 275

state 2, 17, 34, 52, 57, 66, 133, 137, 139, 141-144, 146, 149-151, 166-169, 177, 183, 185-189, 192, 194, 196, 202, 204-205, 208-209, 234, 236, 250-252, 262, 266

strategic development plan 249, 251

strategic planning 16, 26, 75, 79, 84, 155, 170, 249-252, 257-260

sustainability 1, 8, 10-16, 26, 55, 72, 75, 147, 149, 156, 170, 177, 204-205, 215, 219, 227, 233-234, 237, 243-244, 248, 262, 264, 266-267, 269, 273, 275

T

Teaching-Learning Process 75, 84

technological mediation 84

technology 5, 17, 20, 25-28, 36, 41, 43, 51, 53-58, 60, 64, 66, 68, 70-73, 86, 88-90, 95-96, 98, 101, 103, 105, 109, 111, 138, 142, 163, 165, 173-175, 181-186, 189, 195, 197, 208-210, 219, 224, 233-234, 238, 242, 244, 246

the Great Recession 138, 140, 142, 144-146, 150-151

tourism 51, 191, 201, 212-248, 251, 254-255, 257-258,

261-269, 273-274, 276-283

tourism industry 212-214, 217-218, 220-226, 232, 234-237, 241, 243-247, 264, 266

tourism services 212-214, 217, 220-221, 224-225, 229, 236, 239, 277

tourist organization 222-223, 229

tracking 86-90, 93-101, 103-105, 109-113, 125, 128, 136, 262

Tracking, Tracking technology 86

trade 40, 48, 134, 139-149, 152, 160-178, 181, 184-196, 198-199, 208-209, 213, 225, 227, 233, 235

transnational corporation 138

transnational corporation 142, 149-150, 153, 186

U

uncertainty 82, 114-115, 133, 154-155, 159-160, 163-171, 173-175, 177, 232, 235, 238, 241

UNESCO 41, 49, 52-53, 69, 73, 278

UNIMINUTO 75-85

UNIMINUTO Council of Founders 85

V

Virtual Mediation 81, 85

virtual reality 64, 242, 245

W

who 4-6, 12-13, 15, 31-33, 35, 37-41, 43, 50-51, 55, 57, 70, 74, 80, 82, 89, 92, 94, 96-97, 101-103, 105, 109, 113, 115, 117, 123, 125, 134, 140-142, 144-145, 149, 157, 176, 181, 183, 186-187, 190, 192-193, 195, 203, 206, 213-214, 218, 220, 222-223, 228, 231, 234, 238, 242-243, 251, 253, 259, 262, 264-268, 273, 276-277

World Bank 69-70, 73, 139-140, 213, 232, 236, 239, 247, 273, 283

WTO 144, 148, 152, 161, 176, 181, 185-187, 189, 192-193, 195, 226, 228