



TOURISM SECURITY-SAFETY AND
POST CONFLICT DESTINATIONS

VIRUS OUTBREAKS AND TOURISM MOBILITY

Strategies to Counter Global Health Hazards

Editor

SHARAD KUMAR KULSHRESHTHA



Virus Outbreaks and Tourism Mobility

As we gradually start the slow recovery from COVID-19 the book provides informative and comprehensive analysis of the various virus outbreaks and their impact on tourism. The global tourism industry needs to build resilience through sharing knowledge and learning from experience and best practice. This book provides a range of case studies and provides best-case examples to support the tourism and hospitality industry. Resilience, solidarity, humanity and leadership will take us forward towards using tourism to achieve the sustainable development goals by 2030.

–Professor Dimitrios Buhalis, Bournemouth University Business School

It is timely to take account of the connected and related themes of *Virus Outbreaks and Tourism Mobility*. This valuable collection adopts a systematic approach. The contributing authors offer new thinking about how border closures and other restrictions challenge prior assumptions about accelerating mobilities. Congratulations to the editors for this insightful and well-considered initiative.

–Professor Brian King, Associate Dean, School of Hotel and Tourism Management, The Hong Kong Polytechnic University

The second decade of this century has ended up with a particular emphasis on the significance of safety and security in human beings' life in general and tourist decision-making in particular. As a result, this is a timely contribution to overview the impacts of coronavirus on various parts of the travel and tourism industry across the globe. The book also suggests a number of effective strategies to maintain resilience and recovery out of such a global silence and disaster.

–Professor Metin Kozak, Dokuz Eylul University, Turkey

COVID-19 has spread over the world at an incredible rate. The world economy, especially the tourism industry related to mobility, has been severely damaged. This book provides useful suggestions on how the tourism industry responds, survives, adapts and develops when infectious diseases such as COVID-19 spread. I definitely recommend reading this book.

–Shunsaku Hashimoto Professor, University of the Ryukyus,
Faculty of Global and Regional Studies, Management program

This looks to be an important and timely publication. I can't wait to read it and potentially use in my teaching. The coverage is broad and the topic is most urgent for examination.

–Johnny Skinner, Reader in Social Anthropology,
Department of Life Sciences, Whitelands College,
University of Roehampton London (UK)

I am hoping for a counterfactual outcome for tourism, once the dark clouds of the Covid-19 pandemic is passé; a better kind of tourism, with increased focus on health and wellbeing. Or, will the bad olden days of mass tourism make a vigorous comeback? This book offers hope, yet does not lose realism. Timely reading and excellent presentation.

–Babu George, PhD Professor, Christian Brothers University, USA

The tourism, travel and hospitality industry is the most sensitive as well as highly volatile global industry for demand and supply point of view. Any major disruption, i.e. political unrest, terrorism, disasters, natural calamities and pandemics, can directly affect and impact tourism mobility which may be the cause of huge loss of earnings and employment of millions. In this context, the book covers all such previous pandemic cases, which have directly affected the tourism industry.

–Professor S.P. Bansal, Vice-Chancellor,
Himachal Pradesh Technical University, Himachal Pradesh, India

Tourism Security-Safety and Post Conflict Destinations

Series editors: Maximiliano E. Korstanje and Hugues Seraphin

Since the turn of the century, the international rules surrounding security and safety have significantly changed, specifically within the tourism industry. In the age of globalization, terrorism and conflict have moved beyond individual high-profile targets; instead, tourists, travellers and journalists are at risk. In response to this shift, the series invites authors and scholars to contribute to the conversation surrounding tourism security and post-conflict destinations.

The series features monographs and edited collections to create a critical platform which not only explores the dichotomies of tourism from the theory of mobilities but also provides an insightful guide for policymakers, specialists and social scientists interested in the future of tourism in a society where uncertain-ness, anxiety and fear prevail.

Tourism Security-Safety and Post Conflict Destinations explores research approaches and perspectives from a wide range of ideological backgrounds to discuss topics such as:

- Studies related to comparative cross-cultural perceptions of risk and threat
- Natural and human-caused disasters
- Post-disaster recovery strategies in tourism and hospitality
- Terror movies and tourism
- Aviation safety and security
- Crime and security issues in tourism and hospitality
- Political instability, terrorism and tourism
- Thana-tourism
- War on terror and Muslim tourism
- The effects of global warming on tourism destinations
- Innovative quantitative/qualitative methods for the study of risk and security issues in tourism and hospitality
- Virus outbreaks and tourism mobility
- Disasters, trauma and tourism
- Apocalyptic theories and tourism as a form of entertainment

Volumes in This Series

Tourism, Terrorism and Security

Edited by Maximiliano E. Korstanje and Hugues Seraphin

International Case Studies in the Management of Disasters

Edited by Dr Babu George and Dr Qamaruddin Mahar

Tourism Safety and Security for the Caribbean (Forthcoming)

By Andrew Spencer and Peter E. Tarlow

Overtourism as Destination Risk: Impacts and Solutions (Forthcoming)

Edited by Anukrati Sharma and Azizul Hassan

Tourism Destination Management in a Post-Pandemic Context: Global Issues and Destination Management Solutions

Edited by Vanessa GB Gowreesunkar, Shem Wambugu Maingi, Hiran Roy and Roberto Micera

Pandemics and Travel: COVID-19 Impacts on the Tourism Industry

Edited by Cláudia Seabra, Odete Paiva, Carla Silva and José Luís Abrantes

This page intentionally left blank

Virus Outbreaks and Tourism Mobility: Strategies to Counter Global Health Hazards

EDITED BY

SHARAD KUMAR KULSHRESHTHA

North-Eastern Hill University, India



United Kingdom – North America – Japan – India – Malaysia – China

Emerald Publishing Limited
Howard House, Wagon Lane, Bingley BD16 1WA, UK

First edition 2021

Copyright © 2021 by Emerald Publishing Limited
All rights of reproduction in any form reserved

Reprints and permissions service

Contact: permissions@emeraldinsight.com

No part of this book may be reproduced, stored in a retrieval system, transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise without either the prior written permission of the publisher or a licence permitting restricted copying issued in the UK by The Copyright Licensing Agency and in the USA by The Copyright Clearance Center. Any opinions expressed in the chapters are those of the authors. Whilst Emerald makes every effort to ensure the quality and accuracy of its content, Emerald makes no representation implied or otherwise, as to the chapters' suitability and application and disclaims any warranties, express or implied, to their use.

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

ISBN: 978-1-80071-335-2 (Print)

ISBN: 978-1-80071-334-5 (Online)

ISBN: 978-1-80071-336-9 (Epub)



ISOQAR certified
Management System,
awarded to Emerald
for adherence to
Environmental
standard
ISO 14001:2004.

Certificate Number 1985
ISO 14001



INVESTOR IN PEOPLE

To my respected teacher (Guru) Professor Umendra Narayan Shukla. My respected parents Shri Jiwan Prakash Kulshreshtha (father) and Late Smt. Sushma Kulshreshtha (mother) for their endless affection, support and encouragement.

This page intentionally left blank

Contents

List of Figures	<i>xiii</i>
List of Tables	<i>xv</i>
List of Abbreviations	<i>xvii</i>
About the Contributors	<i>xxi</i>
List of Contributors	<i>xxvii</i>
Foreword	<i>xxix</i>
Preface	<i>xxx</i>
Acknowledgements	<i>xxvii</i>
Introduction	1
<i>Sharad Kumar Kulshreshtha</i>	
Chapter 1 Catastrophic Pandemics: Disruption in Tourism Mobility	15
<i>Sonam Angmo</i>	
Chapter 2 Demographic Change and Human Mobility	31
<i>Chooi Chea Chiam and Tai Kwan Woo</i>	
Chapter 3 Five Decades of Research on Disease Outbreaks, Pandemics and Tourism: A Bibliometric Analysis	43
<i>Mahender Reddy Gavinolla, Agita Livina, Sampada Kumar Swain and Galina Bukovska</i>	

Chapter 4 Virus Outbreaks and Tourism Resilience Strategies: A Perspective of Asian Countries	59
<i>Vikas Gupta and Garima Sahu</i>	
Chapter 5 Sustainability of Tourism after the SARS Pandemic: Revisiting the Past Experiences	75
<i>Ruchika Kulshrestha and Ashutosh Pandey</i>	
Chapter 6 A Bibliometric Analysis of Contagious Diseases and Tourism: Current Status, Development and Future Research Directions	95
<i>Pooja Goel, Simarjeet Singh and Nidhi Walia</i>	
Chapter 7 COVID-19 and Epidemic Diseases Transforming Lodging Facilities: A Study of Brazilian Cities	113
<i>Pedro de Alcântara Bittencourt César, Bruna Tronca and Tháise Zattera Marchesini</i>	
Chapter 8 COVID-19 Impact on Leisure and Travel Industry: Psychological, Safety and Governance Imperatives	129
<i>Dileep Kumar, M., Normala, S.G. and Amine Belhadi</i>	
Chapter 9 The Effects of Pandemic on a Tourism City and the Impacts of Government Policies in Macao	147
<i>Erdan Ma, Cindia Ching Chi Lam and Ut Lon (Billy) Im</i>	
Chapter 10 Comparing the Effects of COVID-19 Pandemic on the Tourism Industry with Other Epidemics: A Conceptual Review	161
<i>Mehmet Ertas</i>	
Chapter 11 Impacts on and Responses of Tourism SMEs and MEs on the COVID-19 Pandemic – The Case of Norway	177
<i>Sabrina Seeler, Olga Høegh-Guldberg and Dorthe Eide</i>	
Chapter 12 Cultural Consumption through Innovative Experiential Marketing: Insights from Japanese Resorts during the COVID-19 Pandemic	195
<i>Soniya Billore and Yasushi Maruyama</i>	

Chapter 13 The Gold Standard in Handling a Pandemic at a National Level: Vietnam’s Approach to Dealing with COVID-19	213
<i>Justin Matthew Pang</i>	
Chapter 14 Impacts of Coronavirus on the Aviation Industry	225
<i>Gönül Akin</i>	
Chapter 15 How Will Tourists Select Accommodation for Their Holiday after the COVID-19 Outbreak? Insights from France	241
<i>Giacomo Del Chiappa, Marcello Atzeni and Enrico Panai</i>	
Index	257

This page intentionally left blank

List of Figures

Figure 1.	WHO's Expanded Programme on Immunization (EPI), 1974.	2
Figure 2.1.	The Linkages between Modernization and Pandemic Outbreak.	32
Figure 3.1.	Methodological Approach of the Study.	47
Figure 3.2.	Frequency of Research Articles Published from 1970 to 2020.	48
Figure 3.3.	Most Productive Journals.	48
Figure 3.4.	Most Productive Authors.	49
Figure 3.5.	Most Contributed Subject of Articles.	49
Figure 3.6.	Most Contributed Funding Sponsors.	50
Figure 3.7.	Most Contributed Countries.	50
Figure 3.8.	Co-occurrence of Author-provided Keyword with Five Clusters.	52
Figure 5.1.	Selection Criteria of a Research Paper Based on Preferred Reporting Items for Systematic Reviews and Meta-Analysis (Prisma) Approach.	78
Figure 6.1.	Publication Trend in the Field of Contagious Diseases and Tourism.	98
Figure 6.2.	Geographical Locations of all Contributing Organizations	101
Figure 6.3.	Cluster Analysis.	104
Figure 7.1.	Location of Study Areas in Brazil.	120
Figure 7.2.	Campos do Jordão: Grande Hotel (SP), 1939.	121
Figure 7.3.	Quitandinha Hotel Petropolis (RJ), 19–.	122
Figure 7.4.	Tavares Correia Sanatorium, Garanhuns (PE), 19–.	123
Figure 7.5.	São Francisco de Paula: Veraneio Hampel (RS), 2019.	124

Figure 8.1.	Historical Perspectives of Health Diseases.	130
Figure 8.2.	Airline Industry – Debt Restart Level.	132
Figure 8.3.	Jobs Loss in Tourism (UNWTO, 2020) due to COVID-19.	133
Figure 8.4.	Global 2020 Job Loss Forecast – Travel and Tourism Sector by Region.	134
Figure 8.5.	Thematic Model: Mental Health Challenges of Hospitality and Tourism Professionals.	137
Figure 9.1.	Community Assistance Scheme.	152
Figure 9.2.	Macao Health Code.	154
Figure 9.3.	Summary of the 5-Phase COVID-19 Fighting in Macao.	158
Figure 11.1.	Timeline of Events.	188
Figure 12.1.	Innovative Experiential Marketing.	199
Figure 12.2.	Enacting the Bungo Plan in Hongo.	202
Figure 12.3.	Experiential Marketing Framework with the 4 C’s – Company, Content, Customers and Context.	207

List of Tables

Table 1.	Years of Various Vaccines Development.	4
Table 2.	Contact Tracing Apps during COVID-19 Pandemic.	7
Table 3.	The Company's COVID-19 Vaccine Candidate.	9
Table 4.	COVID-19 Vaccines Authorized for Emergency Approval from the Country's Drug Regulator.	9
Table 1.1.	Fatality Rates and Infection Rates of COVID-19 and other Epidemic.	20
Table 2.1.	Outbreak: 10 of the Worst Pandemics in History.	34
Table 4.1.	Tourism Resilience and Re-emergence Strategies after the Various Viral Outbreaks in Asian Countries.	67
Table 5.1.	SARS Statistics (1 November 2002 to 31 July 2003).	77
Table 5.2.	Studies on SARS Outbreak and Its Effect on the Hotel Industry.	81
Table 5.3.	Studies on SARS Outbreak and Its Effect on the Airline Industry.	85
Table 5.4.	Studies on SARS Outbreak and Its Effect on Destination Tourism.	86
Table 5.5.	Studies on SARS Outbreak and Its Effect on Inbound Tourism.	88
Table 6.1.	Top 10 Journals.	99
Table 6.2.	Top 10 Contributing Organizations.	100
Table 6.3.	Top 10 Productive Authors.	102
Table 6.4.	Top 10 Citation Measures.	102
Table 6.5.	Top 10 Papers by Page Rank.	103
Table 7.1.	Epidemiological Crises in Brazil Over Decades.	115
Table 8.1.	Possible Business Travel Payout and Income Loss due to COVID-19.	131

Table 8.2.	Predicted Loss in Gross Domestic Product (GDP) from Jobs at Risk in the Travel and Tourism Industry.	133
Table 10.1.	Number of International Tourists.	162
Table 10.2.	Number of Tourists Coming by Years in the Countries Where Severe Acute Respiratory Syndrome (SARS) Is Most Common.	164
Table 10.3.	Number of Tourists Coming by Years in the Countries Where Avian Flu Is Most Common.	165
Table 10.4.	Number of Tourists Coming by Years in the Countries Where Swine Flu Is Most Common.	166
Table 10.5.	Number of Tourists Coming by Years in the Countries Where Middle East Respiratory Syndrome (MERS) Is Most Common.	167
Table 10.6.	Number of Tourists Coming by Years in the Countries Where Zika Virus Is Most Common.	169
Table 10.7.	Number of Tourists Coming by Years in the Countries Where Ebola Virus Is Most Common.	170
Table 11.1.	Response Patterns of Norwegian SMEs and MEs in Prodromal, Emergency and Intermediate Stages.	187
Table 12.1.	Innovative Experiential Marketing Strategies Employed by Japanese Resorts for Enhancing Experiential Marketing during the Pandemic.	206
Table 14.1.	Measures Taken by Airport Operators.	229
Table 14.2.	Measures Taken by Airline Companies.	230
Table 14.3.	Measures Taken by Government and Aviation Authorities.	232
Table 14.4.	Losses in Airline Companies.	233
Table 14.5.	Number of People Projected to Remain Unemployed.	235
Table 15.1.	Overall Profile of the Sample.	246
Table 15.2.	Results of Factor Analysis.	247
Table 15.3.	Results of Cluster Analysis.	250

List of Abbreviations

ACI	Airports Council International
AIDS	Acquired Immune Deficiency Syndrome
ARDL	Autoregressive Distributed Lag
ARIMA	Autoregressive Integrated Moving Average
CCTV	Closed-circuit television
CDC	Centre For Disease Control
CHIKV	Chikungunya virus
COVID-19	Corona Virus Disease 2019
CSV	Comma-separated Values
DRC	The Democratic Republic of The Congo
EASA	The European Aviation Safety Agency
EVD	Ebola virus disease
FDA	Food and Drug Administration
FSSAI	Food Safety and Standards Authority of India
FTA	Foreign tourist arrival
GBTA	Global Business Travel Association
GDP	Gross domestic product
H1N1	Haemagglutinin Type 1 and Neuraminidase Type 1
H2N2	Haemagglutinin Type 2 and Neuraminidase Type 2
H3N2	Haemagglutinin Type 3 and Neuraminidase Type 2
H3N8	Haemagglutinin Type 3 and Neuraminidase Type 8
H5N1	Haemagglutinin Type 5 and Neuraminidase Type 1
H7N9	Haemagglutinin Type 7 and Neuraminidase Type 9
HCoV-229E	Human coronavirus 229E
HCoV-HKU1	Human coronavirus HKU1
HCoV-NL63	Human coronavirus NL63

HCoV-OC43	Human coronavirus OC43
HIV	Human Immunodeficiency Virus
HMD	Hand and Mouth Disease
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
ICT	Information and Communication Technology
IHR	International Health Regulations
IPCC	Intergovernmental Panel on Climate Change
ITR	Income Tax Return
MERS	Middle East respiratory syndrome
MERS-CoV	Middle East respiratory syndrome coronavirus
MEs	Micro-enterprises
MICE	Meetings, incentives, conventions, exhibitions
NAIs	Neuraminidase inhibitors
NGOs	Non-governmental organizations
NIF	National Science Foundation
NIH	National Institutes of Health
NNSFC	National Natural Science Foundation of China
OECD	Organisation for Economic Co-operation and Development
PCR	Polymerase chain reaction
PHEIC	Public Health Emergency of International Concern
PPEs	Personal protection equipment
PPP	Public–private partnership
RevPAR	Revenue per available room
ROK	Republic of Korea
RPKs	Revenue passenger kilometres
RT-PCR	Reverse transcriptase polymerase chain reaction
SARIMA	Seasonal Autoregressive Integrated Moving Average
SARS	Severe acute respiratory syndrome
SARS-CoV	Severe acute respiratory syndrome coronavirus
SARS-CoV-2	Severe acute respiratory syndrome coronavirus 2

SDGs	Sustainable development goals
SIV	Swine influenza virus
SMEs	Small and medium-sized enterprises
S-OIV	Swine-origin influenza virus
SOPs	Standard operating procedures
STI	Sexually transmitted infection
UNWTO	United Nations World Tourism Organization
USAID	United States Agency for International Development
VFR	Visiting friends and relatives
WHO	World Health Organization
WFH	Work from home
WTTC	World Travel and Tourism Council
X-ray	X-radiation (X standing for ‘Unknown’)
ZIKV	Zika virus

This page intentionally left blank

About the Contributors

Gönül Akın is an Assistant Professor of Beykent University, Turkey. She obtained her BSc and Master's degrees in tourism from Canakkale On Sekiz Mart University, Turkey. She holds a PhD in Tourism from Istanbul University, Turkey. Gönül also has a bachelor degree in the aviation industry and another degree in economics from Anadolu University, Turkey. Her fields of expertise engage with the aviation operations and tourist experiences.

Sonam Angmo is a Research Scholar at the Department of Tourism and Hotel Management, Kurukshetra University, Kurukshetra. She is also an Adjunct Assistant Professor at Ladakh University, Leh (Ladakh) India. She received her Master's Degree in Hospitality Management from Kurukshetra University in 2015. She has published six research articles in leading journals and books and received the best student award for her PGDM in Tourism and Leisure from IITTM, Noida.

Marcello Atzeni (PhD) is Assistant Professor in Marketing at the Department of History, Human Sciences and Education, University of Sassari (Italy), where he teaches Cultural Marketing and Management. His research is related to tourist behaviour, tourism authenticity, cultural tourism, sustainable tourism, museum marketing, ICT and cultural heritage sites.

Dr Amine Belhadi is a Research Scholar at Caddi Ayyad University, Marrakech, Morocco. He is an Engineer by profession and extensively engaged in several research studies in sustainable development, data analytics, industrial engineering and business management. He has published several case studies and research papers under engineering and data analytics, and especially on COVID-19 implications on sustainable development and waste management in high-impact journals.

Dr Soniya Billore is Assistant Professor of Marketing at the School of Business and Economics, Linnaeus University, Sweden. She earned her PhD from Keio University, Tokyo, Japan, as a Monbukagakusho (MEXT) scholar. Her research areas are cultural consumption, cross-cultural consumerism, international marketing and innovation. Dr Billore has published in several peer-reviewed journals and authored books. She was awarded the second position at the 2nd Annual

Emerging Scholar Award by the *International Journal of Gender and Entrepreneurship* (IJGE), Emerald Publishing.

Galina Bukovska is a Visiting Lecturer at Vidzeme University of Applied Science and Head of Conference and Incentive Department, Baltic Travel Group, Latvia.

Pedro de Alcântara Bittencourt César, University of Caxias do Sul, Brazil, has a PhD in Geography (University of São Paulo – USP), an MSc in Planning and Management in Environmental Tourism and Culture (Centro Universitário Ibero Americano) and is an Architect and Urbanist (Unitau). He is a Permanent Professor at the University of Caxias do Sul in PostGraduation Program of Tourism and Hospitality and Architecture Graduation. He has been a Researcher with CNPq Productivity and CNPq Universal Scholarship. <https://orcid.org/0000-0001-6096-9209>.

Chiam Chooi Chea obtained her Bachelor in Economics (Honours), Master in Business Administration (MBA) and PhD in Economics in the years 2001, 2003 and 2014, respectively. Since early 2003, she started lecturing in an international private university college and private university. With a total academic experience of approximately 17 years, her research interest is in the field of open distance learning (ODL) and resource economics.

Giacomo Del Chiappa (PhD) is Associate Professor of Marketing at the Department of Economics and Business, University of Sassari (Italy). He is also Senior Research Fellow at the School of Tourism and Hospitality of University of Johannesburg (South Africa). He is Associate Editor of the *European Journal of Tourism Research* and member of numerous editorial boards of national and international scientific journals. He is author and co-author of around 200 national and international publications.

Dorthe Eide is a Professor in Organisation and Management at Nord University Business School in Norway. She holds a Doctor Polit degree from the University of Tromsø, and her dissertation was about knowing, learning and innovation in hotels. Her research and teaching interests have turned from service to experience sectors/activities (nature, culture and meals) within various topics. These include different aspects of experience-based innovation and value co-creation, including sustainability and destination/visitor management.

Mehmet Ertaş is a Research Assistant Doctor at the Department of Tourism, Faculty of Tourism, Management Pamukkale University in Denizli/Turkey. He completed his PhD in 2019. His main fields of study are crisis management, tourism marketing and tourism recreation.

Dr Pooja Goel is an Assistant Professor in Shaheed Bhagat Singh College, University of Delhi, since August 2007. She obtained her PhD from Kurukshetra University, Haryana. Her area of interest is in marketing management, consumer behaviour, and research methodology. She has published many research papers in

reputed journals. She has participated in many international and national conferences. She is a reviewer of many journals.

Dr Normala, S.G. is an Assistant Professor in Xiamen University Malaysia, School of Economics and Management. Having double doctorates in Human Resource Management and Business Administration and published several case studies, research papers and books in the areas of Human Resource Management and Marketing areas. Her studies are exclusively focused on areas of HRM, SME development.

Dr Vikas Gupta is an Alumnus of Amity University, Uttar Pradesh, India, and holds a PhD in Hospitality. Apart from his academic credentials he possesses exemplary leadership and training skills, making him a really sought-after professional especially in the fields of Food Production and Culinary Arts. He has rich and extensive experience of teaching for more than 13 years in both India and abroad.

Olga Høegh-Guldberg is a Postdoctoral Researcher in Experience-based Tourism at Nord University Business School and is part of the Marketing, Management and Innovation of Experiences research group. She holds a PhD from Inland Norway University of Applied Sciences. Her main research interests are experience innovation, cross-sectoral networking and innovation practices, participative innovation approaches, and sustainable destination management.

Ut Lon (Billy) Im is a Lecturer in the School of Hospitality Management of Macao Institute for Tourism Studies (IFTM). He completed his Bachelor Degree in Hotel Management from IFTM and earned his Master Degree in Hospitality Administration in University of Nevada, Las Vegas. His span of research covered tourist behaviour and professions in hospitality.

Ruchika Kulshrestha is working with Amity School of Hospitality, Amity University, Gurugram (Haryana) as Assistant Professor and Programme Coordinator (Tourism). She has completed her PhD (Tourism) in Jiwaji University. Her research interest pertains to areas of heritage tourism, destination management, tourism marketing and tourist behaviour. She has published her research work in reputed international journals.

Woo Tai Kwan obtained her Bachelor in Humanities with Education (Hons) in 1982, Masters in Education in 1992 and a PhD in Education in 2003. She has been actively engaged in teacher training for more than 20 years and started lecturing in a private university since 2009. She also enjoyed a 5-year stint as an editor at a leading daily in Malaysia (The Star). Her field of interest is diverse but mainly pertains to open distance learning and the development of educational resources.

Cindia Ching Chi Lam is the Academic Coordinator of the Evening Degree Programmes at Macao Institute for Tourism Studies (IFTM). She earned her PhD from the Catholic University of Portugal (Portugal). She has published

books, book chapters and worked on many government and commercial consultancy and research projects.

Agita Livina is the Chair on UNESCO MAB and Director, HEPsi at Vidzeme University of Applied Sciences, Latvia.

Erdan Ma is an Associate Professor at the Yunnan University of Finance and Economics. She earned her PhD from Macao University of Science and Technology (MUST). Her research interests involve issues of tourism and hospitality. She has completed many academic, government and commercial projects, and published journal articles, book chapters and other articles.

Thaïse Zattera Marchesini, University of Caxias do Sul, Brazil, is an Architecture and Urbanism Academic at the Arts and Architecture Center of the University of Caxias do Sul (UCS), as well as a Researcher at Scientific Initiation Scholarship PIBIC/CNPq and member of the Center for Urban Studies and Cultural Heritage studying Tourism and Regional Planning. <https://orcid.org/0000-0001-5479-3032>.

Dr Yasushi Maruyama (PhD, CIA, CFE, CPFA) is a Professor at the School of Business Administration, Aichi Institute of Technology. His research interests include public accounting, public auditing, public administration management, and innovation in non-profit organizations. He has worked in the local government in Japan and aims to bridge the gap between practice and theory. He holds a professional internal audit certification CIA and has a long history of working in the audit department. In addition, he is an academic advisor to several Japanese local governments on governance and management.

Dileep Kumar, M. is a Professor of Research and Strategy of Gopal Narayan Singh University, India and Nilai Field Research Centre, Malaysia. He has engaged in teaching, training, consultancy and academic administration for the past 18 years in several national and international universities. He is a consultant of research and project management for manufacturing and service organizations. He has written several industrial and business case studies, books and monographs and published several research papers in high-impact journals.

Ashutosh Pandey is an Assistant Professor at FORE School of Management, New Delhi (India). He received the MHRD scholarship to pursue his full-time PhD in Marketing from ABV-IIITM, Gwalior. His area of interest lies in tourism marketing, destination management, experience quality management and social media marketing. He has published his research work in many reputed international journals.

Justin Matthew Pang is a Tourism and Hospitality Lecturer with the Royal Melbourne University of Technology (RMIT) University, Vietnam, Hanoi. He holds a Doctor of Hotel and Tourism Management (D.HTM) from the Hong

Kong Polytechnic University. Prior to joining RMIT University, Justin taught hospitality for more than a decade at Temasek Polytechnic, Singapore. He also spent more than 10 years in operations, having worked in hotels and resorts in Australia, Singapore, United Kingdom, USA and the Caribbean.

Enrico Panai (PhD) is a Human Information Interaction Specialist and an independent researcher in Cyber Geography and Ethics of Information. He has taught for several years as an adjunct professor of Digital Humanities in the Department of Philosophy at the University of Sassari. He is in the process of obtaining a new PhD in Geoeconomics and Geopolitics at the Department of Humanities and Social Science (DUMAS) at the University of Sassari (Italy). He is currently president of EATSA – Euro-Asia Tourism Studies Association.

Gavinolla Mahender Reddy is an Assistant Professor at the National Institute of Tourism and Hospitality Management, India, Guest Lecturer at Vidzeme University of Applied Sciences, Latvia, and a PhD candidate at Indira Gandhi National Tribal University, India. <https://orcid.org/0000-0002-3476-3132>.

Garima Sahu is a Research Scholar at Amity University, Uttar Pradesh, India. She possesses exemplary marketing management skills especially in the fields of product branding and consumer behaviour. She has rich and extensive industry experience of more than 8 years in both India and abroad with renowned names such as Unilever, Australia, Maruti Suzuki, India Ltd, etc.

Sabrina Seeler is a Lecturer in International Tourism Management at the West Coast University of Applied Sciences, Heide (Germany) and a Research Fellow at the DITF – German Institute for Tourism Research. She holds a PhD from Auckland University of Technology (New Zealand) and has worked as a Postdoctoral Researcher at Nord University (Norway) where she has conducted this research. Her main research interests are experience consumption and creation, consumer behaviour in tourism, sustainable destination management, and visitor management. She is a book review editor for the *Journal of Tourism Futures* where she has also guest-edited a special issue and is a regular reviewer.

Simarjeet Singh is a Research Scholar, University School of Applied Management, Punjabi University, Patiala.

Sampada Kumar Swain is the Professor and Head of Department of Tourism, Pondicherry Central University.

Bruna Tronca, University of Caxias do Sul, Brazil, holds an MSc in Tourism and Hospitality (UCS) and graduated in Architecture and Urbanism (UCS). Her current research interest includes areas of architecture and urbanism, tourism and hospitality, accessibility, historical heritage, urban and regional planning. <https://orcid.org/0000-0002-7529-3560>.

Dr Nidhi Walia is an Assistant Professor in University School of Applied Management, Punjabi University, Patiala. She has completed her MBA (Finance), MCom and PhD and has more than 15 years of teaching experience. She has published around 30 research papers in various reputed international journals. She is also acting as editorial board member in various international journals.

List of Contributors

<i>Gönül Akin</i>	Beykent University, Turkey
<i>Sonam Angmo</i>	Ladakh University, India
<i>Marcello Atzeni</i>	University of Sassari, Italy
<i>Amine Belhadi</i>	Cadi Ayyad University, Morocco
<i>Soniya Billore</i>	Linnaeus University, Sweden
<i>Galina Bukovska</i>	Vidzeme University of Applied Science, Latvia
<i>Pedro de Alcântara Bittencourt César</i>	University of Caxias do Sul, Brazil
<i>Chiam Chooi Chea</i>	Open University Malaysia, Malaysia
<i>Giacomo Del Chiappa</i>	University of Sassari, Italy
<i>Dorthe Eide</i>	Nord University, Norway
<i>Mehmet Ertas</i>	Pamukkale University, Turkey
<i>Pooja Goel</i>	University of Delhi, India
<i>Normala, S.G.</i>	Xiamen University Malaysia, Malaysia
<i>Vikas Gupta</i>	Amity University, India
<i>Olga Hoegh-Guldberg</i>	Nord University, Norway
<i>Ut Lon (Billy) Im</i>	Macao Institute for Tourism Studies, China
<i>Ruchika Kulshrestha</i>	Amity University, India
<i>Woo Tai Kwan</i>	Open University Malaysia, Malaysia
<i>Cindia Ching Chi Lam</i>	Macao Institute for Tourism Studies, China
<i>Agita Livina</i>	Vidzeme University of Applied Sciences, Latvia
<i>Erdan Ma</i>	Macau University of Science and Technology, China

xxviii List of Contributors

<i>Thaise Zattera Marchesini</i>	University of Caxias do Sul, Brazil
<i>Yasushi Maruyama</i>	Aichi Institute of Technology, Japan
<i>Dileep Kumar, M.</i>	Research and Strategy of Gopal Narayan Singh University, India and Nilai Field Research Centre, Malaysia
<i>Ashutosh Pandey</i>	FORE School of Management, India
<i>Justin Matthew Pang</i>	RMIT University, Vietnam
<i>Enrico Panai</i>	University of Sassari, Italy
<i>Gavinolla Mahender Reddy</i>	National Institute of Tourism and Hospitality Management, India
<i>Garima Sahu</i>	Amity University, India
<i>Sabrina Seeler</i>	Nord University, Norway
<i>Simarjeet Singh</i>	Punjabi University, India
<i>Sampada Kumar Swain</i>	Pondicherry University, India
<i>Bruna Tronca</i>	University of Caxias do Sul, Brazil
<i>Nidhi Walia</i>	Punjabi University, India

Foreword

Declared as a pandemic on 11 March 2020 by the World Health Organization (WHO), the Coronavirus (COVID-19) outbreak has resulted in more than 1.3 million deaths out of the more than 56 million (or 0.8% of the world's population) known infected individuals (as of 18 Nov 2020) across the globe (WHO, 2020).

The global tourism industry has felt the full brunt of the pandemic, with business closures accompanied by massive job losses. Major airlines have filed for bankruptcies, and the abilities of every single government are tested to its limits. The need to protect lives and livelihoods has become a delicate balancing act, with proponents of business resumption and reopening of borders at odds with those who prioritize health and safety. There is even polarization at the most basic level – those for and against the wearing of masks. For all the progress made in the twenty-first century especially in education, the irony is that science (and rationality) risks being sidelined.

This book is timely as it provides a comprehensive review and compilation of topics related to the current and past pandemics and their direct and indirect impact on tourism. Dr Sharad must be commended for directing the research towards a more applied focus, as concrete solutions are needed in the collective responses by the people, industries and governments of the world.

There is reason to be cautiously optimistic. 38 million people have recovered from COVID-19. In parts of Asia, the situation has either improved with no further community spread or successfully achieved a huge reduction of COVID-19 positive cases. Some air travel bubbles have been established, safety protocols put in place, safe management measures instituted and implemented and a good number of vaccine candidates competing to complete their trials.

The day will come when we finally conquer COVID-19, yet we know it will not be the last widespread disease that we would witness in our lifetime. A measured and rational approach by all is needed to prepare for the next challenge, viral or otherwise. There is cautious optimism that mankind will prevail again.

Dr Edward Koh¹
Visiting Professor
Bangkok University International

¹Dr Koh works at the Singapore Tourism Board as its Executive Director (Conventions, Meetings & Incentive Travel) at the Experience Development Group.

This page intentionally left blank

Preface

Viruses have been found everywhere on Earth (*NHGRI, USA*). Viruses are found wherever there is life and have probably existed since living cells first evolved (Iyer et al., 2006). Virus outbreaks are not a new phenomenon. They have occurred many centuries ago and are happening in this twenty-first century too. The outbreaks of these viruses were most horrific because of lack of knowledge of these viruses and their severe impacts, as well as no research and development to encounter such viral diseases because of absence of the vaccination and its related treatments and precautions. Such pandemics will always be a dreadful experience for human beings due to mass death tolls and infection through community spread. According to the *National Human Genome Research Institute*, 'A virus is a small collection of genetic code, either DNA or RNA, surrounded by a protein coat' (*NHGRI, USA*). These viruses can enter our life and infect us in various ways. It can be possible through disease-bearing organisms, transmitted from plant to plant by insects and by blood-sucking insects. Influenza viruses are spread by coughing and sneezing etc. The book highlights several past and recent severe global pandemics that have broken out in various countries in the last few decades and harshly impacted tourism mobility and the tourism industry globally. The recent outbreaks of some well-known viruses such as *avian flu, SARS, MERS, yellow fever, Ebola virus, Zika virus, swine flu and bird flu* have directly affected tourism mobility throughout the world (CDC, 2020).

The most recent outbreaks of *COVID-19* inflamed throughout the world, and as a result the outbreak was declared a Public Health Emergency of International Concern on 30 January 2020 by the *World Health Organization (WHO)*. On 11 March, *World Health Organization Director-General* characterized *COVID-19* as a pandemic (*previously known as '2019 novel coronavirus'*) (CDC, 2020). The book highlights conceptual, theoretical background of studies and practical methods towards successfully handling these global pandemics and health emergencies as well as provides best practices to rejuvenate the tourism and hospitality industry from these pandemics.

The historical reviews of virus outbreaks exhibit the repulsive story which directly affects people, place, process, productivity, profitability and pleasure of business and society throughout the world. The dynamics of virus outbreaks are always painful, precautionary and preventive and involve follow-up on many strict restrictions, guidelines as well as standard operating procedures which are most essential protocols during such pandemic situations. The setbacks of these pandemics have always disrupted the social, economic and political environment

in the respective regions. It is an old saying that human beings are social creatures. Pandemics affect the social sphere and create a psycho-syndrome of virus infections during the socialization process, meeting for specific purposes, leisure, pleasure and recreation. The terms social distancing, covering mouth with mask, regular hand washing, hand sanitization and maintaining cleanliness and health and hygiene are expounded.

The outlook and approach to encounter such chronic and critical viral diseases have always disrupted our lively environment and physical and mental well-being. In this new age of globalization, commercialization and socialization, celebrations with faster connectivity mobility and advanced information and communication technology, sharing economy where people are the most vibrant sensible resource which require safety and security, protection, precaution during meetings, interactions, with various stakeholders are very routine affairs. Faster mobility with advanced means of transportation, inter-continental global connectivity of people is the most vibrant reason of virus outbreaks and virus infection. The most recent virus outbreaks are some supporting real examples of such global regional and local pandemics.

Purpose of the Book

The purpose of this book is to bring historical and contemporary holistic understanding of various virus-related diseases and direct impact on tourism mobility is needed by academicians, researchers, and travel, tourism and hospitality industry practitioners. This book aims to fill that gap and offers a variety of perspectives through useful and current information in this most crucial aspect that relates to everyone through the focus on cutting-edge research, case study, conceptual, evidence-based study and viewpoints on virus outbreaks and tourism mobility. The book disseminates new knowledge and understanding relayed to emerging and re-emerging pathogens and their vulnerabilities which have influenced the travel, tourism and hospitality and aviation sectors globally. This will also explore the impacts of epidemics, risk factors, capacity to evacuate tourists from the vulnerable destination, the revival of the tourism sector and efforts to control infectious disease through these virus outbreaks.

Some chapters highlight the management and effective measures for prevention and control procedures of these virus outbreaks that provide practical guidelines and frameworks, standard operating procedures, protocols that can be adopted to minimize the severe impacts of the virus and make implementation efforts to control such pandemics successfully by efficiently managing tourism destination and tourism and hospitality enterprises globally.

This book provides an understanding of crisis management during virus outbreaks and recovery and revival after the pandemic of the travel, tourism, hospitality and events sectors worldwide. As an edited book, it will add on new research and knowledge base with high-quality contributions by international scholars and practitioners.

Organization of the Book

The book provides an informative insight into various types of recent virus outbreaks and impact on tourism mobility in worldwide. The chapter coverage of this book is in context of stakeholders of the tourism and hospitality sector. These are people (as guests, visitors, tourists and host as services providers such as tour operators, travel agents, tourist guides, hoteliers, cabs and coaches operators, corporate event planners, destination management companies, local streets food and snacks vendors, souvenir sellers etc.), places (inbound and outbound, international and domestic tourist destinations, tourist spots), processes (booking, marketing, service quality feedback, online and offline payment, online customer care, practices (responsible, sustainable, eco-friendly), technology (technology enabled services) and environment issues (climate changes) destination governances etc., which provide an overview of the severe impacts of pandemics.

The book will have both theoretical and practical implications for researchers, academicians and policymakers who wish to share insights about virus outbreaks and the impact and revival of tourism mobility. The book contains 17 chapters relating to various virus outbreaks and their impact on sharing knowledge about tourism industry experience, learning, outcomes and practices during pandemics from country to country. A chapter-by-chapter brief description follows.

Chapter 1 highlights the catastrophic pandemics which have occurred in the twentieth and twenty-first centuries and their disruptive impact on tourism mobility. A detailed study of past pandemics is conducted starting from the Black Death or Bubonic Plague of 1346 to the recent COVID-19 outbreak and the effect of these diseases on the tourism and economy of the infected countries. Such pandemics have a negative effect on tourism destinations by damaging their image and competitiveness, and as a result leading to disruptions in mobility of tourists, with Asian countries being the most at risk of such disruptions.

Chapter 2 focuses on some demographic trends today that may increase the risk for spreading contagions and our vulnerability to viruses. This is mainly due to the sheer volume of today's population movements, from migration and travel as people fly within and across countries. This vast mobility may make it faster and easier for viruses to spread around the world. COVID-19, which purportedly started in 2019, was a global pandemic that now affects the whole world due to high mobility among countries.

Chapter 3 reports a comprehensive study to elucidate the existing landscape of scientific production of disease outbreaks, pandemics and tourism research. The authors analyzed scientific production of pandemics and tourism-related studies such as year-wise publications, productive authors, institutes, funding sponsor, thematic areas of research and citation analysis. The authors analyzed the research papers indexed in the online Scopus data base over a 50-year period, starting from 1971 to 2020 by using Bibliometrics, and the data are visualized by using data visualization tools like VOS viewer and the Tableau.

Chapter 4 briefly discusses the major viral outbreaks in Asian countries and discusses their impact on the tourism industry. It also discusses the resilience strategies taken by the Asian countries to re-emerge their tourism markets from

these outbreaks. It is based on the systematic review of the earlier literature on the various viral outbreaks and the corresponding resilience measures in the Asian peninsula.

Chapter 5 aims to review the effect of the 2003 SARS epidemic on tourism and to analyze the learning outcomes from this crisis critically. The study further proposes practical and strategic tips for airlines, hoteliers and destination marketers in the top Asian tourism markets such as India, China, Singapore and Thailand if a similar crisis affects the region. The research reviewed past literature by using the Prisma method, which is an evidence-based minimum set of items, for reporting in systematic reviews and meta-analyses. The research summarized the previous literature on the SARS outbreak in 2003 and reviewed various practices for tourism industry sustainability. The study provides information of how the airlines, hoteliers and destination marketers tackled the SARS epidemic and proposes the integrated strategy for managing such crises in future.

Chapter 6 synthesizes and organizes existing literature on contagious diseases and tourism. This systematic mapping of the literature helps to identify various mature and emerging themes around the research domain in the literature. The study uses systematic methodology along with bibliometric and content analysis. Using a combination of electronic database searching and forward and backward references searching, the study identifies 160 suitable published studies. The present study is one of the early attempts that analyzes the literature on contagious diseases and tourism using bibliometric analysis and contributes to the literature by identifying various mature and emerging on contagious diseases and tourism literature. These insights provide a robust map for future investigation in this field and also offer implications for practitioners.

Chapter 7 seeks to reflect on new expectations for the lodging industry regarding the post-epidemic social context of COVID-19. By presenting a brief historical review of the way of life and the configuration of cities over the years, mainly from the Middle Ages, it seeks to relate events to protocols developed in response to global sanitary demands. These past demands, since the tuberculosis crisis, have been able to respond after a century and a half to this new urban and architectural challenge. In this way, it points out these practices in different medium-sized locations in Brazil, developed through – and in function of – installation of these accommodations, such as Campos do Jordão (SP), Petropolis (RJ), Guaramuns (PE) and São Francisco de Paula (RS). This research seeks to explore, by means of a bibliographic reference survey, this demand.

Chapter 8 discusses the impact of COVID-19 on employments and livelihood measures and how safety, health and hygiene issues affected the tourism and hospitality industry. It describes a theoretical model to understand the mental health challenges and implication of policies on a practical level. It extends towards tourist destination governance practices that ensure better hospitality and tour operation businesses by minimizing the impact of the pandemic.

Chapter 9 portrays the pandemic period in the city and illustrated the government strategies that have effectively put the outbreak and society under control. The governmental actions can be categorized chronologically into five phases: from early warning and impeding both imported cases and community

spread during the two initial stages; city lockdown and encouraging domestic demand in the third and the fourth stages; and supported the resumption of the economy to the new normal by the fifth stage. The analyses showed that the success was, by large, the results of the swift actions and astute strategies of the government, from instant responses to the potential risks, seeking support from large enterprises through corporate social responsibility (CSR), to actively cooperate with the community and the vicinity.

Chapter 10 focuses on the COVID-19 pandemic, SARS, bird flu, Ebola, swine flu, MERS and Zika epidemics. The study also includes a review of studies on epidemics in previous years. Besides, the COVID-19 pandemic is quite different from other epidemics. In April 2020, international flights were stopped for the first time in the tourism history all over the world. From this point of view, the aim of the study is to compare the effects of the COVID-19 pandemic and epidemics that occurred after the 2000s on the tourism sector.

Chapter 11 explores how micro-enterprises (MEs) and small and medium-sized enterprises (SMEs) within the Norwegian tourism sectors were impacted by COVID-19 in early 2020. It examines central stakeholders' and tourism SMEs and MEs first responses to the pandemic. This study is based on a news media review. The media review reveals that Norwegian tourism SMEs and MEs so far have responded in five ways that are to some extent time-displaced yet continue simultaneously: (1) early response to business survival, (2) smaller operational changes, (3) employee layoff and bankruptcies, (4) innovation and alternative income sources and (5) gradual reopening.

Chapter 12 explores the innovative experiential marketing adopted by Japanese resorts and contributes to the identified need for more knowledge in the area. A multiple case approach was adopted and information from 12 resorts was obtained through secondary data. Results identify five innovative marketing approaches that were used by the Japanese resorts studied in this research. The chapter contributes theoretically in relating cultural consumption to experiential marketing in COVID-19 times, opens discussion for policy implications and aims to provide some inspiration to other firms in the business of tourism related to cultural consumption.

Chapter 13 delves into the approaches taken by Vietnam in pre-mediating the influx of COVID-19 from interlopers into the country and controlling its spread within the confines of the nation. This study examines the steps taken by Vietnam. The quick actions of the government have instilled confidence in their citizens, promoted greater internal travel mobility within the Vietnam thus helping the local tourism industry to remain vibrant and competitive. Unlike other countries, which have been severely affected by the COVID-19 virus, Vietnam is poised for a head-start in its recovery.

Chapter 14 aims to provide a generic discussion of how the coronavirus pandemic is likely to influence the services operated by the aviation industry. The chapter, to a greater extent, benefits from the results of existing conceptual/empirical studies, media news as well as the reports of various international organizations such as UNWTO and IATA.

Chapter 15 focuses on research carried out to contribute to this debate by presenting and discussing findings of an empirical investigation applying a factor–cluster analysis on a sample of 225 French consumers/travellers to profile them based on accommodation selection criteria. Further, a series of chi-square tests was run to investigate whether significant differences exist among clusters based on their socio demographic characteristics (i.e. gender, age, level of occupation, employment status) and travel-related variables (i.e. the preferred type of accommodation and the length of the holiday).

Finally, at the end of this journey of the book, as an editor I can say that the outcomes will be able to cover many issues and outcomes related to virus outbreaks and tourism mobility. I hope the readers will find some value in the contributions made by the authors from various countries representing a broad cross-section of university researchers and industry practitioners as they provide a global perspective to this topic. In summary, the book will also open up further avenues and opportunities for future research into the area of virus outbreaks and its impact on tourism, hospitality, events and transport industry globally in a diverse range of cross-disciplinary settings.

References

- Iyer, L. M., Balaji, S., Koonin, E. V., & Aravind, L. (2006). Evolutionary genomics of nucleo-cytoplasmic large DNA viruses. *Virus Research*, 117(1), 156–184. doi:[10.1016/j.virusres.2006.01.009](https://doi.org/10.1016/j.virusres.2006.01.009)
- <https://www.cdc.gov/coronavirus/2019-ncov/travelers/travel-risk.html>. Accessed on October 29, 2020.
- <https://www.cdc.gov/zika/pdfs/fs-zika-basics.pdf>. Accessed on October 29, 2020.
- <https://www.genome.gov/genetics-glossary/Virus>. Accessed on October 29, 2020.

Acknowledgements

First of all my sincere thanks to the Almighty whose blessings made it possible to edit this book successfully which is based on the most emerging global issue especially focussed on tourism and hospitality industry mobility during virus outbreaks.

Secondly, I owe an enormous debt of gratitude to my teacher (Guru) Professor, Umendra Narayan Shukla, and my respected parents without whose support and encouragement it would not have been possible for me to complete this endeavour.

I would like to express my gratitude to book series editors Prof. Maximiliano E. Korstanje and Prof. Hugues Seraphin who gave me this opportunity to edit on the topic 'Virus Outbreak and Tourism Mobility' under the book series on 'Tourism Security-Safety and Post Conflict Destinations', Emerald Publication, and also helped with the completion of this book. I am really thankful to them.

My sincere gratitude goes to all authors and co-authors whose interest, initiative, integrity, commitment and hard work for their valuable contributions to this edited volume. I highly appreciate their quality chapters, timely contribution and expertise to this book.

I am also grateful to my department faculty colleagues who have always inspired and encouraged me to complete this book.

My special thanks go to Emerald Publishing who gave me this opportunity to edit this book, and to all the book editing team members who have been involved in this book project for their continuous support and guidance for the successful completion of this book.

Finally, big thanks to my wife Sakshi and my children Atharv (son) and Aashvi (daughter) without whose support this book would not have been completed.

Thanking you

Dr Sharad Kumar Kulshreshtha

This page intentionally left blank

Introduction

Sharad Kumar Kulshreshtha

Virus Outbreaks Backgrounds

The twenty-first century is the century of major pandemics and virus outbreaks. In this century, there were many pandemics that had occurred, i.e. Spanish flu: 1918–1920 from the South Seas to the North Pole, Asian flu: 1957–1958 in Singapore, Hong Kong and the United States, acquired immunodeficiency syndrome (AIDS): 1981 to present day in West Africa; after that, there are various influenza virus outbreaks like severe acute respiratory syndrome (SARS), H1N1 influenza pandemic (2009–2010), Middle East respiratory syndrome (MERS) (2012), Ebola pandemic (2014–2016), Zika virus (ZIKV) (2015), Nipah virus, cholera, yellow fever (YF), Lassa fever and the ongoing coronavirus (2019). Bats are being increasingly recognized as an important reservoir of zoonotic viruses of different families, including SARS, coronavirus, Nipah virus, Hendra virus and Ebola virus (Smith & Wang, 2013). Pandemics are large-scale outbreaks of infectious disease that can greatly increase morbidity and mortality over a wide geographic area and cause significant economic, social and political disruption (Madhav et al., 2017). Ebola is one of the deadliest infectious diseases of the modern era. Over 50% of those infected die (LaBrunda & Amin, 2020). As at September 2015, the recent Ebola virus disease (EBV) in West Africa has led to 11,306 deaths out of 28,200 cases reported from 10 countries (Naa, Lokko, & Lokko, 2016). The first introduction of ZIKV to Brazil likely occurred between August 2013 and April 2014 (90% credible interval) (Zhang et al., 2017). ZIKV has been one of the major international public health concerns following large outbreaks in the Americas occurring in 2015–2016 (Desai, Hartman, Jayarajan, Liu, & Ian Gallicano, 2017). Chikungunya virus (CHIKV) is a mosquito-transmitted alphavirus belonging to the Togaviridae family, first isolated in Tanzania in 1952 (Caglioti et al., 2013). The new coronavirus strain called ‘2019-nCoV’ is believed to have an incubation period of 2 to 14 days, according to the US Centers for Disease Control and Prevention.

The Fig. 1 highlights the WHO’s immunisation programmes which started in 1974, 1990 and 1999.

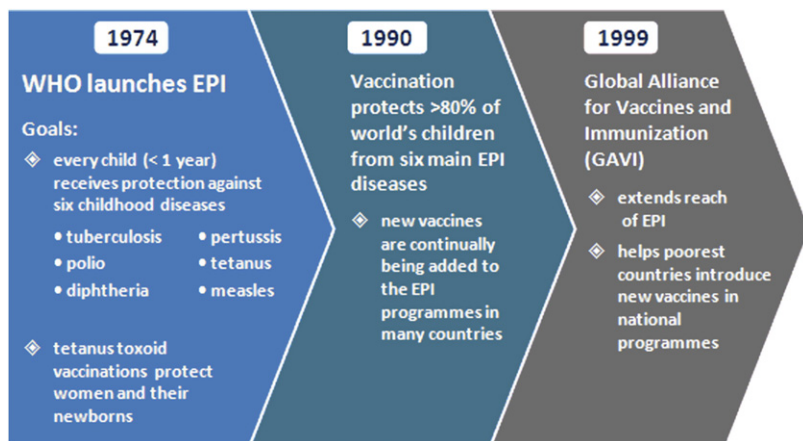


Fig. 1. WHO's Expanded Programme on Immunization (EPI), 1974.
 Source: WHO (Strengthening immunization: WHO's Expanded Programme on Immunization).

Emerging and Re-emerging Pathogens in the World

The challenge becomes even greater when faced with a wholly new disease. The international community has recognized the need to invest to improve our ability to respond to new threats and prepare itself with a novel research and development (R&D) paradigm to address future epidemics (*outcomes of the Workshop on Prioritization of Pathogens held on 8–9 December 2015, a group included experts in virology, microbiology, immunology, public health, clinical medicine, mathematical and computational modelling, product development, and respiratory and severe emerging infections, met in Geneva to prepare a process for prioritization of pathogens under the Blueprint for accelerated R&D for severe emerging diseases with potential to generate a public health emergency*).

The major difference today is that arbovirus emergence and dispersion are more rapid and geographically extensive, largely due to intensive growth of global transportation systems, arthropod adaptation to increasing urbanization, our failure to contain mosquito population density increases and land perturbation (Gould, Pettersson, Higgs, Charrel, & de Lamballerie, 2017). The identification and characterization of a new coronavirus (2019-nCoV) caused an epidemic of acute respiratory syndrome in humans in Wuhan, China (Zhou et al., 2020). A panel of scientists and public health experts convened by the World Health Organization (WHO) met in Geneva 17–18 November 2016 to prioritize the top five to ten emerging pathogens likely to cause severe outbreaks in the near future. The initial list of disease priorities needing urgent R&D attention comprises: Crimean–Congo haemorrhagic fever, EBV and Marburg, Lassa fever, MERS and SARS coronavirus diseases, Nipah and Rift Valley fever. The list will be reviewed annually or when new diseases emerge (WHO, 2015). Rift Valley fever is an acute zoonotic viral disease caused by Rift Valley fever virus (RVFV) that affects ruminants and humans in Sub-Saharan Africa and the Arabian Peninsula (Samy, Peterson, & Hall, 2017). YF outbreaks continue, and have expanded into new areas and threaten large populations in South America and Africa (Chen & Wilson, 2020).

After this, in 2009, the Swine flu vaccine, and, in 2020, COVID-19 vaccine have been developed.

Virus Outbreaks in Asian Countries

In the past two decades or so, a number of viruses have emerged in the global swine population (Meng, 2012). The most populated Southeast Asia region is particularly vulnerable. Arboviral diseases, such as dengue, Japanese encephalitis, West Nile virus, chikungunya fever, hemorrhagic fevers such as Crimean–Congo hemorrhagic fever, Kyasanur forest disease virus, etc., are on the rise and have spread unprecedentedly, causing considerable burden of disease (Dash, Bhatia, Sunyoto, & Mourya, 2013). The numerous other outbreaks of disease have forged a persistent presence amongst modern-day headlines. Amongst these are SARS, H1N1 influenza pandemic, MERS, Ebola, Zika, Nipah virus, cholera, YF and Lassa fever (WEF January 2019).

Virus Outbreaks and Tourism Mobility

Tourism is the fastest growing industry with the fastest means of mobility worldwide. Tourism is a global activity; as globalization spread across the world, there is much to be understood about how the wide-ranging changes are impacting on infectious diseases. In the age of globalization, digitalization and emerging sharing economy, the mobility of people, products and services have become much faster than earlier. People are travelling to every corner of the world for various reasons and motivations. This mass mobility is possible due to the advent of a new age of transportation system which provides faster global connectivity and mobility. This mobility sometime becomes a cause of virus spread or virus outbreaks which are also a very severe and drastic challenge and risk for the global community. After the emergence of the H1N1 influenza in 2009, some countries responded with travel-related controls during the early stage of the outbreak in an attempt to contain or slow down its international spread (Bajardi et al., 2011).

The outbreak of SARS created international anxiety because of its novelty, its ease of transmission in certain settings and the speed of its spread through jet travel, combined with extensive media coverage (Wilder-Smith, 2006). The disease was noticeable for the rapid global spread, which had substantial repercussions for local economies and human mobility, as well as for health (Hall & Lew, 2009).

The outbreaks of virus are not a new pathogenic event; almost, every country in the world has gone through severe health hazards. As per WHO, the outbreak of SARS in 2003 in China had spread to at least 30 countries and regions including Australia, Brazil, Canada, Hong Kong, South Africa, Spain and the United States. According to the recent United Nations World Tourism Organization (UNWTO) report, international tourism arrivals (overnight visitors) worldwide grew to 4% in 2019 to reach 1.5 billion based on data reported by destination around the world. The recent outbreaks of some well-known viruses such as *malaria*, *dengue*, *cholera*, *chikungunya*, *measles*, *Japanese encephalitis*, *avian flu*, *SARS*, *YF*, *Ebola*, *Zika*, *swine flu* and *bird flu* have directly affected tourism mobility throughout the world.

Table 1 shows the year-wise vaccine development from 1798 to 2006 of various diseases.

Table 1. Years of Various Vaccines Development.

1800–1899	1900–1949	1950–1979	1980–1999	2000–2020
1798 – Smallpox	1923 – Diphtheria	1955 – Polio (IPV)	1981 – Hepatitis B	2000 – Pneumococcal conjugate
1885 – Cholera	1923 – Tuberculosis	1962 – Polio (OPV)	1986 – Meningitis B	2006 – Human papillomavirus
1885 – Rabies	1924 – Tetanus	1963 – Measles	1989 – Hepatitis A	
1891 – Anthrax	1926 – Pertussis	1967 – Mumps	1995 – Varicella zoster	
1896 – Typhoid	1927 – Tetanus	1969 – Meningitis	1998 – Rotavirus	
1897 – Plague	1935 – Yellow fever	1970 – Rubella	1999 – Meningitis C (conjugate)	
	1943 – Typhus	1972 – <i>Haemophilus influenzae</i>		
		1976 – Viral influenza		
		1976 – Pneumococcal polysaccharide		
		1977 – Meningitis C		

Source: WHO-Vaccine Safety Basic e-Learning Course.

UNWTO Initiatives during Pandemics

Being an international tourism organization, the roles and responsibilities of United Nations World Tourism Organization (UNWTO) are always very crucial to manage and control mobility of visitors, travellers and tourists worldwide and provide safety measures for tourists and destinations. During the pandemics and critical time, the role of UNWTO is not only to issue the urgent advisories but also to take care of health, hygiene and safety measures of the tourists. During times of crisis, tourism has to live up to its responsibility as an integral part of wider society. The sector must put people and their well-being first. During the EVD outbreak in the Democratic Republic of the Congo WHO recommended that it is particularly important there should be no international travel or trade restrictions.

The director general of the WHO, on the advice of the International Health Regulations (IHR) Emergency Committee on COVID-19, which met on 30 January 2020, declared outbreak of COVID-19 constitutes a Public Health Emergency of International Concern (PHEIC). *WHO has named the disease COVID-19 in short form for corona virus disease 2019. WHO During COVID-19, the UNWTO has taken a number of steps, i.e. travel tomorrow, travel restrictions, tourism recovery, sustainability in new normal, restart tourism, recommendation for action, tourism recovery technical assistant packages.*

Impact of COVID-19 Pandemic on Tourism, Hospitality and Aviation Industry

The COVID-19 pandemic has caused significant disruptions in the global economy and global mobility. The world is facing an unprecedented global health, social and economic emergency with the COVID-19 pandemic. According to WHO, the confirmed cases were 80,773 033, and confirmed deaths were 1,783, 619, with 222 countries, areas or territories presenting with cases of COVID-19 by 30 December 2020 (WHO, 2020). The most painful and severe condition was faced by the tourism, hospitality and aviation industry due to this COVID-19, which has had bad global impact. The UNWTO reported during the second quarter of 2020 for the first time ever that 100% of global destinations introduced travel restrictions.

According to UNWTO, there was a loss of 850 million to 1.1 billion international tourists and loss of US\$ 910 billion to US\$ 1.2 trillion in export revenues from tourism, and 100–120 million jobs were at risk due to this ongoing COVID-19 pandemic. There was a decline in international tourism receipts of between USD 910 and 1,170 billion in 2020, compared to the USD 1.5 trillion generated in 2019, with 100% of worldwide destinations having travel restrictions (by UNWTO).

The impact of COVID-19 has already surpassed the 2003 SARS outbreak which had resulted in reduction of annual revenue passenger kilometres (RPKs)

by 8% and USD 6 billion revenues for Asia Pacific Airlines (IATA, 2020). An overall reduction of air passengers (both international and domestic) ranged from 59% to 60% in 2020 compared to 2019 (ICAO, 2020). In airlines, there is a 54.7% decline of RPKs (both international and domestic) in 2020 compared to 2019 (IATA, 2020). An estimated loss of approximately 60% of passenger traffic and 61% or over USD 104.5 billion airport revenues occurred in 2020 compared to business as usual (ACI, 2020).

The cruise industry has suspended sailing until September 2020. The industry has seen record losses in share prices amongst the top three cruise lines – Carnival, Norwegian Cruise Line and Royal Caribbean Cruises (unctad 2020). The WHO and the Governments have prescribed maintaining an inter-personal distance of 1.5 or 2 metres (about 6 feet) from each other in order to minimize the risk of contagion (Setti et al., 2020).

Resilience and Tourism Industry during Epidemics

Resilience in the tourism sector is a practice that is able to develop business immunity to acclimatize in the current environment, manage instability and difficult times and move ahead in leaps and bounds. In this context, resilience is to be considered a catalytic business strategy to continue after the crisis from the current pandemic. It offers a chance to reorganize the business, even when tourism is at a standstill. Resilience, thus, prepares tourism businesses for coming challenges like climate change impacts, disease outbreaks and internal business risks amongst others. Destination governance after pandemics will be quite strategic and need to redefine and redesign with all the health, hygiene and required essential safety measures. In this context, tourist itineraries will be shorter and more protective, tours will be conducted in small groups, with focus being more on rural tourism while outskirts resorts and events are planned as appropriate.

Strategies to Encounter Virus Outbreaks for Safe Travel and Tourism

As per the WHO advisory on travel, precaution should be taken in regard to any respective destination along with health safety measures pertaining to standard operating procedures to minimize risks. In this situation, any virus outbreaks can disrupt the tourist mobility to a particular destination till there is a return to normalcy. International agencies like UNWTO, WHO, World Travel and Tourism Council (WTTC), International Civil Aviation Organization (ICAO), International Air Transport Association (IATA), Cruise Lines International Association (CLIA) and Pacific Asia Travel Association (PATA) always issued global advisories for travel restrictions during the time of pandemics and travel advisories. For this reason, the UNWTO with the coordination of respective countries issues travel advisories from time to time in the interest to protect the

safety of tourists with any virus infection and virus spread. They share all the safety precautions with the execution of all mandatory and essential safety measures that includes maintaining hygiene through regular handwash or sanitizing the hands, using masks to cover nose and mouth, and maintaining social distancing in public and crowded places.

Innovations and Digital Solutions for Tourism and Hospitality

There are many innovations and technological solutions exploring during COVID-19 like thermal scanners, personal protective equipment (PPE) kit, face shield and contact tracing mobile apps. The contact tracing app is the most significant tool for tracing COVID-19 positive patients as it alerts the mobile users about an infected person in nearby locations. Australia was amongst the first countries to launch a national contact tracing app, called COVIDSafe.

Table 2 mentions about ‘Contact Tracing Apps’ which have developed during the COVID-19 pandemic in various countries worldwide.

Table 2. Contact Tracing Apps during COVID-19 Pandemic.

Countries	Contact Tracing Apps
Australia	COVIDSafe
France	StopCovid App
Israel	HaMagen App
Germany	Corona-Warn-App
Canada	COVID Alert App
India	Aarogya Setu App
China	Close Contact Detector app
Vietnam	NCOVI App
Nepal	COVIRA App
Bangladesh	Corona Tracer BD App
Italy	Immuni App
Japan	COCOA App
New Zealand	NZ COVID Tracer app
Singapore	TraceTogether App
Malaysia	MyTrace App
Switzerland	SwissCovid App
United Kingdom	NHS COVID-19 App
Spain	Radar COVID App
Finland	Koronavilkku App

Source: Compiled by Author.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) has initiated many digital technology-based solutions against COVID-19, by deploying artificial intelligence (AI)-enabled mobile app solutions to mitigate current COVID-19 and future pandemic-related challenges, and organized the global hackathon CodeTheCurve for young developers and innovators, OER4 COVID-19 and support learning and knowledge sharing through open educational resources (OER) and #DontGoViral campaign for false information about COVID-19's origins (UNESCO).

Vaccination Development and Trails for COVID-19

Vaccines contain substances from an infectious agent, such as a virus, that, when injected into a person's body, stimulates production of antibodies that create resistance, or immunity, to that agent. After SARS coronavirus (CoV) outbreaks in 2003, vaccination trials started. The SARS infection may be mild, but it can lead to death. Globally, many countries, companies and research laboratories are working towards a COVID-19 vaccine which is still under development process, with a number of human trial phases. The WHO is working in collaboration with scientists, businesses and global health organizations through the Access to COVID-19 Tools (ACT) Accelerator to speed up the pandemic response. When a safe and effective vaccine is found, COVAX (led by WHO, GAVI and Coalition for Epidemic Preparedness Innovations (CEPI)) will facilitate the equitable access and distribution of these vaccines to protect people in all countries. There are many medical pharmaceutical companies in the race towards a COVID-19 vaccine. New York-based Pfizer and the German company BioNTech made history by presenting preliminary data indicating that their coronavirus vaccines were over 90% effective. Moderna announced that a preliminary analysis of the trial indicated that the vaccine was 94.5% effective. The Indian vaccine-maker Zydus Cadila began testing a deoxyribonucleic acid (DNA)-based vaccine delivered by a skin patch. They launched a Phase 2 trial on August 6 and are planning a Phase 3 trial to begin in December (Coronavirus Vaccine trackers, *The New York Times*). Oxford and AstraZeneca expect to produce up to three billion doses of the vaccine in 2021. Recently, worldwide media releases of the interim results of Phase 3 vaccine trial tests have shown a 90–95% success rate. The United Kingdom has become the first country to approve the Pfizer coronavirus vaccine for rollout. The vaccine claims to offer up to 95% protection against corona. Russia is the second country where authorities have begun mass voluntary vaccinations against COVID-19 (BBC News). Most countries in the world have already, with all supporting health and administration agencies along with airports, airlines and hospitals, arranged the essentials for this mass COVID-19 vaccination, which through cold chain air freight is to transport these temperature-sensitive medicines, including a potential COVID-19 vaccine.