Cutting Edge Research Methods in Hospitality and Tourism

This page intentionally left blank

Cutting Edge Research Methods in Hospitality and Tourism

EDITED BY

FEVZI OKUMUS

University of Central Florida, USA

S. MOSTAFA RASOOLIMANESH

Taylor's University, Malaysia

AND

SHIVA JAHANI

University of Central Florida, USA

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

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

First edition 2023

Reprints and permissions service
Contact: permissions@emeraldinsight.com

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

ISBN: 978-1-80455-064-9 (Print)
ISBN: 978-1-80455-063-2 (Online)
ISBN: 978-1-80455-065-6 (Epub)

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

Certificate Number 1985
ISO 14001

INVESTOR IN PEOPLE

Contents

List of Figures and Tables

Figures

Tables

About the Contributors

Graziano Abrate is an Associate Professor of Management in the Department of Economics and Business at University of Piemonte Orientale, Italy. His research interests include pricing and revenue management, demand estimation, environmental and economic sustainability and efficiency analysis, with a particular focus on the tourism and hospitality industry. His work has been published in several international journals. He currently serves as a member of the editorial board of the following journals: *Journal of Travel Research*, *Journal of Hospitality & Tourism Research* and *Tourism Economics*.

Chunrong Ai is Professor of Economics and Presidential Chair Professor in the School of Management and Economics, Chinese University of Hong Kong, Shenzhen. He is the Director of the Social and Behavioral Big Data Lab at The Shenzhen Research Institute of Big Data and Associate Director of Shenzhen Institute of Data Economy. Before that, he was Professor of Economics and Florida Term Professor at the University of Florida. His primary research interests are in the area of econometrics, empirical industrial organization, empirical finance and Chinese economy. Recently, he focused on the interdisciplinary research between data science and behavioral big data.

Md. Samsul Alam is currently working as an Associate Professor (Research) and Faculty Lead for Knowledge Exchange Framework in the Faculty of Business & Law, De Montfort University. He is a leading expert with experience in creating real-world impact around his research areas: financial economics, green finance, tourism finance, business sustainability and corporate governance. His research has received an amazing response across academic and general public forums.

Guy Assaker is presently serving as the Assistant Dean and Associate Professor of Hospitality and Marketing at the Adnan Kassar School of Business at Lebanese American University. He holds a PhD in Decision Science and Quantitative Methods from ESSEC Business School in France and a professional certification in hotel industry analytics from the American Hotel and Lodging Educational Institute in the USA. He has published more than 40 papers in major international refereed journals over the past years, with his research focusing on the use of advanced multivariate statistical methods and structural equation modeling to model various hospitality and tourism subjects.

Filipa Brandão holds a PhD in Tourism and a Master's degree in Tourism Management and Development from the University of Aveiro. She is an Assistant Professor at the Department of Economics, Management, Industrial Engineering and Tourism of the University of Aveiro and is Vice Director of the Master in Tourism Management and Planning. She is a Full Researcher at GOVCOPP – Research Unit in Governance, Competitiveness and Public Policy – University of Aveiro and Associate Editor of the *Journal of Tourism & Development* (SCOPUS). She authored books, book chapters and articles published in international journals. She has integrated several research and consultancy projects in Tourism and Leisure and has organized national and international scientific events. Her research interests and scientific production focus on innovation in tourism, regional development, tourism networks, social network analysis, planning and management of tourist destinations and urban tourism.

Zélia Breda holds a PhD in Tourism, a MA in Chinese Studies (Business and International Relations) and a BSc in Tourism Management and Planning from the University of Aveiro, where she is Assistant Professor, at the Department of Economics, Management, Industrial Engineering and Tourism, holding the position of Director of the Master's in Tourism Management and Planning. She is a senior member of the Research Unit "Governance, Competitiveness and Public Policies" of the University of Aveiro, a founding member of the Observatory of China and a Senior Consultant of Idtour, a tourism R&D spin-off company. She is also a member of the editorial, scientific and review boards of a few academic international peer-reviewed journals, as well as a member of the organizing and scientific committees of international tourism conferences. She has also been taking part in several research projects in the tourism field, both as a member of the team and as a consultant. Her research interests are tourism development, networks, China's outbound tourism, gender and tourism and internationalization of the tourism economy.

Carlos Costa is Full Professor and Head of the Department (School) of Economics, Management, Industrial Engineering and Tourism of the University of Aveiro, and Tourism Expert at the European Commission. He is Editor-in-Chief of the *Journal of Tourism & Development* (SCOPUS), and Senior Advisor of the *Tourism Review* (SCOPUS), *Journal of Destination Marketing Management* (SCOPUS) and *Journal of Hospitality and Tourism Management* (SCOPUS). He holds a PhD and MSc in Tourism Management (University of Surrey, UK), and a BSc in Urban and Regional Planning (University of Aveiro, Portugal). He is the leader of the PhD Tourism Program of the University of Aveiro and is also the head of the Tourism Research Centre of the University of Aveiro (included in Governance, Competitiveness and Public Policies Research Unit). He is also Scientific Coordinator of "idtour-unique solutions" – a tourism start-up company (private sector) based at the University, responsible for the transference of knowledge and innovation to the tourism sector. He is involved in a number of national and international tourism projects. He also works as Consultant for Portugal's National Agency of Accreditation, National Foundation for Science and

Technology and for the Cyprus Agency of Quality Assurance and Accreditation in Higher Education.

Jan Dul a Professor of Technology and Human Factors at the Rotterdam School of Management, Erasmus University, the Netherlands. He has a background in the technical, the medical and the social sciences and he is author of more than 200 academic publications. He is the Founder of Necessary Condition Analysis and wrote articles about the method in Organizational Research Methods and Sociological Methods & Research, as well as two books *Conduction Necessary Condition Analysis* (Sage Publications) and *Advances in Necessary Condition Analysis* (online book https://bookdown.org/ncabook/advanced_nca2/).

Irina Valerie Gewinner is a Postdoctoral Researcher at the Institute of Sociology, Leibniz Universität Hannover, Germany. Her research interests include social inequalities in education and labor market; skilled migration, mobility and tourism; and cultural and gender studies. Her recent publications are "Understanding patterns of economic insecurity for post-Soviet migrant women in Europe" (*Frontiers in Sociology*), "Gendered and diversified? Leadership in global hospitality and tourism academia" (*International Journal of Contemporary Hospitality Management*) as well as "Women in tourism in Muslim contexts: The impact of cultural background on customer behaviour" (*Women in Tourism in Asian Muslim Countries*, Springer).

Shiva Jahani is a Data Scientist and tourism and hospitality scholar. She leverages her data science expertise as a Statistician and Graduate Faculty in the College of Community Innovation and Education at the University of Central Florida as well as a Research Fellow at Orblytics LLC – an international data science and scholarly writing firm. She applies her tourism and hospitality expertise as the Associate Editor of the *Journal of Hospitality and Tourism Insights*. She has served as an Invited Board Member and Researcher of the World Academy for the Future of Women. She has published over 20 articles in refereed journals as well as several methodological white papers on a variety of topics. Her research includes invited collaborations on funded projects from such funders as: (a) FEMA, (b) NSF and (c) FDA.S.

Wangoo Lee is a PhD student at Fox School of Business, Temple University, PA, USA. He is a member of the Necessary Condition Analysis (NCA) development team and has published earliest NCA papers in hospitality/tourism-related journals. His research interests include service consumer experience and behavior, hospitality human–technology interaction, gamified hospitality services and tourist pro-environmental behavior. He has published academic papers in international journals such as *Current Issues in Tourism*, *Journal of Hospitality and Tourism Management*, *Journal of Destination Marketing and Management*, and *Leisure Sciences*.

S. Mostafa Rasoolimanesh is an Associate Professor and Director of Centre for Research and Innovation in Tourism, in Taylor's University, Malaysia.

His research interest areas contain sustainable tourism, heritage tourism, community participation, residents' perceptions and urban sustainability. Moreover, he has used advanced quantitative analysis such as partial least squares – structural equation modeling in most of his papers. He has published widely in high impact journals. He is an editorial team and board member of several reputed tourism and hospitality journals.

Fevzi Okumus is the CFHLA Preeminent Chair Professor within the Hospitality Services Department at the University of Central Florida's Rosen College of Hospitality Management. He has over 160 refereed journal articles, 3 books, 12 book chapters and 90 conferenced presentations and reports. As of August 1, 2021, his publications have received over 13,300 citations and he has an *h*-index of 55. He has chaired/co-chaired and served on numerous PhD dissertation and master thesis committees. He is the Editor-in-Chief of the *International Journal of Contemporary Hospitality Management* (IF: 6.514) and the *Journal of Hospitality and Tourism Insights*. He has received numerous prestigious research awards and recognitions.

Peter O'Connor is Professor of Strategic Management at University of South Australia Business School. His primary research, teaching and consulting interests focus on the use of technology in online retailing and marketing. Prior to joining the UniSA, he founded the Chair in Digital Disruption, sponsored by BNP Paribas, at Essec Business School in France. He taught, and held a number of senior administrative positions, at Essec for over 25 years, serving as both Director of MBA Programs and Dean of Academic Programs at various stages. In addition, he has regularly taught executive education seminars at London Business School; held visiting positions at both the Johnson Graduate Business School and the School of Hotel Administration at Cornell University; as well as worked in a variety of positions in industry in both Europe and the USA. In 2015, he launched Essec's first MOOC on hotel distribution with Coursera, which currently has over 15,000 active learners.

Ronald Ravinesh Kumar is Associate Professor in the School of Accounting, Finance and Economics at the University of the South Pacific. He teaches international finance, investment analysis and financial risk management. His research interests include tourism economics and development finance in small island economies. His publications have appeared in journals like *Applied Economics*, *Tourism Economics*, *Tourism Analysis*, *Tourism Management*, *Tourism Management Perspectives*, *Journal of Pension Economics and Finance* and others.

Syed Ali Raza is a Full Professor of Finance at Iqra University Karachi, Pakistan. He received his PhD degree in Finance from the Northern University of Malaysia. He is Director of Academics, Chairperson of Department of Accounting and Finance, member of Academic Council, member Board of Advance Studies and Research and member Doctoral Committee for Business Administration at Iqra University. Also, he has many international research publications

in well-reputed impact factor journals like *Tourism Management*, *Energy Economics*, *Energy Policy*, *The Energy Journal*, *Economic Modelling*, *Social Indicators Research*, *Resources Policy*, *Current Issues in Tourism*, *Physica A: Statistical Mechanics and its Applications*, *Quality and Quantity*, *International Migration*, *Total Quality Management, and Business Excellence*, *Journal of Business Economics and Management*, *Studies in Higher Education*, *Journal of Educational Computing Research*, and others. His research work has been cited more than 4,500 times.

Sajad Rezaei currently works at Worcester Business School, University of Worcester. Previously, he worked as a Lecturer/Researcher at Universität Hamburg and Lecturer at Taylor's University dual award programs with the Bristol Business School, University of the West of England. His recent research has been published in refereed journals such as *Computers in Human Behavior*, *Journal of Business Research*, *Journal of Retailing and Consumer Services*, *Marketing Intelligence & Planning*, *Journal of Internet Commerce*, *Technology Analysis & Strategic Management*, *The International Review of Retail, Distribution and Consumer Research* and *International Journal of Retail & Distribution Management*, among other scholarly outlets. His research direction has extended from his background in BSc Business Administration, MBA dissertation and PhD. theses with two key research themes including e-commerce and implicit cognition approach. He serves as a reviewer for several refereed journals such as Journal.

Nida Shah is working as an Assistant Manager Research and Visiting Faculty at Iqra University Karachi, Pakistan. She received her MBA degree in Finance from Iqra University Karachi. She has many international research publications in well-reputed impact factor journals. Her area of research work includes economics, finance and behavioral sciences.

Zsofia Toth is an Associate Professor of Marketing and Management. Beforehand she worked at the University of Nottingham and she obtained her PhD from the Manchester Business School, University of Manchester. Her research focuses on the development of buyer–supplier relationships and networks with special regard to customer/supplier attractiveness, social capital, tension management as well as digital service innovation. She has published in the *International Journal of Operations and Production Management*, *Annals of Tourism Research* and *Journal of Business Research and Industrial Marketing Management*, and serves as member of the editorial and review boards of the latter two journals.

Ahmet Usakli is an Assistant Professor in the Department of Tourism Administration at Bogazici University, Turkey. He holds a Master's degree in Hotel Administration from the University of Nevada Las Vegas (USA) and a Doctorate in Tourism Management from Gazi University (Turkey). His research interests revolve around consumer behavior in travel and tourism, destination marketing and management and statistical and methodological aspects of hospitality and tourism research.

Naser Valaei is Senior Lecturer in Digital Marketing at Liverpool Business School, Liverpool John Moores University, Liverpool, UK and MBA supervisor in Digital Marketing at University of the West of Scotland, London, UK. Previously, he was Postdoctoral Researcher in Digital Marketing at KEDGE Business School, Bordeaux, France and Assistant Professor in Marketing at Department of Marketing, Sunway University Business School, Malaysia. His research has been published in several journals such as Journal of Business Research, Computers in Human Behavior, Information Technology & People, Technology Analysis & Strategic Management, Industrial Management & Data Systems, Journal of Retailing & Consumer Services, Journal of Enterprise Information Management, Marketing Intelligence & Planning, Business Process Management Journal, the International Review of Retail, Distribution, and Consumer Research, among others. He is an Associate Editor of the Asia-Pacific Journal of Business Administration and sits at the editorial board of Journal of Promotion Management. He also serves as a reviewer to several refereed journals such as Journal of Business Research, Technovation, Information Technology & People and Tourism Management.

Yang Yang is a tenured Associate Professor in the Department of Tourism and Hospitality Management at Temple University. Also, he serves as the Executive Director of the U.S.-Asia Center for Tourism and Hospitality Research. He got PhD in Geography, Master of Statistics and MA in Economics from the University of Florida. His major research interests lie in tourism demand analysis, regional tourism growth, as well as hotel financial and real estate analysis. With a productive publication record, he was appointed as the Associate Editor of *Annals of Tourism Research* and the Corresponding Editor of the *International Journal of Hospitality Management*. At the same time, he has accumulated abundant industrial experience from various consulting projects.

Malin Zillinger, as a human geographer, is interested in several aspects related to the empirical study of tourism, and to the impact that the choice of methods has on what we know about tourist behaviour. Discussions on the importance of method choice, and the epistemological reasoning behind such choices, have been a major focus since she published her thesis in 2007. The main argument for the need of such a discussion is that decent methods enable us to enlarge our knowledge on the entire field of tourism, not least as a part of social science. She is teaching methods on bachelor and master level, and dedicated to the development of pedagogic teaching approaches.

Chapter 1

Introduction

S. Mostafa Rasoolimanesh, Shiva Jahani and Fevzi Okumus

In recent years, the issues facing internal and external stakeholders (e.g., managers, customers, and researchers) in hospitality and tourism have grown in complexity and scope. As such, several studies have highlighted the importance of applying advanced and cutting-edge research methods to investigate these complex phenomena. To this end, researchers have introduced new and avant-garde research methods and analysis techniques for use in hospitality research (Ali, Rasoolimanesh, Sarstedt, Ringle, & Ryu, 2018; Hadinejad, Moyle, Scott, & Kralj, 2019; Okumus, Koseoglu, & Ma, 2018; Rasoolimanesh, Ringle, Sarstedt, & Olya, 2021; Tavakoli & Wijesinghe, 2019). To meet this need, the editors have produced this book that introduces cutting-edge research methodologies relevant to current research in hospitality and tourism.

This first chapter provides a preview of the chapter content in this book. A paragraph is dedicated to each chapter. Methodologies covered in this chapter include structural equation modeling (SEM), applied econometric research, the relationship between tourism growth and income equality, network theory and social network analysis (SNA), examining tourism behavior with tracking mobility and planning exercises, fuzzy-set Qualitative Comparative Analysis (fsQCA), necessary condition analysis (NCA), and netnography research.

In Chapter 2, Ahmet Usakli and S. Mostafa Rasoolimanesh discussed application of SEM in tourism and hospitality research. The existence of two different approaches to SEM – covariance-based SEM (CB-SEM) and variance-based and partial least squares SEM (PLS-SEM) – presents challenges for researchers about SEM type selection and subsequent reporting. As such, these authors discussed the differences between CB-SEM and PLS-SEM, and provided comprehensive guidelines for researchers on how to apply each SEM. Within this context, the authors (a) summarized the fundamentals and advantages of SEM, (b) explained in detail the major issues that researchers should consider when selecting between CB-SEM and PLS-SEM, and (c) to ensure rigorous research practices, provided step-by-step guidelines for the application of both CB-SEM and PLS-SEM.

Cutting Edge Research Methods in Hospitality and Tourism, 1–4

doi:10.1108/978-1-80455-063-220231001

Guy Assaker and Peter O'Connor also provided discussions of PLS-SEM in Chapter 3. Specifically, the authors assessed that given its modeling flexibility, PLS-SEM may be ideal for testing the moderation effects of continuous variables. As such, the authors reviewed the methods available to hospitality and tourism researchers to perform moderation analysis with continuous variables in PLS-SEM, with the objective of enhancing understanding and encouraging the use of these techniques in future papers. The product term method is presented first, followed by an empirical example/application in the context of hospitality and tourism. Two extensions, namely the two-stage approach that can help cope with formative and higher-order constructs, and the orthogonalizing approach that can help generate more accurate results and overcome multicollinearity among tourism variables in the presence of a continuous moderator variable, are then presented and discussed.

Yang Yang, Graziano Abrate, and Chunrong Ai shifted topics in Chapter 4 from SEM to applied econometric research in hospitality and tourism management. The authors provided an overview of applied econometrics and outlined the econometric toolsets available for quantitative researchers using empirical data from the field. Basic econometric models, cross-sectional models, time-series models, and panel data models are reviewed first, followed by an evaluation of relevant applications. Next, econometric modeling topics that are germane to hospitality and tourism research are discussed, including endogeneity, multi-equation modeling, causal inference modeling, and spatial econometrics. Furthermore, major feasibility issues for applied researchers are examined based on the literature.

In Chapter 5, Syed Ali Raza, Nida Shah, Ronald Ravinesh Kumar, and Md. Samsul Alam described the application of an advanced econometric technique namely quantile-on-quantile (QnQ) to examine the nexus between tourism growth and income inequality in the top 10 tourist destinations in the world. This approach combines the two approaches, that is, the nonparametric estimation and quantile regression and regresses the quantile of the tourism growth onto income inequality quantiles, thus enabling the effect of the income inequality on across different conditional tourism growth distribution. Using QnQ approach, this chapter explains a comprehensive picture of the overall interdependence and nonlinear relationship between the examined variables. The result from QnQ approach shows wide variations within and across different quantiles of variables and provides important policy direction for tourism management in the respective countries.

Filipa Brandão, Zélia Breda, and Carlos Costa used Chapter 6 to discuss the application of network theory and SNA methods to the study of tourism and hospitality is relatively recent. The authors characterized the use of SNA as applicable in tourism and hospitality research. Specifically, they: (a) presented the evolution and the framework of SNA in a methodological perspective; (b) performed a bibliometric analysis of SNA use in tourism and hospitality research; (c) systematized the dimensions (e.g., centrality, cohesion, and structural holes) and metrics that researchers can use in order to apply SNA, as well as their relevance for tourism and hospitality research; and (d) presented a case study in which SNA was used to analyze tourism innovation networks.

In Chapter 7, Malin Zillinger encouraged tourism researchers to widen their scope of method when studying tourist behavior by debating tracking mobility and planning exercises as meaningful complements in researchers' method repertoire. Both methods have been found to reflect tourist behavior rather than simply mirror what tourists say they do. The data of the former are collected through more sophisticated methods, such as tracking mobility. Data for the latter are often recorded through use of more simple means such as surveys and interviews. The authors presented studies in which tracking mobility and planning exercises have been used and elaborated on their importance for theory building in future tourism research. They also provided concrete assistance for upcoming research studies that would like to include methods like these in their examination of tourist behavior.

S. Mostafa Rasoolimanesh, Naser Valaei, and Sajad Rezaei illustrated a step-by-step guideline in conducting fsQCA in tourism and hospitality studies in Chapter 8. As an emerging method, fsQCA is simultaneously quantitative and qualitative in nature, which makes it an appropriate method for social science disciplines including tourism and hospitality because of complex nature of relationships between multiple variables where theories and models are underdeveloped. Unlike conventional statistical techniques, fsQCA is an asymmetrical analysis technique that provides a holistic view and interrelationships among several conditions using Boolean algebra. The fsQCA analyses produce comprehensive assessment by revealing causal combinations of antecedents to predict an outcome; and identify sufficient configurations (e.g., causal combinations, and recipes) and necessary condition/s. By utilizing this method, researchers would be able to produce complex, comprehensive, and robust results.

In Chapter 9, Wangoo Lee, Jan Dul, and Zsofia Toth discussed the NCA method for hospitality and tourism research. The NCA is a data analysis method designed to identify necessary conditions based on the necessity logic of causality. Necessity logic is fundamentally different from the conventional logic of causality, which is usually evaluated by the statistical methods drawing the lines *through the middle of the data* (e.g., regression and SEM). The authors provided details on the underlying logic, key advantages, and an illustrative example of necessity causality and NCA. They offered recommendations for future NCA applications in hospitality and tourism research.

In Chapter 10, Irina Valerie Gewinner discussed netnography as a novel method of scientific enquiry that targets the online interactions of various actors. While quantitative survey design represents a default research method in the field of hospitality and tourism, qualitative approaches remain largely sidelined. This is particularly true for netnography approach. The author introduced the netnographic approach, outline its implementation in hospitality and tourism, as well as demarcate it from other methods, such as survey, text mining and content analysis. By giving an overview of recent studies employing netnography, the author demonstrated applied examples of ethnographic research online, presents a cross-cultural study on disappointing travel experiences and suggests further research avenues, such as cross-cultural investigation. She concluded by discussing strong and weak points of the netnographic approach.

Finally, in Chapter 11, the editors summarized and synthesized the cutting-edge research that the chapter authors presented. Within each chapter summary, the editors highlighted key recommendations for applying the methods in hospitality and tourism research.

References

Ali, F., Rasoolimanesh, S. M., Sarstedt, M., Ringle, C. M., & Ryu, K. (2018). An assessment of the use of partial least squares structural equation modelling (PLS-SEM) in hospitality research. *International Journal of Contemporary Hospitality Management*, *30*(1), 514–538.

Hadinejad, A., Moyle, B. D., Scott, N., & Kralj, A. (2019). Emotional responses to tourism advertisements: The application of FaceReader™. *Tourism Recreation Research*, *44*(1), 131–135.

Okumus, B., Koseoglu, M. A., & Ma, F. (2018). Food and gastronomy research in tourism and hospitality: A bibliometric analysis. *International Journal of Hospitality Management*, *73*, 64–74.

Rasoolimanesh, S. M., Ringle, C. M., Sarstedt, M., & Olya, H. (2021). The combined use of symmetric and asymmetric approaches: Partial least squares-structural equation modelling and fuzzy-set qualitative comparative analysis. *International Journal of Contemporary Hospitality Management*, *33*(5), 1571–1592.

Tavakoli, R., & Wijesinghe, S. N. (2019). The evolution of the web and netnography in tourism: A systematic review. *Tourism Management Perspectives*, *29*, 48–55.

Chapter 2

Which SEM to Use and What to Report? A Comparison of CB-SEM and PLS-SEM

Ahmet Usakli and S. Mostafa Rasoolimanesh

Abstract

In recent years, the use of structural equation modeling (SEM) has become widespread in tourism and hospitality research. Because there are two different approaches to SEM (i.e., *covariance-based SEM* and variance-based, *partial least squares SEM*), this brings challenges for researchers about which SEM to use and what to report in each SEM approach. Therefore, the purpose of this chapter is to discuss the differences between CB-SEM and PLS-SEM and to provide comprehensive guidelines for researchers on how to apply each SEM. Within this context, the authors first briefly summarize the fundamentals and advantages of using SEM. Then, the authors explain in detail the major issues that should be considered when selecting between CB-SEM and PLS-SEM. Finally, to ensure rigorous research practices, the authors provide step-by-step guidelines for the application of both CB-SEM and PLS-SEM.

1. Introduction

Structural equation modeling (SEM) has become a crucial tool for researchers in several areas, including marketing (Chin, Peterson, & Brown, 2008; Hair, Sarstedt, Ringle, & Mena, 2012), strategic management (Hair, Sarstedt, Pieper, & Ringle, 2012; Shook, Ketchen, Cycyota, & Crockett, 2003), operations management (Peng & Lai, 2012; Shah & Goldstein, 2006), human resources management (Ringle, Sarstedt, Mitchell, & Gudergan, 2018), accounting (Nitzl, 2016), psychology (MacCallum & Austin, 2000), international business research (Richter, Sinkovics,

Cutting Edge Research Methods in Hospitality and Tourism, 5–28

doi:10.1108/978-1-80455-063-220231002

Ringle, & Schlägel, 2016), tourism (Nunkoo, Ramkissoon, & Gursoy, 2013; Usakli & Kucukergin, 2018), and hospitality (Ali, Rasoolimanesh, Sarstedt, Ringle, & Ryu, 2018; Line & Runyan, 2012). Even though the usage of SEM is gradually increasing in the social sciences, there has been considerable debate on the use of SEM, specifically regarding reporting issues and misuse of the method. Therefore, this chapter tries to clarify which SEM to be used and what to report in each type of SEM.

Although the initial works regarding the idea of SEM date back to the early twentieth century (especially with Sewall Wright's path analysis – see Bentler, 1986 and Tarka, 2018 for a detailed historical review), SEM, as it is understood today, emerged in the early 1970s (particularly by the works of Jöreskog, 1973; Keesling, 1972; and Wiley, 1973). Specifically, SEM is a second-generation data analysis method (Bagozzi & Fornell, 1982) that has been developed in response to the need to overcome the several weaknesses of first-generation techniques (e.g., exploratory factor analysis, logistic regression, multiple regression, and analysis of variance). We will discuss the advantages of SEM over first-generation techniques in the next section, but in a nutshell, SEM facilitates the analysis of cause–effect relationships between unobservable variables (Hair, Black, Babin, & Anderson, 2018).

SEM can be approached in two primary ways: one is *covariance-based SEM* (CB-SEM) (Jöreskog, 1978), and the other is *partial least squares SEM* (PLS-SEM) (Wold, 1982), which is variance-based approach. Although the two approaches share the same roots (Jöreskog & Wold, 1982), each approach uses a different statistical method and thereby has different requirements and goals (Richter, Sinkovics, Ringle, & Schlägel, 2016). Specifically, CB-SEM uses the maximum likelihood (ML) estimation method and therefore aims to minimize the difference between the sample (empirical) and the estimated (model-implied) covariance matrices (Rigdon, Sarstedt, & Ringle, 2017). PLS-SEM, on the other hand, follows the regression-based ordinary least squares (OLS) estimation method as its goal is to maximize the endogenous constructs' explained variance (Hair, Ringle, & Sarstedt, 2011).

By gaining popularity among hospitality and tourism researchers, SEM has thereby become one of the most widely used methods in the fields of hospitality and tourism (Ali, Kim, Li, & Cobanoglu, 2018). However, the comprehensive review studies focusing on the use of CB-SEM (Nunkoo et al., 2013) and PLS-SEM (Ali, Rasoolimanesh, Sarstedt, et al., 2018; Usakli & Kucukergin, 2018) in hospitality and tourism research have revealed several misapplications in the use of SEM, indicating that hospitality and tourism researchers did not always apply the recommended practices. Even some fundamental aspects of SEM, such as choosing between CB-SEM and PLS-SEM, have been widely misunderstood by hospitality and tourism researchers (Usakli & Kucukergin, 2018). The choice between either the CB-SEM or PLS-SEM approach should be dependent on the chosen approach's objectives and assumptions. Researchers must not arbitrarily select the SEM approach that produces the best results for the model they wish to report (Gefen, Rigdon, & Straub, 2011). The full advantages of SEM can be achieved only if the chosen approach (CB-SEM or PLS-SEM) is correctly applied

and findings are properly reported. Thus, the objective of this chapter is to present step-by-step guidelines for both CB-SEM and PLS-SEM.

Despite being a sophisticated statistical method, user-friendly software (e.g., AMOS for CB-SEM, SmartPLS, and WarpPLS for PLS-SEM) makes SEM highly accessible to non-statisticians. Since this ease of access to SEM software may cause misapplications, a practical guideline is needed for researchers. This chapter aims to contribute to tourism and hospitality research by providing these practical guidelines for the application of both CB-SEM and PLS-SEM.

2. Literature Review

This section discusses the advantages and types of SEM as well as which SEM method to use and the proposed application guidelines for each method.

2.1. Why Use SEM?

As mentioned earlier, SEM is a second-generation method of multivariate data analysis. Unlike first-generation methods, SEM allows researchers to model relationships between multiple independent and multiple dependent variables simultaneously (Gerbing & Anderson, 1988). To do this, in first-generation techniques (such as in multiple regression), researchers need to perform the analysis several times with different combinations because a dependent variable might become an independent variable in the subsequent relationships (Shook, Ketchen, Hult, & Kacmar, 2004). Another major advantage of SEM over first-generation techniques is its ability to construct latent variables and to test the complex interrelationships among these unobservable variables (Chin, 1998). Latent variables (mostly referred to as constructs) are theoretical concepts that cannot be measured directly, but rather can be measured or represented indirectly through observed variables (also called items, indicators, or manifest variables) (Hair, Black, et al., 2018). Perceptions, attitudes, and feelings are some commonly measured latent constructs in the social sciences. For instance, "perceived destination image" as a latent construct cannot be measured directly. Instead, we measure destination image using some characteristics we attribute to the destination (such as the natural and cultural attractions, the quality of hotels and restaurants, the friendliness of local people, etc.). Moreover, by concurrently combining factor analysis and regression analysis, SEM assesses both measurement and structural models in the same analysis. This combined analysis permits SEM to directly account for measurement error (Astrachan, Patel, & Wanzenried, 2014) and thus it provides more accurate estimates as compared to first-generation regression analyses (Gefen, Straub, & Boudreau, 2000), which assume that there is no error in the data (Chin, 1998).

2.2. The Two Types of SEM

While SEM refers to a family of statistical methods that estimates the relationships among latent constructs, CB-SEM and PLS-SEM constitute the two main

approaches. Undoubtedly, CB-SEM is the most well-known type of SEM (Hair, Hult, Ringle, & Sarstedt, 2017) and many researchers sometimes incorrectly refer to CB-SEM as SEM (Vilares, Almeida, & Coelho, 2010). This is because CB-SEM is more widely used in social sciences (Hair, Hult, Ringle, & Sarstedt, 2017), while PLS-SEM is still an evolving method that developed more slowly, due to the lack of strong software for many years (Rigdon, 2016). However, since its development by Wold (1982) and Lohmöller (1989), PLS-SEM has undergone numerous advances and recently its application has largely increased, not only in tourism and hospitality research but also across many other disciplines (Ali, Rasoolimanesh, & Cobanoglu, 2018).

It is worth noting that many tourism and hospitality researchers applying either CB-SEM or PLS-SEM do not usually provide a strong rationale for selecting one method over the other (Ali, Kim, et al., 2018). Because each type of SEM can appropriately be applied to different research contexts, before applying SEM, researchers must first understand the fundamentals of CB-SEM and PLS-SEM.

The main conceptual difference between the two methods is how they treat the latent constructs in the model (Hair, Sarstedt, Ringle, & Gudergan, 2018). CB-SEM uses both the indicators' common and unique variances. Common variance is the same for all indicators of the construct, while unique variance is different since it represents each indicator's error (Sarstedt, Hair, Ringle, Thiele, & Gudergan, 2016). Based on the common variance, CB-SEM computes the covariance between the associated indicators and thus aims to minimize the difference between the covariance from sample data and model by using the ML estimation approach. It then estimates the model parameters, such as loadings and path coefficients (Rasoolimanesh & Ali, 2018). In brief, CB-SEM treats the latent variables as common factors and therefore it is called the factor-based approach to SEM (Rigdon et al., 2017).

PLS-SEM, on the other hand, considers only the total variance of the indicators. By combining the variances of all indicators of each construct, PLS-SEM calculates the construct score and then estimates the model parameters that maximize the explained variance (R^2) of endogenous constructs, using the regression-based OLS estimation method. As the construct represents the linear combination of indicators in PLS-SEM, it is therefore called a composite model approach (Sarstedt et al., 2016).

2.3. Choosing Between CB-SEM and PLS-SEM

When deciding which SEM to use, researchers should consider some aspects of their research and explicitly discuss the rationale behind their decision. The most prominent rationales for selecting between CB-SEM and PLS-SEM are discussed below and presented in Table 2.1.

2.3.1. Philosophy of Measurement. As discussed earlier, CB-SEM and PLS-SEM treat the latent variables differently, meaning that each approach follows a different measurement philosophy. Since the indicators' common and unique variance are used in CB-SEM, latent constructs are viewed as common factors. Accordingly, when estimating a common factor model, CB-SEM becomes the best-chosen method (Hair, Sarstedt, et al., 2018). PLS-SEM, on the other