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Abstract

This study examines how the demographic profiles of residents (gender, level of education, nationality, length of residency, and age) moderate the relationship between residents' perceptions of the impact of tourism and their support for tourism development. The aim of the study was to gain knowledge on the understudied emerging countries, the underexplored geographical area of Middle East and North Africa, and most specifically on the UAE which is the most competitive destination among them. This study is the first to use the novel Bayesian SEM multigroup approach to overcome the major issue of the non-normal distributions of data. The data are derived from 631 residents of Abu Dhabi and Dubai. The results indicate that residents' perceptions influence residents' support for tourism development. Additionally, the multigroup analysis reveals that gender, education, and nationality influence the perceptions of residents while length of residency and age do not have a significant effect.

Keywords

tourism development, resident perceptions, resident support, Bayesian SEM multigroup approach, United Arab Emirates

Introduction

The tourism industry is considered one of the major drivers of economic diversification and growth for the Middle East and North Africa region (UNWTO 2017). Recent studies have found that tourism development can produce various benefits to residents, such as employment opportunities and improvement of government facilities and infrastructure, and can encourage local entrepreneurship and growth of the local economy (López et al. 2018; Sinclair-Maragh 2017; Khoshkam, Marzuki, and Al-Mulali 2016).

Residents are considered key stakeholders in any tourism development. Their needs and expectations regarding tourism must be taken into consideration throughout the planning and implementation stages (Khoshkam, Marzuki, and Al-Mulali 2016) since their perceptions of tourism influence their support for tourism development (Dyer et al. 2007; Sharpley 2014; Nunkoo 2016). Therefore, it is extremely important for government officials and tourism planners to understand residents' perceptions of the impact of tourism development and to measure their level of support for it (Hammad, Ahmad, and Papastathopoulos 2017; Sinclair-Maragh 2017).

Previous studies have indicated that different individuals can have different perceptions of the same impacts on the

same tourism destination (López et al. 2018; Almeida-García et al. 2016; Sinclair-Maragh 2017). These differences have been attributed to their demographic characteristics (Wang 2013). Demographic characteristics are factors that are associated with an individual, such as age, gender, education, income, and nationality, and are often used in tourism research to determine individuals' perceptions (Hernández and Mercader 2015; Wang, Bickle, and Harrill 2010; Sinclair-Maragh 2017; Hammad, Ahmad, and Papastathopoulos 2017). These demographic characteristics have been identified as contributing to the formation of residents' perceptions of tourism development (Almeida-García et al. 2016).

This study investigates tourism development in terms of its social, cultural, economic, and environmental impacts. Although a number of studies have examined residents' support for tourism development, only a few studies have classified residents based on their demographic characteristics

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(Almeida-García et al. 2016; Sinclair-Maragh 2017; Khoshkam, Marzuki, and Al-Mulali 2016). The findings of these studies showed that it is necessary to understand residents' opinions based on their demographic profiles in the planning process and governance of destinations and should receive more attention during tourism planning and implementation policies to improve the relationship between residents' perceptions and tourism development (Almeida-García et al. 2016; Sinclair-Maragh 2017). Although the literature highlights the importance of understanding the relationship between demographic characteristics and residents' perceptions (Sinclair-Maragh 2017), little attention has been paid to understanding the moderating effect of these variables. The current study aims to present a multicharacteristic analysis across multiple demographic groups. Khoshkam, Marzuki and Al-Mulali (2016) call for additional research to get a better understanding of the sociocultural, economic, and environmental impact of tourism development activities, since they can form the basis for developing a grand model or theory of tourism influences. So, the first contribution of this study is answering the call for further research and further exploring demographic characteristics such as the nationality classification (Hammad, Ahmad, and Papastathopoulos 2018), a characteristic that only a few studies have examined regarding its impact on residents' support for tourism development (Hernández and Mercader 2015), especially when it comes to multicultural destinations. In that vein, a major research shortfall exists.

The conditions regarding each context (e.g., topography, heritage, culture, history, and infrastructure) produce results that are still unique to the local area, albeit potentially sharing common traits with other places (Almeida García, Balbuena Vázquez, and Cortés Macías 2015; Ryan, Chaozhi, and Zeng 2011). Subsequently, a multidimensional approach is required (Sharpley 2014). The influence exerted by tourism on communities is highly localized in terms of time and place. According to Ryan and Gu (2008), "*glocalization*" is the only long-term response to tourism globalization.

The research focus on residents' perceptions began in developed countries of the West, and fewer studies have examined the Middle East and North Africa region in relation to tourism development (Hammad, Ahmad, and Papastathopoulos 2017). So, as no single set of factors exists that can determine destination competitiveness and can be applied to all the destinations (Abreu Novais, Ruhanen, and Arcodia 2018), and given that the major factors contributing to competitiveness differ for various types of economies and their levels of development (Porter, Sachs, and McArthur 2001), the need to explore these factors is imperative, more so in new and emerging tourist destinations (Reisinger, Michael, and Hayes 2019). Liao, Lin, and Hsieh (2019) suggest that future research could reveal more relevant factors that exert an influence on indigenous tourism satisfaction, so as to enrich the studies on indigenous tourism development from the perspective of residents. Responding to calls for

further research into the perspective of residents on the influence of tourism in different countries (Pham and Vogt 2019), as well as recommendations for future research to account for further classifications of residents, such as ethnicity (Asian and Western, Arabs and non-Arabs, or Muslim and non-Muslim), the authors chose the UAE (Kayal and Maheswaran 2018), an emerging country (Kayal and Maheswaran 2018) with unique traits outlined below, and more specifically two cities that are recognized as tourist destinations: Abu Dhabi, the capital city of the UAE, and Dubai, one of the world's most prestigious and popular tourist attractions. In addition, the UAE boasts an ideal mix of locals/expatriates, allowing for cross-group comparison. This study is responding to calls for research regarding the need to focus on the geographical area of the Middle East and North Africa, as well as the UAE specifically, which is the most competitive destination among them (Reisinger, Michael, and Hayes 2019; Schwab et al. 2017).

This research examines the relationship between residents' demographic characteristics and their support for tourism development by using the Bayesian structural equation modeling (SEM) multigroup approach. Most previous studies adopted covariance-based SEM (Yu, Cole, and Chancellor 2018; Zuo, Gursoy, and Wall 2017; Nunkoo and So 2015; Styliadis et al. 2014) under the assumption that the data are normally distributed. This approach may lead to invalid results and implications. To address this major issue, the Bayesian SEM is adopted because the data present non-normal distributions.

This study therefore has three objectives. The first is to examine the relationships between residents' demographic profiles (gender, education, nationality, length of residency and age) and their support for tourism development, and extend current knowledge regarding the moderating effects of these demographics on this relationship. The second is to extend this topic's current knowledge by focusing on the understudied emerging countries' area, the underexplored geographical region of the Middle East and the North Africa, and most specifically the UAE, which is the most competitive destination among them (Michael, Reisinger, and Hayes 2019; Schwab et al. 2017). The third is to apply the novel Bayesian approach in tourism literature (and management literature as well), responding to the calls for the use of this approach in tourism literature, becoming the first study to explore the Support for Tourism topic employing this analytical approach, while at the same time conducting a content analysis in the tourism, leisure, and hospitality management journals regarding BSEM and CBSEM approaches.

The article is organized as follows: the second section reviews the relevant literature on residents' support for tourism development. The third section describes the research methodology used and explains the innovative approach of Bayesian SEM. The fourth section presents the results of the empirical analysis. Finally, the article concludes with a

discussion of the practical implications and possible options for future research.

Literature Review

Residents' Support for Tourism Development

A review of the tourism literature shows that most studies categorize the impacts of tourism into social, cultural, environmental, and economic impacts (Almeida García, Balbuena Vázquez, and Cortés Macías 2015; Rivera, Croes, and Lee 2016; Gursoy, Chi, and Dyer 2010). The social impacts of tourism are often associated with changes in the daily social lives of residents due to tourism development and tourism activities that can change the routines, habits, and behaviors of residents (Fredline, Jago, and Deery 2003). The cultural impacts of tourism can be tangible, such as changes to local customs, arts, crafts, or buildings and infrastructure (Dyer et al. 2007; Gursoy, Chi, and Dyer 2010), or intangible, such as changes to residents' beliefs (Gabriel Brida, Osti, and Faccioli 2011). Regarding the environmental impacts of tourism, residents are often subject to changes to the local environment due to tourism development activities such as the deterioration of natural resources, increased litter and waste, and traffic congestion (Rasoolimanesh et al. 2017; Almeida-García et al. 2016). Similarly, the economic impacts of tourism, which include both benefits and costs that are realized by residents due to tourism development, can influence residents' support for tourism development (Lundberg 2017; Dyer et al. 2007). The economic impacts of tourism include creating more employment opportunities and attracting more investment and business opportunities for the local market (Rahman 2010; Hernández and Mercader 2015).

While residents recognize the impacts of tourism, their level of support for tourism varies based on their perceptions of these impacts (Látková and Vogt 2012; Styliadis et al. 2014; Dyer et al. 2007). Therefore, it is expected that residents' perceptions of the impacts of tourism will influence their support for tourism development. Based on findings in the extant literature, the following hypotheses are proposed:

Hypotheses 1–4: There is a positive relationship between residents' perceptions of the social impacts (hypothesis 1), cultural impacts (hypothesis 2), environmental impacts (hypothesis 3), and economic impacts (hypothesis 4) of tourism and their support for tourism development.

Residents' Gender and Their Support for Tourism Development

Gender is one of the demographic characteristics that may influence residents' perceptions of tourism (Long and Kayat 2011; Nunkoo and Gursoy 2012). While the tourism industry provides employment opportunities for both genders, Thrane (2008) observed that male employees working in tourism

receive approximately 20% higher wages annually than their female counterparts. This finding indicates that the benefits received from tourism are perceived differently by male and female residents. Furthermore, employment opportunities in the tourism industry have allowed women to achieve financial independence that has enabled them to be the main provider for their families, which has caused changes in women's role in traditional societies (Soontayatron 2010). The literature presents mixed results on the influence of gender. While a few studies have reported a nonsignificant influence of gender on residents' perceptions (Mensah 2012; Rasoolimanesh et al. 2015), other researchers have reported that male residents are more supportive of tourism than female residents are (Jani 2018; Nunkoo and Gursoy 2012), and some researchers have reported that women are more likely to have positive perceptions of tourism because of the benefits that they receive from tourism (Sinclair-Maragh 2017; Wang 2013; Wang and Pfister 2008). In line with the above literature, the following hypotheses are proposed:

Hypotheses 1a–4a: Gender has a moderating effect on the direct positive relationship between residents' perceived social impacts (hypothesis 1a), cultural impacts (hypothesis 2a), environmental impacts (hypothesis 3a), and economic impacts (hypothesis 4a) of tourism and their support for tourism development.

Residents' Level of Education and Their Support for Tourism Development

Level of education refers to the highest education level completed by an individual (Nunkoo and So 2015). It is also an indication of the expected influence of educational attainment on that individual. According to Park and Yoon (2009), the two main categories of educational attainment are having a high school degree or lower or achieving a college degree or higher. The level of education has been employed in various studies for different reasons. The level of education is used as a measure of social class (Ghubash 1992) and as an indicator of the ability to secure high-paying jobs, which offers an opportunity for individuals to improve their quality of life (Thrane 2008), provides individuals with the ability to improve communication with others (Sinclair-Maragh 2017) and offers opportunities to learn foreign languages.

Prior research has indicated that education is the most significant single factor affecting residents' perceptions of tourism. Education can enhance residents' communication skills and awareness levels with regard to tourism-related issues (Sinclair-Maragh 2017). The majority of studies that have examined residents' level of education and their perceptions of tourism have reported that residents with higher education levels perceive tourism more positively than do residents with lower education levels (Miyakuni 2012; Látková and Vogt 2012; Almeida-García et al. 2016). For instance, Long and Kayat (2011) suggested that residents who hold a higher

level of education are more likely to support tourism because they appreciate the positive impacts of tourism and disapprove of the negative impacts. Phumsathan (2010) argued that highly educated people tend to rate the impacts more severely than do people with a lower level of education because they have high expectations regarding the quality of the outcome. Sinclair-Maragh (2017) suggested that college graduates represent the majority of tourism supporters. This is considered logical because these residents perceive tourism as a source of work opportunities for the community and a way to reduce unemployment. Based on these findings, the following hypotheses are proposed:

Hypotheses 1b–4b: Level of education has a moderating effect on the direct positive relationship between residents' perceived social impacts (hypothesis 1b), cultural impacts (hypothesis 2b), environmental impacts (hypothesis 3b), and economic impacts (hypothesis 4b) of tourism and their support for tourism development.

Residents' Nationality and Their Support for Tourism Development

Nationality refers to owning legal documents issued by the government of a country. Nationality is one of the strongest demographic variables that affect the perceptions of an individual (Prayag and Ryan 2012). Residents are often attached to the country of their citizenship and own its nationality. National residents are also referred to in the tourism literature as local, indigenous, or native residents (Rahman 2010; Hernández and Mercader 2015). Hernández and Mercader (2015) reported that national and nonnational residents in Spain had different perceptions of tourism. National residents were more concerned about the environmental impacts of tourism in Spain than were nonnational residents. In a study conducted by Alhemoud and Armstrong (1996) in Kuwait, which included Kuwaiti university students and English-speaking foreigners living in Kuwait, the Kuwait national residents preferred manufactured attractions, while the nonnational residents chose cultural attractions that were available in Kuwait. This finding supports the notion that national and nonnational residents often have different perceptions of tourism in the same destination.

According to Soontayatron (2010), national residents represent the host culture that is presented to tourists; therefore, any changes to the local culture because of tourism activities will result in changes in the local culture. Negative changes to local culture can negatively influence the perception of national residents. Based on the above findings, the following hypotheses are proposed:

Hypotheses 1c–4c: Nationality has a moderating effect on the direct positive relationship between residents' perceived social impacts (hypothesis 1c), cultural impacts (hypothesis 2c), environmental impacts (hypothesis 3c),

and economic impacts (hypothesis 4c) of tourism and their support for tourism development.

Residents' Length of Residency and Their Support for Tourism Development

The length of residency refers to the number of years that an individual resides in a country. Length of residency was found to be influential in a number of earlier studies that examined its relationship with residents' perceptions of tourism, but the findings were contradictory (Wang, Bickle, and Harrill 2010; Látková and Vogt 2012; Almeida-García et al. 2016). For example, Haralambopoulos and Pizam (1996) found that residents who lived in an area for fewer years showed more positive attitudes toward tourism than did residents who had longer periods of residence. Banks (2003) reported that length of residency influences residents' perceptions of tourism; the longer people have lived in a community, the more negative their perceptions tend to be. In a similar vein, Haley, Snaith, and Miller (2005) reported that residents who have recently moved into a city have more positive perceptions of tourism than do residents who have been living there for longer. Ryan and Montgomery (1994) found that residents with longer periods of residency tended to disagree that tourism improved their quality of life, and they agreed that the town would be better without tourists. Residents with longer periods of residency also disagreed that tourism was good for the local economy. However, more recent research has revealed the inadequacy of this measure and found that length of residency does not significantly influence residents' perceptions of tourism (Long and Kayat 2011; Wang and Pfister 2008). For example, Sinclair-Maragh (2017) found that length of residency is not a determinant of residents' support for tourism in Jamaica. These inconsistent findings on length of residency are addressed by the following hypotheses:

Hypotheses 1d–4d: Length of residency has a moderating effect on the direct positive relationship between residents' perceived social impacts (hypothesis 1d), cultural impacts (hypothesis 2d), environmental impacts (hypothesis 3d), and economic impacts (hypothesis 4d) of tourism and their support for tourism development.

Residents' Age and Their Support for Tourism Development

Age represents the number of years that a person has lived. Studies of well-being suggest that old age brings greater emotional control because older adults focus more on positive affect than negative affect as their emotional experiences change during aging (Neiss et al. 2009). Tourism studies have also shown that the age of residents can influence their perceptions of tourism development (Bagri and Kala 2016; Látková and Vogt 2012). However, there are contradictory findings in the literature regarding the influence of age on the

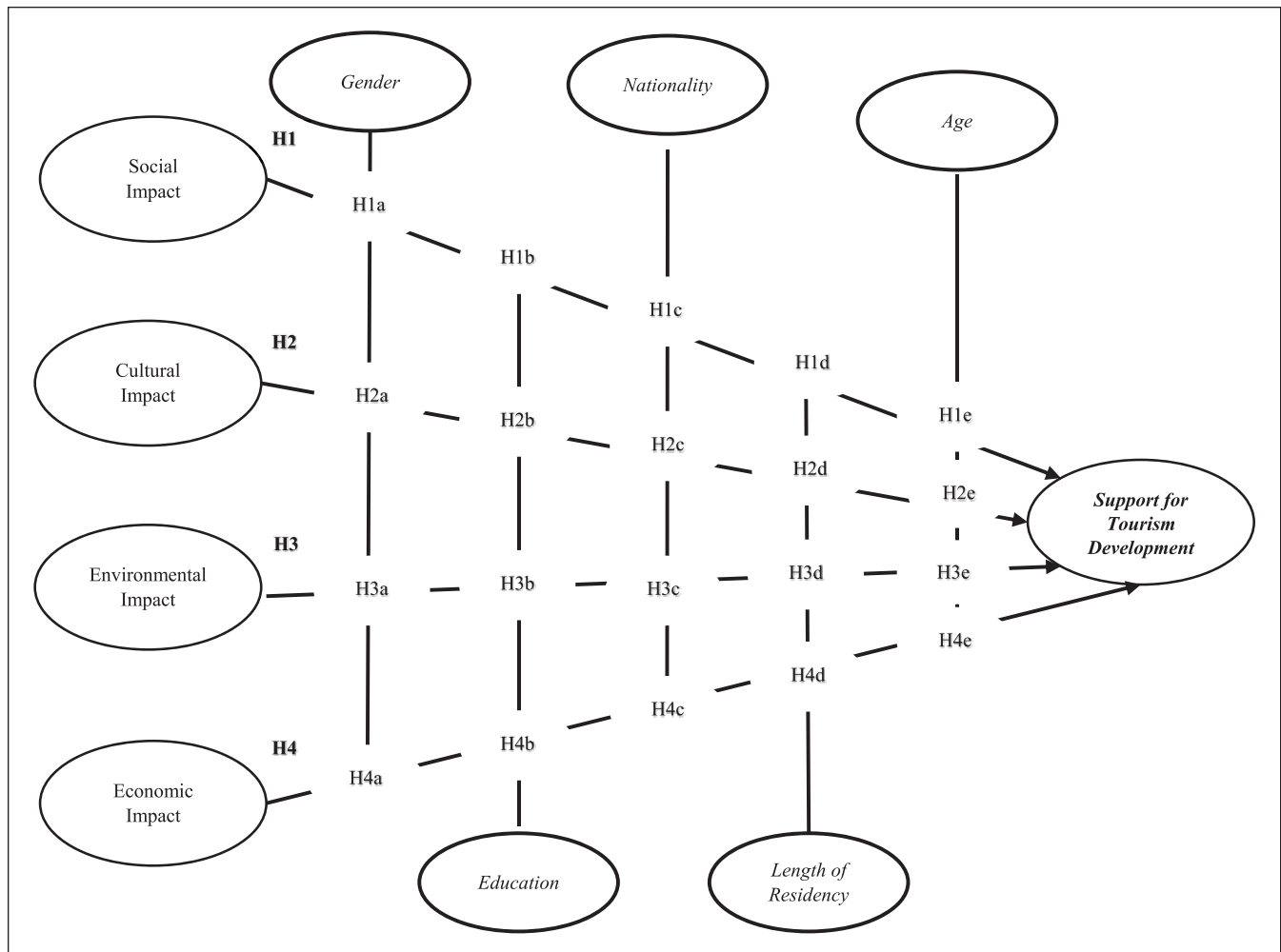


Figure 1. The proposed framework: Moderating effects of sociodemographic characteristics on the relationship between tourism impact variables and support for tourism development.

perceptions of residents (Sinclair-Maragh 2017). For example, Rasoolimanesh et al. (2015) reported that older residents show positive perceptions of tourism because they stand to gain more benefits from tourism than do younger residents. According to Rasoolimanesh et al. (2015), younger residents show more concern regarding the negative impacts of tourism on their community. Similarly, Látková and Vogt (2012) report that older residents are more likely to agree with the statement that tourism has positive impacts than they are to agree with the statement that tourism has negative impacts, while younger residents are more likely to perceive negative impacts than are older residents. McGehee and Andereck (2004) explain that older residents have more opportunities to benefit from tourism because they have gained the experience necessary for management positions or own the necessary capital to invest and become self-employed in tourism-related businesses. In contrast, Sinclair-Maragh (2017) found that younger residents in Jamaica were more supportive of tourism development than older residents because younger residents may perceive tourism development as an opportunity

for job creation and a business opportunity. Bagri and Kala (2016) reported that older residents showed less positive perceptions of tourism in India, possibly because of their traditional mentality and their resistance to change in social areas. Considering these findings, the following hypotheses are proposed:

Hypotheses 1e–4e: Age has a moderating effect on the direct positive relationship between residents' perceived social impacts (hypothesis 1e), cultural impacts (hypothesis 2e), environmental impacts (hypothesis 3e), and economic impacts (hypothesis 4e) of tourism and their support for tourism development.

In light of the above, this study investigates the relationship between residents' perceptions of the impacts of tourism and their support for tourism development and examines whether gender, level of education, nationality, length of residency, and age moderate this relationship. Figure 1 illustrates the proposed framework for the study.

Research Methodology

Study Area

The aim of this study is to examine the demographic characteristics of UAE residents living in Abu Dhabi and Dubai with respect to their support for tourism development. The UAE consists of a federation of seven emirates: Abu Dhabi, Dubai, Sharjah, Ajman, Ras Al Khaimah, Um Al-Qaiwain, and Fujairah. Abu Dhabi and Dubai are the two emirates selected as survey sites because they are the two primary tourist attractions and business travel hubs of the UAE. Both areas emphasize investment in the development and diversification of their tourist markets to attract more domestic and international visitors (BMI Research 2017). The population of the UAE in 2016 was 9.12 million residents (FCSA 2018). The target population of the current study consisted of national and nonnational residents residing in the UAE who were 18 years of age or older.

Survey Instrument/Measurement of Variables

The survey instrument consists of three main sections. The first section included questions regarding residents' perceptions of tourism's social, cultural, environmental, and economic impacts, measured using a Likert-type scale that ranged from strongly disagree (1) to strongly agree (7). The questions were designed based on related studies of residents' perceptions of the impacts of tourism (Nunkoo and Ramkissoon 2010; McGehee and Andereck 2004).

The second section included five statements that measured residents' support for tourism development based on previous studies (Woo, Kim, and Uysal 2015; Látková and Vogt 2012).

The last section included demographic questions. The demographic variables used in this study consisted of age, gender, level of education, length of residency, and nationality. The demographics were grouped into two response categories. Age was categorized as residents who were 44 years old or less and residents between 45 and 64 years old (Almeida-García et al. 2016). Level of education was measured at two levels: residents who were high school graduates or less and residents who were at least college graduates (Park and Yoon 2009). Similarly, length of residency was categorized into less than 10 years or more than 10 years (Latkova 2008). Nationality was measured in the analysis by two options: national and nonnational.

Sampling and Data Collection Procedures

This study used probability sampling. The respondents were selected using a multistage cluster sampling approach (Daniel 2012) by distributing a questionnaire covering the emirates of Abu Dhabi and Dubai, the areas that tourists visit. Because a fixed-line or mobile phone subscribers' list or a residents' list could not be obtained from telecommunication providers and

public services because of personal data legislation, the aforementioned sampling approach had to be applied to ensure that the sample was representative of the population explored. In the first stage of the sampling design, a list containing all street names obtained from Geographic.org (2018) was prepared. Following the approach of McGehee and Andereck (2004), streets were randomly selected after giving a number to each street and applying a random number generator. In the second stage, after identifying randomly selected locations, every third house was approached door to door by a research assistant for participation in the study (Woosnam and Norman 2010) until the designated number of ten questionnaires were collected from each particular street. This sampling approach appears in previous studies in the field of tourism (Stylidis, Sit, and Biran 2016; Dyer et al. 2007; McGehee and Andereck 2004). One of the authors supervised each of the survey teams (two for each city). This sampling approach ensured the randomness of the resident selection process from different districts and provided a balanced composition of respondents (Nunkoo and Gursoy 2012). The respondents had to be residents living in Abu Dhabi and Dubai who were 18 years of age or older regardless of whether they were nationals of the UAE or other countries. The research assistants spoke both Arabic and English fluently and were aware of the conservative UAE cultural requirements. The survey was dropped off with a cover letter explaining the purpose of the research and was collected the next day to avoid any inconvenience that could affect the residents of the house.

The data were collected from September 2017 to March 2018. A total of 1285 questionnaires were distributed to potential respondents. A total of 695 questionnaires were returned, but 64 were removed from the analysis because of missing data. A sample of 631 usable surveys was collected for the purposes of this study. The response rate was 49.1%. The confidence interval approach of Burns, Veeck, and Bush (2016) was used to determine the sample size using a 50% estimated variability in the population, following past studies (Qu, Kim, and Im 2011). The population older than 18 years totaled 2,284,045 in Abu Dhabi (Dubai Statistics Center 2017) and 2,191,220 in Dubai (Abu Dhabi Statistics Centre 2018), resulting in a total population of 4,475,265 (51% in Abu Dhabi and 49% in Dubai). At the 95% confidence level, a sample size of 384 would be adequate for an SEM approach according to Krejcie and Morgan (1970), who suggested that for a population of more than 1,000,000, a sample of 384 is adequate. Bayesian estimation requires smaller data sets compared to ML estimation (Hox, van de Schoot, and Matthijsse 2012). Therefore, our sample was adequate. The total sample of the 631 respondents comprised 321 respondents from Abu Dhabi (51%) and 310 respondents from Dubai (49%).

The questionnaire was composed in English and translated into Arabic, using the back-translation method to ensure that both versions were equivalent (Karatepe and Zargar Tizabi 2011). The translation was conducted using professional, authorized, legal translation services to ensure the

reliability of the translated versions (Stylidis, Sit, and Biran 2016). Both the Arabic and English questionnaires were pre-tested among residents with master's degrees or higher. The questionnaire was finalized based on the comments received on both versions.

This study collected data from 631 participants, 32.5% (205) of whom were national residents and 67.5% (426) of whom were expatriate residents. Female respondents accounted for 40.6% of the sample (256), while male respondents accounted for 59.4% (375) of the sample. Residents under 44 years of age accounted for 60.7% (383) of the sample, while residents over 44 years of age accounted for 39.3% (248) of the sample. The majority of the respondents held at least a bachelor's degree (88.6%, 559), while residents who were high school graduates or less represented only 11.4% (72) of the sample. Respondents who had lived in the UAE for less than 10 years represented 37.6% (237) of the sample, while residents who had lived in the UAE for more than 10 years represented 62.4% (394) of the sample.

The Era of the Bayesian Structural Equation Modeling Approach in Tourism Research

In the last 20 years, SEM has become one of the methodologies of choice in tourism research. Studies in this field still use this covariance-based (CBSEM) estimation approach (Assaf, Tsionas, and Oh 2018). However, Lee and Song (2014, 277) have argued that CBSEM is “unable to produce correct results for statistical inferences” and that for structures with complicated data, model assumptions and statistical properties of the estimates, the goodness-of-fit test obtained is “asymptotically true” (Assaf, Tsionas, and Oh 2018). Assaf, Tsionas, and Oh (2018) proposed that it is possible to overcome this issue with Bayesian methods. The rapid growth of the Bayesian approach across a rising number of social science disciplines was dubbed the “Bayesian revolution” by Zyphur and Oswald (2013).

B. Muthén and Asparouhov (2012) demonstrated an approach to model specification and estimation in SEM by focusing on long-standing issues and limitations in conventional SEM, providing significant benefits for empirical application. Traditional methods based on null hypotheses statistical testing – also known as “frequentist statistics” to separate them from “Bayesian statistics” – demonstrate the probability of obtaining the data at hand, or more extreme unobserved data, if the null hypothesis is true (Aguinis et al. 2010). Cohen (1994) notes that a statistical significance test “does not tell us what we want to know, and we so much want to know what we want to know that, out of desperation, we nevertheless believe that it does!” (1994, p. 997). Consequently, based on the frequentist approach, data are always seen as uncertain (George Assaf and Tsionas 2018). On the other hand, the Bayesian technique considers the true value of model parameters to be unknown and random. These values are believed to be distributed based on a probability distribution. This gives rise to a

“posterior distribution” (Bolstad and Curran 2016; Arbuckle 2016). Bayesian estimation combines the probabilities of the data with previous distributions to generate posterior distributions, which are then used to derive parameter estimates (Muthén and Muthén 2017). According to Depaoli and van de Schoot (2017, p. 240), “many scholars prefer Bayesian statistics because they believe that population parameters must be treated as random.”

“The use of p-values for hypothesis testing has always been the norm in the tourism literature” (George Assaf and Tsionas 2018, p. 17). The Bayesian approach provides further and more accurate information on the estimated model parameters compared to traditional estimation procedures in covariance-based SEM. Progress in computational algorithms based on Markov chain Monte Carlo (MCMC) sampling led to the rise in the use of Bayesian tools for statistical modeling.

Nonetheless, researchers must also consider other benefits of this approach. Multivariate normality within the data distribution is a significant assumption of the covariance-based SEM. In the past 20 years, many covariance-based SEM applications have been based on ordered-categorical data (e.g., Likert-type scales) for which this assumption does not hold (Bulmer 2012; Tucker 1962). Although it has become common practice to treat these ordinal data as if they were continuously scaled (Byrne 2010), if the ordinal nature of the data is not taken into account, biased research findings may be obtained (DiStefano 2002). The assumption of multivariate normality is violated when Likert rating scale data are treated as continuous outcomes in confirmatory factor analysis (Lubke and Muthén 2004). The same authors argued that in a multigroup context such as the one in this study, the differences in factor structure across groups may be distorted if Likert data analysis is used under the assumption of multivariate normality. An approach to deal with the ordinal nature of empirical data in SEM analysis is to use the Bayesian estimation approach rather than traditional frequentist methods, such as MLE. As Rasoolimanesh and Ali (2018) note, “the links between resident's support for the development of tourism and their perceptions have been investigated across a large number of studies, most of which assume a linear path.”

SEM and BSEM Studies in Tourism. Despite the recent rise in the use of Bayesian statistics in empirical management research (e.g., Jebb and Woo 2015; Zyphur and Oswald 2013), there is rather limited insight into and understanding of this estimation approach, and its application in empirical purchasing research is quite rare (see Table 1). To examine how often BSEM is used instead of traditional SEM, a content analysis was conducted in tourism, leisure, and hospitality management journals.

According to the SCImago Journal Ranking platform, 101 journals are listed under the “Tourism, Leisure and Hospitality Management” category (SCImago, n.d.). A search was conducted for Bayesian SEM-based articles in all of these journals

Table 1. SEM and Bayesian SEM Studies in Tourism Research.

Rank	Title	SJR	Number of Publications in Tourism Using SEM	Number of Publications in Tourism Using Bayesian SEM	BSEM Studies
1	<i>Tourism Management</i>	3.027	349	2	Assaf and Tsionas 2015; Assaf, Tsionas, and Oh 2018
2	<i>Journal of Travel Research</i>	2.820	108	1	Assaf, Oh, and Tsionas 2016
3	<i>Annals of Tourism Research</i>	2.262	86		
4	<i>Journal of Hospitality and Tourism Research</i>	2.150	141		
5	<i>International Journal of Hospitality Management</i>	2.027	384		
6	<i>Journal of Sustainable Tourism</i>	1.543	68		
7	<i>Journal of Service Management</i>	1.488	128		
8	<i>Current Issues in Tourism</i>	1.474	101		
9	<i>International Journal of Contemporary Hospitality Management</i>	1.452	289		
10	<i>Applied Geography</i>	1.319	19		
11	<i>International Journal of Tourism Research</i>	1.315	85		
12	<i>Tourism Geographies</i>	1.202	47		
13	<i>Cornell Hospitality Quarterly</i>	1.198	55		
14	<i>Journal of Hospitality Marketing and Management</i>	1.160	124		
15	<i>Sport Management Review</i>	1.159	59		
16	<i>Cities</i>	1.110	48		
17	<i>Journal of Hospitality and Tourism Management</i>	0.949	46		
18	<i>Journal of Travel and Tourism Marketing</i>	0.940	271		
19	<i>Journal of Vacation Marketing</i>	0.875	58		
20	<i>Leisure Studies</i>	0.865	22		
21	<i>Tourism Management Perspectives</i>	0.842	38		
22	<i>European Sport Management Quarterly</i>	0.797	44		
23	<i>Space and Culture</i>	0.776	0		
24	<i>International Journal of Retail and Distribution Management</i>	0.742	197		
25	<i>International Journal of Sport Policy</i>	0.708	4		
26	<i>Tourism Economics</i>	0.665	49	1	Romão et al. 2015
27	<i>Asia Pacific Journal of Tourism Research</i>	0.636	132		
28	<i>Leisure Sciences</i>	0.607	69		
29	<i>Tourist Studies</i>	0.603	0		
30	<i>Journal of Tourism and Cultural Change</i>	0.572	7		
Total			3,028	4	

Note: SEM = structural equation modeling; BSEM = bayesian structural equation modeling.

to ensure that studies with different tourism orientations (e.g., marketing, travel, hospitality, economics) were included in this review. In addition, the search emphasized the investigation of the number of publications that have used the traditional SEM approach. The search for studies using the traditional SEM approach focused on the top 30 journals based on the SJR2 indicator (Guerrero-Bote and Moya-Anegón 2012). This extended search method included all the leading journals in the field of tourism, which have also been indexed in other important journal lists, such as the Social Sciences Citation Index, Web of Science, and Thomson Reuters 2018.

The second step was to conduct a full-text journal-by-journal search for more accurate and updated results. The keywords used included “structural equation” and “SEM” for the traditional

SEM approach and “Bayesian structural equation,” “Bayesian,” and “BSEM” for the Bayesian approach. Furthermore, the search considered the online versions of the journals to double-check that it captured all bayesian SEM articles in the 30 tourism journals. The search revealed that the traditional SEM approach has been used in more than 3,000 articles, and the bayesian approach has been used in only 4 studies (see Table 1).

In agreement with Assaf, Tsionas, and Oh’s (2018) call for a Bayesian SEM estimation in tourism research and their comment that “the time has come” for such a study, the present study analyzed the data using the Bayesian estimation procedure in AMOS 24. This software program uses the Bayesian approach as a default method to analyze categorical data (Byrne 2016).

Results

First, the univariate normality of the data was examined using the Shapiro–Wilk test. These are the preferred tests when examining skewness, kurtosis, or both due to their good power properties (Mendes and Pala 2003), which revealed a violation of normal distribution assumption. According to Yap and Sim (2011), the Shapiro–Wilk test is better than all others (Kolmogorov–Smirnov; skewness–kurtosis test; Lilliefors etc.) since its power properties across a wide range of asymmetric distributions are considered optimal.

Multivariate normality was inspected using Mardia's coefficient (Mardia 1970). Byrne (2016) indicated a value of > 7 as indicating a substantial departure from normality, while (Kline 2011) suggested kurtosis values ranging from 8 to 20 indicate extreme levels of kurtosis suggesting that values greater than 3 is more indicative of more extreme levels of skew. The results indicated that the Mardia's coefficient exceeded the suggested thresholds (Mardia's coefficient = 139.539; critical ratio = 59.080), indicating a deviation from multivariate kurtosis.

As the data are not normally distributed, it is evident that the Bayesian SEM approach is necessary (see Table 2).

Measurement Model

This study first examined the psychometric properties of all study measures using the posterior values obtained from the Bayesian estimation (see Table 2). In addition to the means that Bayesian estimation commonly provides, all standardized factor loadings also had to be estimated. During the confirmatory factor analysis (CFA) process, all latent construct items were statistically significant ($p < 0.05$) (i.e., the zero value was not included in the confidence interval) and over 0.5, indicating that the constructs exhibit convergent validity (Hair et al. 2013). Frequentist reliability and validity measures, such as composite reliability and Cronbach's alpha, are based on multivariate normality. As a result, they cannot be calculated for ordinal variables (Poucke, Matthyssens, and Weeren 2016).

As the next step, the discriminant validity was assessed by adopting two different methods. First, discriminant validity was assessed with the Fornell–Larcker criterion (Fornell and Larcker 1981; Hair et al. 2013). According to this approach, the square root of the AVE values is compared to the latent variable correlations. The square root of each construct's AVE must be greater than its highest correlation with any other construct. The Bayesian estimation procedure provided the posterior distributions of the covariances of all model variables. The correlations were computed from these. The correlations were smaller than the square root of AVE; therefore, discriminant validity was proven (see Table 3). Nonetheless, a recent study by Henseler, Ringle, and Sarstedt (2015) demonstrated that this widely accepted discriminant validity assessment often fails to detect a lack of discriminant validity.

Therefore, Henseler, Ringle, and Sarstedt (2015) proposed an alternative approach to assess discriminant validity based on the multitrait-multimethod matrix: the heterotrait-monotrait (HTMT) ratio of correlations (Henseler, Ringle, and Sarstedt 2015). In line with Henseler's study, Voorhees et al. (2016) also proposed that using the HTMT ratio with a 0.85 cutoff provides the best assessment of discriminant validity.

Discriminant validity was tested using this new method, and the results are listed in Table 3 (upper triangle). According to Kline (2011), if the HTMT value is greater than the HTMT value of 0.85, then discriminant validity is a problem. As demonstrated in Table 3, however, all values are below 0.85. The following formula was used to calculate the HTMT values based on the Bayesian correlations among indicators, as AMOS does not compute the HTMT criterion.

$$HTMT_{ij} = \frac{1}{K_i K_j} \sum_{g=1}^{K_i} \sum_{h=1}^{K_j} r_{ig,jh} \div \left(\frac{2}{K_i (K_i - 1)} \sum_{g=1}^{K_i-1} \sum_{h=g+1}^{K_i} r_{ig,jh} \cdot \frac{2}{K_j (K_j - 1)} \sum_{g=1}^{K_j-1} \sum_{h=g+1}^{K_j} r_{jg,jh} \right)^{\frac{1}{2}}$$

Bayesian estimation uses MCMC algorithms to repeatedly extract random samples from the posterior distribution of the model parameters (Muthén and Muthén 2017). The convergence is assessed by monitoring the posterior distributions based on trace and autocorrelation plots (Muthén and Muthén 2012). When rapid up-and-down fluctuations and the absence of long-term trends are observed in the plot, this indicates rapid convergence in the distribution (Kaplan and Depaoli 2012; Arbuckle 2016). In this case, the results were based on 54,000 samples collected after 1000 burn-in samples, for a total of 55,000 samples after the thinning process.

To evaluate model fit, a sufficient number of samples has been extracted from the posterior distribution to accurately estimate the posterior parameter values (Arbuckle 2016). The model provided a posterior predictive value of 0.52, an indication that the model has a very good fit (Gelman et al. 2014). MCMC convergence is also evaluated based on the potential scale reduction (PSR) convergence criterion (Gelman and Rubin 1992; Gelman et al. 2014). Within- and between-chain variation in parameter estimates are compared with the PSR criterion. When using a single MCMC chain, the PSR compares variation within and between the third and fourth quarters of the iterations. A PSR value of 1.000 reflects perfect convergence (Muthén and Muthén 2012; Kaplan and Depaoli 2012). When the number of parameters is large, a PSR < 1.100 for each parameter indicates that convergence of the MCMC sequence has been achieved (Muthén and Muthén 2012). The PSR value of the model was 1.0017, indicating that convergence has been achieved.

Table 2. Normality Test and Psychometric Properties.

Constructs and Indicators	Test of Normality SW Test	AVE	Mean	SD	λ	Sig.
	Statistic					
Economic Impact (Ecl)		0.578				
Tourism has created more employment opportunities in the UAE	0.868***		5.492	0.048	0.722	*
Tourism is a good strategy for economy diversification in the UAE	0.840***		5.912	0.038	0.792	*
Tourism attracts more investment and project development in the UAE	0.816***		6.106	0.034	0.770	*
Tourism has created more business opportunities for UAE residents	0.823***		5.832	0.044	0.756	*
Environmental Impact (Enl)		0.608				
Tourism has led to an increase in traffic congestion in the UAE	0.919***		4.796	0.058	0.585	*
Tourism has destroyed the natural environment because of construction of hotels and other tourism facilities in the UAE	0.939***		3.841	0.063	0.778	*
Tourism has led to an increase in urban pollution in the UAE	0.944***		3.824	0.062	0.919	*
Tourism has led to an increase in litter in the UAE	0.940***		3.791	0.061	0.801	*
Social Impact (Sl)		0.538				
Increase in number of tourists improves the positive image of the UAE	0.791***		6.190	0.032	0.731	*
Tourism improves of the quality of service in restaurants, shops, and hotels	0.812***		6.135	0.031	0.696	*
Tourism increases the number of recreational opportunities for UAE residents	0.810***		6.079	0.035	0.773	*
Tourism makes the residents more satisfied with their living in the UAE	0.884***		5.628	0.04	0.731	*
Cultural Impact (Cl)		0.547				
Tourism has contributed positively to local arts in the UAE	0.854***		5.789	0.036	0.626	*
Tourism has a positive impact on cultural identity in the UAE	0.890***		5.138	0.055	0.717	*
Tourism has increased cultural exchange in the UAE between residents and tourists	0.872***		5.622	0.041	0.832	*
Tourism has generated greater respect for cultural heritage in the UAE	0.861***		5.621	0.046	0.769	*
Support for Tourism Development (STD)		0.694				
I think that the UAE should remain a tourist destination	0.880***		5.502	0.049	0.833	*
The UAE should support the promotion of tourism in the country	0.851***		5.836	0.041	0.770	*
I believe tourism should be encouraged as a strategy for economic diversification for the UAE	0.871***		5.599	0.045	0.893	*
I believe that the overall impact of tourism in the UAE is positive	0.863***		5.731	0.041	0.831	*

Note: SW = Shapiro–Wilk; AVE = average variance extracted; M = mean; SD = standard deviation; λ = factor loadings; Sig. = significance level.

*Significance at the $p < 0.05$ level (i.e., the value was not included in the confidence interval).

***Significance at $p < 0.01$.

Structural Model

As shown in Table 4(A), support was found for hypothesis 1, indicating a positive effect of social impact on support for tourism development (mean: 0.261, confidence interval 0.121 to 0.406). Moreover, cultural impact was also found to positively impact support for tourism development (mean: 0.510, confidence interval 0.349 to 0.697), providing support for hypothesis 2. Additionally, hypothesis 3 was also supported, indicating a negative impact of environmental impact on support for tourism development (mean: -0.093 , confidence interval -0.148 to -0.038). Finally, the analysis provided support for economic impact having a positive effect on support for tourism development

(mean: 0.463, confidence interval 0.361 to 0.565). Therefore, all hypotheses were supported. In addition, the graphical representation of the posterior distributions verify the above (see Figure 2).

The Moderating Role of the Demographic Characteristics

A very useful tool in SEM is multigroup analysis, as it allows for the comparison of multiple samples across multiple population groups for any identified structural equation model (Byrne 2016). In other words, it tests whether different groups differ significantly by assuming that they are equal by examining

Table 3. Discriminant Validity: Fornell and Larcker Criterion and Heterotrait-Monotrait (HTMT) Ratio of Correlations.

Constructs	Ecl	Enl	SI	CI	STD
Economic Impact (Ecl)	0.760^a	0.180 ^c	0.505	0.534	0.598
Environmental Impact (Enl)	−0.179 ^b	0.780	0.259	0.286	0.342
Social Impact (SI)	0.504	−0.258	0.733	0.624	0.578
Cultural Impact (CI)	0.533	−0.284	0.622	0.740	0.595
Support for Tourism Development (STD)	0.597	−0.341	0.577	0.594	0.833

a. Diagonal elements in bold denote the square root of average variance extracted.

b. Lower triangle: denotes the correlations between the constructs.

c. Upper triangle: denotes the heterotrait-monotrait values.

Table 4. Summary of Direct Relationships and Moderating Effects.

(A) The Results of the Structural Model Hypothesis

Hypothesized Relationships	Mean	SE	SD	95% Lower Bound	95% Upper Bound	Min	Max	Status
Hypothesis 1: STD ← SI	0.261	0.004	0.074	0.121	0.406	0.003	0.599	Supported
Hypothesis 2: STD ← CI	0.510	0.004	0.089	0.349	0.697	0.186	0.884	Supported
Hypothesis 3: STD ← Enl	−0.093	0.001	0.028	−0.148	−0.038	−0.201	−0.001	Supported
Hypothesis 4: STD ← Ecl	0.463	0.002	0.053	0.361	0.565	0.261	0.712	Supported

(B) Moderating Effect of Gender, Education, Nationality, Residency and Age

Moderators	Hypothesized relationships	Mean		Moderating Effects
Moderator 1: Gender		Group a (Male)	Group b (Female)	
	Hypothesis 1a: STD ← SI	0.344	0.251	Yes
	Hypothesis 2a: STD ← CI	0.269	0.891	Yes
	Hypothesis 3a: STD ← Enl	−0.087	−0.060	Yes
Moderator 2: Education		Group c (High School or Less)	Group d (College or Above)	
	Hypothesis 1b: STD ← SI	0.117	0.279	Yes
	Hypothesis 2b: STD ← CI	0.272	0.525	Yes
	Hypothesis 3b: STD ← Enl	0.000	−0.110	Yes
Moderator 3: Nationality		Group e (Nationals–Emirati)	Group f (Nonnationals)	
	Hypothesis 1c: STD ← SI	0.396	0.233	Yes
	Hypothesis 2c: STD ← CI	0.686	0.446	Yes
	Hypothesis 3c: STD ← Enl	−0.093	−0.080	Yes
Moderator 4: Length of Residency		Group g (≤10 years)	Group h (<10 years)	
	Hypothesis 1d: STD ← SI	0.126	0.332	No
	Hypothesis 2d: STD ← CI	0.464	0.579	No
	Hypothesis 3d: STD ← Enl	−0.068	−0.101	No
Moderator 5: Age		Group i (≤44 years old)	Group j (>44 years old)	
	Hypothesis 1e: STD ← SI	0.267	0.238	No
	Hypothesis 2e: STD ← CI	0.588	0.448	No
	Hypothesis 3e: STD ← Enl	−0.060	−0.144	No
	Hypothesis 4e: STD ← Ecl	0.505	0.450	No

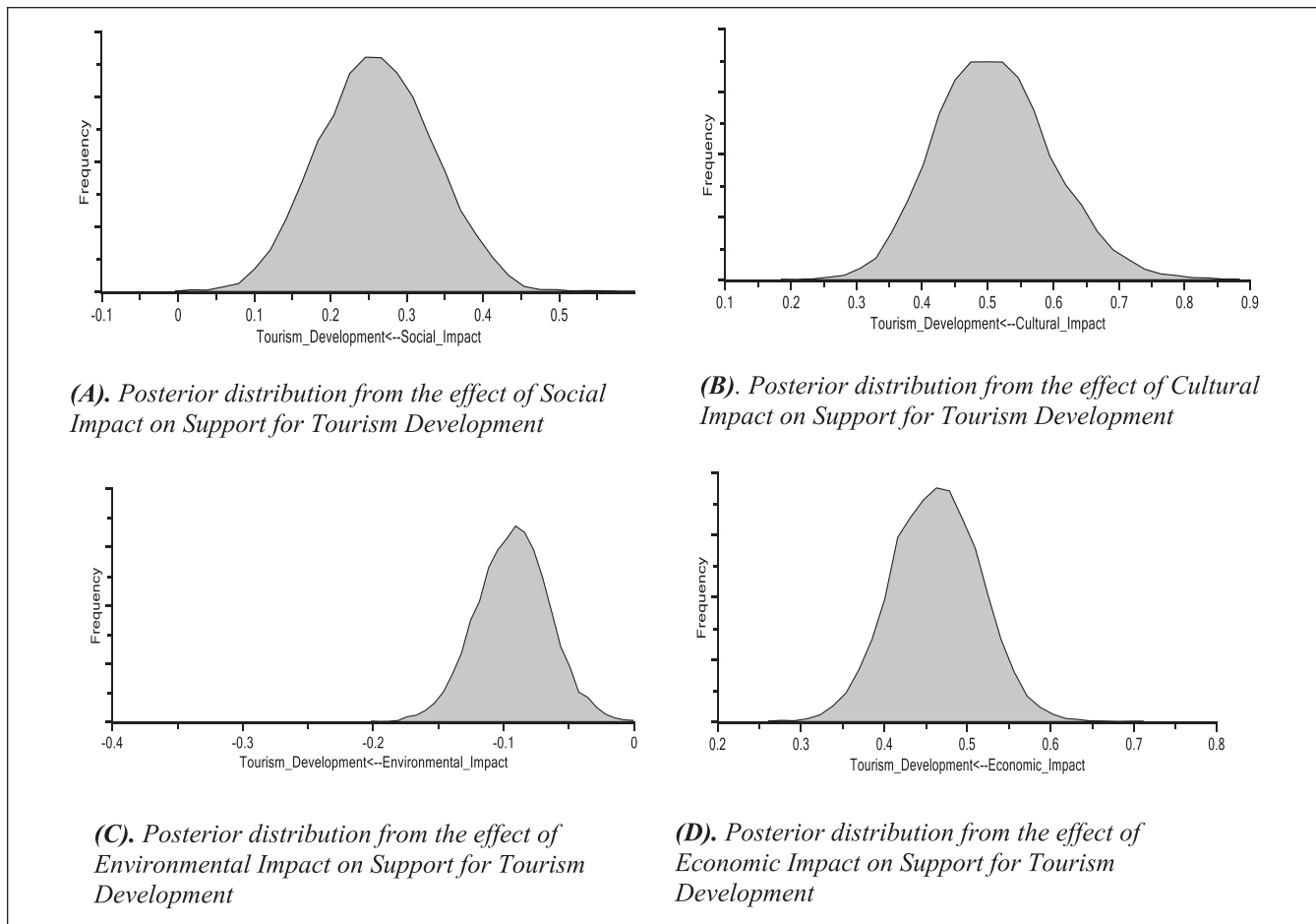


Figure 2. Posterior distribution from the effects of social, cultural, environmental, and economic impact on support for tourism development.

their invariance. In this case, the grouping criteria are gender, educational level, nationality, length of residency, and age.

Prior to highlighting the significance of moderating variables and assessing whether the suggested hypotheses vary with their inclusion, the baseline models must be studied separately and then combined into a single model (configural model). No between-group constraints are involved in the estimation of baseline models (Marsh 1994). Consequently, the data should be first analyzed separately for each group. When testing for invariance, the first step was to impose equality constraints on particular parameters to analyze the data for all groups simultaneously to obtain the results (Joreskog and Sorbom 1993; Bentler 2006). Nonetheless, the fixed-free parameter pattern remains consistent with the baseline model specification for each group. Therefore, the first invariance type that was examined was configural. This invariance is satisfied if the model structure is invariant across groups. It is a critically important model because if the data do not support identical patterns of fixed and nonfixed parameters across groups, then they also will not support more restrictive models (Bollen 1989).

Gender. Regarding the moderating impact of gender, the first step was to examine the fit of the two baseline models grouped according to the respondents' gender. Model a (i.e., the male group) provided a posterior predictive value of 0.51 and a PSR value of 1.012 (65,000 samples), whereas Model b (i.e., the female group) provided a posterior predictive value of 0.52 and a PSR value of 1.0015 (62,000 samples), indicating that convergence had been achieved in both models. The analyses performed for the combined model (Models a and b) indicated that the model satisfied the configural invariance criterion, with a posterior predictive value of 0.52 and a PSR value of 1.015 (54,000 samples), permitting the multigroup analysis to proceed. In the Bayesian approach, Bayes' factors are ideally used to test the invariance hypotheses, comparing the marginal probabilities of the models with and without invariance constraints. Moreover, the MCMC algorithms can be used to evaluate certain restricted versions of the model (Verhagen and Fox 2013). Then, the deviance information criterion (DIC) value was used (Spiegelhalter et al. 2002) to compare the fit of the models with and without invariance constraints. The structural invariance

Table 5. BSEM Multigroups Fits.

Moderators		Indices Groups		Combined	
		Group a (Male)	Group b (Female)		
Moderator 1: Gender	Post. pred. value	0.51	0.52	0.52	
	PSR (sample)	1.012 (65,000)	1.0015 (62,000)	1.015 (54,000)	
	DIC			Constrained 17,842.41	Invariant 17,861.73
Moderator 2: Education		Group c (High School or Less)	Group d (College or Above)		
	Post. pred. value	0.53	0.53	0.54	
	PSR (sample)	1.016 (76,000)	1.0013 (61,000)	1.017 (54,000)	
Moderator 3: Nationality		Group e (Nationals–Emirati)	Group f (Nonnationals)		
	Post. pred. value	0.52	0.53	0.53	
	PSR (sample)	1.014 (53,000)	1.0014 (62,000)	1.015 (55,000)	
Moderator 4: Length of Residency		Group g (≤10 years)	Group h (>10 years)		
	Post. pred. value	0.52	0.54	0.52	
	PSR (sample)	1.013 (72,000)	1.0013 (66,000)	1.016 (53,000)	
Moderator 5: Age		Group i (≤44 years old)	Group j (>44 years old)		
	Post. pred. value	0.54	0.52	0.52	
	PSR (sample)	1.011 (73,000)	1.0015 (51,000)	1.015 (72,000)	
	DIC			Constrained 17,906.35	Invariant 17,903.41

Note: Post. Pred. = posterior predictive; PSR = potential scale reduction; DIC = deviance information criterion.

assumption was tested by comparing the estimated DIC of the constrained structural path model and the invariant model. The models will not be invariant if the estimated DIC of the latter model (the invariant) is higher (Verhagen and Fox 2013). According to the results, the DIC value of the constrained model is 17,842.41, whereas the value of the invariant model is 17,861.73, indicating that the models differ (see Table 5).

The results show that the effect of social, environmental, and economic impacts on support for tourism development was supported for both groups. However, this effect was higher in the case of males (mean: 0.344, confidence interval 0.146 to 0.546; mean: −0.087, confidence interval −0.156 to −0.038; and mean: 0.469, confidence interval 0.350 to 0.596, respectively) compared to females (mean: 0.251, confidence interval 0.037 to 0.465; mean: −0.060, confidence interval −0.144 to −0.023; and mean 0.461, confidence interval 0.297 to 0.664, respectively). Among women, cultural impact elicits more support for tourism development (mean: 0.891,

confidence interval 0.540 to 1.317) than among men (mean: 0.269, confidence interval 0.101 to 0.453). Therefore, hypotheses 1a, 2a, 3a, and 4a are supported (see Table 4B, Figure 3).

Education. Following the aforementioned process, the moderating impact of educational level was also examined (see Table 5). The results indicate that social, cultural, and environmental impacts affect support for tourism development only in the case of respondents with higher educational levels (mean: 0.279, confidence interval 0.133 to 0.433; mean: 0.525, confidence interval 0.349 to 0.717; and mean: −0.110, confidence interval −0.165 to −0.056, respectively), whereas economic impact exerts a stronger effect in the case of lower-educated respondents (mean: 0.518, confidence interval 0.125 to 1.174) than in the case of more highly educated respondents (mean: 0.490, confidence interval 0.385 to 0.603), providing support for hypotheses 1b, 2b, 3b, and 4b (see Table 4B, Figure 3).

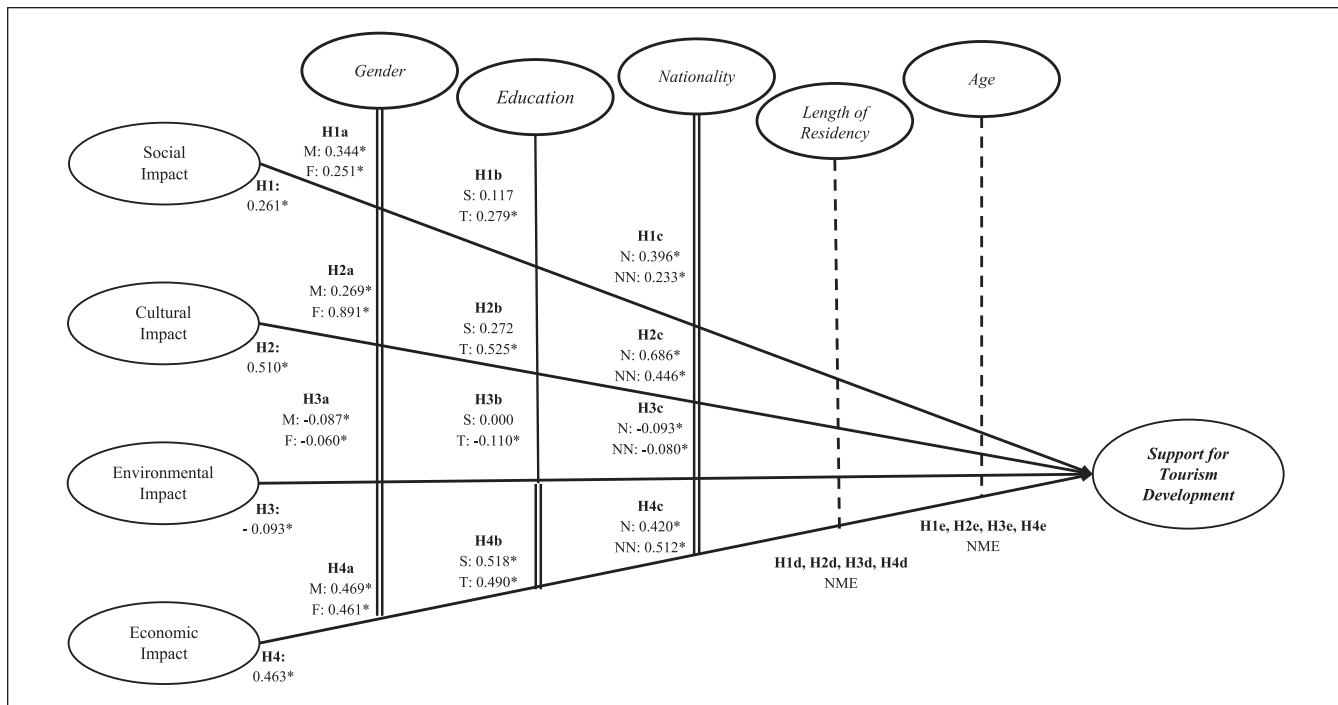


Figure 3. Results of the Bayesian multigroup structural model.

Note: Solid lines indicate statistically significant relationships or moderating effects for one of the two groups. Double solid lines indicate a moderating effect for both groups. Dashed lines represent nonsignificant moderation effects. The asterisk indicates significance at the 5% level in the sense that the 95% Bayesian credibility interval does not cover zero (the numerical values represent posterior means of the standardized estimates). M = male; F = female; S = secondary; T = tertiary; N = nationals; NN = nonnationals; NME = no moderating effect.

Nationality. Focusing on the moderating impact of Nationality, the same process was followed (see Table 5). The results reveal that the effect of social, cultural, and environmental impacts on support for tourism development is higher in the Nationals–Emirati group (mean: 0.396, confidence interval 0.071 to 0.736; mean: 0.686, confidence interval 0.301 to 1.162; and mean: -0.093, confidence interval -0.194 to -0.003, respectively) compared to the Nonnationals group (mean: 0.233, confidence interval 0.056 to 0.403; mean: 0.446 confidence interval 0.269 to 0.639; and mean: -0.080, confidence interval -0.150 to -0.014, respectively), whereas economic impact's effect on support for tourism development appears to be stronger in the case of nonnationals (mean: 0.512, confidence interval 0.348 to 0.702) than for nationals–Emirati (mean: 0.420, confidence interval 0.297 to 0.551). Therefore, hypotheses 1c, 2c, 3c, and 4c are supported (see Table 4B, Figure 3).

Length of Residency and Age. Finally, the moderating impact of length of residency and age were examined. As shown in Table 5, the comparison of the DIC values of the constraint models and the values of the invariant models revealed that the models do not differ. Therefore, hypotheses 1d, 2d, 3d, 4d, 1e, 2e, 3e, and 4e are not supported.

Discussion and Implications

This study sheds light on residents' support for tourism development in the UAE. It examines the relationship between residents' demographic characteristics and their support for tourism development and makes several academic and management contributions. Overall, the residents of the UAE have strong and positive perceptions of the social, cultural, and economic impacts of tourism, and they support tourism development in the UAE. The most important antecedent of support for tourism development is culture, followed by the economic and social benefits associated with tourism. However, it is notable that with regard to the negative aspects of tourism, although the environmental impact is considered a significant factor, the impact of residents' perceptions on their support for tourism development is weak. In other words, residents seem to almost disregard the environmental consequences of tourism. The same pattern regarding this negative impact was found in all the demographic characteristics that were explored. Among the demographic characteristics that are discussed in detail, the results show that gender, level of education, and nationality are significant moderators in the relationship between residents' perceptions of the impacts of tourism and their support for tourism development, while length of residency and age show no moderating

effects. The focus on specific groups' perceptions and their impact on support for tourism can provide suggestions for specific practices to enhance this support.

Gender

Male residents were found to exhibit a stronger relationship between their perceptions of the social, environmental, and economic impacts of tourism than female residents, while the relationship between residents' perception of the cultural impact of tourism and their support for tourism development was significantly higher for women than for their male counterparts. A possible explanation is that while women appreciate the benefits of tourism, they are more concerned with the possible positive benefits associated with the cultural promotion of the country because women in the Middle East are known to be more conservative. This study contradicts Sujie Wang, Bickle, and Harrill's (2010) study, which reported that male residents were more aware of cultural changes created by tourism than female residents were. The findings of this study also contradict the findings of Sinclair-Maragh (2017), who reported that in general, female residents were more supportive than male residents of tourism development in Jamaica. In contrast, Almeida-García et al. (2016) reported that gender had no effect on residents' perceptions of tourism impacts in Spain. The findings related to gender are interesting and emphasize the understanding that women are prone to care for their community (Moghavvemi et al. 2017).

Education

With regard to the moderating impact of the level of education on the relationship between residents' perceptions of the impacts of tourism and their support for tourism development, the results showed that residents with higher levels of education exhibited a stronger effect of the social, cultural, and environmental impacts, while residents with lower levels of education exhibit a stronger effect of the economic impacts of tourism. These findings are consistent with the study of Almeida-García et al. (2016), who reported that residents' perceptions of the impacts of tourism increased positively as their levels of education increased. In contrast, Látková and Vogt (2012) found that residents with higher levels of education were less supportive of the positive impacts of tourism. However, Nunkoo and Ramkissoon (2010) found that the level of education had no influence on residents' perceptions of tourism impact. It is worth highlighting that residents with higher levels of education are concerned about the negative environmental impact of tourism in contrast with those with lower levels, who ignore this impact.

Nationality

Regarding the moderating impact of nationality on the relationship between residents' perceptions of the impact of

tourism and their support for tourism development, the results of this study indicate that the national-Emirati respondents reported greater perceived effects of the social, cultural, and environmental impacts of tourism than did nonnational residents, whereas nonnational residents reported greater positive perceptions of the economic impacts of tourism in the UAE. One possible explanation for this finding is that the primary reason for nonnationals to reside in the UAE is for the pursuit of better economic opportunities; therefore, they are more concerned about the economic impacts, while national residents are more concerned about the social, cultural, and environmental impacts of tourism on their country. The UAE government offers national social security programs and support for housing, education, and health services that are not available for nonnational residents (Hammad, Ahmad, and Papastathopoulos 2017). Conversely, nonnational residents might consider economic benefits to be the most important aspect of tourism. These findings are in line with Hernández and Mercader (2015), who also found that nonnational residents have more positive perceptions of the economic impacts of tourism, while national residents have more concerns regarding the social, cultural, and environmental impacts of tourism in Spain.

Length of Residency and Age

The findings of this study indicate that the length of residency and age seem to have no moderating influence on the relationship between residents' perceptions of tourism impacts and their support for tourism development. A possible explanation is that the UAE offers equal opportunities for its residents to enjoy the benefits of tourism regardless of their age or length of residency in the UAE. However, the findings regarding the influence of the length of residency contradict those of previous studies (Türker and Öztürk 2013; Wang, Bickle, and Harrill 2010) that reported that the longer their years of residency, the less positive residents' perceptions of tourism are. Similarly, the findings regarding the influence of age on residents' perceptions regarding impacts of tourism contradict the findings of previous studies on the same topic. Látková and Vogt (2012) found that older residents perceive tourism impacts more positively than do younger residents. They explained that because the study area is well established as a tourism destination, residents recognize that the positive impacts of tourism outweigh the negative impacts. However, other researchers have found that younger residents have a more positive perception than older residents regarding the impacts of tourism (Bagri and Kala 2016) because older residents are more resistant to change, especially cultural change.

Practical Implications

The investigation of the moderating effects of residents' demographic characteristics offers several practical implications that

are useful for tourism officials, tourism planners, and policy makers in the UAE. The findings suggest that tourism officials need to be aware of how the demographic profile of residents affects the relationship between residents' perceptions of the impacts of tourism and their support for tourism development. First, regarding the influence of gender on the perceptions of residents, the findings of this study suggest that female residents are concerned with the positive cultural impact of tourism, while male residents exhibit concerns regarding the social, environmental and economic impacts of tourism. An explanation might be that Emirati women "express a strong interest in their traditions and an awareness of preservation and responsibility" (Cherrier and Belk 2015, p. 329) and in the spread of their culture. Additionally, men are often the main breadwinners in households in the Middle East, so it is expected that they are more concerned about the economic impact of tourism, and because they interact more with other people, they care more about social factors. Therefore, tourism officials in the UAE should promote cultural activities for tourists and provide opportunities for female residents to participate in local arts and crafts, benefiting from their very high willingness to spread their culture. At the same time, residents can be informed about the social benefits of tourism and increase their positive perceptions of the social impact of tourism. In addition, UAE tourism officials can promote social activities that are suited for both genders and that involve both tourists and residents of UAE, increasing their perceptions of the social benefits. Sharing the UAE's culture and social activities with tourists can facilitate cultural exchange between residents and tourists and can improve residents' perceptions of the cultural and social impacts of tourism. Furthermore, UAE tourism officials can promote the conservation of the environment by encouraging sustainable tourism initiatives and projects and thus can demonstrate their efforts to protect the environment to residents to allow them to perceive this negative effect of tourism as even more insignificant. The adoption of social sustainability practices through the help of small tourism enterprises (STEs) in tourism can also be a valuable practice. This term, defined from the perspective of STEs, considers their profits but also highlights their social equity and community development contribution as well as building networks (Dahles and Bras 1999). As Zhang and Zhang (2018) note, in developing countries, tourism development can be enhanced by using social sustainability practices "through the help of STEs, which are key players for connecting with tourists, local residents, and government" (2018, p. 117). In the case of Lao PDR, which was used as a case study country, the government, neighbors, and other STEs as well as tourists "are treated as major stakeholders of a social network" (Zhang and Zhang 2018, p. 118).

Second, with regard to the influence of the level of education on the perceptions of residents and their consequent support (or lack of support) for tourism, the findings suggest that residents with lower levels of education are more concerned with the economic benefits of tourism, while residents in the UAE with higher levels of education are more concerned

with the social, cultural, and environmental impacts of tourism. The government can encourage educational programs that are related to tourism for residents with low levels of education, highlighting the social and cultural benefits of tourism to increase residents' levels of support for tourism. Training and education of local residents to work in the tourism industry is an important source of local empowerment (Nunkoo and So 2015). Additionally, among the more educated group, the negative environmental impact of tourism is a significant barrier to their support for tourism; therefore, initiatives for sustainable tourism can be launched and communicated to higher education institutions.

Third, regarding the effect of nationality on the relationship between residents' perceptions of their support for tourism development, the findings of this study reveal that the support of national residents is influenced by their perception of the social and cultural benefits and the negative environmental impacts of tourism (although their environmental concerns are low), while nonnational residents are more concerned with the economic impacts of tourism. These findings are not surprising given that one of the main reasons for expatriates to move to the UAE is the availability of better economic opportunities (Hammad, Ahmad, and Papastathopoulos 2017). It is important to take advantage of national residents' perceptions of the social and cultural benefits of tourism in the UAE. Internal advertisement campaigns for tourism activities in the UAE should encourage national residents' involvement in tourism planning and development by offering them opportunities to participate in social and cultural events. Such campaigns may also link residents' positive identification with the country's distinctive image because "residents' positive identification with their community's distinctive image is likely to enhance their social esteem, while negative identification may degenerate [their] sense of self-esteem" (Wang and Chen 2015, p. 26). Considering the enhancement in modern communication channels, UAE officials should open channels of communication by utilizing various social media outlets to reach out to residents and to directly receive their feedback regarding their perceptions of various impacts. In this way, they can make residents "part of the story." Involving locals in the process will increase organizers' and politicians' trust (Gursoy et al. 2017). The use of social sustainability practices, mentioned earlier as an important practice to promote tourism development in developing countries (Zhang and Zhang 2018), may also be a useful approach. Destination marketing approaches could also be applied with the residents' involvement in the form of online communities (e.g., via Facebook).

To the researchers' knowledge, this is a pioneering work in tourism literature because it examines the moderating effects of five demographic characteristics and advances tourism literature by explaining the relationship between residents' perceptions of the impacts of tourism and their support for tourism development. It demonstrates that

residents' demographics can help in understanding in-group bias and between-group discrimination in relation to residents' perceptions of the impacts of tourism.

In addition, this study contributes to existing knowledge by using the Bayesian SEM multi-group approach to examine the perceptions of residents regarding the impacts of tourism. The BSEM can cope with the ordinal nature of empirical data in SEM analysis and therefore enables researchers to investigate potential nonlinear relationships. As mentioned, "the assumption of linear relationships between constructs in a model can lead to the results of a study being misunderstood" (Rasoolimanesh, Ali, and Jaafar 2018, p. 1). The current study offers a remedy for this problem by applying the latest knowledge on this methodological and analytical issue.

Finally, this study adds to the existing body of knowledge by adopting a recently proposed measure to assess the discriminant validity of the constructs. The heterotrait-monotrait (HTMT) ratio of correlations (Henseler, Ringle, and Sarstedt 2015), proposed after the traditional Fornell and Larcker (1981) criterion, failed to reliably detect the lack of discriminant validity in common research situations.

Limitations and Future Research

Similar to other studies, this study is not without limitations. For instance, this study did not consider the heterogeneity among nonnational residents. Future research could examine ethnicity or religion as a way to divide residents into multiple groups within this community. Moreover, this study was conducted in the UAE only. Future research could consider expanding the analysis to other countries or conducting a cross-comparison between various countries in the Gulf region because the tourism industry is currently growing and attracting more visitors. Future research could also consider a qualitative method to examine the perceptions of residents because qualitative methods can shed light on new variables that may influence the perceptions of residents that were not included in this study. Finally, in light of the dynamic nature of SEM in tourism research (Assaf, Tsionas, and Oh 2018), a study comparing the Bayesian SEM approach with other approaches allowing the use of discrete variables and non-Gaussian distributions (Lombardi et al. 2017), such as the Generalized Structural Equation Modeling (GSEM), which has recently been introduced in the tourism research field by Zhang and Zhang (2018), would add significant knowledge to the current literature.

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