Year 14, No. 2, December 2021, ISSN 2335-4194

Academica Turistica

Tourism & Innovation Journal
Revija za turizem in inovativnost

Academica Turistica

Tourism & Innovation Journal – Revija za turizem in inovativnost
Year 14, No. 2, December 2021, ISSN 2335-4194
https://doi.org/10.26493/2335-4194.14_2

UNIVERSITY OF PRIMORSKA PRESS

Indexed in Scopus, Erih Plus, CAB Abstracts, CIRET, EBSCO, and EconPapers.

Published by University of Primorska Press
University of Primorska
Titov trg 4, SI-6000 Koper
E-mail: zalozba@upr.si
Web: http://www.hippocampus.si

Editorial Office Academica Turistica
Faculty of Tourism Studies – Turistica
Obala 11a, SI-6320 Portorož, Slovenia
E-mail: academica@turistica.si
Web: http://academica.turistica.si

Subscriptions The journal is distributed free of charge. For information about postage and packaging prices, please contact us at academica@turistica.si.

Copy Editor Susan Cook
Cover Design Mateja Oblak
Cover Photo Alen Ježovnik
Printed in Slovenia by Grafika 3000, Dob
Print Run 100 copies

Academica Turistica – Revija za turizem in inovativnost je znanstvena revija, namenjena mednarodni znanstveni in strokovni javnosti; izhaja v angleščini s povzetki v slovenščini. Izid publikacije je finančno podprla Agencija za raziskovalno dejavnost Republike Slovenije iz sredstev državnega proračuna iz naslova razpisa za sofinanciranje domačih znanstvenih periodičnih publikacij.

ISSN 1855-3303 (printed)
ISSN 2335-4194 (online)

Original Scientific Article

Restart of Hospitality and Tourism: System Dynamics and Scenario-Based Modelling

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A tourism destination is defined as an open, complex, and adaptive system, in which numerous relations in the economic, social, and environmental spheres are generated. This paper aims to define a system dynamics model of tourism destination as a complex system and to identify future behaviour of the system after the restart of tourism in the post-COVID-19 era. The main methodological approaches were system dynamics and simulation modelling. The case of a complex tourism system in the South Bohemia Region, the Czech Republic, in the form of a Stocks and Flows Diagram (SFD) is presented in this paper, focusing on the business activities at this tourism destination. The simulation results show the future behaviours of the system in various scenarios and compare the development of several economic indicators. Three possible future scenarios of a restart of the hospitality and tourism industry are compared with the theoretical situation without COVID-19 disease. The proposed system dynamics model contributes to the current theory of tourism destination management systems and can be used practically by destination managers for destination planning and to formulate destination strategies.

Keywords: system dynamics, simulation modelling, tourism destination, destination management

 https://doi.org/10.26493/2335-4194.14.125-136

Introduction

A tourism destination system involves a great number of stakeholders. One of the most significant stakeholders are the tourism enterprises that are regarded as a 'backbone' of the tourism destination system. A destination in which tourism enterprises operate has a significant impact on the competitiveness of these enterprises and their performance. However, the opposite relation also applies. It means that the competitiveness of the destination is noticeably dependent on the competitiveness of the enterprises in the destination, in terms of each individual company and all companies in aggregate (Ritchie, 2003).

The ability to compete in the tourism market is, from the perspective of individual entrepreneurs, the subject of their interest; on the other hand, the com-

petitiveness of the whole industry and aggregated results of the private sector in the destination are important for the public administration. Thus, the competitiveness of the whole destination should be in the spotlight for destination management as represented by destination management organisation (DMO).

The hospitality and tourism industry has suffered enormously from the COVID-19 pandemic and government restrictions in all countries. The behaviour of the whole tourism system in the post-COVID-19 period is still unclear, as well.

Therefore, the main ambition of this paper is to define a system dynamics model of tourism destination as a complex system and to simulate possible scenarios of future development after the tourism system restart. We use the case of the South Bohemia Region. The South Bohemia Region represents one of the most popular tourist regions in the Czech Republic, right after the capital city of Prague and the South Moravia Region. The aim is to provide a practical tool in the form of a complex model, which could be used by destination managers to facilitate their decision making, destination planning, and destination strategies formulation in post-COVID-19 tourism development.

Therefore, we formulate the following research question: *How will the hospitality and tourism industry develop in the post-COVID-19 era in the South Bohemia Region?*

We use system dynamics as the main methodological approach to answer the postulated research question. A tourism destination is considered a dynamic complex system because it comprises many different components that interact in a non-linear way (Baggio & Sainaghi, 2011; Mai & Smith, 2018) and, therefore, it needs to be appropriately modelled to achieve efficient destination management (Bieger, 2008; Farrell & Twining-Ward, 2004; Lew & McKercher, 2006; Rodriguez-Diaz & Espino-Rodriguez, 2007). System dynamics is a method to enhance learning in complex systems which often uses computer simulation models to help us learn about dynamic complexity and design more effective policies (Sterman, 2000). This method can be understood as a computer-based approach to understand and analyse a system's behaviour over time (Sedarati et al., 2019). Therefore, we use system dynamics to simulate possible scenarios, because future tourism development in the post-COVID-19 period is still unclear and will require complex solutions.

The proposed system dynamics model contributes to the current theory of tourism destination management systems. System dynamics in travel and tourism research is used by other researchers as well (Borštnar et al., 2011; Jere Jakulin, 2016; 2017; Jere Lazanski & Kljajic, 2006; Mai & Smith, 2018; Patterson et al., 2004; Ropret et al., 2014; Sedarati et al., 2019; Štumpf & Vojtko, 2016; Tegegne et al., 2018; Vojtko & Volfová, 2015). However, the previous studies do not include such a high number of variables and interrelations and do not cover the complexity of the whole destination system as does the presented model. Only a few authors simulate future scenarios (Mai & Smith, 2018). Thus, we see the gap in the theory and provide a scientific tool for future directions of tourism in these chaotic times.

Theoretical Background

The use of the systemic approach in tourism originates from the fact that tourism destinations are considered complex systems (Baggio & Sainaghi, 2011; Kaspar, 1976; Laesser & Beritelli, 2013; Mai & Smith, 2018; Štumpf & Vojtko, 2016). According to the Sankt-Gallen consensus of destination management, destinations can be understood not only as geographic entities, clusters or networks of suppliers but also as productive social systems with specific business aims and non-business related goals (Laesser & Beritelli, 2013).

Tourism Destination as a Complex System

Systems theory is used as one of the essential approaches to studying and managing the travel and tourism industry (Kaspar, 1976), especially in a specific environment of tourism destinations. Based on this theory, a tourism destination is defined as an open, complex and adaptive system, in which numerous relations in the economic, social, and environmental spheres are generated. A tourism destination is considered a dynamic complex system because it comprises many different components that interact in a non-linear way (Baggio & Sainaghi, 2011; Mai & Smith, 2018). The tourism destination as a complex system needs to be appropriately modelled to achieve

efficient destination management (Bieger, 2008; Farrell & Twining-Ward, 2004; Lew & McKercher, 2006; Rodriguez-Diaz & Espino-Rodriguez, 2007).

The system also contains many stakeholders with entirely different management objectives and interests (Mai & Smith, 2018; Štumpf & Vojtko, 2016), and it is influenced by various internal factors (such as policy, government regulations, and socio-economic conditions) as well as external factors (such as the economic situation, safety and security, and technological or environmental changes). It means that managing a tourism destination is uncertain, and destination managers have to make decisions in a complex environment (Mai & Smith, 2018).

Tourism Destination and System Dynamics

The first system dynamics models were used for simulations in businesses (Forrester, 1961). However, system dynamics modelling enables evaluating the economic impacts and the socio-cultural and environmental impacts and their mutual interactions (Jackson, 2003). In comparison to other methods that are often used for the evaluation of the economic impact of tourism on destinations, system dynamics has one advantage – it can be operated at the same time with 'soft' factors from the social and environmental spheres, non-linear relations, delays, and causal loops (reinforcing or balancing), in one complex model (Sterman, 2000). Thus, we can observe stakeholders and general tourism development in destinations in a broader context with the emphasis on sustainability.

The system dynamics searches for an explanation of phenomena (variables within the boundaries of the system). The endogenous approach creates system dynamics through the interaction of variables and agents represented in the model. By specifying the structure of the system and the rules of interaction (decision-making rules in the system), it is possible to reveal behaviour patterns created on the basis of these rules and this structure, and to discover how behaviour can be changed following the alternation of the structure and rules (Sterman, 2000). For example, Jere Lazanski and Kljajic (2006) or Mai and Smith (2018) have used this approach in dynamic modelling of tourism destinations.

In contrast, the approach based on the exogenous variables (variables beyond the model boundaries) explains the dynamics of given variables in the sense of other variables whose behaviour is anticipated. An endogenous explanation of the system dynamics does not mean that the models should never contain any exogenous variables. However, the number of external inputs should not be high, and each 'exogenous input candidate' must be carefully verified. Careful consideration must be given to whether there is significant feedback from endogenous elements to the considered exogenous input in the system. If so, the boundaries of the system must be extended, and this variable must be modelled as endogenous (Sterman, 2000).

An approach based on exogenous variables has been used in tourism by, for example, Patterson et al. (2004), who deal with a dynamics system of sustainable tourism on the Caribbean island of Dominica. At first, the authors identified exogenous variables such as the global economy, politics, and climatic conditions. Only then did they outline three broad endogenous areas of research in which they identified individual variables – society (population, migration, etc.), ecosystem (land exploitations, portable capacity, etc.) and economics (GDP, income from tourism, etc.).

Several research studies have been published in the field of travel and tourism, using system dynamics as the main theoretical approach (Borštnar et al., 2011; Jere Jakulin, 2016; 2017, 2019; Jere Lazanski & Kljajic, 2006; Mai & Smith, 2018; Patterson et al., 2004; Ropret et al., 2014; Sedarati et al., 2019; Štumpf & Vojtko, 2016; Tegegne et al., 2018; Vojtko & Volfová, 2015). Moreover, Schianetz et al. (2007), based on Senge's (1990) theory of Learning Organization, present the concept of Learning Tourism Destination using system dynamics as a tool for implementing and reinforcing collective learning processes. The results show that system dynamics methodology can support communication among crucial stakeholders in tourism destinations and stimulate organisational learning.

Simulation Modelling in Tourism Research

Modelling in tourism is used mainly to understand complex systems and connections when, on the basis of the clarification of certain phenomena, it is possi-

ble to imitate the behaviour of the investigated system, simulate it on the specific model, and then influence its behaviour. Simulation models are used in tourism, for example, to predict supply and demand, determine the impact of tourism on the economy, the local communities and the environment, to model movement of tourists in the destination, or as a tool facilitating decision-making in planning and defining development and marketing strategies (Ahlert, 2008; Andergassen et al., 2013; Athanasopoulos & Hyndman, 2008; Bonham et al., 2009; Buchta & Dolnicar, 2003; Greiner, 2010; Lacitignola et al., 2007; Lawson, 2006; Lew & McKercher, 2006; Liu et al., 2012).

Nowadays, computer simulations are increasingly used in social sciences as a tool for understanding various social phenomena. Employing simulation, scientists can determine causal effects, specify key parameter estimates, and clarify the evolution of the processes over time. In addition, simulation methods are often very effective in terms of time and costs; sometimes, they are even the only possible means for examining certain phenomena (Garson, 2008). The main areas of simulations used in the social sciences are system dynamics models, network models, spatial models, and agent-based models.

Focusing on this research study, simulations grounded in system dynamics could be used to better understand the structure of the complex tourism destination system and its behaviour in a time perspective. These simulations can combine many different interrelated factors and play an important role in testing various scenarios. That is why such system dynamics simulation models can be used to make strategic decisions and for strategic planning in tourism destination development in general.

Methods

The main methodological approach was system dynamics modelling. In line with the previous studies, we built the model based on system dynamics modelling, according to the system dynamics methodology (Jackson, 2003). The first step consists of identifying a research problem and variables, which have a crucial influence on the defined problem. The variables create the boundaries of the system.

The Stocks and Flows Diagram Construction

The presented system dynamics model in the form of a Stocks and Flows Diagram (SFD) shows the interactions among the defined variables and reveals the complex structure of the model. Jere Lazanski and Kljajic (2006) defined the relations among the model, the object, and the modelling subject. Based on this approach, the object of the model was defined as the dynamics of tourism development in the South Bohemia Region. The subject of the model is then represented by the researchers (authors) as the observers/descriptors of the model. The SFD represents a mathematical simulation model. Figure 1 shows the SFD structure.

The compiled model of the tourism destination system includes 14 stock variables that form the base of the model. Each stock variable has its own inflow(s) and usually, but not necessarily, outflow(s). Stocks represent accumulations within a system and flows increase (inflows) or decrease (outflows) stocks. Auxiliary variables and stocks control the flows. Therefore, a stock can be changed only via its flows, and stocks and auxiliary variables control the flows (Mai & Smith, 2018). Constants are used for setting the policies and scenarios simulations. Figure 2 shows a part of the SFD focusing on accommodation capacity where the *Accommodation establishments (AE) capacity* variable represents the stock, *Investments* the inflow, *AE closing* and *Depreciation* the outflows, *AE occupancy* and *AE building necessity* the auxiliary variables, and *Additional investments* the constant.

In this study, we focus primarily on the variables linked to the entrepreneurs' performance, such as Profit&Loss, accommodation capacity, or number of days spent by visitors in the destination. However, the model enables us to set the policies and simulate scenarios in a sustainable manner because it includes also the variables related to public administration (e.g. tax revenues), residents' attitudes (residents irritation), and the environment (cultural and natural potential). The model structure is described in Appendix 1.

Model Calibration and Validation

After the SFD structure construction, the model must be calibrated with parameter values to run the simula-

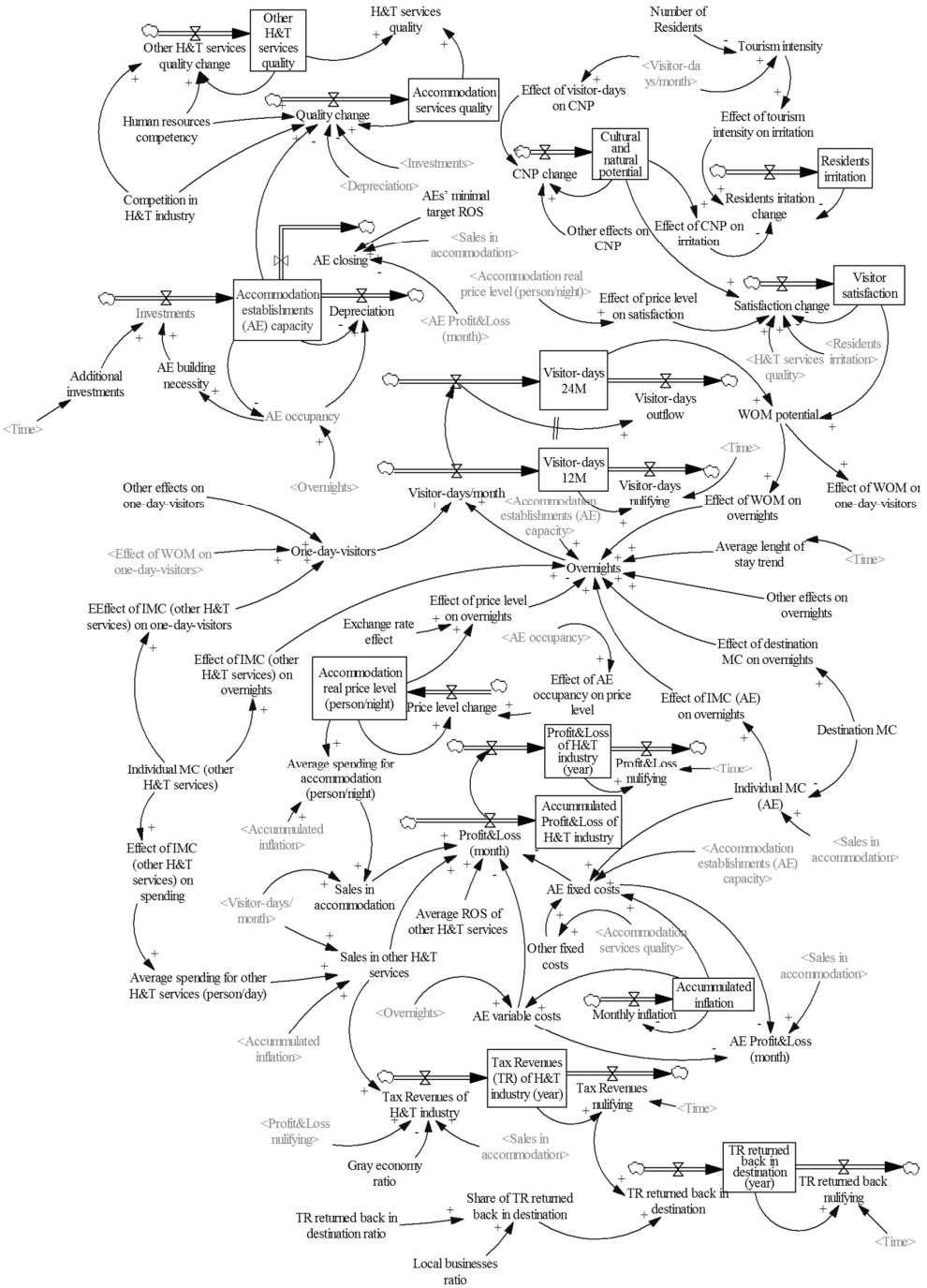

Figure 1
Tourism Destination System: Stocks and Flows Diagram

tions. These parameters include (a) the initial value for stocks at the beginning of the simulation, (b) constants that are stored as auxiliary variables, and (c) graphical functions that represent the influence of one variable on another. The remainder of the SFD is parametrised using equations (Mai & Smith, 2018; Sterman, 2000). The time step of the simulation is one month, and the simulations run for 120 time-steps (10 years).

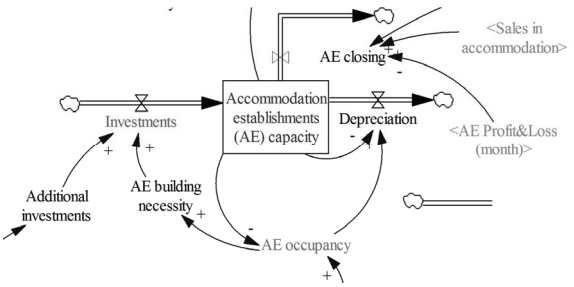

Figure 2 Stocks and Flows Diagram: Accommodation Capacity

A wide set of secondary data about the numbers of destination visitors, length of stay, and accommodation capacity was collected to calibrate the simulation model. The base year for these statistics was 2019. Some variables, such as the price level, indications of quality, satisfaction, or residents' irritation, were estimated based on consultations with professionals from the region.

Calibration of the simulation model, as well as the initial values, equations and data sources are shown in the supplementary file generated by Vensim 6 Professional (https://fm.vse.cz/english/sfd-irritation2).

We validated the simulation model to achieve the real-life behaviour of the system. The behaviour of the model was compared with the situation after the first COVID-19 wave in the Czech Republic (March–May 2020) and the post-wave behaviour of the system. We followed the results of own research studies and used primary data focusing on the effects of the COVID-19 pandemic on SMEs in the Czech Republic, or visitor profiles and satisfaction in South Bohemia. Moreover, we used a range of studies about the COVID-19 impacts on the hospitality and tourism industry published by the UNWTO and the Czech Tourism Board (https://www.unwto.org and https://tourdata.cz/temata/data/).

Results

We simulated three possible scenarios (Scenario 0, Scenario 1, and Scenario 2) of future tourism development in connection with the hospitality and tourism industry restart in the post-COVID-19 period. These three possible future scenarios are confronted with the theoretical situation without the COVID-19 disease. Using Vensim 6 Professional software, we utilise the SyntheSim function for scenarios simulations.

Scenario without the covid-19 Disease

In this scenario, we simulate the theoretical situation of how the hospitality and tourism industry in South Bohemia would be developing if the COVID-19 pandemic had not occurred. The development would be natural and continuous without any external impacts and specific politics.

Scenario 0

We consider Scenario 0 as the base situation when we consider the basic impacts of the COVID-19 pandemic. We changed the input parameters as follows:

- 43% decrease of the *Number of visitor days* based on the statistics (https://tourdata.cz/temata/data/).
- The Human resources competency index decreased from 0.5 to 0.4 because of the professionals and employees outflow from the hospitality and tourism industry.
- The *Competition in the hospitality & tourism industry* index decreased from 0.8 to 0.6 due to the closing of businesses as a result of the COVID-19 pandemic restrictions.

Scenario 1

Scenario 1 is considered as a pessimistic situation when people will be generally scared to travel. In comparison with the base situation (Scenario 0), we consider 30% fewer overnights and one-day-visitors in Scenario 1.

Scenario 2

Scenario 2 is considered as an optimistic situation when people will be generally anxious to travel since they were not able to go on holidays during the COVID-19 pandemic. In comparison with the base situation (Scenario 0), we consider 30% more overnights and one-day-visitors in Scenario 1.

Simulations Results

The simulation results show that the number of visitors and days spent in South Bohemia after the tourism

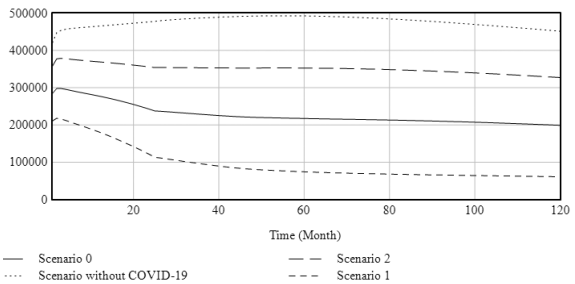

Figure 3 Scenario Simulations: Number of Visitor-Days

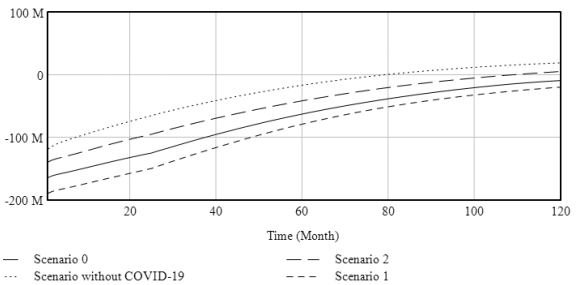

Figure 4 Scenario Simulations: Accommodation Establishments Profit&Loss

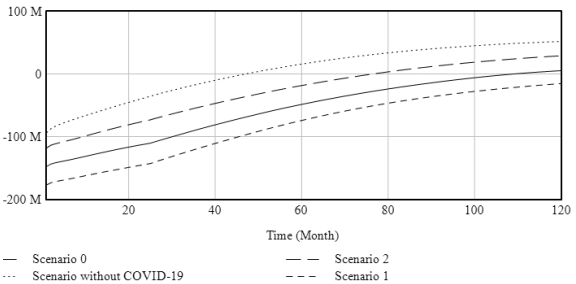

Figure 5 Scenario Simulations: Other H&T services Profit&Loss

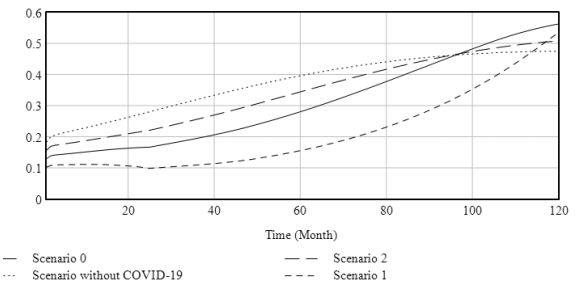

Figure 6 Scenario Simulations: Accommodation Establishments Occupancy

restart could drop quite dramatically (Figure 3). If we consider the optimistic Scenario 2, the number of visitor-days will be 72% of the situation without COVID-19 at the end of the simulation (step 120). However, if we consider the base situation (Scenario 0) and the pessimistic Scenario 1, the number of visitor days will be 44% of the situation without COVID-19 (Scenario 0), or 13% respectively (Scenario 1), at the end of the simulation (step 120).

From the simulation results, we can analyse the situation in the hospitality and tourism industry. The simulation shows how Profit&Loss develops in particular situations. While the accommodation industry will achieve profits only in the optimistic Scenario 2 at the end of the simulation period (Figure 4), the other hospitality and tourism services will be profitable in the optimistic, as well as in the base, situation at the end of the simulation (Figure 5).

Figure 6 shows the development of accommodation establishments occupancy. The results show that the stabilisation of the accommodation sector will last significantly longer in pessimistic Scenario 1.

The simulated scenarios showed a possible development of the hospitality and tourism industry in the South Bohemia Region, the Czech Republic. The simulation shows that the recovery after the tourism restart will not be easy, and the hospitality and tourism industry will suffer from several related problems, such as the outflow of human resources from the H&T sector.

Discussion and Conclusion

A tourism destination is considered to be a dynamic complex system. Managing tourism destinations is uncertain, and destination managers have to make decisions in a complex environment, including many stakeholders with different management objectives and interests (Mai & Smith, 2018). System dynamics in travel and tourism research was used by many researchers (Borštnar et al., 2011; Jere Jakulin, 2016; 2017; Jere Lazanski & Kljajic, 2006; Mai & Smith, 2018; Patterson et al., 2004; Ropret et al., 2014; Sedarati et al., 2019; Štumpf & Vojtko, 2016; Tan at al., 2017; Tegegne et al., 2018; Vojtko and Volfová, 2015). Our study iden-

tifies the complexity of the destination system using a Stocks and Flows Diagram and simulation modelling. Moreover, we use the model for scenarios simulations in the COVID-19 tourism crisis.

The proposed system dynamic model can be considered as a unique tool for destination managers to understand and deal with the soft systems and tourism development policies which determine the dynamics of the destination system. The model enables us to simulate different combinations of possible future development, the effects of decisions and policies, and to test their effectiveness to find the optimal solutions, not only in crisis situations. Therefore, the results can be used practically by destination managers for destination planning and destination strategies formulation.

The theoretical contribution of the model lies in its complexity, and it covers the crucial relations in the destination system respecting the economic, social, and environmental sustainability of tourism. These facts underline the necessity of modelling the destination system properly to achieve efficient destination management (Bieger, 2008; Farrell & Twining-Ward, 2004; Lew & McKercher, 2006; Rodriguez-Diaz & Espino-Rodriguez, 2007).

The research question was formulated: *How will the hospitality and tourism industry develop in the post-COVID-19 era in the South Bohemia Region?* The simulated scenarios show the possible development of the hospitality and tourism industry in the South Bohemia Region, the Czech Republic. The simulation shows that the recovery of tourism will develop differently in various situations, depending on tourist behaviour in the post-COVID-19 era (long-lasting fear of travel, on one hand, and a travel boom, on the other hand). However, the hospitality and tourism industry will suffer from several related problems, such as the closing of tourism businesses, or outflow of human resources from the H&T sector.

Based on Jere Lazanski and Kljajic (2006), the proposed system dynamic model was established by the authors, as the observers/descriptors of the model. We can consider this fact as a limitation of the study as the model may be influenced, to a certain extent, by the authors' perspective. Other limitations of the model are connected with the calibration. We had to estimate several variables' quantification and their initial values based on experts' opinions. Moreover, it is not easy to set the relations between several variables as graph functions since they usually interact in a non-linear way (Baggio & Sainaghi, 2011; Mai & Smith, 2018). Therefore, we were not able to validate the simulation results in their absolute values, but the simulations can point to future development and the differences between various scenarios.

The systems approach and complex system dynamics modelling deserve better attention in future research, in terms of social, environmental, and economic sustainability in tourism destinations. These methods represent the scientific tools that can provide balanced, optimal results to find a consensus among different aims of various stakeholders in tourism destinations. The proposed model can be useful for simulations variety scenarios of the destination system in connection with post-COVID-19 travel behaviour. The precise calibration for the situations in a variety of destinations is the way for future research. This crisis of tourism has shown an enormous and sudden drop in international travel and the reduction of business activities in the hospitality and tourism industry.

The dynamics of tourism and simulations of the post-COVID-19 scenarios represent a big challenge for the future. The current situation outlines the necessity of a complex and systemic approach in managing tourism destinations. Therefore, we consider our system dynamics model a useful tool for decision-making support and sustainable destination development in the post-COVID-19 era.

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Appendix 1: Detailed description of the Stocks and Flows Diagram structure

1. *Accommodation establishments (AE) capacity* represents one of the key stock variables in the entire model, which is expressed by the number of beds in the destination. The capacity of accommodation establishments (AE) is increased by *investments* (flow variable; inflow). The total investments in the construction of new accommodation capacities (beds) include either investments due to the need to build capacities (*AE building necessity*) – to extend the capacity of the existing AES, or *additional investments,* in other words, construction of new AES. In this case, the *additional investments* represent an exogenous variable. In general, however, they may be determined, for example, by the attractiveness of the tourism sector in the destination. It can be increased, for example, by subsidies for the construction of new accommodation capacities. *The AE building necessity* is given by the occupancy of accommodation facilities, which is expressed as the ratio between the number of overnight stays (per month) and the capacity of accommodation facilities (per month). The total capacity of AES is reduced by two flow variables – a *depreciation* of accommodation facilities (outflow) and *AE closing* (outflow). While the depreciation is mainly caused by the occupancy of accommodation facilities (the higher occupancy of the accommodation facility, the higher the wear and tear), the closure of accommodation facilities depends mainly on the monthly financial result of AES and profitability of AES, which in this case is expressed by profitability based on *the return of sales* (ROS). If the AES do not reach at least the expected *AES' minimal target ROS,* the accommodation facilities will be closed due to their unprofitability.
2. *Accommodation services quality* is determined by the change in the quality of accommodation services (*quality change,* outflow variable), which is influenced by exogenous variables – *human resources competency* and *competition in H&T industry* – as in the case of the quality of other services. Furthermore, however, the quality of accommodation facilities is increased by investments placed in accommodation capacities, provided that investments in accommodation facilities exceed their depreciation. The quality of accommodation services and the quality of other services is then expressed by the auxiliary variable *H&T services quality,* which influences, together with other factors, the visitors' *satisfaction change.*
3. *Other H&T services quality* is determined by *Other H&T services quality change* (flow variable), which in the suggested model is influenced by two exogenous variables – *human resources competency* and *competition in H&T industry.* In general, it can be assumed that increase in employees' competencies will increase the quality of, for example, catering, guide, transport, and other services; similarly, the increase in competition should force providers to be more competitive and increase the quality.
4. *Accommodation real price level* is determined by the *price level change* (flow variable), which is influenced mainly by the AE occupancy (the *effect of AE occupancy on price level*). In general, it can be concluded that if the AE occupancy increases, the price of accommodation will also increase. The price level is calculated as the average price per bed/night. For simplification, the price level was calculated only for accommodation services. When summarising other services into one common category, quantifying the price level for all other services would require their detailed elaboration and calculation in a separate model.
5. *Accumulated inflation* in the proposed model represents a stock variable that needs to be quantified due to the fact that the model considers the real price level for accommodation. The inflow of accumulated inflation is monthly inflation (annual inflation rate calculated for 12 months of the year with respect to the time unit of the simulation, which is one month).
6. *Accumulated Profit&Loss of H&T industry* is stipulated by monthly Profit&Loss, which represent a flow quantity for the purpose of this model. Financial results of accommodation facilities and the facilities providing other tourism services (to keep the model as simple as possible the other services were not further distinguished) are reflected in a *Profit&Loss (month).* Thus, monthly Profit&Loss is calculated using the difference between revenues from accommodation, and fixed plus variable costs of accommodation facilities and the expected profitability of facilities providing other services. In this case, it is expressed by the *average ROS of other H&T services.*
7. *Profit&Loss of H&T industry (year)* had to be quantified not only for monitoring the annual Profit&Loss in the tourism sector but also for the subsequent quantification of tax revenues from the H&T industry in the destina-

tion, which are generated in individual years. The inflow of *Profit&Loss of H&T industry (year)* is also *Profit&Loss (month)* (flow variable). The *Profit&Loss (month)* is not accumulated for the whole simulation period as in the previous case, but the Profit&Loss is nullified after each year. This represents an outflow of Profit&Loss of H&T industry (year), and it is possible to derive tax revenue (TR) of H&T industry from it.

8. *Tax revenues (TR) of H&T industry (year)* are in the model (again, with respect to the time unit of the simulation) given by the inflow of *tax revenues (TR) of H&T industry* according to individual months (flow variable). For simplification, tax revenues include only income tax and VAT, which are calculated from the total financial result of accommodation and other tourism facilities, in other words, from the revenues from accommodation and other services. Tax revenues are reduced by the assumed *grey economy ratio* (exogenous variable). Following each year, tax revenues are nullified (flow variable). It is an outflow of annual TRS of the H&T industry in the destination. It is possible to derive from it in a simplified way the *tax revenues returned back in destination* (flow variable), which is redistributed and returned to the local and regional budget.

9. *TR returned back in destination (year)* represent a stock variable that has an inflow in the proposed model in the form of the *tax revenues returned back in destination* (flow variable) and outflow in the form of *TR returned back nullifying* in order to determine tax revenues each year. This is the way in which the financial resources are expressed; after the taxes are redistributed the financial resources return to the destination through local and regional public budgets. Their share of the total tax revenues from the tourism sector in the destination will determine the budget allocation of taxes. This fact has been simplified for the purpose of this model to a single coefficient of *TR returned back in destination ratio* (exogenous variable). Another factor is the *Local businesses ratio* based in the destination (exogenous variable). Business entities located outside the destination, which provide tourism services in the region, file their tax return at the place of their registered office. This fact reduces the tax revenues that flow back to the destination.

10. *Visitor-days per year* (Visitor-days 12M) is a key stock variable on the demand side. The inflow is (with respect to the time unit of the simulation), for the purposes of this model, expressed in *a number of visitor-days per month* which is given by the sum of *overnights* and *one-day visitors.* In the proposed model, the number of one-day visits is influenced by 'word-of-mouth' (*effect of WOM on one-day visitors*), individual marketing communication of other service providers (*effect of IMC/other H&T services/on one-day visitors*), and *other effects on one-day visitors* (exogenous variable).
The number of overnights can be increased through higher expenditures that the accommodation facilities spend on marketing communication (*effect of IMC/AE/on overnights*), but also by providers of other services (*effect of IMC/other H&T services/on one-day visitors*). A wider offer of other services or higher awareness of the offer can encourage visitors to stay longer. The number of overnights will be further increased by higher expenditures on marketing communication in the destination (*Destination MC*), more intensive positive 'word-of-mouth advertising' (*effect of WOM on overnights*), declining price level (*effect of price level on overnights,* and related *exchange rate effect* as an exogenous variable), or *other effects on overnights.* The number of overnight stays is also influenced by the *average length of stay trend* (as an exogenous variable), which is based on the global trend of shortening the length of stay of tourism participants in destinations. This fact is due to the preference of tourism participants to travel several times a year for shorter stays. The number of overnight stays is then limited by the capacity of accommodation facilities.
Exogenous variables affecting the number of visitor-days (*other effects on one-day visitors* and *other effects on overnights*) were used as an input variable for simulation of future development scenarios for the restart of the tourism sector after the COVID-19 era.

11. *Visitor-days in the last 24 months* (Visitor-days 24M) is a stock variable which, in the proposed model, has the same inflow as *Visitor-days 12M,* and which is the basis for quantifying the *WOM potential.* The proposed model assumes that visitors who have visited the destination in the last 24 months will share their experience with other possible visitors to the destination (their relatives and acquaintances). This means that the visitor-days from the previous 24 months can generate more visitor-days in the future. However, only satisfied visitors will share a positive experience.

12. *Visitors' satisfaction* is determined by the *satisfaction change* (flow variable), which in this model is influenced by the *H&T services quality* of services, the state of the *cultural and natural potential (CNP),* the real price level of the accommodation services, and the level of the *Residents irritation* from tourism. In general, it can be concluded that the satisfaction of visitors will grow in line

with better cultural and natural potential, in other words with better primary attractiveness of the destination, if the prices decline, but the quality of services grows, and the locals will be more friendly to visitors. The satisfaction of visitors is expressed on the scale in the interval of [0,1]. The value of 0 means that visitors to the destination are completely dissatisfied; in contrast, the value of 1 is assumed in a situation where the visitors would be entirely satisfied with their stay in the destination.

13. *Residents' irritation,* in the proposed model, is influenced mainly by the *tourism intensity,* which in this case is expressed by the ratio of the number of visitor days per month to the number of local inhabitants. The second influence that is reflected in the irritation of residents is the cultural and natural potential. The *effect of tourism intensity on irritation* and the *effect of cultural and natural capacity on irritation* results in *the change in irritation of local inhabitants,* which represents a flow variable affecting the current state *of the residents' irritation* of local inhabitants. In general, in this relation, it can be concluded that the increasing intensity of tourism in the destination increases the irritation of the local population, while the improving cultural and natural environment reduces the irritation of residents. The irritation of local people is expressed on the scale in the interval of [0,1]. The value of 0 means that the local people in the destination are not irritated by the presence of visitors in the destination. In contrast, the value of 1 is assumed in a situation where locals would be upset about the presence of visitors and the negative consequences of tourism as much as possible.

14. *Cultural and natural potential* (CNP) in the proposed model is mainly influenced by the number of visitor-days. In general, it may be concluded that the more days tourists and visitors spend in the destination, the more they will burden the natural environment and affect the local culture, thus degrading the primary capacity of the destination. The *effect of visitor-days on CNP* and *other effects on CNP* (exogenous variable) results in the *CNP change,* which is a flow variable affecting the current state of *CNP.* Other impacts on the CNP can be investments in historic preservation, environment protection, or generally in improving the attractiveness of the primary capacity of the destination. The model also takes into account a certain degree of self-renewal, especially of the natural capacity of the destination. In this case, favourable conditions for the self-renewal of the destination are assumed, such as an appropriate environmental protection policy or prevention of 'brownfields' creation. CNP is expressed on the scale in the interval of [0,1]. The value of 0 assumes a borderline situation where there would be no natural and cultural capacity in the destination which was creating an attractiveness for tourism. In contrast, the value of 1 is assumed in a situation where the natural and cultural capacity of the destination is at the highest possible level.

Original Scientific Article

Customers' Continuance Intention in Using a Mobile Navigation App in the Tourism Context: What Factors Will Lead?

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A mobile navigation app with a geographical information system is favoured to search addresses and find the fastest ways to reach a destination. However, there is a lack of scholarly attention to consumer behaviour and mobile navigation apps. This study aims to measure the impact of perceived enjoyment, perceived usefulness, customer satisfaction, and customer habit on continuance intention to use a mobile navigation app. Data were collected using an electronic survey; participants were approached by applying a convenient sampling method. According to Burns and Grove (2005, p. 351), 'Convenience sampling is useful for descriptive and correlation studies conducted in new areas of research.' In total, 212 participants were involved in this study, consisting of 110 females and 102 males. This study found that Google Maps and Waze were the most popular apps used by participants. Perceived enjoyment had a significant impact on perceived usefulness and habit. Perceived usefulness had a substantial effect on satisfaction. Satisfaction significantly influenced continuance intention. In addition, customer habit significantly affected satisfaction and continuance intention. This study discusses recommendations for future research.

Keywords: continuance intention, customer habit, geographical information system (GIS), Google Maps, mobile navigation application, technology adoption, tourism, Waze

 https://doi.org/10.26493/2335-4194.14.137-148

Introduction

Modern humans increasingly rely on mobile technologies and a geographic information system (GIS) such as Google Maps, Waze, and similar applications (apps) (Brumen et al., 2020; Dickinson et al., 2016). These apps have been adopted by motorcyclists, pedestrians, and people with special needs (Mikayelyan, 2011). Generally, Google Maps and Waze are the two most popular navigation apps in Indonesia. Although both are used as a driving guide, Google Maps and Waze have clear differences.

First, according to Alfarizi (2020), Google Maps features a right-click option, which navigates to selected destinations and measures the distance between two points on the map. Second, Google Maps users can touch the screen to zoom in on an image. Third, the app provides statistical data about peak hours, helping users avoid long queues. Fourth, Google Maps can recall parking spots. Fifth, the app does not require users to meet a quota. Finally, Google Maps users can share their location(s) and view usage history.

Several studies have explored consumer behaviour and mobile navigation apps. For example, Marzuki et al. (2016) measured intention to use online mapping by employing perceived interactivity, perceived ease of use, perceived usefulness, and perceived enjoyment. Noerkaisar et al. (2016) used the awareness, interest, desire, and action (AIDA) formula in relation to the Waze app. Another study by Knote and Söllner (2017) focused on the e-service quality of three apps. Moorthy et al. (2019) examined influencing factors of behavioural intention to adopt mobile apps, selecting performance expectancy, habit, price value, social influence, complexity, and trialability as predictors. To support the current study, the authors also use theories from other relevant studies to form a theoretical framework. These include e-payment, mobile social networking, and other mobile services (Gan et al., 2017; Tella & Olasina, 2014; Wang et al., 2016). In the tourism sector, it is still difficult to find studies that measure consumer behaviour related to navigation apps. Therefore, this study will be significant in filling the gap.

As noted, few studies were found on the use of mobile navigation apps. Therefore, this study aims to measure factors that impact the continuance intention of users. This study includes perceived enjoyment, perceived usefulness, customer satisfaction, and habit as predictor factors.

Literature Review

Perceived Enjoyment

Overall, enjoyment refers to pleasure, joy, or delight. One could find pleasure when they use a certain gadget or app. Kimiecik and Harris (1996) defined enjoyment as 'an optimum psychological state (i.e., flow) that leads to performing an activity primarily for its own sake and is associated with positive affective experiences' (para. 1). Further, enjoyment should contain affect, pleasure, attitude, intrinsic motivation, and enjoyment flow.

Depending on the context, enjoyment can cause and be caused by different factors. For example, in game play, enjoyment can be affected by competence, autonomy, and relatedness (Tamborini et al., 2010), as well as knowledge sharing (Binsawad et al., 2016). In general, enjoyment can impact attitude, perceived usefulness, habit, and continuance intention (Mouakket, 2015; Phan & Daim, 2011; Tella & Olasina, 2014). Previous studies claim that perceived enjoyment is an important factor in shaping perceived usefulness (Alsultanny & Alotaibi, 2015; Aziz & Lei, 2016; Lee, 2021; Ngangi & Santoso, 2019; Ongena et al., 2013). For example, Ongena et al. (2013) selected perceived enjoyment as a variable to predict behavioural intention in the context of an audio-visual heritage archive. Their study found that perceived enjoyment significantly affects perceived usefulness. Accordingly, Aziz and Lei (2016) focused on the behavioural intention of Chinese youth consumers to play a mobile game. Perceived enjoyment was linked to perceived usefulness. Based on their analysis, they demonstrate that perceived enjoyment has a significant effect on perceived usefulness. Furthermore, Alsultanny and Alotaibi (2015) included perceived enjoyment in investigating factors that influence the behavioural intention of human resource development (HRD) in organisations to employ online recruitment for new employees. They also prove that perceived enjoyment has a significant effect on perceived usefulness. Addition-

ally, Ngangi and Santoso (2019) tested the implementation of a customer relationship management system in automotive companies. Perceived enjoyment is considered an important variable to predict user behaviour. They claim that perceived enjoyment significantly affects perceived usefulness.

Consequently, the following hypothesis was formulated:

H1 *Perceived enjoyment will have a significant effect on perceived usefulness in using a mobile navigation app on a daily basis.*

Phan and Daim (2011), after examining factors that influence mobile service use intention, found that enjoyment significantly influenced perceived usefulness. However, in the current study, the authors use perceived enjoyment, linking this variable to perceived usefulness and habit. In the same vein, Turel and Serenko (2012) measured factors that affect the addiction of social networking website users. They argued that individuals who have higher perceived enjoyment will form a strong habit in using the website. A similar result was found by Hsiao et al. (2016), mentioning that perceived enjoyment has a significant impact on habit.

Based on this discussion, the authors hypothesise the following:

H2 *Perceived usefulness will have a significant effect on the habit of using a mobile navigation app daily.*

Perceived Usefulness

Davis (1989) defined perceived usefulness as 'the degree to which a person believes that using a particular system would enhance his or her job performance' (p. 320). Jahangir and Begum (2008) described the perceived usefulness concept as 'the degree to which a person believes that using a particular system would enhance his or her job performance' (p. 33). Perceived usefulness predicts perceived benefit, satisfaction, continuance intention, perceived ease of use, and actual use (Tella & Olasina, 2014; Wang et al., 2016).

In the current study, perceived usefulness is linked to customer satisfaction. A study by Amin et al. (2014) explored the satisfaction of mobile website users. The study employed perceived ease of use, perceived usefulness, and trust to predict satisfaction, noting a significant impact of perceived usefulness on mobile user satisfaction. Further, Sibona and Choi (2012) investigated the satisfaction of Facebook users, linking perceived ease of use to perceived usefulness and satisfaction, as well as linking perceived usefulness to satisfaction. Their study documented a significant impact of perceived usefulness on satisfaction.

The satisfaction of smart plug users in the United Arab Emirates was studied by Ghazal et al. (2016). Their study employed environmental concern, app usage characteristics, information quality, importance, and app usefulness. One finding is a significant influence of usefulness on satisfaction.

Shah and Attiq (2016) employed technology quality, perceived ease of use, and perceived usefulness to test the satisfaction of e-learning consumers. Their study involved university students in Pakistan. One finding showed that perceived usefulness has a significant impact on consumer satisfaction. The same result is demonstrated by Joo et al. (2017), Mouakket (2015), and Wang et al. (2016), indicating a significant effect of perceived usefulness on customer satisfaction.

Therefore, the third hypothesis is formulated as follows:

H3 *Perceived usefulness will have a significant effect on customer satisfaction in using a mobile navigation app on a daily basis.*

Satisfaction

In the context of retail banking services, Caruana (2002, p. 816) defined customer satisfaction as:

> [A] post purchase, global affective summary response, that may be of different intensities, occurring when customers are questioned and undertaken relative to the retail banking services offered by competitors.

This definition can be adapted into the setting of mobile navigation services. Satisfaction can be reached after users adopt mobile navigation technology. In addition, users show devotion by choosing one app from

among the others. Generally, customer satisfaction can predict habit, continuance intention, and continuance behaviour (Bhattacherjee & Lin, 2015; Limayenm et al., 2003; Wang et al., 2016).

In Korea, Ohk et al. (2015) examined continuance intention to use the Korean government's mobile apps, finding that satisfaction has a significant effect on continuance usage intention. In Kenya, Osah and Kyobe (2017) looked at the continuance intention of users of M-Pesa, a mobile money system for microscale businesses and lower-income families. They questioned whether satisfaction has a direct impact on continuance intention, indicating a significant and direct effect of satisfaction on continuance intention. Similarly, Amoroso and Lim (2017), Joo et al. (2017), Mark and Vogel (2009), Mouakket (2015), and Wang et al. (2016) investigated the role of satisfaction in continuance intention, showing a significant effect of customer satisfaction on continuance intention.

Based on these studies, the fourth hypothesis is as follows:

H4 *Customer satisfaction will have a significant impact on continuance intention to use a mobile navigation app on a daily basis.*

Shiau and Luo (2013) mentioned that those who are consistent with their habit tend to be satisfied in using mobile social networking. Furthermore, Wang et al. (2013) tested factors that could influence consumers to use self-service technology in supermarkets. One hypothesis tested whether customer satisfaction could affect habits, suggesting that customer satisfaction has a significant effect on consumer habits in the use of self-service technology. Amoroso and Lim (2017) examined influencing factors of continuance intention, presenting one finding that satisfaction significantly influenced habit. Moreover, Chiu et al. (2012) focused on online shoppers' intention to repurchase, postulating that satisfaction significantly affects habit. Relatedly, Gu et al. (2019) measured Chinese consumers' continuance intention to use a smart home service. As a result, satisfaction is a significant variable to predict consumers' habits.

The following hypothesis was guided by the above studies:

H5 *Habit will have a significant impact on customer satisfaction in using a mobile navigation app on a daily basis.*

Habit

In general, habit is a custom, lifestyle, norm, pattern, behaviour, belief, tradition, and/or character of a person. According to Shiau and Luo (2013, p. 576), 'habits reflect automatic behaviour tendencies developed during the past history of the individual.' Habit can enhance customer loyalty, satisfaction, purchase behaviour, and continuance intention (Guo & Barnes, 2012; Hsiao et al., 2016; Yee & Faziharudean, 2010). Amoroso and Lim (2017) and Wang et al. (2016) linked satisfaction to habit. However, in the current study, habit is linked to continuance intention.

Habit and Continuance Intention

Habit is included in prior studies that examined customers' continuance intention to use certain services. Rahardja et al. (2019) reported that habit supports intention to continue using a mobile game learning service. Also, Gan et al. (2017) and Wang et al. (2016) claimed that habit has a significant impact on intention to use a social networking service. Habit is also employed by Liao et al. (2006) and Liu et al. (2018), investigating factors influencing continuance intention to shop online and make online investments, respectively. They show a significant influence of habit on continuance intention. Furthermore, a study to measure customers' intention to continue using a music streaming service was conducted by Wulandari et al. (2019). It was found that habit has a significant impact on continuance intention.

Considering the discussion above, the following hypothesis must be examined:

H6 *Habit will have a significant impact on continuance intention to use a mobile navigation app on a daily basis.*

Theoretical Framework

Figure 1 shows the model and theoretical framework to be tested. Perceived enjoyment is linked to perceived usefulness and habit. Further, perceived usefulness is

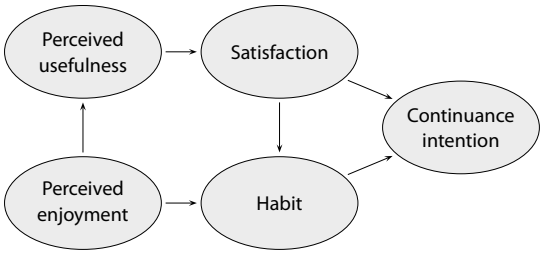

Figure 1 Theoretical Framework

connected to customer satisfaction. Customer satisfaction is linked to habit and continuance intention. Additionally, habit is used to predict continuance intention.

Methods

Sample

The study expected a minimum of 200 participants to be involved. With this number, the authors can determine the minimum loading factor of 0.4, showing the validity of each indicator (Hair et al., 2019). A convenient sampling method was employed in this study. The following criteria were selected as a cohort for the current study:

1. Participants were identified as those who drove a motorcycle and/or car to work or campus daily.
2. Participants have installed and used a navigation app on their vehicle. Prospective participants who met the criteria were asked to fill out an online questionnaire.

Willing participants were sent a link to the survey. Private messages and questionnaire links were sent via WhatsApp and Line. Data were collected in Jakarta, Indonesia.

Measures

The authors adapted indicators from the studies of Dang and Nguyen (2015) and Hsiao et al. (2016) to measure perceived enjoyment. Further, indicators from Oghuma et al. (2016) and Wang et al. (2016) were adapted to examine perceived usefulness. Indicators from Hsiao et al. (2016), Shiau and Luo (2013), and Wang et al. (2016) were used to measure habit. Indicators from Dang and Nguyen (2015), Hsiao et al. (2016), and Shiau and Luo (2013) were adapted to measure customer satisfaction. Lastly, the authors adapted indicators from Dang and Nguyen (2015) and Hsiao et al. (2016) to test continuance intention. Indicators were translated into Bahasa (language) Indonesia for the survey. The questionnaire was made with Google Forms and distributed via an instant messenger platform. The authors adopted a snowball sampling method by persuading respondents to spread the questionnaire link to their networks.

Data Analysis

The authors analysed the data in three steps. First, an exploratory factor analysis (EFA) used direct oblimin rotation to validate dimensions and indicators. Second, a reliability test was conducted. Third, a structural equation model was used to measure the proposed research framework. The author selected four criteria as requirements for a fitted model.

1. Probability score of ≥ 0.05 (Schermelleh-Engel et al., 2003).
2. CMIN/DF score of ≤ 2 (Tabachnick et al., 2007).
3. CFI score of ≥ 0.97 (Hu & Bentler, 1995).
4. RMSEA score of ≤ 0.05 (Hu & Bentler, 1999).

Results and Discussion

Participants

This study involved 212 participants, including 102 males (48.1%) and 110 females (51.9%). Table 1 shows the profile of the participants. In terms of age, most participants were 21 to 24 years of age.

Additionally, participants indicated that 155 (73.1%) had a two-wheeled vehicle, 34 (16.1%) had two- and four-wheeled vehicles, and 23 (10.8%) had a four-wheeled vehicle. When asked about GIS, participants used the most frequent apps; 167 (78.8%) marked Google Maps and 44 (20.8%) used Waze. One participant (0.5%) chose the HERE WeGo app.

EFA

Table 3 (see p. 143) shows the EFA result of all variables in this study. Perceived enjoyment possessed five indicators with a Cronbach's alpha score of 0.898, with factor loadings ranging from 0.603 to 0.829. Perceived

Table 1 Profile of Participants

Category	Item	Frequency	Percent
Sex	Male	102	48.1
	Female	110	51.9
	Total	212	100.0
Age	<20	30	14.2
	21–25	115	54.2
	26–30	59	27.8
	31–35	4	1.9
	36–40	3	1.4
	41–45	1	0.5
Occupational status	Employed	131	61.8
	Unemployed	118	31.6
	Self-employed	14	6.6
Level of education completed	Diploma	49	23.1
	Undergraduate	86	40.6
	Postgraduate	5	2.4
	High school	67	31.6
	Less than high school	5	2.4

Table 2 Vehicle and Mobile Navigation App Ownership

Category	Item	Frequency	Percent
Type of vehicle ownership	Two-wheeled vehicle	155	73.1
	Two-wheeled and four-wheeled vehicle	34	16.1
	Four-wheeled vehicle	23	10.8
Application	Google Maps	167	78.8
	HERE WeGo	1	0.5
	Waze	44	20.8

usefulness had six items, with factor loadings ranging from 0.693 to 0.835. This construct had a Cronbach's alpha score of 0.880. Further, habit, customer satisfaction, and continuance intention survived six indicators, with Cronbach's alpha scores of 0.899, 0.908, and 0.898, respectively. All constructs were considered reliable with a Cronbach's alpha score of 0.8 and larger.

Hypotheses Testing

Figure 2 demonstrates the result of the structural equation model. This model achieved a fitness with a probability score of 0.112, a CMIN/DF score of 1.228, a CFI score of 0.990, and a RMSEA score of 0.033.

Table 4 (see p. 144) reports the results summary of the hypotheses testing. In total, there were six hypotheses. Five of the hypotheses (H1, H3, H4, H5, and H6) had a critical ratio (CR) score larger than 2.0, indicting significances.

Discussion

This study evaluated factors that influence continuance intention to utilize a mobile navigation app. The first hypothesis predicted the influence of perceived enjoyment on perceived usefulness. Users with positive enjoyment perceptions of mobile navigation apps view these apps as beneficial. This path had a CR score of 5.263, indicating significance. This finding supports previous studies, such as Alsultanny and Alotaibi (2015), Aziz and Lei (2016), Ngangi and Santoso (2019), and Ongena et al. (2013).

The second hypothesis predicted the impact of perceived enjoyment on habit. Online directions apps can be influenced by several factors, including perceived enjoyment (Hsiao et al., 2016; Phan & Daim, 2011; Turel & Serenko, 2012). The path gained a CR score of 1.843, showing insignificance. Perceived enjoyment failed to predict habit.

The third hypothesis focused on the impact of perceived usefulness and customer satisfaction. This path has been explored (Amin et al., 2014; Ghazal et al., 2016; Shah & Attiq, 2016; Sibona & Choi, 2012). Users who perceive that a mobile navigation app has high usability tend to be satisfied with the performance of the app. In this case, the path achieved a CR score of 8.364. This was the highest score among the others.

The fourth hypothesis measured the impact of satisfaction on continuance intention. Consumers who are satisfied with a technology-based product tend to continue their intention to use the product. This satisfaction can be influenced by many factors, including attitude, social ties, perceived enjoyment, perceived value, perceived ease of use, and perceived usefulness (Hsiao et al., 2016; Hsu & Lin, 2016; Lee et al., 2015; Newholm & Shaw, 2007). In this case, the navigation app gives satisfaction to its users. This satisfaction is influenced by perceived usefulness. The

Table 3 EFA Results

Indicators	(1)	(2)
Perceived enjoyment		0.778
EN2 Using a mobile navigation app is great fun.	0.829	
EN5 I am interested in using a mobile navigation app.	0.827	
EN1 I am more comfortable using a mobile navigation app in searching for a location.	0.782	
EN4 In my opinion, a mobile navigation app has many features.	0.605	
EN3 In my opinion, a mobile navigation app features information sharing facilities.	0.603	
Perceived usefulness		0.880
PU4 A mobile navigation app is an efficient use of my time.	0.835	
PU3 I find the mobile navigation app to be beneficial.	0.820	
PU5 Using a mobile navigation app makes doing things effortless.	0.815	
PU2 Using a mobile navigation app is more effective than other ways.	0.805	
PU6 A mobile navigation app is more profitable than other ways.	0.782	
PU1 A mobile navigation app is very useful in my everyday life.	0.693	
Habit		0.899
HA1 Using a mobile navigation app became a habit for me.	0.864	
HA2 I have to use a mobile navigation app.	0.851	
HA4 I became dependent on using a mobile navigation app.	0.843	
HA3 Using a mobile navigation app is already natural to me.	0.825	
HA5 When faced with location searching, I automatically use a mobile navigation app.	0.759	
HA6 When faced with location searching, using a mobile navigation app is the right choice for me.	0.753	
Customer satisfaction		0.908
SA3 My experience with using a mobile navigation app was very satisfying.	0.871	
SA1 I am delighted with my choice of a mobile navigation app in location searching.	0.866	
SA4 I think I made the right decision in using a mobile navigation app.	0.848	
SA2 I am happy with my decision on choosing a mobile navigation app.	0.833	
SA5 I am satisfied with downloading a mobile navigation app.	0.819	
SA6 I am thrilled with the features in a mobile navigation app.	0.732	
Continuance intention		0.898
CON4 I believe I will keep using a mobile navigation app.	0.906	
CON2 I will use a mobile navigation app in my daily life.	0.835	
CON3 I will continue to use a mobile navigation app later on.	0.832	
CON1 I intend to continue using a mobile navigation app.	0.802	
CON6 I would recommend a mobile navigation app to anyone interested in location searching.	0.773	
CON5 I believe my interest will increase in the future toward updating a mobile navigation app's feature	0.738	

Notes Column headings are as follows: (1) factor loadings, (2) Cronbach's alpha.

current study shows that customer satisfaction affects continuance intention as documented by prior studies (Gan et al., 2017; Ohk et al., 2015; Osah & Kyobe, 2017).

The fifth hypothesis predicted that satisfaction af-

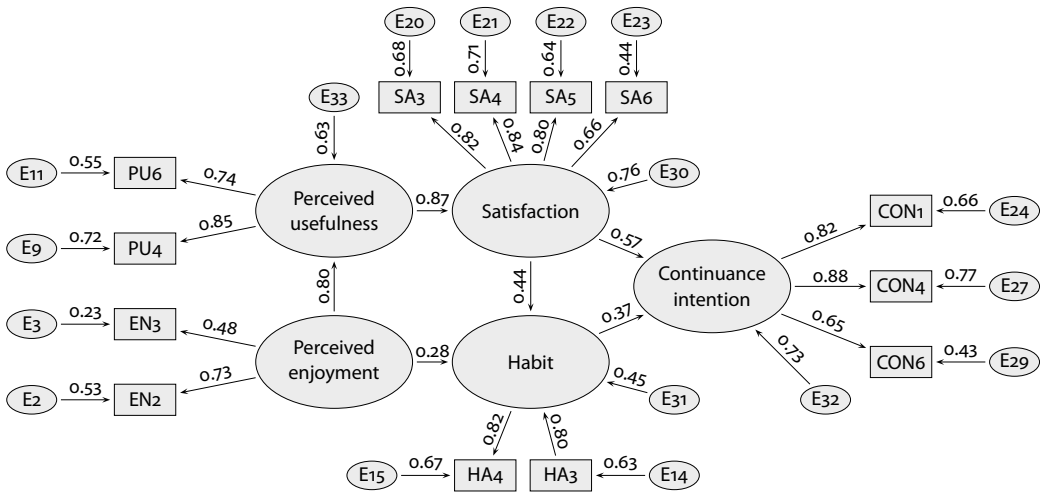

Figure 2 Structural Model of the Proposed Model

Table 4 Result Summary of Hypotheses Testing

Hypotheses/paths			CR	*P*	Results
H1	Perceived enjoyment	→ Perceived usefulness	5.263	***	Accepted
H2	Perceived enjoyment	→ Habit	1.841	0.066	Rejected
H3	Perceived usefulness	→ Satisfaction	8.364	***	Accepted
H4	Satisfaction	→ Continuance intention	6.188	***	Accepted
H5	Satisfaction	→ Habit	3.250	0.001	Accepted
H6	Habit	→ Continuance intention	4.294	***	Accepted

fected habit in using a directional app. When a person has a habit of using a tool, gadget, or app, this behaviour can be a manifestation of intentional or unintentional spontaneity, whether planned or unplanned and/or realized or not realized. Prior studies (Amoroso & Lim, 2017; Chiu et al., 2012; Shiau & Luo, 2013) convinced us about the importance of habit and satisfaction. The current study indicates the same finding with a CR score of 3.250.

The last hypothesis predicted the impact of habit on continuance intention. The current study found a significant impact of habit on continuance intention with a CR score of 4.294 (Gan et al., 2017; Liao et al., 2006; Liu et al., 2018; Rahardja et al., 2019; Wang et al., 2013; Wulandari et al., 2019). When using a mobile navigation app as a habit, consumers will continue to use the app. Even with usual routes, users will continue to use the app because of their familiar behavioural reflex.

Conclusion

This study aimed to measure the impact of perceived usefulness, consumer satisfaction, and habit on the intention to continue using a mobile navigation app. In this case, participants predominantly used Google Maps. The study found a significant impact of perceived usefulness on satisfaction, of habit on satisfaction and continuance intention, and of satisfaction on habit. The authors predict that if GIS is used to help users while driving a vehicle, both car and motorcycle use will increase, especially in large cities with high traffic congestion levels.

Although it does not directly affect continuance intention, the service provider needs to apply the Signpost app to pay attention to the users' perceived enjoyment of the app.

In some studies, the use and intentions regarding gadgets and social media are influenced by perceived enjoyment. The authors believe that GIS should not be integrated with a social media platform. When using Waze, for example, users will see their friends in the network who are also using Waze. We should not allow the user to have an interactive conversation with other users because of the risk of disrupting user concentration while driving their vehicles.

From the results of this study, perceived usefulness affects customer satisfaction. Previous studies relating to the use of gadgets, social media, and customer satisfaction are also affected. The study shows a significant impact of customer satisfaction on habits. This evidence indicates that customers will make the use of GIS a habit, meaning there is a tendency to bond between users and GIS. Other research can explore this aspect for attachment level and attachment impact to continuance intention and customer loyalty to certain GIS providers.

This study helps to expand our knowledge about technology adoption of the mobile navigation app. It also serves as a sturdy base for future studies in different contexts, settings, and countries. Moreover, it helps us better understand the behaviour of users of mobile navigation apps, which will aid in consumer retention. It could help service providers, planners, managers, and marketers enhance the user experience in the mobile navigation app context.

It has been mentioned that it is difficult to find studies that reveal consumer behaviour related to navigation apps. The findings of this study prove that technology adoption theories can also be applied to the adoption of navigation apps; they have succeeded in filling the gaps in marketing, tourism, and tourism marketing.

Future studies can further reveal the role of factors that can measure continuance intention to use navigation apps by consumers and tourists, including usage intention, usage behaviour, usage decision, and loyalty. In addition, future studies should consider the selection of variables, looking at sample groups like younger vs. older people, men vs. women, and professionals vs. non-professionals. Several studies have shown that demographic factors play a role in technology adoption (Bhandari, 2019; Haider et al., 2018; Ooi et al., 2020). Furthermore, future studies can focus on the types of vehicles used and whether they are in the city of domicile or travelling out of town.

Limitations of the Study

However, the authors recognise several limitations of this study. For example, the current study used a convenient sampling method, which, at its root, is a non-probability sampling method. With a population of Jakarta that exceeds 50 million, the number of 212 participants will not be sufficient. Therefore, the results of this study are not intended to generalise the findings; they are only directed to fill existing research gaps. Another limitation of this study was that the authors did not anticipate that most participants would be motorcyclists. The authors suspect that there might be differences in results if the survey balanced the numbers between the motorcyclist and motorist participants.

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Original Scientific Article

The Moderator Effect of the Perception of Value Co-Creation on the Relationship between Hotel Brand Equity and WOM

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In the current conjuncture, when the competitive environment is getting ever fiercer, the importance of creating brand value and the effect of WOM in all processes before/after a purchase have been grasped. Along with this, in the service sector, where the customer-employee relationship is dense, applications regarding the perception of value creation have started to be used in an increasing manner. For this reason, the aim of the study is to determine the effect of the brand equity of foreign tourists on WOM and whether there is a moderator effect of the Perception of Value Co-Creation on this effect. The population of the study is comprised of foreign tourists coming to Marmaris, Turkey. On the 358 surveys gathered from foreign tourists, EFA, CFA, second-order CFA analyses, path analyses and Slope tests have been carried out. Consequently, it has been determined that hotel brand equity has effects on the perception of value co-creation and WOM, and that perception of value co-creation has effects on WOM. Also, in the relationship between foreign tourists' hotel brand equity and WOM, it has been determined that there is a moderator effect on the perception of value co-creation.

Keywords: hotel brand equity, WOM, perception of value co-creation, Marmaris

 https://doi.org/10.26493/2335-4194.14.149-164

Introduction

Enterprises are proving inadequate with regard to dealing with increasingly challenging and competitive conditions by using conventional marketing techniques. It is considered that new customers will be gained by the contemporary marketing approach, sustenance will be maintained for the customers gained, and in addition the permanence of existing customers will be ensured. Ensuring customer sustenance will only be possible if customers feel valued during/after the purchasing of the goods or service. Grönroos (2000) emphasizes that brand equity is a result of the brand relationship which is constantly developed with the customer.

According to the current perspective of salespeople, Word-of-Mouth communication (WOM) is seen as an important topic which plays a key role in marketing, and it is known that it has substantial effects and consequences (Albarq, 2014). WOM, which determines behaviour and has great interpersonal effect, is seen as one of the most important information resources of the consumer. Salespeople who wish to catalyze and manage these interactions that will benefit them have started to think about and develop strate-

gies in order to manage this interpersonal effect. These effects are seen as important for tourism enterprises, where it is difficult to evaluate the product before it is consumed (Ergün & Akgün, 2016). According to Jalilvand and Samiei (2012), WOM is an important method that is used for influencing tourists to endow them with a high coefficient effect.

The effect of WOM on brand equity (Yang et al., 2015; Murtiasih et al., 2014; Moise et al., 2019) and increasing value co-creation (Seifert & Kwon, 2020) can be observed in previous studies. In this study, the moderator role of value co-creation differentiates this research from the others. While referring to the effect of brand equity on WOM, the enriching effect of value co-creation, which is a third variable, makes the results of the research notable. The businesses that want to be different and connect with consumers by creating a value for them are trying to form strong and valuable brands (Marangoz & Aydın, 2021). Considering the positive results achieved without creating value, it is of great importance for accommodation businesses to learn how to manage this process, which requires active customer participation. It is easily understood that the creation of such value depends largely on how the hotel is perceived (Cantallops, 2019). In order to ensure brand equity, the importance of offering value to the customer and matching this value with the customer perception has been increasingly recognized. Within this context, the finding that brand equity and value co-creation will together have a stronger effect is thought to be a guide, especially for businesses. What is more, in the literature review, no study was found in which these variables were simultaneously examined. Accordingly, it is thought that the research will fill the gap in the literature and be a guide for future studies.

The main aim of this study is to measure the effect of hotel brand equity on WOM and determine whether value co-creation has a moderator effect in this process. Prior to the research analyses (customer-based), a literature review has been provided in order to ensure understanding of the theoretical bases for the concepts of hotel brand equity, WOM and perception of value co-creation, and to develop hypotheses. Subsequently, in order to achieve the aim of the study, EFA, CFA, second-order CFA analyses, path analyses and Slope tests have been carried out in the methodology section.

Literature Review

WOM

WOM can be defined as an interpersonal communication occurring informally between a source and a buyer that does not have a commercial agenda attributable to a brand, product or enterprise (Anderson, 1998). When WOM's effects are taken into consideration, it is assumed that it has a mysterious power and is a tool that works to determine the satisfaction or dissatisfaction created after a product experience (Gremler, 1995).

WOM, which is seen as a popular market phenomenon by writers (Laczniak et al., 2001), is not limited to face-to-face interaction, and can be transferred by interactive tools such as the telephone and internet (Dellarocas, 2003). Also, in online and offline communication, opinion leaders and reliable and knowledgeable individuals comment on content and influence those searching for opinions (Lee et al., 2011).

As the complexity of products increases and their evaluation becomes harder, or when it is considered risky to purchase, the rate of individuals who need recommendations from people they trust increases. It is seen that people have a tendency to follow users' recommendations rather than messages conveyed through advertisement (Barlow & Moller, 2008). In fact, technically, WOM can be used in order to reduce ambiguity with regard to goods or services and minimize risk (Abubakar, 2016). Those services are intangible renders pre-trials impossible. For this reason, WOM plays an important role in the decisions taken regarding service businesses. Also, WOM becomes especially important when the service provided is complex or it has a high perception of risk (Zeithaml et al., 1996). Since tourism services are one of those that cannot be evaluated prior to purchase, they are considered high risk purchases (Sotiriadis & Zyl, 2013).

Hotel Brand Equity

Brand is one of the fundamental marketing concepts. Until recently, the following definition of the concept

of brand has been dominant in both the general marketing and tourism marketing literature. Kotler (2000, p. 404) defines 'brand' as follows: 'A name, term, sign, symbol, design or a combination of these that define a seller or seller group's goods or services and differentiates it from others.' However, Grönroos (2000) claims that this definition takes the concept of brand only with a unilateral perspective and excludes the consuming process and customer. According to this perspective, if a brand is to be built, the customer is the one who does that. In this case, the role of the salesperson is to ensure communication support by using various planned marketing communication tools and to create frameworks in the minds of customers in order to develop a brand.

It is known that right branding bears a critical importance for organizational success (Huang & Cai, 2015). Brand managers are responsible generally for creating a strong brand and sustaining it, while they also have to find ways to measure brand value (Kayaman & Arasli, 2007). Brand value is the most prevalent concept that is used to represent brand performance and is measured as financial value in the organizational statement (Pike, 2010). There are three different perspectives regarding brand equity in the literature. These are the finance-based approach, customer-based approach and mixed approach (Bailey & Ball, 2006; Kim & Kim, 2005). Researchers taking the financial approach into consideration define brand equity as the cash flow created by a product's brand name (Akgün & Akgün, 2014). This approach is criticized since it cannot encapsulate all factors constituting a brand's power and ignores consumer behaviour. Customer-based brand equity, as the other approach acknowledged in brand equity, regards the way goods and services are perceived and evaluated and proves a determining factor in subsequent purchases (Broyles et al., 2010). With this perspective, Keller (1993) focuses on what the customer learned, saw, heard and felt about the brand. Lastly, a mixed approach comprises both the market power and the financial value of the brand (Seric et al., 2017). The reason behind the concept of brand being measured with the customer-based brand equity is the change oriented towards a customer-based approach from a product-based approach in the service marketing paradigm (Grönroos, 2000). It is considered that the conceptualization of brand equity with the customer perspective will be beneficial for both marketing strategies and the decision-making process in management (Keller, 1993) and that the brand is more valuable relative to its raw financial evaluation (Pike, 2009).

When the studies focused on brand equity in the literature are reviewed, it is seen that the conceptual framework underlying all of these studies is based on Aaker (1991) and Keller (1993). Aaker (1991) identified four main brand value variables in their study. These are brand loyalty, perceived quality, brand image and brand awareness, respectively. Keller (1993, p. 8) defines brand value as 'the different effect of the brand knowledge on the customer reaction to the brand marketing' and the concept of brand is evaluated in two dimensions: brand awareness and brand image. In addition to these studies, Yoo and Donthu (2001) have developed the multi-dimensional consumer-based brand equity scale.

Although here are a number of different definitions with regard to the concept of customer-based brand equity, there is a common consensus on the brand value's being comprised of the four perceived dimensions suggested by Aaker (1991). These dimensions are brand awareness, brand image, perceived quality and brand loyalty as a relational variable (Seric et al., 2018).

The concept of brand equity is seen as quite important in the tourism sector as well as other service sectors. According to certain studies carried out on the concept of brand in the literature, it is claimed that brand hotels provide better performance in comparison to others (Forgacs, 2003). Also, it is contended that there is a positive relationship between the brand value success of luxury hotels and their financial performances (Kim & Kim, 2005). The main topic of the studies in the concept of hotel brand equity is defined by Prasad and Dev (2000, pp. 23–24) as 'the positive or negative attitudes and perceptions affecting customers' reservation.'

The increasing international activities of accommodation businesses render it necessary to carry out more research on customer-based brand equity. Destinations and hotel enterprises that endeavour to dom-

inate other countries in the tourism sectors place more importance on the issue of branding in comparison to the past (Çınar et al., 2019). Hotel enterprises that take on the heavy load of the sector are dramatically affected by global developments and lean heavily on the matter of creating brand value in order to turn this situation into opportunity. All positive or negative attitudes and perceptions affecting a customer in preferring a hotel brand represent brand equity. Whereas a customer's good experience in a brand hotel increases brand equity, a bad experience damages brand equity (Prasad & Dev, 2000). It is considered that as hotels are becoming brands, their customer perceptions will be affected, and positive mental attitudes will be ensured. Furthermore, instead of advertisements as mass media tools that are losing their validity, the advantages of WOM established as a result of branding will be utilized. Brand equity does not necessitate a person's experiencing a brand in order to have a brand impression; that they are subjected to certain recommendations can prove adequate on its own (Prasad & Dev, 2000). In addition to all of these, customer-based brand equity is considered an effective tool in hotel managers understanding their own brands (Çınar et al., 2019).

There are studies in the literature that put forth the relation between brand loyalty, brand image, perceived quality, brand awareness and WOM (Murtiasih et al., 2014; Moise et al., 2019). Ansary and Hashim (2018), in their study, measured the moderator effect of WOM on the relations between brand value components and brand value. Xu and Chan (2010), in a study carried out on hotel brand equity, state that WOM has a strong effect on brand awareness and brand image. Yang et al. (2015), in their study, concluded that WOM has an important effect on destination brand value. According to the results obtained by Sofiane (2019), it is seen that all dimensions of brand equity have a positive effect on WOM.

Although the concept of brand equity was studied frequently by correlation with different variables within the context of destination (Boo et al., 2009; Chekalina et al., 2018; Davras, 2019; Dedeoğlu et al., 2019; Kim et al., 2017; Pike & Bianchi, 2016) and hotel (García et al., 2018; Seric et al., 2017; Seric et al., 2018; Seric & Gil-Saura, 2019; Sijoria et al., 2019; Sürücü et al., 2019; Uslu et al., 2020), no studies have been encountered that address the relationship between perceived value co-creation and WOM. In the light of this information, the first hypothesis has been put forth as follows.

H1 *Hotel Brand Equity has a positive and significant effect on WOM.*

Perception of Value Co-Creation

The nature of the concept of value has been discussed since Aristoteles and it is known that it has two meanings acknowledged as 'changing value' and 'value in use.' Changing value is that emerging from the product-dominant logic. According to this perspective, the value is created by the company (produced) and generally distributed to the market via goods or monetary exchange. In the service-dominant (S-D) logic, the concept of value refers to value in use (Vargo et al., 2008). This approach entails more than merely proving to be customer oriented. Here, collaborating with the customers, learning from customers and adapting to their individual and dynamic needs become prominent. This service-dominant logic expresses that value is defined by the consumer and created with them instead of by output (Vargo & Lusch, 2004). Despite the consensus that the customer has a more active role and that the value is subjective, there is no consensus yet on the definition of the concept and the processes inherent in this concept (Alves et al., 2016).

Businesses can present services as only value propositions and this becomes the input of value realization. It is seen that value realization depends on the participation of customers in the service process. Beneficiaries (namely, customers) determine whether value is actually created, and this situation renders the service specific to the beneficiary (Cabiddu et al., 2013).

The concept of value co-creation is correlated with developing a unique competence by using organizational resources and technological capabilities aiming to meet customers' demands more efficiently and thereby gaining a competitive advantage (Maduka, 2016). Among the propelling forces of the concept, there are the developments and maturation in technology, accelerated consumer information and expec-

tations as well as the logic of integrating consumer needs and expectations in the value chain of a company (Chathoth et al., 2016).

From an organizational standpoint, in the perception of value co-creation, the participation of managers and employees is needed as much as that of the customers, although it should not be forgotten that the primary and ultimate actor is always the customer. Managers are held responsible for designing and implementing a process that allows and even encourages customers to take an active role. Within this context, it is seen as indispensable to train and improve employees in achieving success (González-Mansilla et al., 2019). For this reason, enterprises need to train employees in the importance of customer experience and on value creation resourcing from these experiences (Chathoth et al., 2016).

Grönroos (2011) considers the expression '[c]ustomer is always a value creator' to be true, yet incomplete. They express that this definition is too basic to account for theoretical development or practical decision making. It is not entirely clear what value creation means. Does the definition of value in this expression refer to the customer creating value in use or a more comprehensive process where the customer is creating value in use? This is only a single part of the ambiguity. Generally, in the service-dominant logic, value creation refers to a process encompassing everything, and it is created not only by the customers but by different stakeholders, including the enterprise and the customer (Grönroos, 2011).

The concept of the perception of value co-creation focuses on enhancing the customer's experience by way of improvements in the process of service provision or by adjusting the service individually according to the needs of the customer. The situation in question is especially considered important for luxury hotels (González-Mansilla et al., 2019). While co-creation is examined in unison in various areas involving strategy, management and marketing, that it is implemented within the context of tourism and hotel administration as a proactive service provider gains a special importance (Chathoth et al., 2016).

Chekalina et al. (2014) carried out a study in order to test the relationship between customer-based brand equity and the perception of co-creation of value. In the study conducted by González-Mansilla et al. (2019), it was determined that the customer perception regarding the process of value co-creation has a positive effect on the brand value. Xu et al. (2019) examined the customer-based brand equity theory for destinations based on the value co-creation theory. In the study, empirical results were obtained that will encourage brand value management and the participation of tourists in value co-creation activities. According to the findings in Frías Jamilena et al.'s (2017) study, it is put forth that the value co-creation perception is a premise of the customer perceiving the destination brand value to be higher. In the study conducted by Seifert and Kwon (2020), it was concluded that the e-WOM has a higher effect on the brand value and value co-creation loyalty behaviour. As a result of the literature review, the second and third hypotheses have been constituted.

H2 *Hotel Brand Equity has a positive and significant effect on the perception of value co-creation.*

H3 *Perception of value co-creation has a positive and significant effect on WOM.*

As a result of the study conducted by Prebensen et al. (2016) on tourist experiences, it was determined that there is a moderator effect on the relation of perceived value and satisfaction. Chou et al. (2018) examined the moderator effect of the value co-creation variable in their studies conducted on travel agencies. The fourth hypothesis has been put forth in light of the studies reviewed in the literature review.

H4 *Perception of value co-creation has a moderating effect on the relationship between Hotel Brand Equity and WOM*

Methods

The Aim of the Study and the Conceptual Model

The aim of this study is to: (1) determine the brand value perceptions of foreign tourists coming to Marmaris on the perception of value co-creation and WOM, (2) ascertain the effect of tourists' perception of value co-creation on WOM, and (3) determine the moderator effect of perception of value co-creation on the relation between hotel brand equity and WOM. For this

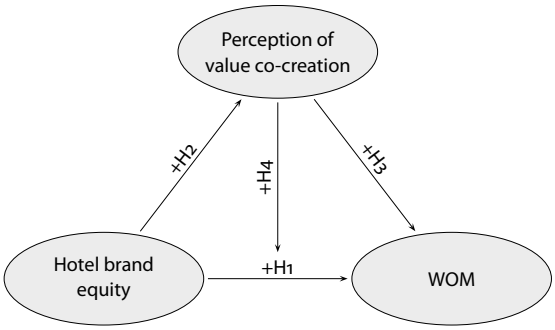

Figure 1 The Conceptual Model

reason, by utilizing the studies in the relevant literature (Prebensen et al., 2016; Ansary & Hashim, 2018; Sofiane, 2019; Moise et al., 2019; González-Mansilla et al., 2019; Seifert & Kwon, 2020; Xu et al., 2019), the model of the study has been created as in Figure 1.

The Method, Population and Sample of the Study

In this study, the quantitative research survey method has been used in order to determine the effects of hotel brand equity dimensions (brand awareness/recognition, brand association/image, perceived quality and loyalty) on WOM and the moderator role of the perception of value co-creation on the relations between these variables. This study is important in terms of its uniqueness in the literature, for explicating the relations between these variables, and for understanding the moderator role of perception of value co-creation.

In this study based on hypothesis testing, a quantitative approach has been adopted and the survey method was used in data collection. 10 questions were created for the study survey in order to determine the socio-demographical characteristics of the tourists. For the 11 questions created with the sub-dimensions of hotel brand equity, surveys created by González-Mansilla et al. (2019) have been adapted. Statements comprised of 3 questions for the WOM variable have been adopted from the study carried out by Yazgan et al. (2014). 12 questions created with the sub-dimensions for the perception of value co-creation have been adopted from the surveys created by González-Mansilla et al. (2019). A 5-point Likert scale has been used in the survey as 1 = Completely disagree, 5 = Completely agree. The survey questions were prepared by three researchers who are experts in the area of tourism and marketing. After the questions were examined, the statements in the survey were controlled by a native English speaker expert.

The study was carried out by two surveyors who knew the aim of the study, and one of the authors, with convenience sampling, between 1 May and 1 August 2019. While foreign tourists were leaving the hotel enterprises that they stayed in, 370 surveys were elicited from those tourists by informing them about the aim of the study in the hotel lobby. 12 surveys that were empty or understood to be erroneous have been excluded and the rest, 358 surveys, have been included in the study. These 358 surveys can be considered adequate in representing the population (Bryman & Cramer, 2001).

The population of the study is comprised of foreign tourists visiting hotel enterprises in Marmaris. The number of accommodation facilities with ministry accreditation operating in Marmaris is 200. According to the GETOB (South Aegean Hotel Enterprises' Union), the number of foreign tourists visiting Marmaris is around 900 thousand people per annum.

Percentage and frequency, along with exploratory factor analysis in SPSS 22.00, was applied to the data obtained and subsequently the CFA, second-order CFA and structural model analysis were carried out in the AMOS 22.00 package software. Subsequently, the Slope test was utilized in determining the moderator effect.

Results

In order to evaluate the research findings, primarily the lost data, outlier value, homogeneity and reliability oriented towards the raw data obtained from the survey needed to be tested. Therefore, when the lost data for the study was gleaned, it was seen that the rate of empty items in the survey was not higher than 15% (Tabachnick & Fidell, 2007) and it was not replaced with any data.

Checking at the outlier values for the data; 'Z' and 'T' scores has been found that there is no value beyond +3 and –3. As a result of the homogeneity test, data was determined to be homogenous since the *p*-value

Table 1 Demographic Characteristics of Foreign Tourists

Category	Item	*n*	%
Gender	Female	166	46.4
	Male	192	53.6
Nationality	British	226	63.1
	Dutch	93	26.0
	Swedish	27	7.5
	Others	12	3.4
Marital Status	Single	164	45.8
	Married	143	39.9
	Married with children	51	14.2
Education status	Primary School	76	21.2
	High School	108	30.2
	University	123	34.4
	Master's degree	13	3.6
	No response	38	10.6
With whom travelling	Alone	15	4.2
	Family/Relatives	240	67.0
	Friends	83	23.2
	No response	20	5.6
Household annual income ($)	<20,000	43	12.0
	20,000–29,999	58	16.2
	30,000–39,999	51	14.2
	40,000–49,000	10	2.8
	50,000–59,000	76	21.2
	60,000–69,000	58	16.2
	>70,000	21	5.9
	No response	41	11.5
Occupation status	Manager	85	23.7
	Retired	49	13.7
	Self-employed	37	10.3
	Worker	107	29.9
	Student	7	2.0
	Civil servant	9	2.5
	Housewife	7	2.0
	Other	32	9.0
	No response	25	7.0

Continued in the next column

Table 1 Continued from the previous column

was higher than 0.05 (Kalaycı, 2008). A pilot study was conducted with 40 foreign tourists visiting hotel enterprises in Marmaris between the dates of 1 and 15 April 2019. The Cronbach's Alpha value (α = 0.908) regarding the 26 statements involved in the survey scale was determined to be quite reliable and the study continued.

According to the 358 population number, the Cronbach's Alpha (α) values of the scales used in the study were examined in order for their reliability and validity to be ensured. As seen in Table 1, it was determined that the hotel brand equity and perception of value co-creation dimensions in the conceptual model and the variable that has the highest reliability value within the WOM variable (α = 0.984) is the brand association variable and the variable that has the lowest reliability value (α = 0.792) is the dialogue variable. It is seen that the Cronbach's Alpha values of all the variables used in the study are over (α) 0.70 and adequately reliable (Hair et al., 2014).

Demographic Characteristics of Foreign Tourists

The frequency and percentage distributions of the foreign tourists visiting Marmaris that were surveyed within the scope of the study can be seen in Table 1. The tourists' average age was determined to be 44 and their length of stay as 4 days. Accordingly, it was determined that 53.6% (192 people) of the participants are male, 46.4% (166 people) female, 45.8% (164 people) single, 39.9% (143 people) married and 14.2% (51 people) married with children. When the nationalities of the foreign tourists visiting Marmaris was examined, it was determined that 63.1% (226 people) are comprised of British tourists, 26.0% (93 people) are Dutch, 7.5% (27 people) are Swedish and the remaining 3.4% (12) are of other nationalities (Irish, Scottish, German). When the levels of education of the tourists were examined, a 34.4% (123 people) majority was identified as college/university graduates. When whom the tourists travelled with was reviewed, it was determined that a large majority of 67.0% (240 peo-

Table 2 Convergent and Discriminant Validity Values

	CR	AVE	MaxR(H)	TRA	AWA	ASS	PQUAL	LOY	DIA	ACC	RISK	WOM
TRA	0.816	0.690	0.821	0.830								
AWA	0.955	0.913	0.955	0.608	0.956							
ASS	0.984	0.969	0.985	0.620	0.788	0.985						
PQUAL	0.918	0.790	0.936	0.642	0.608	0.655	0.889					
LOY	0.932	0.821	0.938	0.656	0.477	0.506	0.647	0.906				
DIA	0.729	0.576	0.758	0.814	0.552	0.600	0.699	0.732	0.759			
ACC	0.913	0.777	0.916	0.744	0.574	0.607	0.666	0.658	0.923	0.881		
RISK	0.885	0.793	0.897	0.599	0.383	0.331	0.495	0.397	0.511	0.443	0.891	
WOM	0.958	0.884	0.958	0.737	0.509	0.511	0.660	0.765	0.733	0.660	0.523	0.940

Notes Column/row headings are as follows: TRA = Transparency, AWA = Brand Awareness, ASS = Brand Association, PQUAL = Perceived Quality, LOY = Loyalty, DIA = Dialogue, ACC = Access, RISK = Risk, WOM = Word of Mouth, CR = Composite Reliability, AVE = Average Variance Extracted. Diagonal values are square roots of AVE values per construct; off-diagonal values are the correlations of the variables.

ple) were travelling with Family/Relatives. In the annual household income, it is seen that 21.2% (76 people) are comprised of tourists within the income range between the $50,000–$59,000 interval. On the other hand, when their occupations were examined, it was determined that 29.9% (107 people) at most are comprised of workers. When all these results are generally reviewed, it can be said that most of the tourists visiting the hotel enterprises are comprised of individuals who are mostly male, British, University graduates, travelling with Family/relatives with an average annual income range between the $50,000–$59,000 interval.

Convergent and Discriminant Validity

Within the scope of determining the reliability and validity of the study, the values of CR, AVE, MaxR(H) have been examined (Table 2). In order to establish CR (Convergent Reliability), it is expected that the CR should have values of 0.70 and higher and AVE (Average Variance Extracted) values should have values of 0.50 and higher (Byrne, 2010). That the AVE value is higher than 0.50 means that adequate levels of variance was explicated by variables relational to factors, and that the CR value is higher than 0.70 means that the factors have high internal reliability (Fornell & Larcker, 1981). The facts that the MaxR(H) (Maximum H Reliability) value is higher than the CR value and that the square root of the AVE value is higher than the correlation values of that variable with other variables mean that discriminant validity is established (Fornell & Larcker, 1981).

When Table 2 is reviewed, it is understood that the lowest AVE value calculated for the latent variables is 0.576 and the lowest CR value calculated is 0.729, rendering the assumptions of convergent validity ensured. It is seen that the MaxR(H) value is higher than the CR value for each latent variable integrated into the model for divergent reliability. Again, it is seen that the square roots of the AVE value and the inter-variable correlation values are acceptable, thereby ensuring divergent validity for all latent variables.

Exploratory Factor Analysis (efa) Results

Initially, to test the structure validity of the scales used in the study, exploratory factor analyses have been carried out. For this reason, exploratory factor analyses have been carried out for the dimensions of brand equity and perception of value co-creation in the study scale. KMO and Bartlett's tests have been carried out initially in order to understand whether they are suitable for factor analysis. As a result of the EFA conducted, the KMO value has been determined as 0.873 and the Bartlett's test χ^2 value has been determined as 4547.808 ($p < 0.000$). For the perception of value co-

Table 3 Exploratory Factor Analysis of the Hotel Brand Equity variable, CFA and Second-Order CFA values

Brand equity dimensions		EFA values				CFA values		
		Std. loadings	Variance explained	Eigenvalue	α	Std. loadings	*t* values	*P*
Perceived quality	PQ3	0.821	62.602	6.886	0.929	0.796	21.096	0.001
	PQ1	0.813				0.940	–	–
	PQ2	0.808				0.921	29.536	0.001
	PQ4	0.747				–	–	–
Loyalty	LOY2	0.877	14.527	1.598	0.930	0.945	25.516	0.001
	LOY3	0.857				0.862	–	–
	LOY1	0.847				0.908	23.991	0.001
Brand awareness	AWA2	0.876	8.551	0.941	0.955	0.952	–	–
	AWA1	0.860				0.960	34.430	0.001
Brand association	ASS2	0.800	4.531	0.498	0.984	0.979	–	–
	ASS1	0.795				0.990	60.177	0.001
Second-Order CFA analysis results								
Brand equity	Perceived quality	–	–	–	–	0.749	14.134	0.001
	Loyalty	–	–	–	–	0.848	10.603	0.001
	Brand awareness	–	–	–	–	0.858	–	
	Brand association	–	–	–	–	0.894	16.886	0.001

Notes Extraction method: Principal Component Analysis; Rotation method: Varimax Rotation. Goodness-of-fit statistics of CFA: $\Delta\chi^2 = 77.959$, DF = 29, $\chi^2/DF = 2.688$, RMSEA = 0.069, CFI = 0.988, GFI = 0.959, IFI = 0.988. Goodness-of-fit statistics of second order CFA: $\Delta\chi^2 = 125.097$, DF = 31, $\chi^2/DF = 4.035$, RMSEA = 0.092, CFI = 0.977, GFI = 0.936, IFI = 0.977.

creation dimensions, the KMO 0.896 and the Bartlett's test χ^2 value has been determined as 2713.991 ($p < 0.000$) and these results show that it is suitable for factor analysis (Kalaycı, 2008).

In Table 3, initially, the EFA results for the expressions of the foreign tourists visiting the hotel enterprises in Marmaris regarding hotel brand equity dimensions are included in the study. As a result of the EFA conducted, it has been determined that the hotel brand equity dimensions involve a four-dimensional structure explaining 90.212% of the total variance and that each of the factor loads are over 0.32 (Tabachnick & Fidell, 2007). As a result of the EFA, it has been determined that brand awareness, brand association, perceived quality and loyalty comprise the brand equity dimensions and factor loads are between 0.877 and 0.747.

On the other hand, as seen in Table 4, EFA analysis has been conducted on the statements where there are the dimensions of tourists' perception of value co-creation. As a result of the EFA, it has been determined that the dimensions of the perception of value co-creation involve a fourfold structure explicating 78.070% of the total variance and that each of the factor loads are over 0.32 (Tabachnick & Fidell, 2007). The dimensions which emerged are Dialogue, Transparency, Accessibility, Risk and Access, with their factor loads determined to be between 0.889 and 0.421.

Confirmatory Factor Analyses (CFA) for the Dimensions of Hotel Brand Equity and Perception of Value Co-Creation

In order to be able to test the structure validity of the scales used, CFA was carried out on the dimensions of Hotel Brand Equity and Perception of Value Co-Creation. Fit indices needed to be reviewed for the

Table 4 EFA, CFA and Second-Order CFA values for the variable of the Perception of Value Co-Creation

Perception of value co-creation variables		EFA values				CFA values		
		Std. loadings	Variance explained	Eigenvalue	α	Std. loadings	*t* values	*P*
Access	ACC2	0.889	51.363	6.164	0.911	0.898	25.068	0.001
	ACC1	0.852				0.902	–	–
	ACC3	0.804				0.842	22.035	0.001
Risk	RIS2	0.869	12.913	1.550	0.835	0.967	13.779	0.001
	RIS1	0.861				0.818	–	–
	RIS3	0.737				–	–	–
Transparency	TRA3	0.884	7.765	0.932	0.809	–	–	–
	TRA2	0.688				0.818	17.141	0.001
	TRA1	0.607				0.842	–	–
Dialogue	DIA2	0.800	6.029	0.723	0.792	–	–	–
	DIA1	0.670				0.655	–	–
	DIA3	0.421				0.861	13.104	0.001
Second-order CFA analysis results								
Perception of value co-creation	Access	–	–	–	–	0.907	12.045	0.001
	Risk	–	–	–	–	0.534	7.573	0.001
	Transparency	–	–	–	–	0.835	10.912	0.001
	Dialogue	–	–	–	–	0.988	–	–

Notes Extraction method: Principal Component Analysis; Rotation method: Varimax Rotation. Goodness-of-fit statistics of CFA: $\Delta\chi^2 = 52.216$, DF = 21, $\chi^2/DF = 2.486$, RMSEA = 0.065, CFI = 0.985, GFI = 0.967, IFI = 0.986. Goodness-of-fit statistics of second order CFA: $\Delta\chi^2 = 78.934$, DF = 23, $\chi^2/DF = 3.432$, RMSEA = 0.083, CFI = 0.974, GFI = 0.952, IFI = 0.974.

CFA results obtained from the AMOS software. Frequently reviewed indices among the fit indices are Chi-Square Fit test ($\Delta\chi^2 \leq 5$), root mean square error of approximation, RMSEA (≤0.080), Goodness of Fit Index, GFI (≥0.80), Adjusted Goodness of Fit Index: AGFI (≥0.80), comparative fit index, CFI (≥0.90), and incremental fit index, IFI (≥0.90) (Schumacker & Lomax, 2010).

According to Table 3, hotel brand equity dimensions are subjected to CFA and the PQ4 statement were excluded from the study since its factor load was low and it reduced the goodness of fit values of the study. As a result of the repeated analysis, it was determined that the factor loads of all the statements are 0.50 (Kalaycı, 2008) and over. The goodness of fit values of the CFA for the hotel brand equity dimensions are $\Delta\chi^2 = 77.959$; DF = 29; $\chi^2/DF = 2.688$; RMSEA = 0.069; CFI = 0.988; GFI = 0.959; IFI = 0.988. These results show that CFA has adequate goodness of fit values (Hair et al., 2014).

As a result of the CFA applied on the perception of value co-creation dimensions, the statements of TRA3, RIS3 and DIA2 were excluded from the model since they had low factor load and they reduced the goodness of fit values. As a result of the repeated CFA analysis, it was determined that all the factor loads are over 0.50. The goodness of fit values of the CFA conducted for the perception of value co-creation dimensions are $\Delta\chi^2 = 52.216$; DF = 21; $\chi^2/DF = 2.486$; RMSEA = 0.065; CFI = 0.985; GFI = 0.967; IFI = 0.986 and it is seen that it has adequate goodness of fit values (Hair et al., 2014).

In order to reduce the hotel brand equity and perception of value co-creation dimensions which will

be involved in the conceptual model to a single dimension, second-order CFA analyses have been conducted. The goodness of fit values of the second-order CFA conducted to reduce the hotel brand equity to a single dimension are $\Delta\chi^2$ = 125.097; DF = 31; χ^2/DF = 4.035; RMSEA = 0.092; CFI = 0.977; GFI = 0.936; IFI = 0.977. On the other hand, the goodness of fit values of the second-order CFA conducted in order to reduce the dimensions of the perception of value co-creation to a single dimension are $\Delta\chi^2$ = 78.934; DF = 23; χ^2/DF = 3.432; RMSEA = 0.083; CFI = 0.974; GFI = 0.952; IFI 0.974. According to all of these results obtained, the second-order CFA analyses are determined to have the adequate goodness of fit values (Hair et al., 2014).

Measurement Model and Testing the Hypothesis

Through the study, the case of whether the primary condition of creating a model was fulfilled has been tested by analyzing the relations between the dimensions used in the study in hotel brand equity, perception of value co-creation and WOM.

As a result of the measurement model carried out, it was determined that the apparent variables are in relation with their dependent latent variables and also that the relations between all variables are significant at the $p < 0.05$ level and that the covariance values between variables are lower than <0.85. In order to elevate the goodness of fit values of the measurement model, adjustments have been made between the ACC1 (e15) and ACC3 (e17), ACC2 (e16) and ACC3 (e17) as well as WOM2 (e25) and WOM3 (e24), and the goodness of fit values were elevated. The goodness of fit criteria for all the variables for the measurement model were determined as $\Delta\chi^2$ = 682.169; DF = 195; χ^2/DF = 3.498; RMSEA = 0.084; CFI = 0.941; GFI = 0.845; IFI = 0.942. These results show that the goodness of fit values are adequate (Hair et al., 2014).

After the measurement models were confirmed, the relations between the variables used in the study were tested through the structural model. Within the scope of the structural model analysis, 3 different hypotheses were analyzed in order to determine the effects of hotel brand equity on the perception of value co-creation and WOM along with perception of value co-creation on WOM. Another unique aspect of this study is that 1 (one) hypothesis has been tested in order to determine whether the hotel brand equity and its effect on WOM has a moderator role on the perception of value co-creation. As a result of the structural model implemented in line with all these aims, the path diagram regarding the findings is seen in Figure 2. As seen in the path diagram, it was determined that there is a positive and significant effect of hotel brand equity on the perception of value co-creation and WOM. Moreover, it was determined that the perception of value co-creation has a positive and significant effect on WOM. Furthermore, it is seen in the model in Figure 2 that the variance exploration rate for the co-creation variable is 78.4% (R^2 = 0.784), and the variance exploration rate for the WOM variable is 63.6% (R^2 = 0.636).

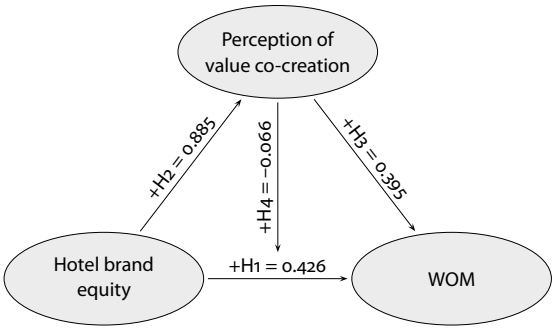

Figure 2 The Standardized Values Determined by the Conceptual Model

When the *t* values in Table 5 are examined, it is seen that the significance level is higher than 2.56 and at $p < 0.001$ between the hotel brand equity and the perception of value co-creation and WOM; and the perception of value co-creation and WOM (Schumacker & Lomax, 2010). Also, when the goodness of fit values for the path analysis regarding the significance of the structural model, it is seen that they are: $\Delta\chi^2$ = 682.169; DF = 195; χ^2/DF = 3.498; RMSEA = 0.084; CFI = 0.941; GFI = 0.845; IFI = 0.942 and that these values are adequate goodness of fit values (Hair et al., 2014).

When the conceptual model in Figure 2 and the hypothesis results in Table 5 are examined, it is seen that the hotel brand equity of the foreign tourists vis-

Table 5 Path Analysis and Hypothesis Results

Hypotheses	Path Analysis	SRW	*t* values	*p*	Results
+H1	Hotel Brand Equity → WOM	0.426	3.670	0.001***	Supported
+H2	Hotel Brand Equity → Perception of Value Co-Creation	0.885	10.887	0.001***	Supported
+H3	Perception of Value Co-Creation → WOM	0.395	3.434	0.001***	Supported

Notes SRW – Standardized Regression Weights. *** $p < 0.001$. Goodness-of-fit statistics of path analysis: $\Delta\chi^2 = 682.169$, DF = 195, $\chi^2/DF = 3.498$, RMSEA = 0.084, CFI = 0.941, GFI = 0.845, IFI = 0.942.

Table 6 Path Analysis Results Showing the Moderating Effect ($n = 358$)

Variables	β	SE	*t*
Hotel brand equity (X)	0.438**	0.054	7.922
Percept. of value co-creation (W)	0.382**	0.059	6.911
X.W	−0.066*	0.040	−1.993

Notes $R^2 = 0.608$; ** $p < 0.001$, * $p < 0.05$, SE = standard error, β = standardized regression coefficients, dependent variable = WOM.

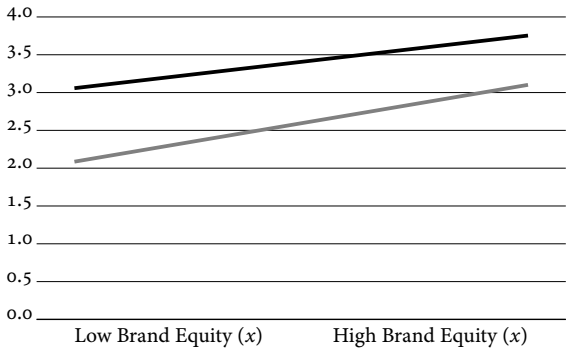

Figure 3 Graphic Representation of the Moderating Effect of the Perception of Value Co-Creation (light – low Value Co-Creation (*w*), dark – high Value Co-Creation (*w*))

iting hotel enterprises in Marmaris has a positive and significant effect on WOM and perception of value co-creation (H1: $\beta = 0.426$, $t = 3.670$, $p = 0.001$; H2: $\beta = 0.885$, $t = 10.887$, $p = 0.001$). For this reason, the hypotheses of H1 and H2 formed as 'Hotel Brand Equity has a positive and significant effect on WOM and perception of value co-creation' have been corroborated. Furthermore, it has been determined that perception of value co-creation has a positive and significant effect on WOM (H3: $\beta = 0.395$, $t = 3.434$, $p = 0.001$). Therefore, the hypothesis H3, formed as 'Perception of value co-creation has a positive and significant effect on WOM,' has been corroborated.

In order to be able to test the moderator role of the perception of value co-creation on the effect of hotel brand equity on WOM, path analysis has been carried out using the AMOS software. In the path analysis conducted with the apparent variables, the method of calculating maximum likelihood has been used and its path analysis results are in Table 5. While the values for the estimation and the moderator variable were standardized beforehand, the values were centralized in order to minimize the multicollinearity issue. It is seen that all the estimation variables included in the path analysis explained 61% ($R^2 = 0.608$) of the change on WOM. On WOM, it has been determined that hotel brand equity ($\beta = 0.438$, $p < 0.001$) and perception of value co-creation ($\beta = 0.382$, $p < 0.001$) have a positive and significant effect. It has been ascertained that the hotel brand equity and perception of value co-creation variables' interactive effect (moderator effect) is significant and negative ($\beta = -0.066$, $p < 0.05$).

Determining the form and direction of the combined effect of the interaction between hotel brand equity and perception of value co-creation, in cases where the hotel brand equity was low and high, the opinions of those with high and low perception of value co-creation on WOM are shown in Figure 3. Whether the slopes in Figure 3 differ at a significant level from the 0 (zero) value, has been tested with a slope test. As a result of the slope test, it has been determined that the correlation between hotel brand equity and WOM is both high and that its correlation to the

value co-creation is significant and positive ($\beta = 0.44$, $p < 0.001$; $\beta = 0.38$, $p < 0.001$, respectively). Consequently, it is seen that tourists with high levels of value co-creation perception carry more WOM compared to those with low perception of value co-creation when there is high hotel brand equity, and hypothesis H4 is accepted in this case. According to this result, it can be said that when hotel managers use the perception of value co-creation by taking hotel brand equity characteristics into consideration, they will increase WOM. Furthermore, it is possible to state that although the relationship between hotel brand equity and WOM is as claimed in the H4 hypothesis, according to the levels of the perception of value co-creation, this relation is thinning. In other words, according to the findings obtained, the relationship between hotel brand equity and WOM is stronger in tourists who attribute low importance to the perception of value co-creation compared to those who attribute more importance to it.

Discussion and Conclusion

As the share of the service sector in the economy grows, the importance of participatory applications that are customer-based is gradually increasing. In Turkey as well, the largest share of the service sector is held by the tourism sector. The branding efforts of hotel enterprises as the locomotives of the sector, the effort to determine the value perceptions of customers and the results of these efforts being spread among the customers in a positive way have become prioritized.

According to the sources obtained as a result of the literature review carried out what was tested in general was whether hotel brand equity had any effect on WOM, and no study has been found that suggests that the perception of value co-creation has a regulating effect. Therefore, in order to define the relationship between hotel brand equity, perception of value co-creation variable and WOM of the tourists visiting hotel enterprises in Marmaris, and to determine whether the perception of value co-creation has a moderator effect on the relationship between hotel brand equity and WOM, 4 hypotheses were constructed and all of them have been accepted. That the moderator effect has been ascertained can be seen as a justification for the study and its most prominent characteristic.

Four dimensions have been uncovered as a result of the EFA conducted on hotel brand equity. The dimensions are conceived as quality, loyalty, brand association and brand awareness. As a result of the EFA conducted on the dimensions of perception of value co-creation, a four-dimensional structure has been identified involving dialogue, risk, transparency and access. As a result of the subsequently conducted CFA analyses and second-order CFA analyses, they were integrated into the model with the names of hotel brand equity and perception of value co-creation and their relations with the other variables were examined.

According to the findings, it has been determined that tourists' hotel brand equity increases the perception of value co-creation and WOM. These findings show similarity to many studies such as Moise et al. (2019), Sofiane (2019), and González-Mansilla et al. (2019). On the other hand, it has been determined that the perception of value co-creation affects WOM. This state of affairs correlates with the findings obtained in Seifert and Kwon's (2020) study. The result to be obtained out of the value co-creation perception of the customers will result in positive or negative WOM. Hotels are primarily obligated to understand the dimensions of hotel brand equity in order to make accurate diagnoses in the long run. The perception of value co-creation formed with well-understood hotel brand equity will lead to the forming of positive WOM from the perspective of the customer.

Lastly, except for the findings of the study that overlap with the literature, as a distinctly revealed finding, it was seen that the perception of value co-creation has a negative moderator effect on the effects of hotel brand equity on WOM. Hotel enterprises are one of the most important components of the tourism sector. Due to hotel enterprises being high-cost businesses, it is necessary for them to wish to create a feeling of being valued for the customer in order to render their customers loyal to the enterprise. It is evident that there is perception of value, and sharing their perceptions through WOM rapidly as a result of developing the perception of being valued is quite important for hotel enterprises in the exponentially challenging competitive environment of the 21st century.

There are certain limitations in this study. It was

carried out in the Marmaris destination and only applied to foreign tourists coming to hotels in the summer months of the year 2019. It is recommended that relevant studies need to be carried out so as to encompass other destinations and also to domestic tourists in order to prove generalizable.

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Original Scientific Article

Dubai Restaurants: A Sentiment Analysis of Tourist Reviews

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An enormous amount of information is available on innumerable travel websites, social media and blogs, of which a large part is user-generated content. This web content holds great potential to assess visitor sentiment at a destination; as this identifies a need for building automated systems to extract unknown sentiments from these sources. Sentiment analysis, which includes text mining and natural language processing (NLP) techniques, helps in extracting related sentiments from the data thus stored, in unstructured formats. The extracted sentiment would facilitate better tourist decision making and improve customer service and new product development for tourism enterprises. This study presents a sentiment analysis model to extract the hidden sentiments from tourist reviews about restaurants in Dubai that will guide visitors to the city in taking suitable dining decisions. Sentiment analysis is carried out by extracting tourist reviews about restaurants in Dubai using a web scraping method using text mining techniques with the help of the R statistical software package. The resultant data is further analysed by sentiment analysis tools to extract the hidden sentiments, which are categorized under eight heads. The sentiment analysis helped uncover hidden sentiments along with the frequency of each sentiment category. It also helped to find the difference between tourist sentiment scores with respect to different categories of restaurants. The paper provides a sentiment analysis model which can be used in the future to extract the reviews related to other tourism products besides restaurants, such as accommodation, attractions and accessibility.

Keywords: tourist reviews, Dubai restaurants, sentiment analysis, text mining, R statistical package

 https://doi.org/10.26493/2335-4194.14.165-174

Introduction

The internet is now a necessary source of personal and professional information and the brisk-paced evolution of information and communication technologies (ICT) has given rise to Web 2.0 characterized by participatory contribution or user-generated content (UGC), or electronic word of mouth (e-WOM). Businesses hitherto enjoyed a monopoly on the information they possessed; users themselves now determine the information they want to see and to consume

(Breda et.al., 2020). According to the International Telecommunication Union there are approximately three and a half billion people, or 47% of the world population, that use the internet, in turn significantly impacting various sectors of the economy and society including tourism (Buhalis & Law, 2008). Information and communication technology (ICT) and the internet have changed the way individuals and organizations in the tourism sector operate today (Boyer, 2014; Mariani et al., 2014). There are various internet applications such as search engines, social media websites, blogs and review sites that have profound influence on tourist decision making in terms of choice of destination, accommodation and mode of travel (Xiang et al., 2015). There are several online interfaces which enable tourists to share their experiences in the form of text, images and videos. This vast user-generated content is available online in the form of user reviews, comments, feedbacks, messages, posts, and tweets, providing opportunities for better decision making for the stakeholders, especially in the tourism sector, but which cannot be analysed manually and require automated tools like text mining (Hearst, 1992; 2003). Text mining (Renganathan, 2017) involves extracting and analysing information from the unstructured data such as text, opinions, reviews, and comments that is not possible with the traditional statistical tools.

Natural language processing (NLP) (Manning et al., 1999) helps to enable computer systems read and understand natural languages such as English. Sentiment analysis (Jiang et al., 2021; Artemenko et al., 2020; Saad & Aref, 2020) enables understanding of different emotions, attitudes and expressions contained in the textual information using text mining and NLP techniques. Sentiment analysis, or opinion mining, (Pang & Lee, 2008) helps in extracting the hidden sentiments or opinion from the unstructured data using tools such as text mining and natural language processing. This study provides an overview of sentiment analysis, text mining and natural language processing in the tourism sector and builds a sentiment analysis model using a lexicon-based approach (Balasubramanian et al., 2021; Bose et al., 2020). Open source software – R statistical package (see https://www.r-project.org) was used to build the model.

Literature Review

The application of 'text mining' is a tool which is being used in many tourism researches (Thomaz et al., 2016) in the areas of destination branding, destination characteristics, sentiment analysis, tourist online behaviour, tourist purchasing decisions and tourism sector marketing strategies. Tourism can be termed as a product which is intangible, experiential and perishable (Xiang et al., 2015). Similarly, tourism can be defined as a product which exists in the form of information before a tourist makes a purchase decision (Doolin et al., 2002). Therefore, the online medium which acts as a mode of communication providing a platform for the tourism industry in the fields of marketing the tourism product and services (Carson, 2006) also helps in the formation of tourist opinions that have greater influence on their purchasing decisions (Cohen et al., 2014; Litvin et al., 2008).

The online behaviour of tourists can be divided into pre, onsite and post visits to the desired destination. Tourists share their experiences, opinions, comments and suggestions online after the visit, which might be positive, neutral or negative (Kim et al. 2017). Online media, including online review websites, blogs and social networks, enable tourists to share travel experiences in the form of posts, comments, opinions, photos and videos (Xiang & Gretzel, 2010; Law et al., 2017) which in turn become a source of information for future tourists to plan their travels and purchase the tourism products.

Research related to the influence of social media on tourist online behaviour shows that around 46% of tourists shared their travel related experiences on social media and 36% of tourists' choice of destination is influenced by social media posts (Thomaz et al., 2016). Tourist purchasing decisions are influenced by the opinions expressed by fellow tourists who share their experience on tourism products such as destination, accommodation and travel (Godnov & Redek, 2016).

Text mining tools which act as a base for opinion mining enable the study of opinions and sentiments expressed by the tourist (Pang & Lee, 2008; Ye et al., 2009). Opinion mining classifies the text into positive, neutral and negative classes wherein the text classifies

the text into two to thousand different classes (Pang & Lee, 2008).

Information about the destination aids the tourist in understanding the characteristics of the destination (Pang et al., 2011) which they intend to visit in the near future. A vast amount of online information related to a destination is generated by tourists who visited the destination recently. Text mining helps in the study of user-generated content (Choi et al., 2007; Pang et al., 2011; Xue, 2013) and helps the tourism sector as a whole to study the impact of user-generated content in the growth of the particular destination. Text mining models are also used to study destination-specific information from the travelogues (Hao et al., 2010). Text mining models can be used as a decision support system which helps travel and tourist agents to analyse the interesting comments given by the tourist online (Loh et al., 2003). Similarly, it also helps management in the hospitality sector to develop strategies to improve their services and increase occupancy rates by analysing tourist opinion queries from future tourists who are about to visit the destination, expressed in online platforms including the newsgroups postings (Lau et al., 2005; Xiang & Pan, 2011; Qi & Ning, 2017).

The text mining process is divided into the following phases: searching and retrieving the set of documents on a given topic, creating a document corpus, stop word removal, stemming, creating a term document matrix, clustering of documents, finding association between documents and creation of a word cloud (Salton & McGill, 1983; Aggarwal & Zhai, 2012; Vijayarani et al., 2015).

Phase I of the text mining process involves the searching and retrieving of documents which contain comments, opinions and suggestions using an information retrieval process based on the information required by the users (Salton & McGill, 1983).

Phase II of text mining includes pre-processing of documents which involves the removal of stop words present in the documents such as 'and,' 'the' and 'an,' etc. (Vijayarani et al., 2015). Stop words are removed from the documents using methods such as the classic method and Zip's law wherein the former method removes the predefined stop words and the latter method removes the words with high Term Frequency – Inverse Document Frequency (TF – IDF) value (Salton & Buckley, 1988). The TF – IDF of a term is an important measure in the text mining process which is defined as follows:

1. TF – IDF = Frequency $(i) \times N/f(i)$.
2. Term Frequency = Number of times the term appears in the document in comparison with total terms in the document.
3. Inverse document frequency = Total number of documents/number of documents containing the term in consideration.

Phase III of the text mining process includes stemming, which helps to identify the root of each term and where each term is replaced by its root term. For example, 'happiness' or 'happily' is replaced with its root word 'happy.'

Phase IV of the text mining process involves preparation of a term document matrix wherein the rows present the terms and columns represent the document. For example, if the word 'Dubai' appears 17 times in a traveller's blog article on different dates and there were 50 dates of blog articles that were considered for the text mining analysis, and out of the 50 documents, 48 contain the term Dubai then:

$$\text{TF} - \text{IDF (Dubai)} = 15 \times 50/48 = 15.625.$$

The web scraping technique enables the extraction of the content from the webpages embedded in HyperText Markup Language (HTML) tags and store it in text format (Prameswari et al., 2017).

Natural language processing (Pang & Lee, 2008) helps in understanding the interaction between the computer systems and the human language such as English. Natural language processing techniques involve studying syntactic (grammar), morphological (different forms of words), semantic (meaning) and pragmatic (context) aspects within a given text. There are different approaches, such as statistical, rule based, linguistic or mixed, used in the field of NLP.

Natural language processing tools are used in the tourism sector (Pekar & Ou, 2008; Özen and Ilhan, 2020) to obtain tourist evaluations of services and products offered by hotels and restaurants from the reviews available in the online medium.

Sentiment analysis helps in understanding sentiments from the user-generated content (UGC) (Gräbner et al., 2012; Schmunk et al., 2013; Calheiros et al., 2017; Chen et al., 2020) in the form of opinions, views and comments available in various online platforms such as social media, groups and blogs, using text mining and natural language processing techniques.

Sentiment analysis is generally carried out using machine learning (ML) (Duong & Nguyen-Thi, 2021; Yi & Liu, 2020), deep learning (Li et al., 2020), lexicon-based and hybrid (combination of two methods) approaches. Each method has its own advantages and disadvantages (Divaka et.al., 2016).

The machine learning-based approach (Nehe et al., 2020) uses the train and test datasets to classify the text into positive and negative sentiments. It includes classifiers such as support vector machines (SVM) and Naive Bayes classifiers (Yusof et al., 2015; Alaei et al., 2019).

Deep learning methods (Karas & Schuller, 2021), which are similar to machine learning methods, are also used for sentiment analysis. Deep learning is more powerful in terms of classification accuracy (Zhang et al., 2018). It includes convolutional neural network (CNN), reinforcement learning, and long short term memory (LSTM) models for classification purposes.

The following are the advantages of machine learning (ML) and deep learning (DL) methods (Yi & Liu, 2020):

1. They are faster to implement.
2. They can handle large volumes of data sets.
3. Training accuracy increases with the increase of dataset size.

The following are the disadvantages of ML and DL methods:

1. They require the users to provide labels for the training data set in supervised learning models.
2. The model built on one domain may not be suitable for another domain.

The lexicon-based approach (Faheem et al., 2020; Yu et al., 2019) uses language dictionaries to classify the text into positive or negative sentiments. Following are the advantages of this method:

1. It attaches sentiment to each word.
2. It does not need any training dataset.
3. Easy to implement (Alessia et al., 2015).

The following are the disadvantages of the lexicon-based approach:

1. It is language specific.
2. If any sarcasm is present, it might not capture that.

This paper uses the lexicon-based approach in carrying out the sentiment analysis as the tourist reviews are collected in the English language. The National Research Council Canada (NRC) Word-Emotion Association Lexicon is used (Mohammad & Turney, 2013) in this paper.

Tourist reviews are available online at social media websites like Twitter and Facebook and also on popular sites like Tripadivisor.com, Expedia.com and Booking.com. An interesting and noteworthy example of sentiment analysis was carried out by Valdivia et al. (2017), uncovering users' sentiment about three well-known monuments in Spain: Alhambra, Mezquita Córdoba, and Sagrada Familia, with the help of user ratings available at tripadvisor.com. Also, Philander and Zhong (2016) captured tourist sentiments through their tweets on Las Vegas resorts.

Analysis of variance (ANOVA) is a statistical model which is used to find out whether the groups or categories in the study differ with respect to the outcome variable (Sun et al., 2020). A post hoc comparison test is used to test which groups differ among themselves (Chen & Scovino, 2020).

Methodology

The study aims to find the hidden sentiments within the tourist reviews on restaurant service and find whether any difference among restaurants exists based on the sentiment scores. The study also addresses the following research question:

RQ1 *Are there any significant differences among restaurant categories (Indian, Chinese, Italian, Middle East and Café Food restaurants) in terms of sentiment score?*

Based on the above research question the following null hypothesis and alternative hypothesis are formed which will be tested using the analysis of variance method.

H0 *There is no significant difference among restaurant categories in terms of sentiment scores.*

H1 *There is significant difference among restaurant categories in terms of sentiment scores.*

The study involves extracting tourist reviews from tourist review websites. The extracted reviews are then parsed and converted into documents. The documents are further analysed to find the hidden sentiments in the reviews and sentiment scores are computed from the analysis. The study also focuses on finding whether any significant difference between restaurants exists in terms of sentiment scores. The study includes tools such as web scraping, text mining and sentiment analysis as the three methods are related and form the basis for the other method. Web scraping is required to extract the text from online websites, text mining tools are required to parse the texts and sentiment analysis tools are required to extract the sentiment from the text.

The reviews of tourists about restaurants in Dubai are extracted using a web scraping technique from www.tripadvisor.com for a period of three months. The sample included tourist reviews data from webpages related to different types of restaurants (Indian, Chinese, Café, Italian and Middle Eastern food-type restaurants).

The extracted text data was stored in a text file for further processing. The content of the text files was then fed into r environment using the 'readline' function.

The resultant text was converted into vector. The text data was preprocessed by removing the stop words, numbers, and punctuation using the tm_map function of the tm package. Here, a single sentence in the text document is treated as one single document for the analysis purpose. The model produced a word cloud output which is a graphical representation of terms present in the reviews, with the font of the words showing the frequency of occurrence. The resultant data is further analysed by sentiment analysis tools to extract the hidden sentiments, which are categorized under eight headings.

To carry out sentiment analysis, the following built-in packages were installed through RStudio environment: TM – text mining package, NLP – natural language processing package, Syuzhet – sentiment analysis package, and ggplot2 – graphical package (see https://www.rstudio.com).

Sentiments which are categorized into *positive, negative, anger, anticipation, disgust, fear, trust, sadness,* and *surprise* headings were extracted using the 'nrc' dictionary present in the Syuzhet package. The 'nrc' function created the sentiment score matrix which is used to find the difference in sentiments across different types of restaurants.

The analysis of variance model is used to test the difference between the sentiment scores among the restaurants and a post hoc comparison test – Tukey's HSD test – is applied to see which restaurants differ among them.

Results and Discussion

The sentiment analysis model provided a word cloud output which is given in Figure 1. The size of each word in the word cloud indicates the importance or frequency of each word appearing in the reviews given by the customers. Four out of five word clouds expressed positive sentiments whereas the Chinese food restaurants word cloud includes negative words like 'overpriced' and 'terrible.' The word clouds which are obtained above are in line with similar studies conducted on customer reviews with respect to restaurant quality (Kamerer, 2014; Gadidov & Priestley, 2018).

The sentiment analysis model provided the following sentiment score matrix (Table 1) with respect to sentiment type and restaurant food type, and the scores in each category are represented as percentages. The positive sentiments come out top in all the food categories, ranging from 32 to 34.54%, and negative sentiment ranged from 1.26% to 4.86%. Café food-type restaurant customers expressed positive sentiments (34.564%) compared to other types of customers. Chinese restaurant customers expressed the highest percentage of negative sentiments compared to other types of customers (2.21%). Previous researches also

Café Food Restaurant | Indian Food Restaurant | Middle Eastern Food Restaurant

Italian Food Restaurant | Chinese Food Restaurant

Figure 1 Word Clouds for Different Restaurant Types

obtained similar sentiment scores for the eight sentiment categories (Samuel et al., 2020; Ray et al., 2020).

The sentiment scores are further analysed using the analysis of variance method which is given in Table 2. The ANOVA method was used to test the hypothesis H1 that the sentiment scores differ with respect to restaurant category such as Indian, Chinese, Italian and Middle Eastern. The ANOVA method was also used to check whether there is any interaction effect in terms of type of sentiment and category of restaurants.

From Table 2, the ANOVA model indicates that the *p*-values of category of restaurants, sentiment type and interaction effect are less than 0.05. Hence we conclude that there is a difference within the sentiment types and type of restaurant category. There is also an interaction between type of sentiment and category of the restaurant (Qamar & Alassaf, 2020). Since the *p*-value for category of restaurant is less than 0.05, we will reject the null hypothesis (H0) but accept the alternative hypothesis (H1) that the category of restaurant differs with respect to sentiment score.

Since there is significant difference among the restaurant type in terms of sentiment scores, a multiple comparison test, Tukey's HSD test, is used to check which type of restaurants differ among them. The Tukey's HSD results on sentiment scores with respect to restaurant types are provided in Table 3. The *p*-values marked with (*) are statistically significant at 5% level of significance (Qamar & Alassaf, 2020).

From the above table we can infer that Chinese food-type restaurants differ with respect to Café food, Indian food, and Middle Eastern food restaurants. Similarly, Italian food restaurants differ with respect to Café food, and Indian food and Middle Eastern food differ with respect to Indian food as the *p* values are less than 0.05 ($p < 0.05$).

Table 1 Sentiment Scores with Respect to Restaurant Food Type Expressed in Percentage

Restaurant	Positive	Joy	Trust	Anticip.	Surprise	Negative	Sadness	Anger	Fear	Disgust
Café food	34.54	20.10	18.89	11.38	7.10	2.82	2.10	1.13	0.81	1.13
Chinese	32.51	18.75	17.99	11.17	6.06	4.86	2.46	2.21	2.27	1.70
Indian food	32.00	22.97	20.69	13.03	6.97	1.26	1.49	0.69	0.91	0.00
Italian	33.35	22.71	21.74	10.19	5.52	2.47	1.36	1.30	0.45	0.91
Middle Eastern	32.41	21.09	20.34	11.55	5.22	3.43	2.38	1.86	1.19	0.52
Overall	33.00	20.97	19.88	11.31	6.08	3.15	1.99	1.52	1.17	0.94

Table 2 Analysis of Variance

Variables	DF	Sum Sq	Mean Sq	*F* Value	Pr(>*F*)
Category of restaurant	4	1027	257	11.591	$4.18e^{-9}$
Sentiment type	9	66600	7400	334.124	$<2e^{-16}$
Category of restaurant × sentiment type	36	1345	37	1.687	0.008
Residuals	670	14839	22		

Table 3 The Multiple Comparison Test – Tukey's HSD Results

Type of restaurants	Upper value	Lower value	*p* adj.	Difference
Chinese–Café	2.300000	0.813638	3.786362	0.000254*
Indian food–Café	−0.968330	−2.544860	0.608191	0.447034
Italian–Café	2.013333	0.526972	3.499695	0.002127*
Middle Eastern–Café	0.686667	−0.799690	2.173028	0.713661
Indian food–Chinese	−3.268330	−4.844860	−1.691810	$2e^{-7}$*
Italian–Chinese	−0.286670	−1.773030	1.199695	0.984536
Middle Eastern–Chinese	−1.613330	−3.099690	−0.126970	0.025659*
Italian–Indian	2.981667	1.405142	4.558191	0.000003*
Middle Eastern–Indian	1.655000	0.078475	3.231525	0.034152*
Middle Eastern–Italian	−1.326670	−2.813030	0.159695	0.105744

Notes * Statistically significant at 5% level of significance.

Conclusion

This study provided an overview of sentiment analysis, text mining tools and natural language processing techniques in the tourism sector. The paper provided a base for analysing the sentiments of customers' perceptions about restaurant service. It also highlighted the difference between restaurants categories in terms of sentiment scores using an analysis of variance model. The developed sentiment analysis model for Dubai restaurants can also be extended to extract reviews related to tourism products such as accommodation, attractions and accessibility, with credible efficiency proving to be of greater utility to the tourism sector. The study has some limitations. It has used only limited data and only one sentiment analysis model, which is based on the lexicon approach. Hence it could not compare the accuracy of the proposed model with other models such as machine learning and deep learning models. Future research can focus on building a hybrid model which includes both lexi-

cons and the machine learning based model and so the accuracy of the predicted sentiments can be measured.

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Sustainable Innovation: Concepts and Challenges for Tourism Organizations

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Tourism companies are looking for new management strategies for helping to preserve their environment and generate positive effects in their social space. Sustainable innovation (SI) is the possibility that organizations must introduce changes, not only in products or services but also in their business model, to achieve a balance between economic, social, and environmental factors. The purpose of this article is to recognize the nature and scope of the existing literature in order to discover patterns of interpretation and lines of research, as well as to create a solid starting point for the academic and working community. We decided on a qualitative systematic review of articles identified in a scientific journal specializing in tourism, sustainability, and business management, using the classification contained in the Web of Science and Scopus databases. We filtered documents based on the criteria of relevance, considering the years from 2010 to 2020. This research includes five categories: business models oriented towards sustainable innovation, sustainable innovation: radical or incremental, dynamic capacities for sustainable innovation, role of stakeholders in sustainable innovation, and drivers of sustainable innovation.

Keywords: sustainable innovation, tourism organizations, sustainable business model

 https://doi.org/10.26493/2335-4194.14.175-187

Introduction

The crisis facing tourism due to the COVID-19 pandemic invites us to reflect on how this activity has been conducted (OECD, 2020b). Tourism has long been relevant for countries due to its main economic benefits; however, it should be recognized that it has generated negative impacts in social and environmental systems.

A more humane approach is required that pursues economic growth as well as human development and environmental conservation (United Nations, 2015).

In this sense, it is necessary that organizations, as an important element of the tourism system, also contribute to the challenge of these changes by seeking new forms of management that will allow them to remain in the market (OECD, 2020a).

Sustainable innovation (SI) is a recent academic topic still under construction, encompassing several meanings and conceptual approaches. There is still scarce literature regarding the relationship with tourism companies. Therefore, the main purpose of this article is to recognize the nature and scope of the existing literature to discover patterns of interpretation and lines of research, as well as to create a solid starting point for the academic and working community. We searched for a systematic review process in the databases Web of Science and Scopus, identifying that the studies are grouped into six categories that explain SI from different perspectives.

Most of the studies are in one of the two variables that make up the binomial, either in innovation or sustainability, and those that manage to integrate them are oriented towards the environmental sphere of the latter. Likewise, the context of the study is mainly applied to lodging companies, with other types of organizations yet to be included. This way, our research contributes to a greater understanding of the subject, rescuing future lines of research to strengthen the development of the tourism sector.

The paper consists of a theoretical section that explains the object of study. This is followed by the methodology that describes the process. Next, the results are shown according to each category. Finally, the conclusions and future lines of research are presented.

Sustainable Innovation: Theoretical Background

Schumpeter (1934) is recognized as the main researcher who consolidated the study of innovation by moving away from the classical paradigm and introducing a dynamic analysis coming from industrial change, which he called 'circular flow.' To Schumpeter, economic growth becomes a process of evolution, which does not come from the effect of external factors such as politics or the consumer but has an internal origin through innovation. Scilicet, it arises from within the company, which can even educate the consumer – if necessary – creating the need to obtain a new product (Olaya Dávila, 2008).

The concept of innovation that Schumpeter (1934) contributed is based on industrial production, and therefore, related to the production of new goods or even the same goods, but with different methods. He details five categories: (a) the introduction of a new product, (b) the introduction of a new method of production, (c) the opening of a new market, (d) the conquest of a new source of supply of raw materials or manufactured products, and (e) the creation of a new organization of any industry (Zuñiga-Collazos et al., 2019). Following this line, the organization acquires the leading role in creating innovations, such as the role of the entrepreneur when achieving a new dimension in the function that is being performed; or the individual who performs new combinations by fulfilling the task of innovating, but not the place in the hierarchy held by the individual within the organization (Olaya Dávila, 2008).

Another element in Schumpeter's (1968) conceptual construction is the term 'creative destruction,' recognizing it as the fundamental impulse that puts and keeps the capitalist machine in motion, because profit resulting from successful innovations generates the creation of new companies, which in turn, also originate a complete reordering of the industry's structural framework. To this end, the organization plays a leading role and professionalizes research and development (R&D) activities, which can be within the business unit or outside, through technological research centres or universities (Olaya Dávila, 2008). However, a new meaning has been found for the innovation concept from its social focus, developed during the seventies with greater precision (Hernández-Ascanio et al., 2016).

Social innovation stems from the need to achieve development with a more humanistic bent. Search is based on exploring and generating new ideas that help to achieve an inclusive society and a good quality of life. Opportunities revolve around education, health, employment, family, community life, gender equity, and environment, considering not only access to these but also quality (Quandt et al., 2017). These new practices to address social challenges have a positive influ-

ence on individuals and organizations, gaining importance by transcending from the economic to the social value (Vega Jurado, 2017).

The European Commission (2013, p. 6) conceptualizes social innovation as 'the development and implementation of new ideas (products, services, and models) to satisfy social needs and create new social relationships or collaborations. It represents new answers to social demands that affect the process of social interactions, oriented to improve human well-being.' The main goal is to find answers to social problems by identifying and delivering new services that improve the quality of life of individuals and communities (OECD, 2011). Social innovation is not exclusive to a specific economic sector. In public organizations, it acquires importance for the development of public policy, attending to social needs and helping to generate more innovative and efficient environments for those that already exist, even to encourage the productive sector (Alonso-Martinez et al., 2015).

In business, this means more than quality products and reliable services. It requires organizations to contribute positively to improve the conditions of society by returning part of the economic benefit, and having an ethical, collaborative, and socially responsible behaviour (Hernández-Ascanio et al., 2016). In this sense, the company plays a fundamental role as a generator of social change, and although this is not its main goal, it can be motivated to acquire visibility in the market, as well as a response to generating new business models oriented to get economic value and satisfaction of needs (Alonso-Martinez et al., 2019; Boons & Lüdeke-Freund, 2013).

In environmental terms, innovation is found in several concepts such as eco-innovation, environmental innovation, ecological innovation, and green innovation. These terms are used interchangeably and were born as a response to the complex environmental situation experienced worldwide. Their indicators are related to forest destruction, depletion and pollution of water resources, loss of biodiversity, or impact by global warming (Velázquez Castro & Vargas Martínez, 2014).

Because of this, the concept of eco-innovation acquired visibility, in economic policies and the business world, being considered as an important strategy to reduce environmental impacts generated by various economic activities. The OECD (2009, p. 13) points out that it is the creation of new or significantly improved products (goods or services), processes, marketing methods, organizational structures, or institutional arrangements, which (intentionally or not) produce environmental improvements.

For Carrillo-Hermosilla et al. (2010), eco-innovation is intended to improve environmental performance and as a side effect, could also reduce production costs. It can also be developed by external factors such as regulatory pressures and the market, or by internal factors such as efficiency, environmental culture, adoption of certifications, and business performance (Bonzanini Bossle et al., 2016).

Specifically, eco-innovation is interpreted as any type of innovation that is oriented towards sustainable development and economic progress, through the responsible and efficient use of natural resources, which ultimately allow a balance between business and nature (Peiró-Signes et al., 2011). Although the terms *eco-innovation* and *SI* are often used synonymously, the former refers to the environmental and economic dimension, while the latter is a broader definition that integrates ethical and social aspects (Kneipp et al., 2019).

SI, as an object of study, is still in an incipient stage and is supported by different disciplines for its theoretical-conceptual construct (Ratten et al., 2020). It combines two opposing terms, the conception of innovation which is related to change, destruction, or transformation, and on the other hand, sustainability which leads to the notion of preservation (Alderin & Do, 2016). Under this understanding, their union implies the development of innovations in all spheres of life and its environment.

Thus, SI suggests that innovation processes are no longer only related to economic objectives but also to environmental and social ones (Boons & Lüdeke-Freund, 2013; Cillo et al., 2019; Kneipp et al., 2019). For Szekely and Strebel (2013), SI is the creation of something new that improves performance in all three dimensions of sustainability, and it is not limited to technological changes. It also includes changes in pro-

cesses, operating practices, business models, thinking, and organizational systems. This implies that organizations improve social and ecological externalities while remaining financially viable (Dyck & Silvestre, 2018).

It could be summarized that SI in companies is the synergic and inseparable integration of the economic, social and environmental, which allows reaching objectives related to sustainable development while remaining competitive and financially profitable (Dyck & Silvestre, 2018). However, even though there is great awareness, companies are still reluctant regarding its implementation, considering it more expensive than conventional innovation since it requires high investments in technology, generating uncertainty and ignorance of the needs of the future market. Therefore, faced with this situation, the role of companies is to break with old paradigms and face new and more complex methods (Alderin & Do, 2016).

Therefore, SI offers companies the possibility of transforming themselves and aligning their operations with the objectives of sustainability under a precise observation of multiple factors, both internal and external, that allow the reduction of uncertainty and differentiate between good sustainability practices and products that are disseminated as sustainable. Up until now, there has still been insufficient demand, lack of dissemination, and little market adaptation (Fichter & Clausen, 2016).

Methodology

Although there are several methodologies for literature review, we opted for the qualitative systematic review, which allows the identification, selection, and evaluation of relevant research on an object of study (Paré & Kitsiou, 2017). It differs from other methodologies by developing a protocol in stages or phases for each of the activities carried out. Additionally, a description of the studies is added to discover patterns, barriers, and trends from the perspective and interpretation of the authors (Sobrido & Rumbo-Prieto, 2018; Templier & Paré, 2015).

Initially, we defined the research question: What is the nature and scope of the existing literature on sustainable innovation in tourism? The second stage considered the literature search based on inclusion and exclusion criteria, including articles with the following features: (a) thematic coverage, obtaining the most comprehensive review possible through the important scientific journals; (b) representativeness in the field of tourism business knowledge; and (c) the period of publication from 2010 to 2020, revealing the most recent knowledge, trends, or new patterns of interpretation. As exclusion criteria, we discarded editorials, prefaces, and book reviews.

A document search was performed using keywords in English, although it included articles in Spanish, considering 'sustainable innovation' as the main keywords and 'tourism,' 'tourism organization,' and 'sustainable business model' as secondary keywords. The databases with the greatest concentration of documents related to the object of study were Web of Science and Scopus. We considered their importance at an international level and their rigorous evaluation criteria.

For the third stage of evaluation and selection, we eliminated repeated articles. Then, through the review of the abstracts, we determined their relevance, separating those that were not related to the business sector and that did not contribute to the knowledge of the object of study. Finally, the full text was reviewed, including articles from bibliographic references, leaving a total of 63 documents (Figure 1).

In the last phase, we extracted data and prepared a bibliographic matrix for its classification. After analysing the documents, we defined five categories: (a) business models oriented towards sustainable innovation, (b) sustainable innovation: radical or incremental, (c) dynamic capacities of sustainable innovation, (d) role of stakeholders in SI, and (e) drivers of sustainable innovation (Table 1).

Results

Business Models Oriented towards Sustainable Innovation

This topic is the most recurrent in SI research. The content of this topic considers the customer as a core aspect of business models, management methods, and value proposition (Teece, 2010). Following this line, some authors emphasize that conventional business

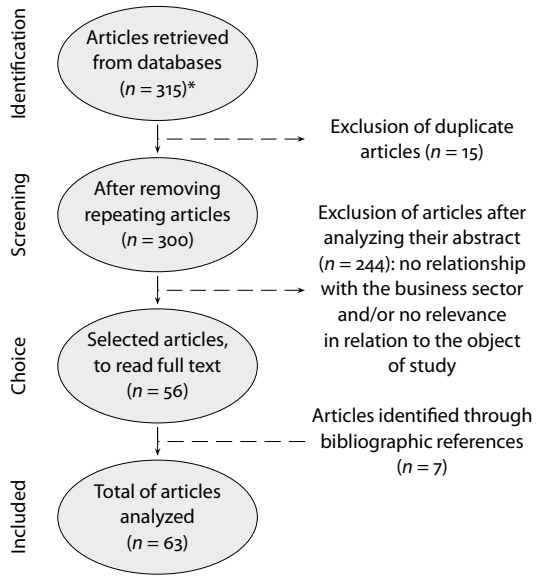

Figure 1 Flow Diagram of the Literature Review (* 210 articles from the Web of Science and 105 articles from Scopus)

Table 1 Articles Classified by Category

Category	Frequency	Percentage
Business models oriented towards sustainable innovation	11	17.5
Sustainable innovation: radical or incremental?	7	11.1
Dynamic capacities of sustainable innovation	15	23.8
Role of stakeholders in sustainable innovation	10	15.9
Drivers of sustainable innovation	20	31.7
Total	63	100.0

models characterized by the appropriation of organizational value, maximize unidirectional dimensional profits, without considering their externalities in social and ecological contexts (Schaltegger et al., 2015). Nevertheless, the company currently seeks to create competitive advantages by moving towards more dynamic and sustainable business models, using innovation to develop integrated solutions that radically reduce the negative effects on nature and generate positive effects on society (Geissdoerfer et al., 2018; Bocken et al., 2014; Bolton & Hannon, 2016).

Likewise, literature shows that business models can be redesigned under strategies that allow the generation of value through sustainability (Yang et al., 2017; Boons & Lüdeke-Freund, 2013). León-Bravo et al. (2019) propose two approaches: the first one suggests an evolutionary change where personnel, production processes, and technologies must be reinvented to integrate more sustainable products. The second suggests a retro-innovation rediscovery of traditional processes and values of environmental and social conservation. Thereby, the value proposal, the supply chain, the communication with the client, and the financial scheme become important when they are aligned with the sustainability spheres (Ratten et al., 2020; Rotondo et al., 2019).

Other studies recognize that SI is based on organizational culture, where companies make substantial transformations in line with their philosophy to better manage and evaluate their business model from a perspective based on the triple bottom line: cost reduction, sustainability, and competitiveness (Adams et al., 2016).

In the field of tourism, airlines were among the first companies to implement the concept of a sustainable business model by reducing the emissions of gases and noise that they emit into the environment. On the social side, they considered job satisfaction, which contributed to customer satisfaction resulting in increasing profits (Rotondo et al., 2019). However, not all sustainable business models manage to be successful. Some studies point out that most sustainable innovations do not prosper until they are tested in the market. It is at this point when companies decide to take them up again and apply them in organizations (Rotondo et al., 2019).

Sustainable Innovation: Radical or Incremental?

Research shows a dispute whether SI should be incremental or radical. In the face of this argument, it is stated that most sustainable innovations made by companies are incremental because there is still not a large market for sustainable products and services (Kneipp et al., 2019).

It is also considered that organizations can develop SI through radical or incremental changes since both types of innovation contribute to sustainability and can lead to a long-term competitive advantage. In this sense, incremental changes allow the company to make gradual adjustments to existing activities and, with radical innovation, a new way of planning and managing strategies for the creation and capture of value is introduced, either to face a new challenge or to address an economic, social and environmental problem (Inigo et al., 2017).

Conversely, it is argued that incremental innovation is not sufficient to achieve the demanding goals of sustainability (climate change, biodiversity loss, poverty, to name a few). Rather, a radical change of an entire system is required (Carrillo-Hermosilla et al., 2010; Kennedy et al., 2017). Since radical innovation for sustainability can alter both production and consumption practices, achieving a substantial change in the market will impact natural and social preservation (Boons et al., 2013; Kuokkanen et al., 2018). In addition, its destructive characteristic of obsolete skills can contribute to the decline of traditional methods. So, with radical innovations, it is more likely to achieve an optimal configuration of the global system but one needs to consider that it represents great challenges (Wagner, 2012). In other words, although SI allows incremental changes to be made to favour sustainability in organizations, a true transformation would imply rethinking incremental innovations.

Dynamic Capacities of Sustainable Innovation

Studies show that SIS are dynamic organizational capabilities. This approach explains the ability of companies to restructure their internal and external resources and skills and in this way be able to quickly respond to changes in the environment (Teece, 2012; 2018). Miranda Torrez (2015) states that these strategic changes lead organizations to reach high levels of sustainable performance, even reaching proactive levels when competitive advantages are generated, forcing competitors to innovate sustainably. Other authors point out that the relationship between dynamic capacities and organizational routines influence innovation directly, achieving a greater degree of sustainability in tourism companies (Pace, 2016). This requires the identification and evaluation of knowledge opportunities, innovative technologies, and market solutions, which allow the mobilization of resources and skills to gain value in sustainability (Mousavi et al., 2018).

Along this line, dynamic capacities based on knowledge become relevant for the development of sustainable innovations, when the company orients its activities and processes to generate new knowledge and capacities and integrates external knowledge coming from the interested parties. This way, the collaborative practices of external knowledge with internal knowledge are fundamental for understanding the flows of new knowledge creation and innovation processes (Maines et al., 2019). Velázquez Castro and Vargas Martínez (2015) mention the importance of technological surveillance as one of the processes that convey information and knowledge to the tourism company, achieving innovations that contribute to sustainable business competitiveness through the connection of four functions: (a) surveillance, (b) plan and enable, (c) implement, and (d) verify and evaluate.

Some empirical studies, based on the dynamic capabilities, point out that each of them is integrated with elements or 'micro-foundations' that achieve SI. The elements that acquire bigger importance are the company's value propositions, outlining a business model that integrates ecological, economic, and social dimensions, and the coordination of a business ecosystem (Mousavi et al., 2019).

Shang et al. (2019, p. 3) introduced the concept of sustainable dynamic capacity, defining it as 'a corporation's ability to address rapidly evolving stakeholder expectations regarding sustainability.' This implies modifying the company's functional capabilities in pursuit of economic, environmental, and social competence. Research on dynamic capabilities and SI has regularly focused on the industrial sector, showing that research on services in tourism is particularly incipient (Bartocci Liboni et al., 2017). Authors such as Krizaj et al. (2012) and Delgado Cruz et al. (2016), consider that innovations in the tourism sector cannot be evaluated in the same way as in industry due to the nature of the services, observing that tourism com-

panies regularly resort to basic innovations (products, processes, and marketing), when they should innovate in business models to remain competitive and, above all, sustainable.

Studies of SI in tourism, particularly tourism companies, are regularly analysed from the perspective of their social, environmental and economic fields, and the most recurrent ones address issues related to products, processes, management, and marketing innovation, as well as institutional and technological innovations, there being a close interaction among the different categories (Hjalager, 2010). Likewise, organizational innovation, innovation strategies, technological innovation, knowledge management in innovation, and innovation models are analysed. Several of these topics are linked to pro-environmental actions that aim to create competitive advantages (Delgado Cruz et al., 2016). Also, the organizational structure, human capital, and collaboration networks are determinants for the development of the innovation capacity in companies (Delgado Cruz et al., 2018).

A study applied to the hotel sector found a link between the social relations of managers, knowledge, and the generation of dynamic capabilities for SI. These relations favoured the ability of companies to alter their resource base, improving access to information and knowledge to identify changes and allowing the company to adjust to environmental and social needs (Nieves, 2014).

Role of Stakeholders in Sustainable Innovation

The literature review provides evidence that addresses the role of stakeholders in the development of SI. SI is a complex process, that individual work alone could not trigger. So, the relationships and demands exerted by stakeholders (internal and external) can become the origin of social and environmental innovations (Alonso-Martinez et al., 2019; Ayuso et al., 2011; Juntunen et al., 2018; Rotondo et al., 2019; Schaltegger & Wagner, 2011).

Primary stakeholders (such as employees and customers) are those that have become more important for research purposes. However, some authors considerer that SI secondary stakeholders (e.g. NGOS, government, communities, universities) may be more relevant, as they are an important source for knowledge generation (Goodman et al., 2017). In contrast, there is evidence that the incorporation of secondary stakeholders does not support the momentum of SI. Instead of looking for many actors, attention should be paid to choosing the right type of parties, and the right time for their integration into the innovation process (Juntunen et al., 2018; Driessen & Hillebrand, 2012).

Goodman et al. (2017) analysed three roles that stakeholders play in contributing to SI, and depending on their actions, they may be proactive, reactive, or mixed. The first is when stakeholders stimulate or generate the idea of innovation while promoting greater use of the product. The reactive role is obtained when experience and feedback are provided to make the product more attractive, when assistance is given to build credibility and trust, educating the public on social and environmental issues related to innovation. Finally, the mixed roles are achieved when enabling collaboration among stakeholders or participating in the reconstruction of policies that allow innovation to flow.

The relationship with stakeholders poses new challenges when trying to reconcile the different interests, characteristics, and objectives pursued by each of them (Ferrero-Ferrero et al., 2018; Kazadi et al., 2016). Because of this, it is suggested that companies develop internal capacities that facilitate their integration and commitment, promoting greater innovation and balance among social, economic, and environmental aspects (Rhodes et al., 2014), as well as the integration of a good team of stakeholders (Bal et al., 2013).

Drivers of Sustainable Innovation

Another group of studies refers to the drivers of IS, which can improve the performance and innovation capacity of companies. In this sense, innovations regularly arise from qualified and motivated employees, research, and development processes (R&D) (Ketata et al., 2015). There are influential external factors that put pressure on stakeholders to demand products produced under sustainable processes, such as regulatory government policies or financial support provided for their development (Ketata et al., 2015; Pellegrini et al., 2019; Sirirat & Lamin, 2019).

A line of empirical studies analyses the capacity for SI with a strategic orientation. This orientation is offered in three areas: (a) customer, (b) competition, and (c) technology. The role that consumers play in affecting the capacity of SI is of utmost importance, as they use their added value as a lever to improve the environmental innovation capacity of their companies (Tseng et al., 2019). Technologies are extremely important in the environmental sphere of tourism enterprises, innovating in energy efficiency, water use care, and waste management, among others, seen as an essential part of the sustainability strategy in the hotel industry (Chan et al., 2020).

Along the same lines, theoretical models associated with innovation, environmental marketing strategy, and the organizational environment are developed for the growth of sustainable innovations in hotels, finding that there is a close relationship among them. Thus, the business's reputation can be strengthened through its environmental marketing strategy. However, this is suggested not to consider the preference of customers as the only reason for adopting sustainable initiatives, but to understand the holistic benefits that are generated in the long term (Horng et al., 2017).

Research has shown that hotels are reluctant to adopt environmental technologies, even though they can reduce their operating costs, improve their image and contribute to the sustainable development of tourism. Chan et al. (2020) identified seven barriers: (a) environmental viability in terms of feasibility and costs; (b) lack of knowledge and uncertainty about the benefits of green technologies; (c) monopolized after-sales service due to high maintenance costs; (d) government and initial support for the adoption of environmental technologies; (e) customer experience in choosing to purchase; (f) shortage of skilled labour; and (g) finance. Simultaneously, other studies address the drivers of SI in hosting companies and airlines, identifying regulatory compliance and brand positioning as ways to implement innovations around the preservation of natural resources (Dibra, 2015; Horng et al., 2017; Mousavi et al., 2018).

SI is largely related to entrepreneurship, since entrepreneurs are corporate leaders who see the opportunities in sustainability, and thus contribute to solving complex social and ecological problems, which in turn act as a catalyst for transformation (DiVito & Ingen-Housz, 2019). In the social sphere, research on innovation drivers in tourism highlights the entrepreneurial nature of creating job opportunities (Alegre & Berbegal-Mirabent, 2016), ethical behaviour (Vargas Martínez et al., 2018), and the participation of communities as a key agent for the development of tourism destinations and their quality of life (Maleka & Costa, 2014). Also, the network collaboration for the sustainability of large and small businesses is analysed, achieving an improvement in the quality of life of communities (Carlisle et al., 2013).

SI maintains a relationship with the size of the company; large companies, technologically sophisticated, with innovative characteristics, and with international operations, generally include sustainability in the innovation of their products and processes. In addition, they make social investments focused on food, training, and assistance for the family, while investments of an environmental nature are oriented to the reduction of environmental impacts, decontamination programmes and projects, environmental audits, and certifications. However, these are not reasons that motivate them to innovate, such as economic objectives and market position (Gomes et al., 2011).

Other studies recognize that a company's ability to implement SI depends on its financial situation and its willingness to change. Large companies generally have the resources to act, helping their global competitiveness, while small companies lack financial resources to be sustainable, although, if they are innovative, they will seek options to overcome economic obstacles in other ways (Ratten et al., 2020). In a significant relationship between SI and the success of an organization, empirical studies show that the adoption of SI practices is associated with business performance, contributing to superior corporate behaviour, as well as generating competitive advantages in the social sphere (Maier et al., 2019; Kneipp et al., 2019).

On the other hand, the implementation of inclusion strategies within government sectors for planning or financial support encourages companies to develop sustainable products and services (Davies & Mullin, 2010). Some companies implement SI to reduce pro-

duction costs, resource optimization, and process efficiency, thus increasing profitability and environmental benefits (Van, 2019; Vinci et al., 2019); governance strategies are also being led to promote innovations in all areas (Lupova & Dotti 2019).

For Vos et al. (2018), companies can perform better in SI through organizational learning; since it allows them to recognize the value of new information, assimilating and applying it in such a way that knowledge will allow companies to adapt to the heterogeneous needs of the client and at the same time, mitigate the ecological and social impact.

Conclusions and Further Research

A big part of the research on SI is associated with factors that impel it from the inside and outside of the company. When a company develops IS, usually the results coincide with economic aspects, acquiring economic value or profitability, derived from the sale of products as well as cost reduction. Another factor is the constant search for customer satisfaction around sustainable products. Similarly, the size of the company is influential, since large companies regularly have financial capabilities that allow them to innovate sustainably to develop competitive advantages and achieve market position (Ratten et al., 2020).

It is important to note that most studies have focused on industrial companies, so studies of the service sector have not acquired relevance, specifically those of the tourism sector (Bartocci Liboni et al., 2017; Hjalager, 2010). Therefore, as it is an incipient field of study, it is necessary to develop future research that will allow tourism companies to identify opportunities through which they can contribute significantly to environmental care and the development of a better society in the destinations where they are settled (Delgado Cruz et al., 2016).

The innovation diffusion theory has been used as a way of propagating SI in the tourism enterprise, since it consists of evaluating an innovation in order to adopt or reject it (Dibra, 2015), which facilitates its implementation due to the nature of the service it offers.

Empirical studies show that the general behaviour of tourism enterprises is unsustainable because tourism business management is dominated by short-term economic objectives, which implies a great concern that leads to the need to investigate proactive change in practices to contribute to sustainable tourism development (Velázquez Castro & Vargas Martínez, 2015). SI has not yet been able to fully integrate itself into the studies of tourism businesses. There is much research performed on innovation in each of its spheres (environmental, social, economic) but separately. It also shows that, within these business innovation capacities, it has not been developed as industry has.

Social and environmental problems are setting the tone to rethink tourism practice and its management. It is necessary to understand that true tourism development is not only economic but also social and ecological. Enterprise, as part of the tourism system, plays a fundamental role as a promoter of change. SI represents the opportunity to reinvent itself and face the challenge of generating more complex organizational structures, with greater knowledge and learning than conventional business models.

Thus, this research acquires relevance by introducing contributions around the tourism sector, since the knowledge gap is wide and the field of tourism needs to be strengthened. SI studies associated with the participation of stakeholders in the creation of new environmental and social values and practices are needed. On the other hand, research shows that large companies are more likely to develop IS, motivated by the search for competitiveness, market positioning, and cost reduction. Meanwhile, small and medium enterprises are reluctant; the challenge is to strengthen these companies in the development of their innovation capabilities.

Another line of research is related to the management of internal and external knowledge and the influence that SI has on the ability of organizations to become intelligent since one is not only intelligent for possessing advanced technology but also for taking care of the environment and contributing to a better social lifestyle. This could include studies that guide the handling of information and the performance of internal collaborators once the organizations have acquired the interest to innovate sustainably. One more line of research would be linked to dynamic capacities

as a mechanism for tourism companies to identify the opportunities offered by the environment and to trigger a greater propensity towards SI.

In the public sector, SI is fundamental for the implementation of successful policies and projects, and for generating conditions that encourage tourism companies to develop sustainable innovations, which could lead to better development of tourism destinations and host communities. Finally, it is recognized that this study has certain limitations because it only explores scientific articles and does not consider other important sources of information such as patents, manuals of international organizations, and information from innovative institutions, that could be enriching for a broader understanding of the object of study.

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Original Scientific Article

Big Data Analysis of Sustainable Tourism Competitiveness in East Java Province

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East Java Province is known as one of Indonesia's regions that has succeeded in increasing their regional economic growth through tourism activities. The study's aim was to analyse East Java Province's sustainable tourism competitiveness potential using review data from the TripAdvisor website in 2019. TripAdvisor reviews are examples of big data for qualitative research that provide information about particular tourism competitiveness, like demographic condition, destinations characteristics, and tourism preference. This research chooses three tourism destinations with high competitiveness in East Java, namely: Jatim Park 2, Ijen Crater, and Bromo, Tengger, and Semeru National Park (BTSNP). Tourism activity in East Java has high competitiveness and sustainability. This research found that the sustainable tourism activity with high competitiveness can not only be applied to nature-based tourism destinations, such as Ijen Crater and BTSNP but also to artificial tourism like Jatim Park 2. Suppose the related stakeholders can explore and manage them well. In that case, tourism activity in East Java Province can extend tourist spending, their length of stay and finally increase regional income in East Java. To accomplish this goal, we provided four recommendation to related stakeholders in the shape of strategic policies to increase competitiveness capability and economic activity in the East Java Tourism Area. These are the following four strategies: tourism business levelling, local common tourism brand-enhancing, local tourism integration, and cashless transaction promotion.

Keywords: big data, tourism competitiveness, East Java, sustainable tourism

 https://doi.org/10.26493/2335-4194.14.189-203

Introduction

The tourism sector has been one of the relatively stable sectors in regional economic growth, especially in the 4.0 industrialization era (Industry 4.0 era). There are a group of young people called 'millennial travellers,' known to have a significant role in provoking tourism activity (Poerwanto & Shambodo, 2020). Subarkah (2018) also declared that millennial travellers significantly contribute to the regional economy about 101 USD to 500 USD by visiting tourism destinations around the particular area. The Ministry of Tourism and Creative Economy of Indonesia (2020) measured the high demand from the millennial generation in Indonesia, roughly about 5.5% or 2.8 billion Rupiah of the Indonesia National Gross Domestic Product (GDP). The related stakeholders, especially the gov-

ernment, are trying to develop many potential sites into tourism destinations to meet that demand. One of the Indonesian regions that is intensively developing many possible areas into tourism sites is East Java Province.

In this province, the tourism industry is known as 'The Awakening Giant,' because East Java has a massive amount of natural and social resources that can be turned into tourism activity to attract suitable investors (Ministry of Communication and Informatics, 2019). Therefore, most cities and suburbs in East Java Province have their own local tourism destinations to increase their local economic growth, such as Jawa Timur Park, an amusement park in Batu City, or Purwodadi Botanical Garden in Pasuruan Regency. Besides local tourism destinations, several tourism destinations are developed and promoted in the international tourism market, such as: Bromo, Tengger, Semeru National Park (BTSNP) and Ijen Crater. These two destinations are mentioned in the Medium-Term National Development Plan 2020–2024 as two of ten Indonesia priority tourism destinations.

The tourism sector growth in East Java Province was shown from East Java overseas visit data through Juanda International Airport and Room Occupancy Rates of star hotels data in East Java. In March 2019, foreign tourist visits to East Java Province increased by 22.8% (21,565 visits) from February–March 2019 (17,561 visits). The Room Occupancy Rate of star hotels also showed growth by 0.82% in March 2019 (Central Statistics Agency of East Java Province, 2019). To anticipate and utilize the growth of tourism sectors in East Java, the regional government has tried to develop East Java Province tourism activity using a cluster system. Based on the Presidential Regulation of the Republic of Indonesia in Article 80 year 2019, the development of East Java tourism activity was divided into two cluster areas, which are the Bromo-Tengger-Semeru (BTS) Priority Area and Ijen Supportive Circular Area, as stated.

East Java Province tourism sector development was centred in the BTS priority area as the core area. This area has a high potential for nature-based tourism, such as ecotourism, agrotourism, educational tourism, and marine tourism. The development of the BTS priority area as a tourism site was supported by the Ijen Supportive Circular Area. Ijen Supportive Circular Area has a similar demographic to the BTS priority area and is famous as a tourism site because it has three tourism destinations known as *Segitiga Berlian* (The Triangle of Diamond). These three destinations are Ijen Crater, Sukamade Beach, and Plengkung Beach (G-Land). Besides these three main destinations, Ijen Supportive Circular Area also has various terrestrial reliefs that could potentially become tourism areas, like highlands, mountain ranges, volcanoes, hills (Ijen and Raung Mount), and lowlands and coasts (Suhato, 2016).

Figure 1 Priority and Supportive Area of East Java Province Map

The development of the Ijen Supportive Circular Area was undertaken to support the BTS priority area by attracting tourists that visit Bali Island to visit tourism sites in East Java Province (Bank Indonesia, 2020). To accomplish that goal, the related government has tried to develop new tourism destinations around BTS and Ijen, such as Marina Boom in Banyuwangi Regency or Edelweiss Village in Wonokriti Village (Nanda, 2018; Wibowo et al., 2019). By developing tourism potential in East Java Province, the related government is not only aiming for regional economic growth but also economic equity in East Java Province rural areas.

One city that successfully grew as a modern tourism industrial area in East Java is Batu City. Batu City successfully developed its area through tourism activity and positively impacted the local community's

economy by allowing them to participate in voluntary activities, like maintaining cleanliness, security, and tourism destination promotion (Nurhayati, 2009). One of the most favoured tourism destinations in Batu City is Jatim Park (Jawa Timur Park), especially Jatim Park 2. Jatim Park 2, also known as Batu Secret Zoo, is a tourism destination in East Java Province recommended by TripAdvisor as one of Batu City's must-visit tourism destinations (TripAdvisor, 2020a). Not only that, many positive reviews from local communities and visitors to Jatim Park 2 also support this fact through word-of-mouth promotion (Aprilia et al., 2015). According to this fact, Jatim Park 2 is known as an ideal artificial tourism destination that has positively influenced the East Java community's social and economic environment.

Based on the case of Jatim Park 2 reviews in TripAdvisor, we can conclude that social media has a high impact on tourism sectors. Suanpang (2020) and UNWTO (2020) also stated that social media such as TripAdvisor, Instagram, and Facebook played an important role in tourism competitiveness in 2020. This phenomenon happened because many visitors tried to tell other people about their experience at some tourism sites using social media. These experiences, written in social media, are called 'tourism reviews' and cover tourism destination competitiveness such as accessibility, facilities, and environmental conditions (Xiang et al., 2017). Many people can access these reviews and use them for many purposes like accommodation preference or government policy consideration. By using them for research purposes, tourism reviews can be classified as specified big data because textual-style data like social media reviews can represent the emotions, perspective, and feelings of a visitor during their visit to specific tourism destinations (Li et al., 2018).

According to previous research, social media reviews can influence tourism destinations' competitiveness. Menk et al. (2018) and Schuckert et al. (2015) stated that social media positively impacts tourism destination competitiveness through data exploration. The potential consumers (travellers) usually do some online research before visiting a particular destination based on their preferences. Using social media, potential visitors try to find their preferred tourism site based on their budget and provided activity (Giglio et al., 2019). If stakeholders like the government or local communities can process this data very well, they can use it to make appropriate and suitable tourism development strategies. For example, nature-based ecotourism needs tourism strategy and activity to increase tourism and the economy. Still, it needs to have a low negative impact to avoid exploiting the ecological environment and social capital around tourism destinations (Sunardi et al., 2019).

Based on that fact, this research was conducted to observe East Java Province tourism sustainable competitiveness using social media TripAdvisor review data in 2019. This study focused on three major tourism destinations: Bromo Tengger Semeru National Park (BTSNP), Ijen Crater, and Jatim Park 2. All three destinations were selected due to their appearance in the top 15 TripAdvisor-recommended tourism destinations in East Java, their positive impact on the local community, and site location (President of the Republic of Indonesia, 2019; TripAdvisor, 2020b). The result of this research is expected to support related parties in maximizing East Java tourism competitiveness. By maximizing tourism competitiveness in East Java Province, in the near future, tourism sectors will come back and give the positive economic impact to East Java regional GDP and can be counted as one potential sector with a high resilience and growth after COVID-19 era.

Literature Review

Sustainable Tourism

Sustainable tourism is a tourism activity that integrates economic activity with social and natural capital around the destination (Tsaur et al., 2006). The tourism destination, from this perspective, should include local cultural identity as the main attraction without sacrificing tourist protection, satisfaction, and the environment around the destination. That is why sustainable tourism activity development should be undertaken based on socio-economic aspects following regional and national economic development growth in the destination area (Pavlic et al., 2019). Most of the time, sustainable tourism development in

particular destinations was undertaken as a regional or national sustainable development policy project. The related stakeholder tried to preserve biodiversity and social capital in the surrounding area through sustainable tourism activity. Sustainable tourism activity also positively impacts the local community in social and economic sectors by increasing their income, and reducing poverty and the unemployment rate around tourism destinations (Tung & Cuong, 2020).

For some time, economic and social impacts on local people have been considered as tourism destination long-term guarantees to maintain tourism activity and tourist satisfaction at tourism sites (Nestoroska, 2012). The concept of a sustainable tourism destination is known to maintain tourist satisfaction for returning and newcomer tourists due to their management trying to provide diverse experiences and satisfy tourists. The sustainable tourism concept is commonly known as a tourism management commitment to managing all kinds of resources in destination areas for the economy, and social, and environmental purposes (Hassan, 2000). This commitment is represented in management, tourist, and government acts to preserve local culture, ecological cyclic processes, biodiversity, and other life support systems. Sustainability in tourism sites can only be achieved when every stakeholder, including tourists and local communities, can actively participate in sustainable activities and destination decision-making. This activity will positively enhance the tourism activity experience and raise sustainable tourism awareness for tourists, local communities, and other related stakeholders (Sasidharan & Krizaj, 2018; Wibowo et al, 2019).

Digital Tourism

Digital tourism, or e-tourism, is known as the integration of Information and Communication Technology (ICT), especially the internet, in the tourism industry (Yanti, 2019). Putra et al. (2018) stated that tourism destinations could be introduced digitally to improve their competitiveness by creating content and spreading it digitally through social media, websites, television, or another digital platform. This method, called 'try-before-you-buy' can help tourist candidates to get a more realistic experience before deciding to visit a particular destination (Gretzel et al., 2020; Heliany, 2019). In exchange, the related stakeholders can promote their destination in a broader range but with lower cost and more targeted traffic (Putra et al., 2018; Yanti, 2019).

Indonesia's government considers digital tourism as a promotion strategy to improve Indonesian tourism competitiveness among domestic and overseas tourists (Putra et al., 2018). To realize that purpose, the Indonesia Ministry of Tourism and Creative Economy applied three main policies: Wonderful Startup Academy, Nomadic Tourism, and *Destinasi Digital* (digital destination) (Heliany, 2019). Through that programme, the government and stakeholders could communicate and maximize the implementation of all three main programmes to improve Indonesia's economic growth through the tourism sector. This policy implementation has also been followed by a new supporting policy related to tourism destination business licenses owned by stalls around tourism destinations, tourism information accessibility, and other tourism activities.

Tourism Competitiveness

Tourism competitiveness is known as the capability to attract tourists to visit and revisit a particular tourism destination. The tourist revisit is one aspect of the tourism destination competitiveness to maintain their popularity in the tourism industry (Chin et al., 2014). The parameters to measure tourism competitiveness are environmental, social, cultural, political, and technological aspects (Blanco-Cerradelo et al., 2018). Tourism competitiveness measurement is taken to determine the impact of tourism factors, such as hospitality, commonwealth improvement, and local community education level, especially sustainable tourism awareness among youth of a particular destination (Blanco-Cerradelo et al., 2018; Minciu et al., 2010). By analysing these various factors, the management party might determine a proper strategy to improve the destination's competitiveness, for example, by making an adequate branding that is easily recognized, like 'Wonderful Indonesia,' the iconic tourism branding from Indonesia (Chen et al., 2016).

Sunaryo (2013) states there are many components

that can be used to measure tourism competitiveness. Blanco-Cerradelo et al. (2018) measured tourism destination competitiveness based on destination attraction, welfare, and sustainability in their research. Zhang et al. (2011) described that tourism competitiveness could be measured based on tourist demand and supply in the tourism market. In Indonesia, there are five main parameters used to measure local tourism competitiveness. The parameters consist of attraction, accessibility, supporting facilities, information and communication, and institutional (Sunaryo, 2013).

Big Data

Big data is classified as large-scale heterogeneous data that increases every day and consists of various types of data (Sowmya & Suneetha, 2017). Praveen and Chandra (2017) classify big data into three types: structured, unstructured, and semi-structured. Due to its data variance, big data is managed through specific processes as needed in research. If big data were mismanaged through an improper process, the data would be useless for research purposes (Kusumasari & Rafizan, 2018). Tourism research usually uses structured data from social media data like reviews, posts, and comments because this data has a unique characteristic that is needed for academic purposes (Praveen & Chandra, 2017).

In previous research, big data was used to determine tourism competitiveness through tourist experience reviews (Xiang et al., 2017). Many studies state that social media data is more accurate than questionnaire data for tourism research because the respondents write the review based on their experience when visiting the destination (Aydin, 2020; Sabiote-Ortiz et al., 2016; Sun et al., 2016). The other advantage of using social media data is that almost all of the social media data (reviews, photos, status, etc.) were written at that moment or almost in real-time by the user (Mohamed & Al-Jaroodi, 2014).

The big data paradigm in tourism research is frequently formed as a framework of the smart tourism destination. This framework consists of three steps, namely data collection, interconnectivity, and data analysis. Through this big data framework, the study result is applied to establish new physical infrastructure, social networking, and business model strategies to enhance the efficiency of destination competitiveness and increase the positive value of tourism activity to the related stakeholders (Gretzel et al., 2015).

Methods

This research was done through a qualitative approach consisting of data collection, analysis, and interpretation through observation (Hussein Jaddou, 2007). This research data was analysed based on the sentiment analysis concept using 'NVIVO 12' tools.

Through NVIVO 12, the data was classified and mapped into the specific topic based on the sentiment approach (positive, negative, and neutral). The result of the sentiment analysis processed data was used to describe the research result clearly as needed (Ye et al., 2009).

This study uses secondary data of BTSNP, Ijen Crater, and Jatim Park 2 tourist reviews from TripAdvisor in 2019. This data was collected using the text mining method, which is a method to gather valuable information for analysis purposes. This type of analysis is applied to collect precise and explicit information that is briefly preserved to be analysed using a computer or manually analysed by the researcher (Sari, 2020).

The study aimed to present a recommendation about tourism development policy that promotes the competitiveness, uniqueness, and inclusivity of East Java Province. Figure 2 shows the flowchart of methods to achieve this objective. First, East Java Province tourism was identified comprehensively through the text mining method by the researcher. Then, after the potential tourism competitiveness was recognized, we tried to provide a recommendation policy based on destination potential that can be considered and applied to increased East Java tourism competitiveness in the future.

Results and Discussion

East Java Tourism Profile

We obtained 640 reviews written in 2019 related to BTSNP, Ijen Crater, and Jatim Park 2 tourism destinations through the TripAdvisor site that can be classified as structured big data. Table 1 shows that the Ijen

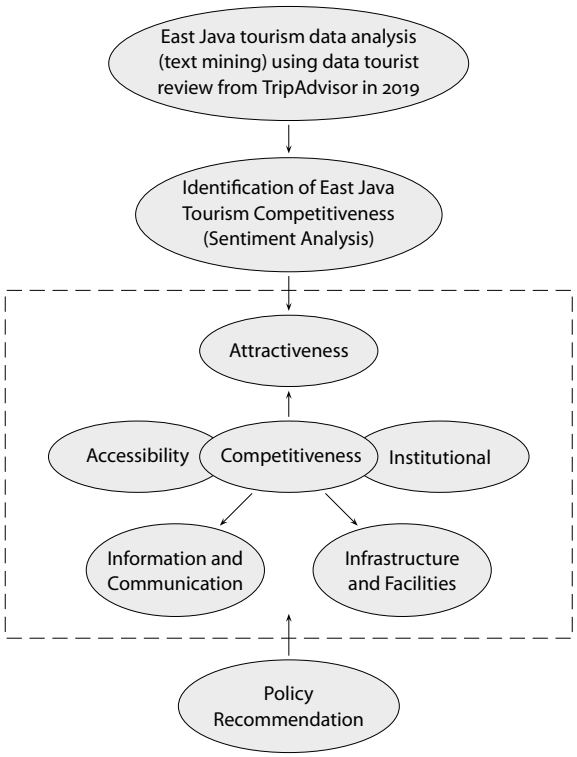

Figure 2 Conceptual Mindmap Flowchart

Crater was the most demanded tourism destination of East Java Province because Ijen Crater has the most reviews (245 reviews) in 2019, followed by Jatim Park 2, and finally BTSNP. Table 1 also shows that artificial tourism destinations like Jatim Park 2 have high competitiveness with the other nature-based tourism destinations in East Java because Jatim Park 2 has more reviews (205 reviews) than BTSNP (190 reviews).

Domestic tourists dominated high demand in East Java tourism activity. Table 2 represents Indonesia as the country with the most people visiting tourist sites in East Java Province, followed by Singapore, France, Malaysia, and Italy. Most domestic tourists in East Java Province came from outside provinces, such as from DKI Jakarta Province (from Jakarta City and Tangerang City) or Yogyakarta Province. The low rate of local East Java tourists shows a lack of interest in East Java tourism. Therefore, tourism competitiveness in East Java should be improved to meet the local tourists' needs and interests.

Table 1 East Java Tourism Reviews

Destination	Number of reviews
BTSNP	190
Ijen Crater	245
Jatim Park 2	205
Total	640

Notes Table 1 shows analysis from text mining processed data related to the BTSNP, Ijen Crater, and Jatim Park 2 tourism destinations on the TripAdvisor website in 2019. This data represented Ijen Crater as the most demanded tourism destination of East Java Province, followed by the Jatim Park 2 and BTSNP tourism destinations.

Table 2 Countries and Cities with Most Number of East Java Province Destination Reviews

Country or city	Number of Reviews
Indonesia	290
Jakarta	89
Malang	27
Surabaya	24
Tangerang	14
Yogyakarta	14
Batu	13
Bali	8
Bogor	8
Banyuwangi	7
Bekasi	6
Singapore	33
France	26
Malaysia	15
Italy	13

The high interest of outside East Java Province tourists shown in Table 2 was followed by another find. We found evidence that many tourists, especially domestic tourists, only spent their time visiting one of the three East Java tourism destinations before returning or taking a trip to another tourism destination outside East Java Province, like Bali Island. Figure 3 shows a map of tourism mobilization across Bali and Java Islands in 2019. According to this figure, we can assume Bali-Java tourists usually travel directly from Bali to

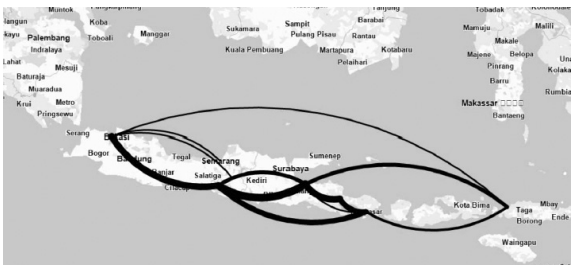

Figure 3 Java and Bali Island Tourism Mobilization in Indonesia

Yogyakarta, without visiting most of the tourism destinations in East Java. Despite the number of Ijen tourist visits, most of the tourists did not bother to visit other destinations like BTSNP and Jatim Park 2 when they passed through East Java Province.

Figure 3 shows most of the tourists skipping the leading tourism destination in East Java province. This evidence indicates that most East Java tourism destinations have lower tourism competitiveness than Yogyakarta and Bali Island. Asian and European tourists preferred to visit Yogyakarta and Bali Island instead of tourism destinations in East Java due to limited visit duration, lack of easy accessibility, insufficient supportive facilities, and low safety and health assurance. These weaknesses were commonly mentioned by tourists visiting East Java tourism destinations, especially tourism destinations in rural areas such as BTSNP. This weakness needs to be evaluated to identify East Java tourism competitiveness further and recommend a suitable policy. Thus, the policy is expected to support East Java tourism development with its distinct geographic condition, infrastructural capacity, and tourist and community needs in 2021.

Identification of East Java Province Tourism Competitiveness through Perspective Analysis

A single data or tourist review in TripAdvisor could be classified as more than one category label of tourism competitiveness factors (accessibility; attraction; information and communication; institutional and supportive facilities). One review about the particular destination in TripAdvisor usually consisted of many things that can be classified in various aspects of East Java tourism competitiveness, thus it must not be separated. Thereby, the number of data after being processed in the coding step usually has more data than the actual reviews data (640 reviews) (Table 3) (Rachmat & Lukito, 2016). Aside from that, the analysed perspective review was determined as a single labelled perspective (positive, neutral, or negative) (Bandur, 2016).

Table 3 shows the result of TripAdvisor reviews data after being processed through coding and sentiment analysis in NVIVO 12. The result shows that Ijen Crater is the most influential tourism destination in East Java Province tourism competitiveness compared to Jatim Park 2 and BTSNP. This interpretation was obtained from a comprehensive review analysis of coding data processing. The more particular tourism destination was review data was processed in coding step, then the more likely the tourist could share their experience about that tourism destination (with positive, neutral, or negative sentiments). In contrast, BTSNP had a low data processed in coding step, representing tourists' low enthusiasm to review BTSNP.

The results of the sentiment analysis processing data and interpretation in East Java tourism competitiveness will be explained based on five tourism competitiveness parameters below.

Accessibility

Accessibility of a tourism destination includes the transportation route support system, station, airport, harbour, and other types of transportation existence (Sunaryo, 2013). Based on reviews in TripAdvisor, accessibility significantly harms BTSNP competitiveness.

There are 54 reviews or 45.76% negative reviews related to Ijen Crater accessibility and 13 reviews or 31.70% negative reviews related to BTSNP accessibility. Many tourists write that the Ijen Crater and BTSNP have poor lighting conditions, and incomplete paving, with a form of zig-zag and uphill routes. This condition can be considered dangerous for new tourists, especially because almost all of the BTSNP and Ijen Crater tourism activities are done at night. The study showed that 151 of 245 reviews came from tourists that had taken trips to Ijen Crater at 1 am. A similar condition was founded at BTSNP. There are 178 of 190 re-

Table 3 East Java Tourism Competitiveness based on Sentiment Analysis

Parameter	BTSNP			Jatim Park 2			Ijen Crater		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Accessibility	7	21	13	3	11	6	15	49	54
Attraction	145	30	2	158	28	10	173	40	6
Information and Communication	24	35	11	35	46	7	41	101	23
Institutional	12	7	6	5	1	2	26	34	8
Supportive Facilities	14	42	14	91	19	6	30	80	11
Total		383			428			691	

Notes Column headings are as follows: (1) positive, (2) neutral, (3) negative. Table 3 shows analysis results from the coding sentiment analysis process in positive, neutral, and negative reviews based on BTSNP, Ijen Crater, and Jatim Park 2 tourism destination reviews from TripAdvisor 2019. The total number of coding and processed reviews was more than the actual total reviews (640 reviews) in Table 1. But the sentiment analysis result was the same with data from the coding process because every single review is only labelled once based on their sentiment characteristic.

views written by tourists who took trips at 0–2 am in BTSNP.

The poor accessibility of both destinations is reducing the East Java tourism competitiveness. The poor road infrastructural condition is harmful to tourists with private vehicles, like a motorbike. This condition is worsened by the infrequent schedule of public transportation, even in the day. Most of the tourists try to overcome these obstacles by hiring the service of a travel agency. However, tourists need to pay more for travel agency services, and many travel agency services in East Java Province try to defraud tourists by charging them a high price or asking them to pay excess costs when doing the trip.

On the other hand, we rarely found negative reviews related to accessibility in Jatim Park 2. This tourism site was considered to have high competitiveness in accessibility since tourists can easily come to Jatim Park 2 using public transportation, private transportation, or mass transportation like a bus. This accessibility was also enhanced with the operation time of Jatim Park from 10 am to 5 pm, which provides higher safety and accessibility than BTSNP or Ijen Crater. Despite having that advantage, Jatim Park 2 sometimes gets negative reviews due to traffic jams in Batu City during the high season (December–January and July). This disadvantage had prevented tourists from visiting Jatim Park 2 at particular times.

Attraction

Attraction in tourism destinations consists of natural, cultural, and artificial resources that have been used to attract tourists (Sunaryo, 2013). In 2018, there were 265 natural-based destinations, 320 cultural-based destinations, and 199 unique interest destinations in East Java Province (Bureau of Cultural and Tourism of East Java, 2019). Most of the tourism destinations in East Java Province are natural-based tourism, such as BTSNP and Ijen Crater. Usually, tourists visit this type of destination just once for hiking, sunrise seeking, and to get a photographic experience. Many tourist come to natural-based tourism on particular time like in dawn for sunrise or dusk for sunset. Because many of them considered natural-based tourism as monotonous tourism activity, only looking to the nature like sun, mountain, or forest without doing another tourism activity, which that can prolonged their leght of stay. This typical tourist behaviour potentially harms the destination environment due to many tourist shortcomings at a specific area and time that exceeds environment capacity.

However, special interest tourism like Jatim Park 2 has more advantages because they have various attractions and activities. Much artificial tourism in East Java has a high demand from tourists that come from various regions. The management and related stakeholders can spread the tourists to many areas and

avoid them piling up in one particular area. The other type of negative review that needs more attention due to high negative sentiment is weather conditions in East Java Province. Many negative reviews related to attractions in East Java Province were due to rainy weather when they came to the tourism site. This review showed that most of the tourism destinations in East Java were dominated by outdoor tourism activity and greatly influenced by the weather. The related stakeholders need to consider this condition when developing a tourism destination in East Java Province.

Informatics and Communication

Information played a significant role in introducing the advantages of tourism destinations through social media (Heliany, 2019). Many tourists prefer to visit tourism destinations with information that is easy to find digitally, like on social media or websites. This advantage is caused by the matching search option of tourist preference on the internet (Gretzel et al., 2020). For example, tourism destinations were matched and classified by the budget, online ticketing, or practical trip when tourists travelled using a travel agency service.

Figure 4 is an analysis result graph called a word cloud, related to the information and communication-related category. In this figure, we found many significant keywords that often appear in the reviews, such as operational hours, guide, experience, location, price, worth, and ticket. The bigger the word in the picture, such as 'guide' or 'hours,' means that everything related to that word, such as 'tour guide' or 'open hour,' has a more significant influence on the information and communication category.

Information transparency and good communication between government, tourists, investors, the local community, and tourism managers have significantly influenced East Java tourism competitiveness. Potential tourists can find information related to tour and travel agency services, tourism destination locations and their open hours, transportation and accommodation facilities, and other expenses they may need in the future, while the related stakeholder such as the local community and the businessmen around the tourism destination also need that information

Figure 4 Word Cloud Information and Communication of East Java Tourism

to increase their economic activity by providing for tourism needs in the surrounding area.

In East Java, Jatim Park 2 and Ijen Crater are known as the tourism destinations that give trusted information through their official digital platforms such as their website and Instagram account. Both tourism destinations have adopted the tourism digitalization concept to facilitate tourists and stakeholders in terms of tourism agency and activity information. The Ijen Crater information can be accessed on the bayuwangitourism.com website while Jatim Park 2 information can be obtained on the jtp.id website. Both forms of digital media can provide information about online tickets, tourism activity, operational hours, accommodation, transportation, and nearby tourism destinations to the tourist candidate or related stakeholders.

In contrast, the BTSNP digital tourism information condition was worse than both of these. There was no official digital platform of BTSNP available to ourists, especially concerning the ticket, tourism activity, operational hours, or nearby tourism destinations. Usually, BTSNP information was provided by private travel agencies or individuals through social media, like vloggers or 'celebgrams' (famous users on Instagram). This condition drives tourists to gather

the related information on their own to avoid the risk of money fraud when doing tourism activities like paying for overpriced products or services, horse-riding, and jacket renting in the BTSNP area.

Institutional

'Institutional' is known as the category related to the management party of tourism destinations, including human resources and the local communities near the destination, and private investors (Sunaryo, 2013). Jatim Park 2 was regarded to have the lowest competitiveness in institutional aspects due to the local community and minimum government participation in its development. Many tourists have written negative reviews of Jatim Park 2 institutional-related unfriendly employees that may harm tourist safety inside the destination because they do not want to hear or deal with tourist complaints reasonably.

Ijen Crater and BTSNP institutional conditions are different than those of Jatim Park 2. The local community participated significantly in tourism development, which caused either positive or negative sentiments. Some local communities developed tourism competitiveness positively through their friendly attitude, such as when local people try to greet tourists satisfactorily or try to keep the surrounding destination clean from tourism activity waste. Based on the research, Ijen Crater was known to have the highest institutional competitiveness due to local communities' creativity in providing culinary offers, like 'rawon,' grilled fish, and 'pecel.' In this aspect, the BTSNP destination has lower competitiveness, because most of the food around the BTSNP area was dominated by fried snacks and instant noodles that are easily found anywhere in East Java Province.

Related to negative sentiment, many tourists write their reviews about nasty behaviour that comes from the local community around tourism destinations. Many local people think of tourists as their gold mine, and scamming frequently happened in the tourism area. Local people insisted tourists purchase their overpriced products or services. For example, many local people in the BTSNP area force tourists to take a horse ride in Bromo Mount for hiking with an approximate price of Rp 150,000. Similar conditions can be found in Ijen Crater. The local community insisted tourists to ride the trolley of sulphur carriers when climbing or descending Jaya Wijaya Peak (Ijen Mountain Peak) and calling this activity as 'Trolley Ride' with an approximate price of around Rp 250,000–Rp 300,000 for every trip (climbing or descending). Low education is regarded as the significant factor in these poor manners, despite Ijen Crater's status as a prior tourism destination of East Java.

Supportive Facilities

Supportive facilities are the tourism competitiveness category that covers all public facilities, including security, toilets, tourism agencies, souvenir shops, information centres, banking facilities, restaurants, and others (Sunaryo, 2013). Jatim Park 2 is considered as a fully-supported facility tourism destination compared to the other two destinations. This statement was proved by the high number of positive sentiments (78.45%) related to the review of supporting facilities in Jatim Park 2. Most of the positive reviews were about the hygienic toilets, proper parking site, and good management of Jatim Park 2. This fully provided facility has enhanced Jatim Park 2 as a family-themed park. Jatim Park 2 also has other facilities to meet the requirement of special needs consumers like pregnant women, toddlers, and seniors.

In contrast, many supportive facilities around BTSNP and Ijen Crater were severely damaged and unmaintained. The BTSNP and Ijen Crater development in the protected forest area was limited by Act No.5 of 1990 concerning Conservation of Living Natural Resources and Ecosystem. Because of this regulation, management and related stakeholders cannot freely develop and maintain BTSNP and Ijen Crater facilities. The most negative perspective reviews of BTSNP and Ijen Crater were about accommodation and amenities in the tourism area as shown in Figure 5. This figure highlights the words guide, toilets, jacket, mask, dollars (financial service), stalls, and lighting. These words significantly influence the supportive facilities category in BTSNP and Ijen Crater negatively or neutrally. The amount of BTSNP and Ijen Crater facilities were considered less accommodated and exceeded the tourist capacity. The amount of BTsnp and

Figure 5 Word Cloud of Negative Ijen Crater and BTSNP Supportive Facilities Perspective

Ijen Crater suportive facilities only a few and located in certain area like rest area. Many tourist were considered this supportive facilities was not maintained, less accommodated and exceeded the tourist capacity. This condition worsened in peak season and at weekends. because the available facilities cannot accommodate too many tourists who usually come on holiday. Not only that, BTSNP and Ijen Crater amenities and accommodation were considered expensive due to the lack of supportive facilities like clean water supply in the surrounding areas.

Wibowo (2020) stated that the sanitary and culinary facilities of the BTSNP area were preserved at a high cost due to a lack of clean water sources. As a result, the local community needs to purchase water at a very high price to meet tourist demand in the BTSNP area. This similar condition was also found in the accommodation facilities in Cemorolawang (an area nearby). Many tourists complained about the high-cost hotels with unclean and unmaintained rooms and toilets in their reviews. This condition can be considered as one factor that can affect tourism competitiveness negatively in the long run. Due to this condition, many tourists refuse to revisit the BTSNP tourism site and seek new tourism destinations with proper facilities surrounding the tourism site.

East Java Province Sustainable Tourism Recommendation

Based on findings in this study, there are a few recommendation policies that can be applied to enhance tourism competitiveness in East Java Province, as follows:

Tourism Business Levelling

Levelling is defined as business capacity increment activity, especially MSMES (micro, small, and medium enterprises) owned by the local community surrounding the tourism site. According to the needs of local community businesses, levelling activity of business activity in tourism sites is provided through training or business incubation activities. These activities aim to improve tourism competitiveness through the following aspects:

- The community would be able to manage business more professionally, including human resource management, production management, financial management, etc.
- By introducing new innovations and technology uses, the local community should be able to increase their business capacity and attract more consumers, especially tourists.
- Business owners would be able to expand their business network to find investors more easily.
- The well-maintained businesses surrounding the tourism area will enhance tourism competitiveness, especially in the accessibility category. This condition will also give a multiplier effect to the local community that previously never got the positive impact of tourism activity.
- Positive economic activity surrounding the tourism area will eventually attract investors that have an interest to maintain and improve supportive facilities and services. The investment is usually in the form of CSR (corporate social responsibility) programmes, training classes, or other activities.

Local Common Brand Development

The tourism activity in East Java Province is unique and makes it different from other tourism sites. The

uniqueness of East Java tourism sites and activity must be highlighted through branding and promotion activity. In tourism research and development strategies and practices, branding and promotion are known as the potential strategy in tourism sectors and can be used to support sustainable tourism activity in East Java Province. The related stakeholders can make East Java Province tourism well and widely known through branding and promoting activities, thus attracting interested tourists to find out more about tourism in East Java Province.

East Java Province brand development might be done through cultural and arts potential exploration. Well explored and utilized cultural and arts potential can create a positive tourism brand in East Java Province. This term means that tourism brands integrate technology with the characteristic local philosophy of East Java tourism. The brand output is formed in the online product such as digital content or physical products such as souvenirs, product packaging, posters, flyers, and other promotional products

Local Tourism Integration

Sustainable tourism development of East Java Province will cause a high multiplier effect in certain areas. The multiplier effect is able to increase the inclusive and sustainable economic activity of the local community. One effect is local business integration for each tourism destination to maximize tourism resource potential. This local tourism integration programme of East Java Province can be achieved through the collaboration of regional government, village government, and youth communities (*karang taruna*) near to tourism sites.

Supporting Cashless Transactions

Monetary facilities have become a matter of issue in the tourism competitiveness of East Java. Through financial literacy support, tourism economic activity could be improved, becoming more effective, safe, and remotely accessible. Cashless transactions would enhance the digital payment environment. This concept is supported with an online system to facilitate tourism activity for each party, such as estimating the cost for tourists, determining the number of tourists for stakeholders, tourist number management for the management party, and transaction of MSMEs. Recently, there have been digital platforms that can facilitate financial transactions in East Java tourism destinations to make them more efficient and safe, such as QRIS, GO-PAY, OVO, and DANA.

Conclusion, Limitation, and Suggestions

Conclusion

Following are the conclusions of this research about sustainable tourism competitiveness of East Java Province:

1. The number of tourists in East Java Province has increased annually, even though commonly only one tourism destination is visited before leaving East Java Province, like Bali Island and Yogyakarta
2. According to the perspective analysis about East Java tourism competitiveness, Ijen Crater is the most competitive tourism destination, followed by Jatim Park 2, then BTSNP. Artificial or particular interest tourism destinations have high potential to be developed in East Java Province through attraction exploration due to their competitiveness among nature-themed tourism destinations.
3. According to perspective analysis results about East Java Province competitiveness, the following four recommended policies were obtained to improve competitiveness and local economic activity near tourism destinations:
   - Tourism business levelling;
   - East Java Province local common brand development;
   - Local tourism integration;
   - Supporting cashless transactions.

Limitations

This article has limitations. First, we only obtained data from the TripAdvisor site. Another limitation is that we manually classified every review in the sentiment category. This process is time-consuming and might influence the efficiency of characterizing crisis

information sharing. In the future, we will try to obtain a larger amount of data from a similar site like Google Flights or Expedia to get a better insight. Not only that, we also plan to apply automatic labelling methods to avoid this limitation.

Suggestions

Based on the conclusion and limitations above, we have two suggestions. First, trying to conduct a further study about local community participation and institutional perspective to improve East Java Province tourism competitiveness. Second, supposing the further research attempts to use the same sentiment analysis method, we suggest applying automatic labelling methods to ensure time efficiency while doing the research.

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Original Scientific Article

Using Google Trends in International Tourism: A Case Study of the Czech and Slovak Republics

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This paper deals with using Google Trends in International Tourism. The attention will be focused on analysing the behaviour of Czech and Slovak tourists travelling to seaside resorts between the years 2010–2019. This paper aims to determine whether there is a connection between the data from the official statistics where Czech and Slovak tourists went and what they were searching on Google Search. The authors also compare the Google Trends analysis with the statistical data for Czech and Slovak tourists travelling to seaside resorts. The paper uses the data from 2010 related to the popularity of Czech and Slovak destinations; the data from 2019 to December is not available yet. This paper will also provide detailed statistical reports using the Spearman's rank correlation coefficient. It is very important to mention that this article focuses only on the Google Trends analysis for the travelling category. Destination selection is a complex process that is influenced by many factors. Google Trends is a useful tool for a prediction about travelling to seaside resorts, but that does not always accurately reflect the popularity of a destination compared to statistics.

Keywords: Google Trends, tourism, Czech, Slovak, seaside resorts

 https://doi.org/10.26493/2335-4194.14.205-216

Introduction

Tourism is a growing phenomenon, both in size and impact. According to Mura and Kajzar (2018), tourism is travel for pleasure or business; it is also the theory and practice of touring, the business of attracting, accommodating, and entertaining tourists, and the business of operating tours (Benevolo & Spinelli, 2018). Small and medium-sized enterprises constitute a significant part of the Czech and Slovak economies, with the greatest potential for growth and impact on economic stabilization and balanced development of the regions (Kovaľová et al., 2018).

The Internet is generally known as the primary information source for searching for information. The Internet is also the most important source for searching for information about travelling. People very often organize their travelling according to information on the Internet using Google services; this is stored in Google company databases, and we can analyse searching information in Google Trends service.

What is the definition of Google Trends? We can mention for example the following definition: Google Trends is a tool that offers a variety of information such as the searches that are currently popular, historical data for search keywords, and traffic trends for websites searchers are interested in. Google Trends allows entry of multiple search keywords so that you can compare and contrast. It also gives search trends by limiting to a specific geographic location (Benckendorff et al., 2019). A side effect is the ability to follow trends relatively easily. In the field of internet business, monitoring and predicting trends is a very important factor that can stand between success and failure.

Google Trends is a very powerful service that allows different analyses which can be useful for some research of searching trends in tourism, services, products, etc. More information about the Google Trends service can be found in the book *Google Trends: The Ultimate Step-by-Step Guide,* (Blokdyk, 2018) which is characterized as a guide that ensures all Google Trends essentials are covered from every angle.

We will summarize literature sources that deal with using Google Trends in tourism in the first chapter and then we will discuss the issue of analysing the behaviour of Czech and Slovak tourists travelling to seaside resorts between 2010–2019, based on the data from Google Trends and official statistics provided by the Czech Statistical Office and the Statistical Office of the Slovak Republic.

Theoretical background

The rapid growth of digital technology and intensive presence on social media platforms leads to the emergence of online content sharing (people to people), which results in the emergence of the sharing economy (e.g. Krajcik et al., 2019; Mura & Kajzar, 2019).

We can find some literature sources that deal with using Google Trends in tourism. The Google Trends analysis was used for forecasting tourism demand in some areas such as, for example the master thesis, *Forecasting Tourism Demand in Amsterdam with Google Trends: A Research into the Forecasting Potential of Google Trends for Tourism Demand in Amsterdam* (Rödel, 2017). Also interesting is a study that examines the usefulness of Google Trends data in predicting monthly tourist arrivals and overnight stays in Prague during the period between January 2010 and December 2016 (Havranek & Zeynalov, 2018).

According to Gorete et al. (2019), Google Trends has been increasingly used in research publications in tourism and hospitality, but the range of its applications and methods used has not yet been reviewed. Therefore, a systematic review of the existing literature increases awareness of its potential uses in tourism and hospitality research and facilitates and helps a better understanding of its strengths and weaknesses as a research tool. We can also find numerous research papers using statistical analysis to characterize and compare the number of visitors in some countries, districts, or towns. Kasagranda (2012) has compared the number of visitors of the Nomenclature of Units for Territorial Statistics (NUTS II) – Central Slovakia at regional and district levels in two selected years, 2001 and 2011. Another paper deals with regional disparities in Slovakia and the Czech Republic. For example, Ivanova and Koisova (2014) deal with similarities or disparities in development according to the analysed indicators in the Slovak and Czech regions in the given period 2001–2012. Time series data about the frequency of hits for tourism-related search terms from Google Trends service is used as a predictor. Another example of studies about search engine-databased tourism demand prediction is by Park et al. (2017), which considers tourist inflow from Japan to South Korea, or by Artola and Martínez-Galán (2012), who forecast numbers of British tourists in Spain. The authors of this paper agree with Bokelmann and Lessmann (2019) that tourism demand forecasting remains an open research field since no method is generally considered most accurate.

A destination that develops a thematic product with a combination of three elements, fun, experience, and exploring, becomes fashionable. Costa et al. (2016) examine the key trends in tourism and approaches for scanning the business environment and the tourism industry. The tourism industry is one of the fastest-growing industries in the world (Ranasinghe, 2019). The focus of the article is important because the tourism industry is an entrepreneurial sector providing various kinds of services that in-

volve providers of accommodation facilities from hotel chains to small private boarding houses, and also a sector related to tourist attractions: national parks; cultural and historical sights; theme parks; botanic gardens; sports centres; transport and the destination organization sector. A change can be observed in the number and structure of domestic and foreign tourists, and at the same time, the demand for quality services is increasing (Kubala & Vetráková, 2018). It has been found that tourism stimulates local economies, attracts foreign investments, increases entrepreneurial activities, raises property value, develops social infrastructure, and attracts a wealthy middle class (Zeng-Xian & Tak-Kee, 2016).

According to Walby and Piché (2015), tourism is a social, cultural, and economic phenomenon that entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes. Many travellers seek escape, pleasure, friendships, relaxation, and unusual experiences (Bácsné Bába et al. 2018).

It might be well accepted nowadays that intensive competitiveness in terms of both quantity and quality makes it extremely difficult for a firm to differentiate itself from its competitors. Moreover, dynamic business environments and increasing customer power have pushed firms toward a customer-focused strategy, especially using new technology to build relationships with the customer (Minh & Huu, 2016). In a complex and dynamic business environment, managers appeal widely to modern methods and techniques that could help them cope with the competition and offer their customers new, attractive, good quality products and services at competitive prices. In this context, total quality management is a viable and sustainable option that can systematically contribute to the consolidation of the capacity of organizations (Androniceanu, 2017). Tourism studies suggest that being a competitive destination means being able to increase the tourism sector and the quality of life of the population (Croes, 2010).

Data and Methodology

The Internet is used by millions of people daily to find different types of information. The Internet is also the most important source for searching for information about travelling. People very often organize their travel according to information on the Internet. The most common search engine is Google, accounting for 75% of these searches. Information about searching using Google services is stored in Google company databases and we can analyse this data using the Google Trends service. Google Trends is a service that can monitor the popularity of search topics and terms over a specified period (Dey et al., 2019). Google Trends provides access to a largely unfiltered sample of actual search requests made to Google. It is anonymized (no one is personally identified), categorized (determining the topic for a search query), and aggregated (grouped). This allows us to display interest in a particular topic from around the globe or down to city-level geography (Google Help, n.d.).

Google Trends (https://trends.google.com/trends/) provides a web interface for mining Google's search history database. Users may mine the database using preconstructed 'topics' or via the free-text of a given search entry. In our search, the topic 'Google Trends in tourism' was used. Google Trends data reflects searches people make on Google every day, but it can also reflect irregular search activity, such as automated searches or queries that may be associated with attempts to spam our search results. Google Trends data should always be considered as one data point among others before making conclusions. According to Rogers (2016), there are two ways to filter the Trends data: real-time and non-real-time. Real-time is a random sample of searches from the last seven days, while non-real-time is another random sample of the full Google dataset that can go back anywhere from 2004 to approximately 36 hours ago. The charts will show you either one or the other, but not both simultaneously, because these are two separate random samples. What is most useful for storytelling is normalized trends data. This means that when we look at search interest over time for a topic, we look at that interest as a proportion of all searches related to all topics on Google at a given time and location. Google Trends allows entry of multiple search keywords so that one can compare and contrast. It also gives search trends by limiting to a specific geographic location

(Benckendorff et al., 2019). When we look at regional search interest for a topic, we look at the search interest for that topic in a given region as a proportion of all searches related to all topics on Google in that same place and time. The context of our numbers also matters. We index our data to 100, where 100 is the maximum search interest for the time and location selected. Understanding the percent increase in a search topic can be a useful way to understand how much rise in interest there is in a topic. This percent increase is based on a topic's growth in search interest over a distinct period compared to the previous period.

We can see the important role of information and communications technology (ICT) in tourism. Cákoci (2012) deals with a short review of development and changes in tourism under the influence of information technologies. The paper describes using the internet in tourism from the beginning, over its dramatic growth, until its current main position in tourism information distribution, as a communication medium, and a place of consumption. Google services are very useful for tourism, too. We can read more information about the possibilities of using application programming interfaces from Google, in the process of a creative web page devoted to the distribution of selected information about Slovak communities in a graphically interesting presentation (Bačík, 2012).

Google Trends also allows the user to compare the volume of searches with two or more terms. An additional feature of Google Trends is its ability to show news related to the search term overlaid on the chart, showing how new events affect search popularity (Sfetcu, 2014). Google Trends allows you to size up search trends related to topics of interest broken down into geographical boundaries (states, countries, or worldwide) or thematic categories (health, science, news, and travel, among others), as well as temporal delimitations (specific periods, last five years, last week, and so forth).

The authors will first compare data from Google Trends with data from the Czech Statistical Office and the Statistical Office of the Slovak Republic. The paper also uses data from 2010 on the popularity of Czech and Slovak destinations; data from 2019 is not yet available to December 2020. The authors used different ways of presenting the data with the help of tables and graphs.

On this basis of research, two research questions have been identified:

- Is the popularity of the destinations different for Czechs and Slovaks in more than 4 cases?
- Is Google Trends data similar for searching selected keywords for Czech and Slovak internet users?

A detailed statistical report will also be provided using Spearman's rank correlation coefficient dealing with these hypotheses:

- There is a dependence on the number of visitors to the same countries in the case of stays abroad of Czech and Slovak tourists, according to official statistics.
- There is a correlation between the data from the official statistics related to the places where Czech and Slovak tourists went and what they were searching on Google Search.

We will start by comparing favourite destinations for longer trips abroad for Czechs, such as Croatia, Greece, and Bulgaria, in Figure 1.

We can see that Greece presents a much more frequent keyword for searching than Croatia. We can see changing trends in comparing interest over time between Croatia and Bulgaria because from 2017 the interest in searching for Bulgaria is much bigger than for Croatia. Although most Czechs travel to Croatia according to Table 1, they often return to the same places, so they do not need to search for information about Croatia anymore. Croatia is a nearby resort where major problems with travelling do not exist. Holidaying in Croatia has a certain tradition in the country so one can visit with a lot of travel agencies. Holiday apartments in Croatia would be the best choice of accommodation in Croatia.

We will continue with comparing favourite destinations for Slovaks, such as Croatia, Greece, and Bulgaria in Figure 2.

We can see that Bulgaria is a more frequent keyword for searching for the Slovaks than Croatia and Greece, therefore we can conclude that there is a difference between Czech and Slovak users in terms of

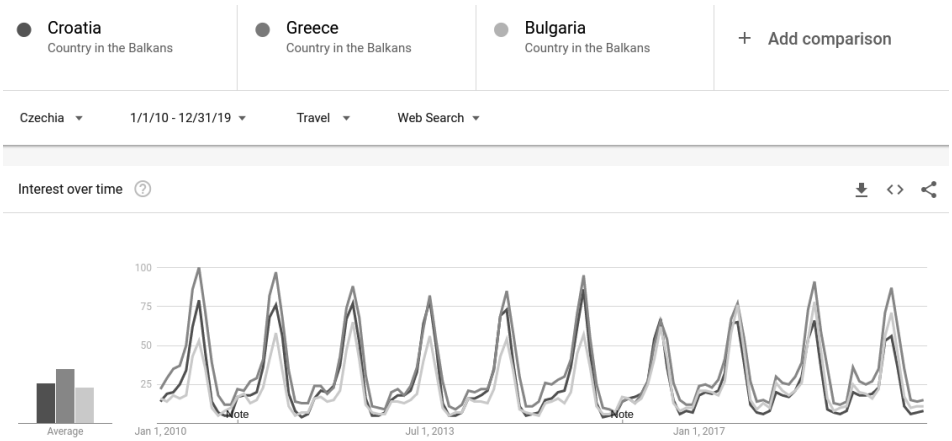

Figure 1
Google Trends Data for Croatia, Greece, and Bulgaria for Czech Internet Users Searching

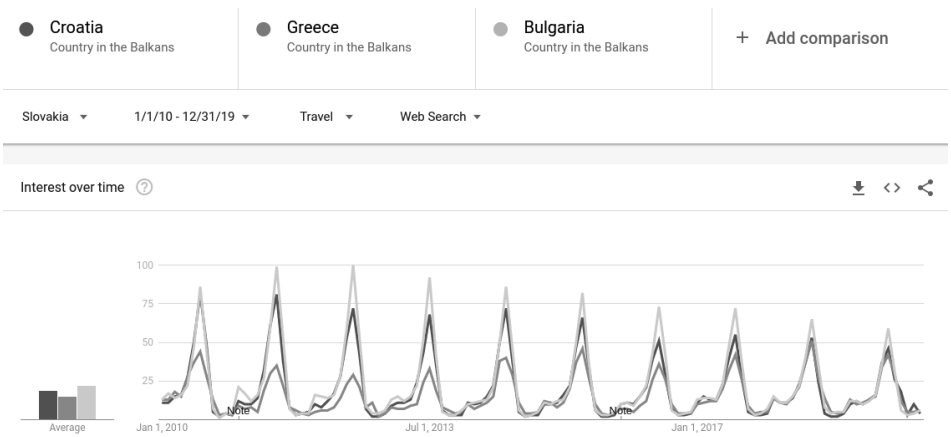

Figure 2
Google Trends Data for Croatia, Greece, and Bulgaria for Slovak Internet Users Searching

searching these countries. Bulgaria is interesting not only for the inhabitants of Western Europe but also for Slovaks, Czechs, Poles and Hungarians. Bulgaria is one of Europe's most budget-friendly destinations for cheap holidays and therefore Bulgaria holidays are often seen as a more economical alternative to the Mediterranean's best holiday destinations

We will continue with Google Trends searching for Czechs for Spain, Portugal, and Italy in Figure 3.

We can see that Italy is a more frequent keyword for searching for the Czechs than Spain and Portugal. Although Portugal is also a beautiful country, the Czechs prefer to choose a holiday to other destinations, also because of higher prices for holidays from travel agencies, unlike Italy and Greece. According to Table 1, which shows the most popular countries for longer trips abroad for Czechs, Italy has a varied tourist offer such as the sun, sea, beaches, culture, art, mountains and good food. Moreover, it is easily accessible by car, in particular the regions of northern Italy. In winter, Czech tourists enjoy holidaying in the snowy mountains of the Italian Alps, so Italy is a popular destination for Czech tourists at any time of the year.

We can see the same country interest searching for Slovak internet users in Figure 4. We can see the same Google Trends data for Spain, Portugal, and Italy for Slovak internet users searching. We can see that Italy is a much more frequent keyword for searching than Spain and Portugal. Czech users more often search for the keywords Italy and Spain than Slovak users. So we can conclude that there is a difference between Czech and Slovak users in terms of searching for these countries. Italy is one of the most popular destinations for the Slovaks for these reasons: Italian food – pizza, pasta, cheese, local fresh products, and wine, beaches, mountains, islands, lakes, and other natural wonders.

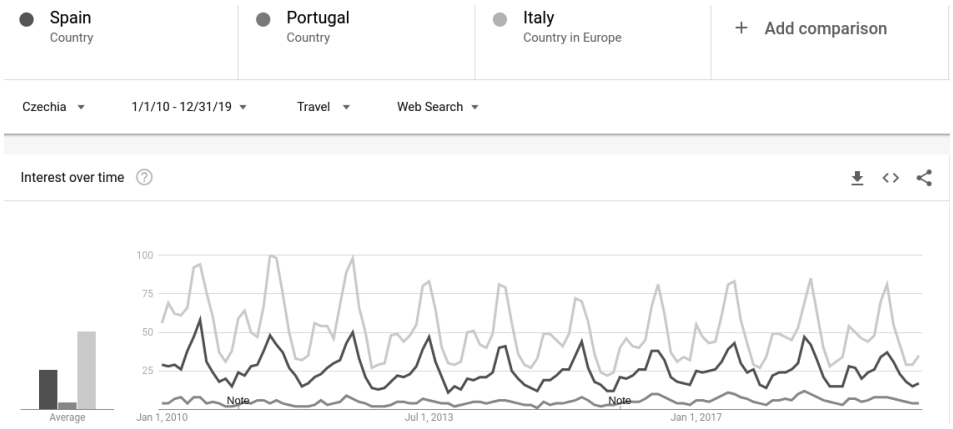

Figure 3
Google Trends Data for Spain, Portugal, and Italy for Czech Internet Users Searching

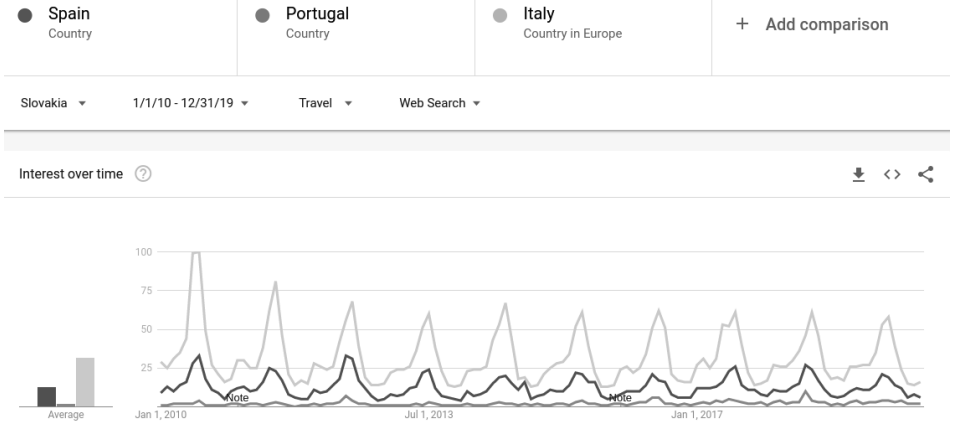

Figure 4
Google Trends Data for Spain, Portugal, and Italy for Slovak Internet Users Searching

Italy is also the cradle of art and culture.

The last analysis of interest over time in searching will deal with Turkey, Egypt, and Dubai. We can see that there are minimal differences for Czech internet users searching for frequent keywords like Turkey and Egypt, followed by Dubai. We can see that Egypt, in the years 2010, 2017, and 2018, is a much more frequent keyword for searching than Turkey and Dubai. We can also see an upward trend over the past 2 years for Czech internet users searching for the keywords Turkey and Egypt. Despite the minimal differences, a bigger difference is seen in 2019 between searching for the frequent keywords Turkey and Egypt. The Czechs who go on holiday to Turkey can also expect to save significantly. In 2019, Turkey became the cheapest country out of the 11 countries that the Czechs visit most often, replacing the long-time leader Bulgaria, which is now in the second place. A Czech tourist will make a purchase in Turkey worth 57 percent higher than at home.

In Figure 6 we can see the difference for Slovak internet users searching for keywords Turkey, Egypt, and Dubai. For every year, we can see that the most frequent searching keyword is Turkey. In the year 2016, Slovak internet users searched for the keywords Turkey and Egypt least because of a military coup and terrorist attacks, respectively. In addition to Dubai, an upward trend can be seen over the past 3 years for Slovak internet users searching for the keywords Turkey and Egypt. We can conclude that there is a difference between Czech and Slovak users in terms of searching for these countries. Slovak internet users search for the keyword Turkey more often than Egypt and Dubai. Turkey is popular for Slovaks due to Turkish history and monuments, natural attractions such as sand and snow, Turkish gastronomy, Turkish bath (hammam),

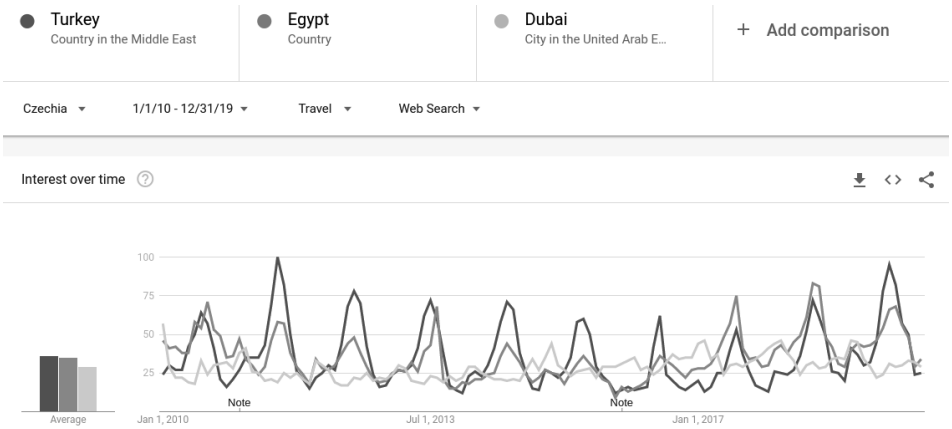

Figure 5
Google Trends Data for Turkey, Egypt, and Dubai for Czech Internet Users Searching

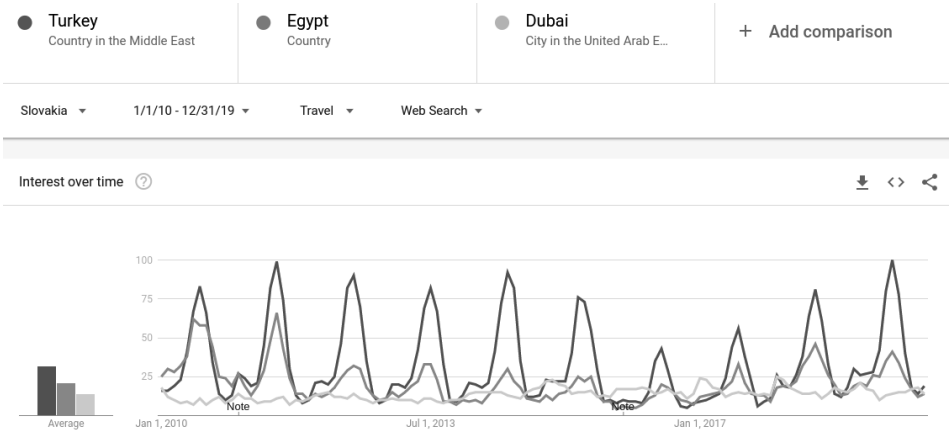

Figure 6
Google Trends Data for Turkey, Egypt, and Dubai for Slovak Internet Users Searching

Figure 7 Google Trends Data for Turkey (dark gray), Egypt (medium gray), and Dubai (light gray) for Czech Subregions Internet Users Searching

the sea's beauty led by the Blue Lagoon, and because, compared to other holiday destinations, the ratio of price and quality of services offered makes Turkey a very attractive destination.

We can also find in Google Trends an analysis for searching compared by subregions in a specific country. According to Figure 7, we can see that the keyword Dubai is a much more frequent keyword for searching in Prague between 2010 and 2019, perhaps because Prague has the highest average salary and Dubai ranks among the more luxurious destinations where you fly from the Czech Republic, mainly in winter and spring. Tens of thousands of Czechs travel to Dubai every year. These are mainly tourists whose numbers have been increasing over the long term. This is also reflected in the establishment of four direct lines per day. The keyword Turkey is a much more frequent keyword for searching in the Pilsen and South Moravia region, and the keyword Egypt is a much more frequent keyword for searching in other regions of the Czech Republic.

In the case of Slovak internet users, no Figure 8 was inserted, because the keyword Turkey is the most fre-

Table 1 Most Popular Countries for Longer Trips Abroad for Czechs (4 and More Nights) in Thousands

Country	2010	2011	2012	2013	2014	2015	2016	2017	2018
Croatia	687	793	806	797	758	721	828	850	813
Slovakia	604	535	583	496	400	837	555	615	724
Italy	593	563	549	526	553	497	552	636	607
Greece	367	318	314	339	291	253	265	371	472
Austria	237	261	279	339	306	281	372	446	328
Egypt	308	208	238	122	185	117	n.a	245	265
Spain	126	231	198	185	174	132	182	258	211
Bulgaria	99	89	159	115	112	96	n.a	214	167
Hungary	117	104	134	90	166	183	n.a.	n.a.	164
Turkey	196	171	202	280	171	162	n.a.	126	228
Portugal	27	24	28	28	29	35	41	53	41
Dubai	n.a.	n.a.	7	9	40	45	56	70	80

Notes Based on data from the Czech Statistical Office (https://www.czso.cz).

quent keyword for searching in all regions of the Slovak Republic between 2010 and 2019. It is no surprise that Turkey is a popular destination for the Slovaks, and this is confirmed by Table 2. Slovak holidaymakers will also pay extra for five-star all-inclusive hotels and comfortable air travel, which is similar to Czech tourists. Turkey offers a very good selection of services and quality resorts with comfort, which some Slovaks are willing to pay for, but it still does not reach the popularity of Croatia, obviously.

Evaluation of Statistical Data

We will now compare Google Trends information with official statistics provided by the Czech Statistical Office and the Statistical Office of the Slovak Republic. We can see the most popular countries for longer trips abroad for the Czechs (4 and more nights) in Table 1.

The most popular countries for longer trips abroad for the Czechs are Croatia, Slovakia, Italy, Greece, Austria, Egypt, Spain, Bulgaria, and Hungary. The number of trips changes every year. For twenty years now, Croatia has been the most popular destination for the Czechs. Only once, in 2015, did Slovakia put Croatia in second place. The Czechs went on trips abroad in 2015 to an increased extent, despite the economic difficulties of Greece and other southern countries or the wave of migration. The growth in Slovakia's popularity in 2015 was influenced by several factors, including the reduced price of fuel, attractive offer of tourism entities and geopolitical changes in the world, which encouraged tourism to neighbouring countries, Slovakia and Germany. Italy belongs to the third most popular countries for the Czechs: around 500–600 thousand trips every year were realized. You can get to the beach in Italy by car in 8 hours. Other tourists prefer the Alps, where they are on the shores of Lake Garda, combining swimming with mountain hiking. Lovers of ancient monuments and good food will also enjoy holidays in Italy.

Why do the Czechs go to Croatia in large numbers every year? The Czechs have been fascinated with the sea and there is a long history of the Czechs travelling to Croatia, one that extends well beyond the past decade. Moreover, a lot of Croatian places are places with intense Czech 'touches.' Magical Dubrovnik was painted, among others, by the Czech impressionist Antonín Slavíček. Croatia is popular mainly due to its availability, not only in terms of distance but also in price and language. The Croatian language is close to Czech. The journey by car to Croatia takes about 8 to 12 hours; if you leave South Moravia and go to the south of the country, then you can reach your

Table 2 Most Popular Countries for Longer Trips Abroad for Slovaks (4 and More Nights) in Thousands

Country	2010	2011	2012	2013	2014	2015	2016	2017	2018
Czechia	209	142	142	162	183	255	189	289	476
Croatia	484	499	387	500	376	401	475	387	418
Italy	197	187	186	227	79	207	225	236	220
Turkey	88	146	155	86	96	101	49	62	158
Austria	69	75	103	101	45	94	89	77	136
Bulgaria	171	112	65	71	58	161	159	128	130
Hungary	105	96	121	63	n.a.	n.a.	81	65	112
Greece	132	79	83	64	71	100	75	87	92
Spain	53	108	93	–	39	–	62	120	91
Portugal	3	3	3	4	4	4	5	6	7
Egypt	81	61	45	33	38	43	25	53	76
Dubai	–	–	1	2	4	–	–	9	10

Notes Based on data from the Statistical Office of the Slovak Republic (https://slovak.statistics.sk).

destination in 6 hours. Also, bus trips to Croatia are organized in large numbers. Whereas in the past the Czechs went to Croatia only for swimming in the sea and sunbathing, today they are also exploring. Every guide to Croatia recommends visiting not only the popular city of Split but also the largest city on the Istrian peninsula, Pula, the historic city of Trogir, etc.

According to a survey by the University of Rijeka in 2018, the Czechs spend an average of 390 kunas a day in Croatia, which is not much compared to the British who spend an average of 915 kunas (Rogulj, 2019).

Now we will compare data from Google Trends with data from the Statistical Office of the Slovak Republic. From the perspective of Slovaks, we can say that the most popular countries for longer trips abroad are similar to those for the Czechs, except Turkey. Croatia remains a top holiday destination for Slovak tourists; only in 2018 did Slovak tourists visit the Czech Republic more. The same situation is related to the third place of Italy, likewise a popular destination for Slovaks. Greece is far less popular from the perspective of Slovak tourists. The difference is more than 370 thousand longer trips in favour of Czech tourists. Compared to the Czechs, the Slovaks are even more conservative in the way they spend their holidays – while the Czechs, although relatively slowly, are also beginning to lean towards the concept of sports holidays, Slovaks strongly prefer a relaxing style of holiday. The Czech Republic will remain the most visited neighbouring country for the Slovaks. The common past and language closeness still attract many Slovaks to holiday here.

We can see the most popular countries for longer trips abroad for the Slovaks (4 and more nights) in Table 2.

Comparing Data Using Spearman's Rank Correlation

We have used Spearman's rank correlation coefficient dealing with the first hypothesis: There is a dependence on the number of visitors to the same countries in the case of stays abroad of Czech and Slovak tourists according to official statistics. Spearman correlation coefficient corr $(x, y) = 0.46666667$ with the null correlation null hypothesis: $t(8) = 1.49241$, with a two-sided p-value of 0.1739. The result is that H0 cannot be rejected at a significance level of 0.05, so the order in travelling to the same countries for the Czech and Slovak tourists is different.

The second hypothesis was that there is a correlation between data from official statistics where Czech and Slovak tourists went and what they were searching

on Google Search. We will start with Czech tourists: corr $(x, y) = -0.00909091$ with the null correlation null hypothesis: $t(9) = -0.0272739$, with a p-value of 0.9788 on both sides. Based on these findings H0 cannot be rejected at a significance level of 0.05 and there was no evidence of dependence between where they went and what they were looking for.

We will continue with Slovak tourists: corr $(x, y) = 0.18181818$ with the null correlation null hypothesis: $t(10) = 0.584705$, with a p-value of 0.5717 on both sides, so the conclusion is the same as for the Czech Republic: there was no evidence of dependence between where they went and what they were looking for.

In this paper, two research questions were identified. According to the first research question, 'Is the popularity of the destinations different for Czechs and Slovaks in more than 4 cases?' we can state that the choice of the most popular countries for longer trips abroad for the Czechs and the Slovaks differs only in one case, and that is in Egypt and Turkey, respectively. Based on the research, we can conclude that the popularity of the destinations is similar for the Czechs and the Slovaks. As far as the second research question, 'Is Google Trends data similar for searching selected keywords for Czech and Slovak internet users?' we can state that Google Trends data is different for selected keywords for Czech and Slovak internet users. For example, from the point of view of the Czechs, the keyword Greece is more frequent in searches than Croatia and Bulgaria. For the Slovaks, the keyword Bulgaria is more frequent in searches than Croatia and Greece. On the other hand, the keyword Italy is more frequent than Spain and Portugal in searches for the Czechs and the Slovaks.

In this paper two hypotheses were also stated. The first hypothesis was there was a dependence on the number of visitors to the same countries in the case of stays abroad of Czech and Slovak tourists according to official statistics. H0 cannot be rejected at a significance level of 0.05, so the order in travelling to the same countries for the Czech and Slovak tourists is different. The second hypothesis was that there is a correlation between data from official statistics where Czech and Slovak tourists went and what they were searching on Google Search. H0 cannot be rejected at a significance level of 0.05 and there was no evidence of dependence between where they went and what they were looking for.

Why are search results different compared to the real behaviour of the population when selecting a destination for the holiday? The answer to these questions is not simple and of course varies from person to person. However, as travel is becoming an increasing phenomenon in our society, it does not leave psychologists and sociologists cold, either. It affects many factors: Papatheodorou (2006) says that destination choice has always been an important aspect in tourism literature and there are various factors influencing travel decisions. According to Venkatesh (2006), the factors constitute culture, travel motivations, finances, and previous experience. Travel motivations form an integral part of travel behaviour and have been widely researched and applied in tourism marketing strategies. George (2004) writes that it is not easy to understand and have adequate knowledge about the motivations affecting the travel behaviour of tourists. In a very inspiring way, he describes the motivation of travel in the work of the French author A. de Botton, *The Art of Travel* (2010), where he reflects on the fact that travel as an active activity hides philosophical problems, i.e. questions about why and how we should travel, to what extent travel changes us, and so on.

Conclusion

This article is devoted to the research of using Google Trends in International Tourism. Attention has been focused on analysing the behaviour of Czech and Slovak tourists travelling to seaside resorts between 2010–2019. The purpose of this article was also to compare the analysis of Google Trends with statistical data about the travel of Czech and Slovak tourists to the seaside resorts. The main aim of the research described in the paper was to find some relations between statistical data and data from Google Trends.

Google Trends has a big advantage because we can find some trends in searching or planning some tourist holidays in the actual period, but we need to wait more months to find statistics that are published by official statistical offices in the Czech or Slovak Republics. Based on the research from official statistics,

we can conclude that the popularity of the destinations is similar for the Czechs and the Slovaks. What is the situation in searching selected keywords by the Google search engine for Czech and Slovak internet users? We have found that Google Trends data is different for selected keywords for Czech and Slovak internet users. Google Trends is a useful tool that does not always accurately reflect the popularity of a destination compared to statistics. For example, from the perspective of the Czechs, Croatia is a top destination, but Greece has surpassed Croatia in the most frequent keyword for searching for Czechs. A similar situation is found with the Slovaks. On the other hand, Google Trends corresponds to statistics for destinations in Italy, Spain, and Portugal.

We have used Spearman's rank correlation coefficient in dealing with the hypotheses: there is a dependence on the number of visitors to the same countries in the case of stays abroad of Czech and Slovak tourists according to official statistics. The priority in travelling to the same countries for the Czech and Slovak tourists is different. The second hypothesis was that there was a correlation between data from official statistics where Czech and Slovak tourists went and what they were searching on Google Search. There was no evidence of dependence between where they went and what they were looking for.

Why are search results different compared to the real behaviour of the population when selecting a destination for the holiday? Destination selection is a complex process that is influenced by many factors. When choosing a destination, we are increasingly influenced by the safety aspect of the destination, and also by the neighbourhood effect. In 2015, for example, Slovakia became the most popular destination for Czech tourists. The choice of tourist destination also affects the image of the destination. The importance of the destination image can be seen in the possibility of influence on the decision-making process of the potential visitor and subsequent consumer behaviour (experience, evaluation, satisfaction, loyalty). The criteria that affect the choice of destination can also include a tradition of destination. (One hundred years ago, Czech tourists were frequent guests in Croatian resorts. They built several hotels themselves and enthusiastically recommended holiday trips to the Adriatic). Along with the quality of the service, the price is the basic factor influencing the client's choice. For destination management, which needs to attract the customer to its place of work, ideally repeatedly, and keep it for as long as possible, it is also necessary to know the customer's needs, as well as the process of choosing a destination.

Some potential directions of future research in using Google Trends in tourism might include among others the following topics: using Google Trends of tourists from the Visegrad Group-comparative analysis, and Google Trends analysis of searching information about Prague top visiting places between 2015–2019.

Acknowledgments

This paper was supported by the Ministry of Education, Youth, and Sports within the institutional support of the long-term conceptual development of a research organization in 2021.

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Original Scientific Article

Differences in the Implications of Organizational Creativity Regarding the Size of Enterprises in the Tourism Sector: The Case of Bosnia and Herzegovina

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The purpose of the paper is to indicate the importance and differences in the implications of organizational creativity regarding enterprise size in the tourism sector. In the process of creativity management, it is essential to develop the capacity for continuous change and frequent adjustment while preserving the identity and value of the organization. The paper is based on a basic hypothesis that there are significant differences in managing organizational creativity associated with enterprise size in tourism. Research results have shown that larger companies are more likely to succeed in managing creativity, which is explained by their access to human, material and financial resources. In general, the behaviour of enterprises in Bosnia and Herzegovina, and especially in the tourism sector, is a relatively unexplored phenomenon. The results of the research are significant as there is no relevant research on the management of creativity in the service sector as a whole and the tourism sector of the Federation of Bosnia and Herzegovina.

Keywords: management, organizational creativity, enterprise size, tourism

 https://doi.org/10.26493/2335-4194.14.217-226

Introduction

The primary challenge of managing any organization is encouraging creativity and innovation, especially in today's era of quick change and continuous development. In the mere process of managing, it is essential to constantly develop the capacity for continuous changes and frequent adjustments while maintaining identity and the organization's worth. Other than the previously stated, it is of high importance to recognize people's ability to adjust and create new products and services. Looking through the scientific and technological prism as well as through economic development, tourism has become one of the most propulsive activities of economic evolution in the world.

Tourism and its multiplicative functions contribute to the growth and development of all other industries. In the modern tourist business, it is very important for enterprises to have management that will continuously

explore trends and endeavour to adjust the company's businesses to those trends.

Traditionally it has been thought that only some aspects of a business are the creative ones, such as development and designing new products, or forming marketing messages, but creative enhancements are possible even in planning, leading projects, personnel managing, interpersonal relationships within the enterprise, and also in client/customer relationships (Carmeli, 2004). Organizational creativity is best understood as the ongoing constituting and legitimating of ideas as people learn in and from practice and connect their understandings to the ideas of others in new ways (Coldevin et al., 2018). According to Sirkova et al. (2014) employers provide their employees with sufficient space for the use and development of creativity at work and also give them freedom when solving problems and presenting their own ideas.

One of the most important preconditions for long-term tourism development is responsible and good quality planning along with affirmation of cultural values. It is necessary to develop additional services with sophisticated and competitive products along with a tourist offer that pleases the guest with its specificity. The ability to recognize and deal with the changes that modern trends bring is a crucial element for all enterprises in tourism. In the future, all trends in tourism should be unquestionably open to creativity, knowledge, and innovation. They should activate entrepreneurial abilities, and connect all elements (creativity, knowledge, innovation) as well as stocks in the market. Furthermore, they should integrate resources to achieve further development and competitiveness. In that way, recognition and uniqueness in the contemporary market are created.

The goal of this paper is to point out the importance and differences in the implications of organizational creativity regarding the size of the enterprise in the tourism sector.

H1 *There are significant differences in managing organizational creativity which are connected with the size of an enterprise in tourism.*

With the given hypothesis it is expected to prove the connection between the size of an enterprise and managing organizational creativity. Theoretical considerations connected to this hypothesis are different depending on whether we look at smaller enterprises as being more flexible and innovative which results in profitability and achieving competitive advantages. If we consider them to have fewer available resources for encouraging creativity it means that bigger enterprises are more competitive and profitable.

Enterprises in tourism have their own specific characteristics. In the process of management, it is necessary to take into consideration the factor of seasonality due to which the majority of the activities are concentrated in a short period. Enterprises in the sector of tourism need to direct their capacity to the time when the largest demand is estimated because because it is the capacities that cause service inflexibility as well as an inability to adjust. Accordingly, demand for adjustment results in employee reduction. Enterprises in tourism are closely related to the further development of tourist destinations, they represent the outline of organizing travels and tourism in general, and they also have an immediate influence on destination development as well as the region itself. Enterprise operations in tourism and catering are characteristic because they are suitable for establishing business relations between hotels and all other business subjects that occur in the process of providing services. The goal of a successful business is equally useful to managers, organizations, and owners of the enterprises.

Literature Review

Organizational creativity represents internal strength that leads to discovering new products, manufacturing processes, market niches, and client-supplier business relations. In that way it builds the competitive advantage of different enterprises over their competitors. Creativity is the ability to make new original content (ideas, conceptions, techniques, methods, models, products, and organizations) which should be perceived as relevant and valuable for society by the environment (Horng et al., 2015). In light of the emergence and reproduction of creativity as a powerful dispositive (Reckwitz, 2017), 'being creative' is no longer an option but a deeply rooted desire and imperative at the same time: organizations want to be creative, and

they have to be creative. According to authors Frederiksen and Knudsen (2017), creativity should successfully serve the process of advising organizations on how to seek and secure ideas for innovation of product/service performance. The creativity of society depends on two types of factors, external and internal, which include (Srića, 1992):

- Micro factors – they act within the organization;
- Macro factors – they originate from the social environment.

The main micro factors are the motivation for creative work, personnel structure, quality of innovation potential, the way of running an organization, modern management technique application, encouragement of creative thinking, etc. The macro climate creativity of a country is formed by a whole set of political and economic features of its space. It includes the level of democratization, freedom of thought expression, legislative system stability, state legislation, and the quality of the infrastructure. Studies on organizational creativity, however, are mainly interested in exploring the variables through which creativity both within and of organizations can be fostered (Sonenshein, 2013; Anderson et al., 2014; George, 2007). Features of an enterprise in tourism include complexity, multidimensionality, susceptibility to changes in the external and internal environment whose further development is conditioned by knowledge, service quality, available resources, and innovation. To move towards continuous enterprise development in tourism and catering, one must equally pay attention to both internal stakeholders (employees) and the external stakeholders such as service users, suppliers, local population, etc. The company's management has even greater responsibilities. They have to find new, creative approaches to business and provision of services, as well as achieving set goals for profit increase and competitive advantages. They also have to find room for responsible management in correlation to sustainable development. According to Evans et al. (2003), managers in the tourism sector meet with special challenges that can be observed through:

- Resource immobility;
- Reallocation of resources;
- The constant conflict between resources and competitiveness;
- Ownership and control of resources;
- Seasonality;
- Low rewards;
- Capacity constraints;
- Time.

Creativity in an organization is a complex and multifaceted process. Creativity, along with innovation, is accentuated as the most important factor of organizational success (Wong and Pang, 2003). Creativity within an organization is an initiator and key factor for developing personal, professional, entrepreneurial and social skills (Goldstein, 2016). Attribution of organizational creativity is an ongoing, playful and risky interactive accomplishment between an organization and its environment (Koch et al., 2018). According to Giura and Vasile (2017), creativity is the vital source of an organization, especially in a time when innovation is the main element of anything that relates to business success. It is of high importance that the main focus of organization management is directed towards factors that encourage the creative manifestation of human resources on all levels in different processes of the organization.

It is very important to highlight that one should never say that some individuals are creative and others are not, but the assignment distribution should be divided in a way that does not violate the stability of the organization. On the other hand, if there are employees that do not indicate a creative approach they should be trained on how to perform the given assignments in a new and different way (Zhu et al., 2014). An empirical study on managing organizational creativity (Slavich & Svejenova, 2016) done from 1990 to 2014, showed that managing creativity includes managing mutually connected processes as well as dual processes, such as processes – outcomes, individuals – teams, etc.

It is also important to point out that regardless of whether the organization in some way measures the creativity of its employees, it is necessary to actively work to encourage and understand the creative behaviour of employees as a multipurpose phenomenon

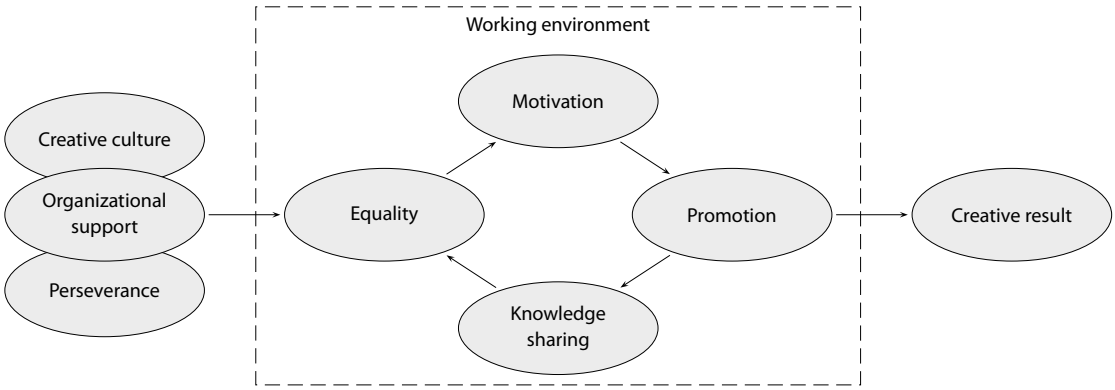

Figure 1 Model of Measuring Employee Creativity

and the contextual factors influencing it. In addition to the above, certain models and methods of measurement are certainly conditioned by different samples, organizations and, of course, cultures. In any of the cases mentioned, the most important thing is to promote the idea in interrelationships within the organization that creativity, innovation in the workplace and an entrepreneurial spirit are vital and crucial to individual and organizational success. The model is based on the componential theory of organizational creativity and expanded with elements of the working environment (equality, motivation, knowledge sharing and promotion) which contribute the most to creative results.

The successful creative team is directed towards quality. The team leader has to create the notion that anything could be better than it already is. Special attention is given to the individual talents of the members to give them the possibility to excel. In the creative team, the leader should create an encouraging environment for the development of new ideas. The creative team seeks for freedom, independence, and authority, as well as responsibility for the results provided. The success of the creative team depends on the free flow of information. While in the authoritative organization the managers are the ones who block information, in the creative team the conversation is led openly and unrestrictedly in an atmosphere where it is easier to solve even the hardest problems. Managing successful groups is based on leadership by example. The leaders of creative teams have a vision and they know how to encourage their associates to accept and follow their ideas. They are devoted, original, independent, flexible and confident. Leadership by example is one of the most important methods of managing a creative group which shows how our behaviour can impact others and the organization itself (Srića, 2016).

In the last few years, creativity has been closely related to tourism development, especially when it comes to creating new touristic products and services. Richards (2011) highlights that the mere concept of creativity is impossible to define, but it is integrated into tourism through different things, such as people, products, processes, and places. He thinks that there are three types of creative development in tourism: creative events, creative space, and creative tourism. As a goal of creative management, Srića (2016) defines two ways that should be applied at the same time:

- Recognition and removal of any obstacles to creativity, and
- Creation of an encouraging environment for creativity.

When we talk about the size of the enterprise, the sector of small and medium enterprises has the fundamental advantage. They have reduced barriers that are caused by hierarchy as well as developing greater flexibility in the process of decision making, a shorter period for feedback on customer needs, and easier establishing of partnerships with enterprises suitable for achieving business results (Paunović & Prebežac, 2010). The management of an organization is the most

important factor that influences creativity within the organization through organizational culture and atmosphere (Scott & Bruce, 1994), strategy, structure, a reward system or resources (Woodman et al., 1993), as well as through the direct effect of their behaviour and their creativity (Baer et al., 2003) and successful motivation of the employees (Tierney et al., 1999). Rowe (2004) asserts that creative leaders are the ones who can manage the future because they are ready to confront the unknown and they see problems as challenges. They understand the world around them, make alliances, recognize the importance of social responsibility, manage complexity and use contemporary technology and embolden creativity.

Gu et al. (2017) say that organizational creativity is an intermediary relationship between leadership and innovative employee behaviour. The economic significance of creativity is recognized by both organizations and the economy as a whole. According to numerous researches as well as the opinions of many experts and practitioners, the core need of a modern organization and its main source of innovation is the creativity of stakeholders. Accordingly, all the stakeholders within the organization have to participate actively, encourage and create new ideas and services.

Methodology

Different scientific research methods have been used throughout the paper. By using the historical method, professional and scientific literature has been analysed. Through empirical research and survey methods, primary data have been analysed. Through statistical methods, the main, general relations set out in the hypothesis have been established. Within collected and systemized data, by the method of abstraction, the relevant data is separated from the irrelevant data, which has led to new theoretical cognitions and the contribution to the practice. Empirical research was carried out in enterprises in the tourism sector in the Federation of Bosnia and Herzegovina which met the criteria of the general definition of large, medium and small enterprises for the entity territory (Law on accounting and auditing of FBiH). The data was collected using a survey questionnaire. The distribution of the questionnaire was carried out by e-mail.

The questionnaire was partly constructed on the basis of the Creativity Audit Questionnaire – I create project EU, and the part related to the use of creative techniques was based on the Community Innovation Survey. The questionnaire consists of three interconnected structural units. The first part includes questions related to the basic characteristics of the surveyed business entities such as the number of employees, ownership, age, business results and work experience of the surveyed manager. In the second part, the respondents were asked questions about creative potential and ways of managing creativity, while the third part deals with the competitive advantages of the company. The part of the survey questionnaire that deals with organizational creativity is divided into sub-sections. The answers to the questions within this group are constructed in the form of a Likert scale ranging from 1 to 5 with higher values suggesting a higher degree of agreement with the proposed statement. In the first subgroup, respondents were asked questions about the individual creativity of employees of the business entity. In this context, respondents were asked questions related to personal characteristics and characteristics of the work environment that encourage individual creativity. In the second subgroup, emphasis was placed on the role of work teams in fostering creativity. Respondents were asked to comment on issues such as how to communicate within the team, procedures for making team decisions, sharing ideas among team members, and team size, that have been identified in the existing literature as potential determinants of creativity development.

Using data on business entities in this sector, a survey questionnaire was sent to 491 business entities. The subjects whose e-mail was unknown received their questionnaires in writing. The target group was the managers in this sector. The database formed in the end included 126 enterprises, or 26% of business entities in the sector, that have been the subject of research. In data processing, an econometric method of linear regression with endogenous treatment effect was used, which makes it possible to estimate the average effect of a particular process such as creativity management on a dependent variable of interest together with other linear regression parameters.

Table 1 Description of Variables

Category	Label	Title (Abbreviation)	Description
Dependent variable	y_1	An indicator of creative management success (creatmng) – dependent variable of the selection equation	Categorical variable (1 – the company succeeds in applying the methods for creativity encouragement during the last three years before the research)
Independent (control) variables	x_1	Headquarters/location of the enterprise (HQ)	Categorical variable (1 – the company is located in a tourist centre)
	x_2	Quality (QTY)	Categorical variable (in competitiveness building the company values the quality of the offer)
	x_3	Manager's work experience (EXP)	Manager's years of work experience
	x_4	The size of the enterprise (SZ)	Number of employees

The size of the enterprise was determined by Eurostat classification, according to which micro-business subjects have fewer than 10 employees, small business subjects between 10 and 49 employees, medium-big business subjects have 50 to 249 employees, and big business subjects more than 250 employees.

Results

Consummation realized by the tourists is important for supporting the business activity level for service providers who operate outside the traditional tourist domain. It was estimated that in 2016, the tourist sector in total was 2.7% of GDP, which is almost 10.4% of total export activity in tourism. It is very important to point out that tourism achieved this kind of participation in GDP within a very short period. This kind of significant growth happened in the last five years, which proves the development of tourism in Bosnia and Herzegovina.

In the Federation of Bosnia and Herzegovina, we differentiate two laws on which the enterprise classification is based, the Law on Accounting and Auditing in the Federation of Bosnia and Herzegovina and the Small Business Incentive Law. Taking this into consideration, the definitions of an enterprise are provided by law in Bosnia and Herzegovina, and they should be accepted without introducing any changes. Legal persons are being classified depending on the average number of employees, overall annual revenue, and the value of the property. All of this is determined on the day of assembly of the annual financial report. Business subjects have to fulfil at least two out of three given criteria. In this research, we used the average number of employees and total income.

Table 2 General Characteristics of the Enterprises

Characteristic	Average	Minimum	Maximum
Profit level in 2016 (€)	44,008.00	−405,228.00	953,648.00
The number of employees in 2016	23	5	126
Manager's years of work experience	13	3	30

Table 2 contains average, minimum and maximum values on the answers from the questionnaire. As one can see from the table, the average surveyed business subjects belong to the small enterprise group since the average number of employees is 23, which shows us that the sample mainly includes micro, small, and medium-big enterprises. The vast majority of the world economy is made up of small and medium-big companies, so the results are understandable. During 2016, there was a positive profit level worth 44,008 Euros (€), even though the sample contained companies that operated with a loss, as well as those who achieved a positive result of management.

Existing literature does not have a unique point of view about the impact of the enterprise size on its profitability. According to one point of view, smaller enter-

Table 3 Results

Item	Dep. variable	comp1	comp2
Treatmant	Kreatmng	11.70***	5.48***
Initial equation	HQ	3.08**	1.44**
	QTY	−1.22	−0.58
	EXP	0.28**	0.13**
	SZ	−0.02	−0.01
Selec. equation	QTY	0.53**	0.53**
	SZ	0.04***	0.04***
Diagnostic	Wald test	41.34***	41.34***
	Number of obs.	126	126
	ρ	−1.68***	−1.68***

prises are more flexible and prone to risk, and in accordance with that they are more innovative which allows them higher levels of competitiveness and higher rates of profitability (Schumpeter, 1934). According to another point of view, smaller enterprises lack resources that are necessary for competing on the market because innovation is the key element of precedence, therefore allowing bigger enterprises to be more successful and more competitive (Schumpeter, 1942). The size of an enterprise can be connected to scales of economy which enable lower costs and higher rates of profitability. For the above reason, there is no expected sign for this variable.

Two indicators were used to measure competitiveness (comp1 and comp2). The first indicator is defined as the level of profitability per employee. In its selection, the findings from the analysis of the theoretical literature were taken into account, which point out that profitability is the final indicator of competitiveness. In constructing the competitiveness indicators, the fact that the absolute values of profitability can have large deviations with regard to the size of the company was taken into account, and the values of profitability were normalized by dividing them by the number of employees within the company. In addition to this indicator, the relative profitability indicator was used in the analysis, which was defined as the ratio of the company's profitability and the average profitability in the sample. In this way, another important feature of competitiveness is taken into account, which states that it is a relative concept.

Variable – the size of an enterprise is defined as the number of employees. As previously stated, smaller enterprises are characterized by flexibility, absence of aversion to potential risk, and a desire for a market breakthrough so a naturally higher level of innovation and creativity is expected. On the other hand, smaller enterprises lack resources necessary for innovation development as well as a means for developing a reward system so that the expected sing cannot be defined. A significant coefficient of this variable would validate the research thesis.

By using the likelihood ratio test it is possible to determine the existence of the stated correlation. The thesis would represent the absence of the correlation between the unexplainable parts of the two regressions. It would presuppose that the correlation's coefficient values $\rho = 0$. The second test that could be applied is the Wald test of variable significance.

The size of the enterprise carries a positive sign and it is statistically significant. Ceteris paribus, the collected finding can be interpreted as compatible with the assumption about easier access to resources. Human, material, and financial resources are considered to be necessary for creativity improvement. The theoretical assumptions about conducting innovation activities within bigger enterprises can also be connected to the obtained result. The obtained results suggest that economies of scale offer higher resource allocations in promoting creativity.

Variables that control the stimulating determinants of creativity are statistically significant with a positive sign. The obtained results support existing researches that emphasize cultural and educational importance in managing creativity. Other than this, sharing ideas and knowledge within the department and among departments within the organization and its surroundings brings success. Financial rewards and nonfinancial stimuli have a positive effect as well.

The obtained results provide support to existing research that emphasizes the importance of cultural, educational and other diversity to encourage creativity. Sharing of ideas and knowledge within the department, between departments within the organization

and between the organization and its environment also contributes to the success of the creative process. Incentives such as financial rewards or non-financial incentives also have a positive effect on the success of creativity management.

Managerial experience has a positive impact on a company's competitive advantage. Experience is also valuable in resolving conflicts within the organization, initiating processes such as managing creativity, improving competitiveness in existing markets and penetrating new ones.

The results show that bigger enterprises are more successful due to having easier access to human, material, and financial resources. Managing creativity increases by 0.04% if there is one employee more, which proves the hypothesis of the research.

It is important to highlight that there is a problem for creativity development in the Federation of Bosnia and Herzegovina because of the social and legal frame which provides inadequate context locally, regionally, and globally.

Discussion

Enterprises within the sector of tourism have a great impact on other enterprises within the service sector, especially when we talk about manufacturing companies such as the food industry, construction, and financial services. The tourist image of a country, along with its political and economic stability, quality of transport infrastructure, and technological development, is closely connected to the success of enterprises within tourism and catering.

The research in this paper was conducted on the territory of the Federation of Bosnia and Herzegovina, so it was not done on the territory of the Republic of Srpska and the Brčko District. One of the main reasons why the research is limited to the territory of the Federation of Bosnia and Herzegovina is the inconsistency of legislation and of the researched issues. Therefore, it is a clear obstacle that organizations face, and that is certainly the high risk of investing in the researched issues.

According to the existing findings, the service sector is characterized by a close relationship between service providers and recipients. In such conditions, human resources and skills of employees as well as the entire system of organizational human resource management are more important than the research and development processes inherent in, for example, the manufacturing industry in which the emphasis is on meeting the needs of technological breakthrough.

The previous research also suggests that environments that allow for unconventional ways of conducting activities, challenging authority, competition among employees, and risk-taking are conducive to unleashing creativity. The emergence of new ideas often requires violations of existing norms and noncompliance with the rules, as well as intellectual and creative autonomy. Consequently, creativity management comes down to finding a solution to the requirement to create such an environment in which there is a sufficient level of motivation to develop employee creativity while maintaining harmony within the organization and ensuring compliance with organizational rules and regulations.

Creativity of a business entity is also affected by its competitive profile. In sectors characterized by standardized products and where the fundamental mode of competition is price competition, companies are motivated to develop innovations and their need for creativity is of lower intensity. In sectors whose competitiveness is based on quality, there is a continuing need to differentiate from the competition, which in turn generates demand for creative ideas and research into new products and services.

The behaviour of enterprises in the sector of tourism and hospitality in Bosnia and Herzegovina is a relatively unexplored phenomenon. The results of this research are significant since there are no relevant researches on managing creativity in the tourism sector.

The key theoretical contributions of this research are:

- The results have shown that bigger enterprises have a greater possibility for success which is explained by having easier access to human, material, and financial resources. If the employment rate is increased by one unit only it enhances the likelihood of managing creativity by 0.04%.
- It is crucial for organizational creativity to assign

compatible tasks to creative workers, organize training to increase creativity and use organizational factors that have an effect on creative work. For companies striving to achieve a competitive advantage, it is important to develop a strategy with a focus on the development of intangible assets, sharing knowledge within all organizational units of the company, continuity of work and service quality certificates, and creative organizational culture that has a positive impact on service quality and product/service innovation.

- No matter the size, all enterprises in tourism have to continuously develop and expand their offers, which should include not only premium accommodation services, but also top-notch quality at all levels of catering, tourism, and professional staff.
- It is important to keep track of trends and standards of service quality. Facilities and services should be constantly upgraded. Tradition and experience are important, but destination promotion and constant facility and service improvement are a key to success as well.
- Managers should understand that by suppressing unique and different approaches they actually destroy the ability for the system to adjust in the process of managing creativity. The ability to accept changes is developed by encouraging employees to try different approaches. Due to organizations and society being so complex, and intertwined with conflicting interests, characteristics, and problems, diversity should be the key to innovation.

Today's companies, and in the conducted research, companies in tourism, have a completely new dimension of business and social responsibility. The time to come will certainly expand the creative range of knowledge necessary for the use of available resources in modern market conditions, and certainly create a better perception of the development of companies in tourism.

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Original Scientific Article

Mobile Devices in the Tourist Experience: Tijuana, Baja California, Mexico

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This research aims to analyse the digital services and tools used in mobile devices and their benefit in the experience of tourists who arrive at Tijuana city. In addition, we test the following hypothesis: the use of digital services on mobile devices of tourists contributes to the experience in the destination. Methodology: 385 surveys made up of six dimensions were applied to tourists of the municipality. A correlation was made between the variables, the use of mobile services and satisfaction, and a factor analysis resulted in five components associated with the touristic experiences. A significant mean correlation between variables analysed was found. Likewise, the components of the factor analysis are immediacy of digital information and services at the destination; anticipated experiences; mobility; instant messaging; and provision of information via tourist apps. These technological factors used by visitors through smartphones benefit the tourist's experience in planning and during their stay in the visited place. The new needs of digital tourist require constant interaction with destination.

Keywords: tourists, mobile devices, ICT, digital services, tourism experience

 https://doi.org/10.26493/2335-4194.14.227-240

Introduction

All human experience happens at brain level, what is perceived through the senses is processed by chemical-electrical impulses which are produced in neuronal communication; this implies that all experience of reality occurs within each individual (González-Damián, 2018). Thus, a personal event assumes an important emotional meaning, which is based on interaction with stimuli that are products or services consumed (Holbrook & Hirschman, 1982), being able to provoke extraordinary experiences within a personal one (Arnould & Price, 1993). For Pine II and Gilmore (2011) an economic factor is the experience, its values attract and involve customers by providing products and services that can generate memorable events. Regarding the tourist experience that the individual obtains during a trip, it cannot be characterized as a single one, but as a set of different situations, some of them obtained as a tourist and others not (González-Damián, 2018). It should be noted that organizations

and service providers in a destination seek to facilitate the development of an environment which allows for increasing the possibilities that people can transform their experiences into something memorable.

Likewise, experience is related to emotion: the tourist wants to discover, enjoy and connect with the local people and their customs, they want to go back to their place of origin with a lived history, with new emotions (Mazarrasa, 2016). The success of the experience offer in the destination is based on its being authentic, through differential characteristics of heritage, landscape, culture and populations (Rivera Mateos, 2013; Mazarrasa, 2016). Currently, technology allows travellers to have information of all kinds about the places that are of interest to them. Tourists have become more demanding and act interactively, with the purpose of finding a type of trip and activity different from the masses, demanding different products, alternative destinations and tailor-made services that are part of their experience (Rivera Mateos, 2013). In this sense, the evolution of mobile devices has increased in the last decade (Saura et al., 2017). According to Wang et al. (2012), they allow portable access to the Internet, they have high-resolution cameras for taking photos and videos, and geolocators to find the ideal route to the place of interest, as well as alarms, calendars, e-mail, and the ability to install applications such as social networks. These latter sites have become a means of communication in promoting tourism. Companies use social media as an immediate channel for contact with customers, who have the opportunity to rate and share their experience in consuming the service or product during their stay in a destination (Mendes-Thomaz et al., 2013; Katsoni, 2014).

As for tourism, Baja California is a great driver of economic growth and job creation. It represents 12% of the state's gross domestic product (GDP). The city of Tijuana is the border with the largest crossing in the world, and the cultural mix makes it a multifaceted, warm, and interesting city for tourists, according to the Tourism Secretariat (SECTUR, 2018). In the State Tourism Program 2015–2019, one of the established objectives was to promote the tourist offer and competitive assistance to boost the ecosystem of this sector in Baja California.

Technology has become a fundamental element in changing the way of travelling through a wide range of Internet sites and mobile applications that are used in preparing tourists' experiences. The evolution of the mobile market to an international scale has increased exponentially as well. Thus, the objective of the research is to analyse digital services and mobile device tools that benefit tourists' experiences when arriving at this border city.

Literature Review

Information and Communication Technologies (ICTS) have changed the way of promoting tourist sites, and electronic tourism (e-tourism) has emerged with the evolution of technologies, which includes the design, implementation, and application of ICTS and e-commerce solutions, as well as the market structures of all the actors involved in the tourist experience (Werthner et al., 2015). By choosing the destination to visit, potential tourists are persuaded by the experiences and opinions of third parties, which are shared in digital media (Zeng & Gerritsen, 2014; Kang & Schuett, 2013). The information about a tourist site has to be continually updated on the different Internet platforms in order to remain a competitive destination in digital media and become an indispensable reference point for the visitor (Caro et al., 2015). Taking a trip involves a number of decisions that guarantee the continual enjoyment of the stay. Tourists have to choose from various options of accommodation, airlines, type of payment, and technological elements that must be considered from the beginning until the end of the trip. The companies that provide the services desired by travellers will gain an advantage by meeting people's expectations (SECTUR, 2018; Katsoni, 2014).

Benefits of Mobile Devices for Experiences of Tourists

The integration of ICTS in the tourism sector has benefitted travellers' experiences (Neuhofer et al., 2013). According to the Internet Association of Mexico (2018), smartphones have become the main means of connecting to the Internet in the country. The World Tourism Organization (UNWTO, 2015) and SECTUR (2018) clarify the importance that the development

of mobile technology has had as a component to improve tourist experience, and to facilitate available services at the site. Through this technological equipment, it is possible to compare places of interest, organize the trip, review recommendations, check the weather before and during the trip, make reservations, locate various places and decide the best option to get there in the shortest time, among other functions and benefits that users find (Chang & Shen, 2018). Therefore, tourist destinations and companies must be prepared to meet the mobility needs of today's travellers (Santillán-Núñez et al., 2015).

Ballesteros Díaz et al. (2014) and Chang and Shen (2018) point out that mobile technology has become a factor that contributes to consumer experience when purchasing services and products, with the opportunity to instantly assess the satisfaction via the Internet. People will remain in contact with friends and family to whom they will recommend their experiences or not. Smartphones have become a companion to travellers, used to obtain information in real time (Ricaurte Quijano et al., 2017). Through the installed applications, smartphones make it easier to move from the starting point to destinations in the city, adding various options that consider the disadvantages of each route. The technology available on mobile devices has become a fundamental component when people organize their trip; users feel connected and secure when they are aided by technology; they share their experience through photographs, videos, or simply indicate their current location in their social networks (Chang & Shen, 2018).

Currently, communication strategies use advertising adapted to smart mobile devices as one of the strategic initiatives of digital marketing, since through the various platforms on the Internet it is possible to interact with tourist consumers who are looking for immediate answers. This exchange can mark the difference in purchase decisions of those who frequently use digital media (Santillán-Núñez et al., 2015; Internet Association of Mexico, 2018). Tourists' experiences can become more pleasant when using mobile technologies, which will accompany and guide them throughout their travel plan (Santillán-Núñez et al., 2015; Bonilla, 2013).

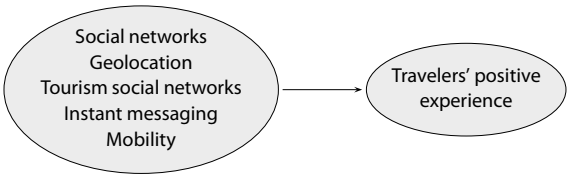

Figure 1 Mobile Services Applications

With smartphones, people can record and edit audios, videos, and texts, and access the Internet at the same time. This generates a history of consultation for other users, who can add a point of interest during their tour based on the information generated by the people who have become part of the web content generation (Iványi & Bíró-Szigeti, 2019; Chang & Shen, 2018).

Thus, some technological tools are used by tourists as an essential element to obtain information on the destination they wish to visit and then to create a travel itinerary, in order to ensure good experiences. Table 1 shows the approaches of some authors in relation to the digital services available, the reason why they are used, and their relation to the factors that prevail in tourists' experiences.

Based on the authors cited in the literature review and in Table 1, it can be asserted that the use of technological tools (social networks, applications for reservation of accommodation and restaurant services, geolocation programs and map tools, tourist social networks, etc.) used by people through smart mobile devices as support before and during their stay is positively related to the final tourist experience. Figure 1 shows a scheme that synthesizes this relationship and the verification of the hypothesis of this research, that the use of digital services on mobile devices contributes to the positive experience of tourists visiting the city of Tijuana. This, too, highlights the importance of digital media availability in tourist places that are of interest to visitors, which become essential for individuals in making decisions to attend and purchase services for which they have found data. Likewise, tourists have the opportunity to evaluate the service obtained in each of the phases of their travel itinerary, of which they anticipated various expectations.

Table 1 Technological Services in Mobile Devices Related to Tourist Experience

Authors	Digital services	Factors in the traveller exp.
Santillán-Núñez et al. (2015); Saura et al. (2017); Munar & Jacobsen (2014); Cervi (2019)	Mobile social network apps such as Facebook, Twitter, and Instagram are used by travellers to obtain information on the tourist site, review comments, and seek information on the experiences users have had in the destinations they wish to visit. These digital media are a reference, in the purchase decision phase and in the socialization of the experience in the tourist place.	Socialization of the experience. Need for information. Communication. Recommendation. Anticipate experience.
Saura et al. (2017); Ricaurte Quijano et al. (2017)	Geolocation tools such as Google Maps are used by tourists to obtain information on the locations and routes of places of interest, allowing the optimization of the transfer time between the origin and destination during the trip. These applications installed on smart mobile devices satisfy travellers' mobility needs.	Mobility efficiency. Effectively manage time during the stay at the destination.
Litvin & Dowling (2016); Saura et al. (2017); Kavoura & Borges (2016); Cervi (2019); Yu et al. (2016)	Travellers use tourist social networks such as Tripadvisor, Expedia, VirtualTourist, etc. to compare prices of hotels, flights, payment options, etc. Potential travellers try to maximize knowledge, searching for information on places of interest available on the Internet.	Search for information. Efficient use of the travel budget. Purchase decision based on recommendations. Anticipate experience.
Munar & Jacobsen (2014); Ricaurte Quijano et al. (2017)	Instant messaging apps like Facebook Messenger, WhatsApp, are used by travellers to be in contact with their friends, family, sharing information, and experiences of the tourist place.	Communication with family and friends. Proximity to its digital social environment. Share experiences.
Saura et al. (2017); Cervi (2019); Dickinson et al. (2014); Okazaki & Hirose, (2009); Wang et al. (2012)	Travellers use m-tourism apps such as geolocation, reservations, Booking, Tripadvisor, Airbnb, Expedia, VirtualTourist, etc., to obtain information on the destinations they want to visit, to plan the easiest route and save time on transfers, compare prices in accommodation, updating, and control of the itinerary. These applications make tourism easier, faster and cheaper, maximizing profitability and generating a favourable experience for tourists.	Control of travel itinerary. Maximum cost-benefit profitability. Service analysis. Control of available services.

The Technological Approach in the Tourism Industry

ICTs have become an important factor in the tourism industry, which is why the UNWTO recommends that countries promote investment in innovation and digital advances in the tourism sector that provide opportunities for all (UNWTO, 2018). ICTs have become part of traveller's culture, which is related to new needs and unpredictable changes of tourists, they also have an important influence on travel cycle, from planning to assessing their experience (Ivars et al., 2016; Ferrá & Cardona, 2015; Tafur et al., 2019).

With technological changes, tourism companies have been subjected to a dynamic that has shaped the business environment: companies need to have information quickly and efficiently to improve service management. The exponential advance of technologies induces companies to adapt to trends, which have among their main needs the constant exchange of information with consumers who use technological means in their daily lives. Digital marketing is used in the tourism industry as an effective means of reaching a cross-border market. The various technological tools favour the creation of value in the services or products,

which are available to people who explore different options on the Internet on a daily basis (Lamberton & Stephen, 2016; Domínguez Vila & Araújo Vila, 2014). For Brumen et al. (2020), digital marketing focused on mobile devices is an area of opportunity for businesses. The interaction that people currently have with technologies leads to the need to use digital marketing to create effective and cheaper advertising, compared to traditional media. This trend has generated significant results, considering its availability to most of the population (Andrade Yejas, 2016; Daries-Ramón et al., 2016).

According to Velázquez Castro et al. (2018) and Narváez Castro and Villalobos Jiménez (2020), technology in the tourism industry has led to structural and functional changes, the entry of new actors, the development of new communication channels between providers and consumers, and the exchange of consumption experiences between people. According to the Ministry of Tourism (SECTUR), innovation allows companies to be more efficient, profitable, and guarantee continuous improvement in the traveller experience (SECTUR, 2013). The causes that drive innovation in the tourism sector are the unexpected decrease in visitors, goal achievement, increased productivity, product and service innovations, and penetration of new markets (Maráková & Kvasnová, 2016).

In recent years, Mexico has been one of the favourite places for tourists in the world (UNWTO, 2018). Mexico has positioned itself among the top seven most visited countries in the world, receiving nearly 40 million tourists per year. The border cities have become important growth points in the country due to the importance of their industrial and service dynamics (Bringas et al., 2004). The city of Tijuana is the most populous municipality in the State of Baja California, with more than 1.7 million inhabitants according to data from the Planning Committee for the Development of the State (COPLADE, 2017). At the beginning of 2019, there was a 9% increase in the influx of tourists to the city compared to the previous year, according to data from the Tijuana Tourism and Convention Committee. However, ICTS are one of the reasons that hinder tourism in Baja California, according to the Baja California State Program 2015–2019.

Furthermore, faced with an unprecedented challenge, the UNWTO, with the support of the World Health Organization (WHO), has asked innovators and entrepreneurs to provide new solutions in the aid of tourism, as it has been one of the sectors most affected by the COVID-19 pandemic (UNWTO, 2020). In mid-March 2020, tourism worldwide was paralyzed by the pandemic; international tourist arrivals decreased by 56% in the first month of the year, leading to losses of up to $320 billion in tourism exports, which is more than three times what was lost in the global economic crisis of 2009 (Naciones Unidas, 2020). Countries and international organizations have undertaken various measures to mitigate the socio-economic impact of the pandemic, with the aim of stimulating the recovery of tourism, but the magnitude of the crisis requires additional efforts, innovation, maximizing the use of technology and continuous improvement of the processes employed in provision of its services (Naciones Unidas, 2020). Tourism organizations have implemented the management of technologies, new practices and protocols, with purpose of making their service more efficient, exercising with more interest the need for innovation to adapt to new tourism trends (De Freitas Coelho & Feder Mayer, 2020).

According to lessons learned during the pandemic, it is essential to include processes and solutions with high added value in tourist destinations, relying on internet connectivity, ICT tools, and mobile devices, as well as the incorporation of various solutions that meet the needs and expectations of people (De Freitas Coelho & Feder Mayer, 2020).

The Proclivity to Use Technology in Purchase Decisions

Advances in technology have caused the opening of new markets and growth in supply, so that companies are immersed in a globalized world, in a complex environment, and with increasing competition, and consumers have become more demanding, with volatile tastes (Velázquez Castro et al., 2018). Considering the current scene, the factors that influence purchase decisions (how to buy, why, what are the benefits sought) should be analysed. Knowing these aspects could be very useful for commercial managers

in designing strategies and creating products based on client preferences, as well as in achieving better positioning in the market (Pérez-Almaguer et al., 2015). With the efficient application of technologies in companies, it is expected to obtain better results from existing services and allow the company to explore new markets (Arévalo-Avecillas et al., 2018).

Currently, the markets are very competitive and the loss of clients is very costly, therefore, developing a relational strategy based on acquiring and retaining clients is profitable (Egan, 2011; Sarmiento Guede & Ferrão Filipe, 2019). In electronic environments, consumers look for brands that provide them with unique and personalized experiences (Zarantonello & Schmitt, 2010) and more emotional activities. In addition, online user perception is influenced by design, emotions, environment, communication, community, security, and other characteristics intended to influence the final result of online interactivity (Constantinides, 2004; Sarmiento Guede & Ferrão Filipe, 2019; Carrizo Moreira et al., 2017). Because electronic markets are characterized by uncertainty, one of the requirements for the progress of electronic commerce is trust (Chung & Shin, 2010; Sukno & Pascual, 2019; Davis et al., 2011). Once customers trust the brand, it is more likely that purchases will increase (Carrizo Moreira & Silva, 2015).

Satisfaction is another important factor in the decision of online user consumption (Szymanski & Hise, 2000; Chung & Shin, 2010). This refers to judging experiences shared on the Internet that influence customer relationships with a product or service, customer loyalty, and their intention to buy online (Bigné et al., 2011). The experience in electronic commerce has a positive effect on user satisfaction (Constantinides, 2004). Electronic satisfaction is closely related to trust (Sukno & Pascual, 2019; San Martín & Pradanova, 2014).

The application of digital marketing in tourism has been growing intensely due to technological trends that are easily adapted to companies in this sector (Zhang et al., 2018; Nikunen et al., 2017). It is necessary to understand the consumer and their behaviour in the use of smartphones to develop marketing strategies (San Martín & Pradanova, 2014). Apps for tourists, search engines, data analysis to measure experience, availability of reservations, or online sales and social networks are tools that frequently update new functions to meet customer needs (Lamberton & Stephen, 2016; Andrade Yejas, 2016). An Internet user can consult various travel sites every day until the reservation is confirmed. This means that there is a lot of data that marketing specialists receive, with which they can prepare a different digital strategy that more effectively convinces potential travellers. Mobile technology offers advantages for purchases such as ubiquity, location, convenience, and personalization (Clarke, 2001).

The proper management of tourist companies' social networks is positively related to travellers' trust: with the information that the users obtain, they manage to solve certain doubts and then decide between the places they want to visit (Giraldo Cardona & Martínez, 2017; Varkaris & Neuhofer, 2017). Tools such as TripAdvisor are important for trip planning, however, Facebook is the main source of information before and during the trip. YouTube provides videos to analyse the destination and anticipate the experience. Messages on Twitter from individual experiences can influence many people's decisions. Instagram also shares images and videos but with special filters, in order to highlight some of the memorable moments during the trip (Huertas & Marine-Roig, 2018). Social networks drive customers' buying decisions (Cvitić & Plenković, 2018). Apps, programs, and/or social networks are available to be installed on smart mobile devices, which have become a satisfaction tool and guide for travellers. Consumers who trust e-buying will make more purchases (San Martín & Pradanova, 2014).

Methodology

A qualitative survey technique was used for the research, and the size of the population studied was based on the latest 2017 report in the statistical and geographical yearbook of Baja California, which records the arrival of tourists in the municipality. The number of tourists recorded in the city of Tijuana in June and July was 217,173 (DataTur, n.d.), of which 92% are from California in the United States and the rest from Mexico (CEMDI, 2015). Based on this proportion, 355 sur-

veys were applied to foreign tourists and 30 to domestic tourists, aged between 18 and 70. It should be noted that the information obtained regarding the number of tourists arriving in Tijuana does not report the gender of the visitor; for this reason this variable was not considered to obtain the proportion. The instrument was applied to 385 tourists in the months of June and July of 2018, by simple random sampling at different tourist points and entrance to the city, to check the hypothesis: the use of digital services on mobile devices contributes to the positive experience of tourists. The sample size was obtained using the statistical formula for finite population, based on 95% confidence and 5% of admitted error (Fischer & Espejo, 2017; Malhotra, 2008).

Formula for finite population:

$$n = \frac{Nz^2pq}{(N-1)e^2 + z^2pq} = \frac{217173 \times 1.96^2 \times 0.5 \times 0.5}{(217173-1) \times 0.05^2 + 1.96^2 \times 0.5 \times 0.5} = 385. \quad (1)$$

Based on the revised literature, the survey is made up of six dimensions (see Table 2). Information is obtained on the sociodemographic profile, followed by the sources of information consulted to research the site; services used on mobile devices when visiting; how often digital services are used on mobile devices during the stay; how often the applications installed on smartphones are used, and which are important during the trip; and the level of satisfaction, based on digital services available on mobile devices during the visit.

Reliability analysis of the instrument was performed, using Cronbach's alpha with the SPSS 20 program. A reliability greater than 0.5 is considered acceptable (Oviedo & Campo-Arias, 2005; Hernández Sampieri et al., 2014; Hinton et al., 2014). To validate the instrument, three dimensions were considered, which are made up of questions on a Likert scale (see Table 3). The sample corresponds to 385 surveys applied in the months of greatest influx of tourists in the year, June and July 2018, aimed at tourists visiting the city of Tijuana.

To manage and study the results database, the IBM SPSS Statistics 20 and MS Excel 2013 programs were used. First, a descriptive analysis was carried out; second, the verification of the relationship between the frequency with which tourists have access to the services available and the applications installed on smartphones during their stay, and the satisfaction that people find in the availability of digital services at the destination and in the companies that provide the services. Lastly, factor analysis was carried out, obtaining the technological factors based on the digital services and tools used by travellers on their smartphones, related to the experience of the tourist arriving in the city of Tijuana.

Results

Descriptive results are first discussed in order to identify the digital services and applications that the traveller uses before and during their stay in the destination, sampling the people who arrived in Tijuana between June and July 2018, of which 47.5% are female and 52.5% male. Travellers were asked about the digital services they frequently access from their mobile device during their stay: 95% search for information on the services available, 92% use digital maps, a similar proportion mention inquiring about local restaurants, 91% check the weather, 90% look for recommendations in digital media, 83% like to make recommendations on social networks, and 78% look for transportation options through the mobile device and compare places of interest in the destination.

Regarding the apps that travellers use on their mobile device during their stay, based on the results, 97% use Google Maps; 96% use Facebook and its instant messaging extension; 95% use WhatsApp; 89% use Uber transport services; 85% search videos on YouTube; and 78% use Instagram, which allows users to upload images and videos with various photographic effects. There are other programs, such as Tripadvisor (32%) and Yelp (27%), which are classified as tools for tourists but are used less frequently.

Regarding the source of consultation to find out about tourist sites of interest, 81% of travellers prefer social networks, 78% prefer recommendations from friends or family, 59% examine the destination website, and 41% make use of geolocation services. Tradi-

Table 2 Application Instrument Dimension

Dimension	Type and number of questions		Authors
1 Sociodemographic profile	Multiple and dichot. choice	6	
2 Information sources that you usually consult, to find out about the tourist place	Multiple choice	7	Santillán-Núñez et al. (2015); Saura et al. (2017); Cervi (2019)
3 Services you use on your mobile device when visiting a tourist place	Multiple choice	10	Santillán-Núñez et al. (2015); Saura et al. (2017); Ricaurte Quijano et al. (2017)
4 Frequency of use of digital services on the mobile device during your trip (compare destinations of interest, publish experiences on social networks, etc.)	Likert scale	11	Santillán-Núñez et al. (2015); Saura et al. (2017); Ricaurte Quijano et al. (2017)
5 The frequency with which installed apps are used which are important during the trip (Facebook, YouTube, etc.)	Likert scale	13	Santillán-Núñez et al. (2015); Saura et al. (2017); Ricaurte Quijano et al. (2017); Munar & Jacobsen (2014)
6 Level of satisfaction in the availability of mobile digital services according to assessment of the tourist during his visit at the destination	Likert scale	8	Santillán-Núñez et al. (2015); Saura et al. (2017); Ricaurte Quijano et al. (2017); Yu et al. (2016); Wang et al. (2012)

Table 3 Results of Reliability Statistics

Item	(1)	(2)
Frequency of use of digital services on the mobile device during your visit	0.867	11
Frequency of use of mobile applications during your visit	0.802	14
Satisfaction with the use of digital services available at the destination	0.776	8

Notes Column headings are as follows: (1) Cronbach's Alpha, (2) number of elements.

tional options – talking on the phone, travel agencies, and tour guides – are used less often.

The result of the simple correlation between the independent variable, or the frequency of use of digital services on the traveller's mobile device during their stay, and the dependent variable, which refers to the level of satisfaction obtained with these digital services in the destination, was $R = 0.507$. This result indicates the total variance, which is explained in the dependent variable, product of the independent (see Table 4). Based on the value of R-squared, it is known that this relationship can be up to 25.7%, which allows assessing the importance that digital services used on mobile devices add to travellers' experiences. These are opportunities for organizations that have the objective of continuing to build channels and improve the conditions of the technologies that must be available to individuals, through which a better-planned stay results and immediate access to information is obtained on purchases and security of local services and in businesses they wish to visit.

Table 4 Simple Correlation

R	0.507
R square	0.257
R squared corrected	0.255
Standard error of estimation	0.558

Notes Predictor variables: constant, use mobile service app trip.

Figure 2 shows the trend of the positive mean correlation between the variables used in the simple regression procedure presented in Table 4 (independent variable: frequency of use of the digital services on

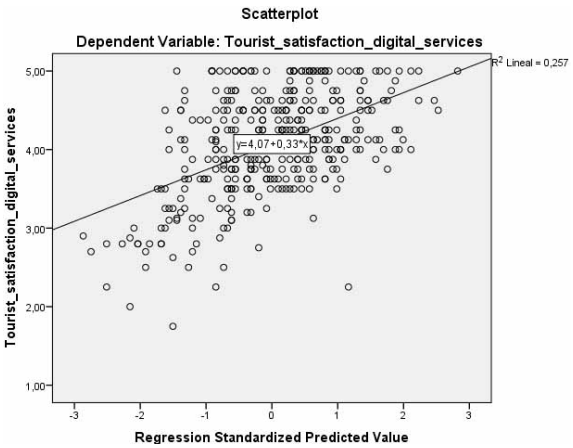

Figure 2 Scatterplot

the mobile device of the tourist during their stay; dependent variable: satisfaction obtained with the use of these digital services during their stay), which demonstrates this association represented in the scatterplot.

To reinforce this data (see table 5), a bivariate correlation was obtained through Pearson to determine the relationship between the independent variable digital services on the mobile device and the dependent variable tourist satisfaction, corresponding to the existence of a positive mean correlation of 0.507 with a significance level of 0.01.

In addition, the results of the ANOVA test are included in Table 6, showing a significance level of 0.01 was obtained among the analysed elements, which is related to the result shown in Table 4. The alternative hypothesis is proven that the use of digital services on mobile devices contributes positively to the experience of tourists during their stay at the destination.

The results from factor analysis are discussed in the next section to identify the technological components which correspond to the digital services and tools used in mobile devices, which benefit the tourist's experience. The KMO tests and Bartlett's sphericity was performed to validate the factor analysis procedure (Pérez López, 2004); a KMO value greater than 0.5 is considered acceptable in the factor analysis model, and the closer it is to 1, the better the adequacy of the data. By obtaining 0.884, the data can be used for factor exposure (Table 7). The Bartlett coefficient of sphericity

Table 5 Correlations

Item		1	2
1 Use mobile service app trip	Pearson Correlation	1	0.507**
	Sig. (2-tailed)		0.000
	N	385	385
2 Tourist satisfaction with digital services	Pearson Correlation	0.507**	1
	Sig. (2-tailed)	0.000	
	N	385	385

Table 6 Level of Significance with ANOVA

Item	Sum of squares	DF	Square root	*F*	Sig.
Regression	41.206	1	41.206	132.182	0.000
Residual	119.396	383	0.312		
Total	160.602	384			

Notes Dependent variable: tourist satisfaction of digital services. Predictor variables: constant, use mobile service app trip.

Table 7 KMO Value and Bartlett Sphericity Test

Kaiser-Meyer-Olkin sample adequacy measure		0.884
Bartlett sphericity test	Approx. χ^2	4027.396
	DF	253
	Sig.	0.000

derived from the process indicates that there is a correlation between the variables. This allows validating the factor analysis procedure since the derived level of significance is less than 0.05.

Table 8 shows the percentage results of the total variance explained, which is summarized by five factors that explain 63.23%. De la Garza et al. (2013) state that, using this criterion, n factors should be managed as an initial solution, as long as the percentage of accumulated explained variation ranges between 60 and 95%.

Following the factor analysis procedure, the rotated components matrix is shown, for which the Varimax method was used (see Table 9). De la Garza et al. (2013) and Pérez López (2004) highlight that it is possible to identify a group of variables with a single simplified factor per component using this method. Therefore,

Table 8 Total Explained Variance

	Initial eigenvalues			Sums of the saturations squared of the extraction			Sum of the saturations squared of the rotation		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
1	7.469	32.472	32.472	7.469	32.472	32.472	3.394	14.756	14.756
2	2.319	10.082	42.554	2.319	10.082	42.554	3.055	13.283	28.038
3	1.968	8.555	51.109	1.968	8.555	51.109	2.825	12.284	40.322
4	1.545	6.718	57.827	1.545	6.718	57.827	2.756	11.984	52.307
5	1.243	5.406	63.233	1.243	5.406	63.233	2.513	10.926	63.233
...									
23	0.224	.973	100.000						

Notes Extraction method: principal component analysis.

the technological factors based on the digital services used on tourists' mobile devices that favour the destination experience during their stay are: (1) immediate access to destination information and services; (2) anticipated experience; (3) mobility conditions; (4) instant communication; (5) analysis of comments and opinions of available services. These factors or components integrate the digital services that contribute positively to the experience of tourists who visit the city of Tijuana. This hypothesis is verified in Table 6. In this sense, there are areas of opportunity for companies in the tourism sector to create and/or improve marketing strategies in these digital services that benefit the stay of the tourist at the destination.

Discussion

Based on the results obtained, there is a positive average relationship between the use of digital services in the mobile devices of tourists during their stay and the level of satisfaction obtained with these digital services in the destination. In addition, tourists ensure that during their stay they use their mobile devices very often to search for information on services available at the destination, followed by use of digital maps, to search for restaurants that are of interest to them, check the weather, and review recommendations made by other users. This result coincides with the results of Chang and Shen (2018), Santillán-Núnez et al. (2015), and Ricaurte Quijano et al. (2017), who indicate that people make use of the benefits of immediacy provided by current Internet technology through smartphones, for comparing the destinations they want to visit, to organize the trip, check reviews, make meteorological consultations, and use geolocation services to get around faster.

Experience is an economic factor that generates memorable events in customers (Pine II & Gilmore, 2011). The tourist experience can become more pleasant with the support of mobile technology. It can be integrated as a personal assistant that will guide visitors in each stage of their itinerary (Santillán-Núñez et al., 2015; Bonilla, 2013). Mobile technology has become a component that contributes and brings benefits to the consumer experience (Ballesteros Díaz et al., 2014; Chang & Shen, 2018; Saura et al., 2017). In this sense, this research found that digital services on mobile devices contribute positively to the experience of tourists in the destination visited. In addition, research results identify five factors that favour the tourist's experience through the use of smart mobile devices: immediate access to destination information and services, anticipated travel experience, resolving mobility conditions, permanent communication with the digital social environment, and analysis of comments and opinions of services available in apps for travellers.

Conclusions

The hypothesis of the research was verified: the use of digital services on the mobile devices of tourists contributes positively to the experience in the destination.

Table 9 Rotated Component Matrix

Item	Component				
	1	2	3	4	5
Purchasing interest destinations		0.684			
Trip organization		0.785			
Information about establishments		0.635			
Searching for reviews		0.766			
Book accommodation		0.625			
Weather consultation			0.743		
Location with digital map			0.825		
Restaurant search			0.554		
Purchasing products or services	0.590				
Publishing reviews on online sites	0.629				
Google maps			0.705		
Facebook App				0.722	
YouTube	0.627				
Google	0.730				
WeChat	0.704				
Twitter	0.587				
Skype	0.658				
Facebook Messenger				0.770	
WhatsApp				0.798	
Instagram				0.639	
Foursquare					0.793
Yelp					0.849
Tripadvisor					0.801

Notes Extraction method: principal component analysis. Rotation method: Varimax normalization with Kaiser. The rotation has converged in 7 iterations.

The digital services that stand out with factor analysis are: buy products and/or services online, search for destinations of interest, book accommodation, and use of apps such as YouTube, WeChat, Skype, Facebook, WhatsApp, Instagram, and Google maps, as well as tourist apps: Tripadvisor, Foursquare and Yelp. These services are integrated into five components: (1) immediate access to destination information and services; (2) advance experience; (3) mobility conditions; (4) instant communication; (5) comment analysis.

Based on the results obtained, there is a significant positive mean correlation at the 0.01 level between the frequency with which travellers use digital services through their mobile devices and the level of satisfaction they obtain regarding digital services during their stay at a destination. Likewise, based on coefficient of determination, this association can be considered 25.7%. The digital services that tourists use the most on their mobile devices before and during their visit are to inquire about available service options at the site; to find restaurants; to use digital maps, which makes it possible to move more efficiently during the visit; to check weather conditions during their stay; and to consult recommendations of places of interest. These digital services are essentials on a smartphone since the sampled group consults transportation options, compares places of interest, and makes recommendations on social networks and on websites of the establishments they have been visiting.

Based on the findings of the study, mobile phones are important technological devices for tourists visiting to city of Tijuana: these benefit the traveller's experience. Therefore, it is essential for service companies in a developing country like Mexico to invest in technology to attract more tourists who demand digital services. Therefore, technology has achieved an important role for people who move to various places for vacation, rest or business. For this reason, it is recommended to intensify campaign strategies for tourism attention and content aimed at this market. Thus, it is essential to make available applications that contain special information for tourists, which they can use to make better decisions.

The current environment of tourism in developing countries, where mobile phones function as a means of consultation, verification and identification in some services, displacing physical contact for some activities, has caused many of the tourist services to complete their technological transition to smartphones, in order to avoid losing connection between company and user. Therefore, in the context of tourism organizations in the city of Tijuana, it becomes a necessity

to highlight their products in a smartphone format.

Research limitations highlight the need to use a larger sample to distribute it by means of a stratified selection with proportional allocation in other municipalities in Baja California that also have a considerable influx of visitors, for comparing the use of digital services and apps in smart mobile devices, and to include tourists who do not use these technological tools in sampling.

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'Stories from "The Most Beautiful River"' and from Elsewhere: Tourism-Space-Nature; In Memoriam Matej Vranješ

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 https://doi.org/10.26493/2335-4194.14.241-243

On October 20, 2021, when our esteemed colleague and dear friend Matej Vranješ would have celebrated his 50th birthday were it not for the mountain that claimed him, the symposium in his memory was organized by the Department of Cultural Tourism at the Faculty of Tourism studies – Turistica, University of Primorska.

The title of the symposium 'Stories from "The Most Beautiful River"' ('Zgodbe z »najlepše reke«') was taken from his last scientific article published posthumously in which he tackled 'a humanistic geographical perspective on the history of the development and management of tourism on the river Soča' his longstanding field research interest. 'Elsewhere' in the title referred to Vranješ's cosmopolitan outlook and also served as an open space within which the colleagues who ground their research mainly in the Humanities were welcome to address the variety of topics.

The symposium was organized in a hybrid format and those present in person received a bubble gum, the meaning of which was revealed in the abstract booklet where the photograph of Matej Vranješ blowing a big gum bubble was included. The photo was taken by the Soča river while on an outing with his family and hints at the part of Vranješ's personality that epitomised playfulness with certain elf-like qualities that were idiosyncratic. Other traits, openness, benevolence, attentiveness, presence, and generosity were part and parcel of his interactions with colleagues and were touched upon or 'in the air' as it were in several presentations. His outdoor active lifestyle was understood as part of both his study rhythms and fieldwork production.

Twenty-two participants were engaged with fifteen papers that were divided into five groups of three followed by a discussion.

The first group of papers was dedicated specifically to the academic work of Matej Vranješ and was kicked off by his PhD mentor Bojan Baskar from the Department of Ethnology and Cultural Anthropology, Faculty of Arts, University of Ljubljana. In the presentation titled 'Landscape as Connecting Link between Geography and Anthropology,' he combined some anecdotal reminiscences of Vranješ's academic growth with a discussion of the contested spatial categories shared by geography and anthropology that were a significant part of Vranješ's thesis. Miha Kozorog from the same department followed by addressing 'Locality in Matej Vranješ's Work' that was developed as a part of the field research in Bovec area. Several concepts and meanings that formed the notion of locality such as local belonging, place belonging, spatial identity, social production of space, territoriality were assessed with a constructively critical eye in identifying common traits and differences in Vranješ's understanding of locality. The third paper by Miha

Matej Vranješ

Koderman from the Department of geography, Faculty of Humanities, University of Primorska touched upon another research focus from the same geographical area, namely the second homes in the Triglav national park where Vranješ worked in different capacities. By posing a question of whether a second home is a 'private piece of paradise' or the 'splinter in the only Slovenian national park' Koderman reflected on the current research into spatial and functional roles of second homes in Bovec municipality.

In the lively discussion that followed the former dean of Faculty of Tourism Studies – Turistica Anton Gosar shed some highly relevant light on the historic development of spatial terminology that is particular to the Slovenian language and influences disciplinary terminological differences that spice up academic debates on basic concepts and contexts. The discussion gave rise to the conclusion that these issues alone would be enough for the whole other symposium.

The second group of presentations was introduced by Simon Kerma from the Department of Cultural Tourism, Faculty of Tourism Studies – Turistica, University of Primorska with 'Tourism Development and Visitor Management in Protected Areas' that was a shared research interest and topic of Vranješ and Kerma. One of the key aspects of the protected areas highlighted in the presentation was related to the protection and preservation of nature, as well as the protection of cultural heritage. From the point of view of awareness-raising, in particular, education and the promotion of sustainable development for the benefit of local communities, and the facilitation and direction of visits are crucial in these sensitive environments.

Two linguists from the same department, Ljudmila Sinkovič and Šarolta Godnič Vičič, followed by analysing 'Interpretive Signs in the Protected Area' of Landscape park Strunjan in which they critically addressed the interactions among visitors and landscape signs and identified positive practices from the research literature on other areas in order to suggest sustainable planning in protected areas. 'How to Protect the Marshes by the Participatory Process' was the third paper in the group delivered in an engaging manner by Aleš Smrekar from Anton Melik Geographical Institute of the Research Centre of the Slovenian Academy of Sciences and Arts. Based on the original methodology developed by several partners from the Mediterranean region it connected directly to several issues raised in previous papers which enabled quality discussion that ensued.

The third group of rather diverse papers managed nevertheless to connect either by elements of research topics or by referring to Vranješ's work and interests indirectly. Tadeja Jere Jakulin discussed timely 'Systems Thinking for the Tourism of New Opportunities' in which she among other presented the outcomes of the research into '4w tourism' (Walker-Watcher-Wander-Wonderer) that directly connected to the next presentation by Nataša Rogelja Caf and Špela Ledinek

Lozej from Slovenian Migration Institute and Institute of Slovenian Ethnology of the Research Centre of the Slovenian Academy of Sciences and Arts on 'Walking as an Ethnological and Anthropological Research Methodology' in which four types of walking within academic research and production were critically analysed. The final paper in the group, 'Welcome in the Land of Slivovic: On Everyday, Culinary and Tourist Nationalism' by Jernej Mlekuž from the Slovenian Migration Institute of the Research Centre of the Slovenian Academy of Sciences and Arts based on the content analysis of newspapers from 1918–1945 open and rounded a sparkling debate of the section.

The fourth group started with 'Intercultural Communication and Perceptions of (In)Equality' presented by Karmen Medica from the Department of Media Studies, Faculty of Humanities, University of Primorska who touched upon the sense of belonging, social cohesion and dialogical communication in public spaces, topics that connected to spatial categories in other presentations through a different discoursive lense. The younger group of researchers and PhD students from the Department of Ethnology and Cultural Anthropology, Faculty of Arts, University of Ljubljana Veronika Zavratnik, Ana Svetel and Blaž Bajič presented their research in the area of Solčava entitled 'Imagined Communities, Communal Imagining: Land, Family and (Un)Changeability' in which they integrated parts of Vranješ's spatial conceptualizations and were lively discussants. The contested topic of authenticity was introduced in a paper '50 Shades of Authenticity: What Do We Want?' by Zrinka Mileusnić and Boris Kavur from the Institute/Department of Archaeology, Faculty of Humanities, University of Primorska. The tension between the tourism studies and archaeology approaches to cultural heritage was discussed with empirical cases that highlighted the double view as it were.

In the 5th group another pair of linguists from the Department of Cultural Tourism, Faculty of Tourism Studies – Turistica, University of Primorska Tina Orel Frank and Nina Lovec tackled the comparative use of 'eco' and 'eko' as in *ekoturizem, ecomuseo, eco-conscious* in English, Slovenian and Italian within a frame of the contemporary globalized linguistic co-creations and internationalization. The potentials of 'Accessible Tourism on Lake Balaton' was discussed by Zorana Medarić, from the same department based on research that aimed to evaluate the state of the art of accessibility in terms of information, transport, service and tourist attractions. The final paper, 'Water and the Leaf: Dialogical Imagination and Hospitality of Asian Tea Houses' by Irena Weber from the same department aimed to combine the historical and artistical representations of tea culture through the lens of literature and film with personal reflections on Vranješ's outdoor dedicated activities and the Zen Buddhist approach to the motif of loss and death in the contexts of contemporary Asian films.

The symposium was wrapped up by the concise presentation of the recent volume dedicated to Matej Vranješ *Potentials of Tourism Development in* UNESCO *World Heritage Sites of Slovenia* published by the University of Primorska Press that was co-edited by Vranješ and presented by his co-editors Aleš Gačnik and Tadeja Jere Jakulin from the Department of Cultural Tourism at the Faculty of Tourism Studies – Turistica, University of Primorska whose members were part of the research project discussed in the edited volume.

While the symposium was rather more emotionally charged than such events customary are, one of the agreed outcomes was the relevance and benefit of a small scale diverse academic encounter which led to the suggestion of a future biannual symposium on a shared topic(s).

Ponovni zagon gostinstva in turizma: sistemska dinamika in modeliranje na podlagi scenarijev

Petr Stumpf, Jitka Mattyašovská in Adriana Krištůfková

Turistična destinacija je opredeljena kot odprt, kompleksen in prilagodljiv sistem, v katerem nastajajo številni odnosi na gospodarskem, socialnem in okoljskem področju. Namen tega prispevka je opredeliti model sistemske dinamike turistične destinacije kot zapletenega sistema in ugotoviti vedênje sistema v prihodnosti, in sicer po ponovnem zagonu turizma v obdobju po COVID-19. Glavna metodološka pristopa sta bila sistemska dinamika in simulacijsko modeliranje. V pričujočem članku je predstavljen primer kompleksnega turističnega sistema v Južnočeški regiji (Češka) v obliki diagrama zaloge in pretoka (SFD), ki usmerja poslovne dejavnosti v to turistično destinacijo. Rezultati simulacije prikazujejo bodoča vedênja sistema v različnih okoliščinah in primerjajo razvoj več ekonomskih kazalnikov. Primerjamo tri možne scenarije ponovnega zagona gostinstva in turizma v teoretičnih okoliščinah brez bolezni COVID-19. Predlagani model sistemske dinamike prispeva k trenutni teoriji sistemov managementa turistične destinacije, upravljavci destinacij pa ga lahko dejansko uporabijo za načrtovanje v zvezi z destinacijami in oblikovanje strategij destinacij.

Ključne besede: sistemska dinamika, simulacijsko modeliranje, turistična destinacija, management destinacije
Academica Turistica, 14(2), 125–136

Namera kupcev za nadaljevanje uporabe mobilne navigacijske aplikacije v turističnem kontekstu: kateri bodo vodilni dejavniki?

Usep Suhud, Mamoon Allan, Dian Puspita Sari, Bayu Bagas Hapsoro in Dorojatun Prihandono

Mobilna navigacijska aplikacija z geografskim informacijskim sistemom je najpogosteje uporabljana za iskanje naslovov in najhitrejših poti do destinacije. Vedenje potrošnikov v povezavi z aplikacijo za mobilno navigacijo je bilo doslej deležno le skromne obravnave. Cilj te študije je izmeriti vpliv zaznanega zadovoljstva, zaznane uporabnosti, zadovoljstva strank in navad kupcev na nadaljnjo namero uporabe mobilne navigacijske aplikacije. Podatki so bili zbrani z uporabo spletne ankete, z metodo priročnega vzorčenja. Po mnenju Burnsa in Grova (2005, str. 351) je »priročno vzorčenje primerno za opisne in korelacijske študije, izvedene na novih raziskovalnih področjih«. V študijo je bilo skupaj vključenih 212 udeležencev, 110 žensk in 102 moških. Študija je pokazala, da sta med udeleženci najbolj priljubljeni aplikaciji Google Maps in Wazei. Zaznano zadovoljstvo je pomembno vplivalo na zaznano uporabnost in navado. Zaznana uporabnost je bistveno vplivala na zadovoljstvo. Zadovoljstvo je pomembno vplivalo na namen nadaljnje uporabe. Poleg tega je navada kupcev pomembno vplivala na zadovoljstvo in namen nadaljnje uporabe. Podana so tudi priporočila za prihodnje raziskave.

Ključne besede: namen nadaljnje uporabe, potrošnikove navade, geografski informacijski sistem (GIS), Google Maps, aplikacija za mobilno navigacijo, uporaba tehnologije, turizem, Waze
Academica Turistica, 14(2), 138–148

Moderatorski učinek dojemanja soustvarjanja vrednosti na razmerje med vrednostjo hotelske blagovne znamke in wom
Abdullah Uslu in Gözde Seval Ergün

V času vse ostrejše konkurence postajata vrednost tržne znamke in učinek pretoka informacij »od ust do ust« v vseh fazah nakupnega procesa vse pomembnejša. Ob tem se v storitvenih dejavnostih, kjer imamo opravka z neposrednim odnosom med stranko in zaposlenim, za analizo vse pogosteje uporablja kriterij zaznane verige vrednosti. Namen pričujoče raziskave je na vzorcu tujih turistov določiti učinek zaznane vrednosti tržne znamke na pretok informacij »od ust do ust«, hkrati pa preveriti, ali je pri tem prisoten učinek moderatorja s strani zaznane vrednosti soustvarjanja. Populacija v raziskavi so bili tuji obiskovalci Marmarisa v Turčiji. Na podatkih, pridobljenih s 358 izpolnjenimi vprašalniki, so bili izvedeni analize EFA, CFA in CFA druge stopnje ter testi naklona. Ugotovili smo, da ima vrednost tržne znamke učinek tako na zaznano vrednost soustvarjanja kot na pretok informacij »od ust do ust«, obenem ima zaznana vrednost soustvarjanja učinek na pretok informacij »od ust do ust«. Potrjen je bil tudi učinek moderatorja zaznane vrednosti soustvarjanja.

Ključne besede: vrednost tržne znamke hotela, informacije »od ust do ust«, zaznavanje vrednosti soustvarjanja, Marmaris
Academica Turistica, 14(2), 149–164

Dubajske restavracije: analiza turističnih mnenj
Vinaitheerthan Renganathan in Amitabh Upadhya

Na spletnih straneh, namenjenih potovanjem, socialnih omrežjih in blogih je na voljo ogromno informacij, med katerimi večinski del vsebine predstavlja tista, ki jo ustvarijo uporabniki. Ta spletna vsebina ima velik potencial za ocenjevanje občutij obiskovalcev glede destinacije. Navedeno sproža potrebo po vzpostavitvi avtomatiziranih sistemov za prepoznavanje vsebine teh zapisov. Analiza občutij, ki vključuje tehnike rudarjenja besedila in obdelave jezika brez prevajanja, pomaga pri identifikaciji sorodnih občutij iz podatkov, shranjenih v nestrukturiranih oblikah. Občutja, ki jih je mogoče prepoznati iz podatkov, lahko olajšajo odločitve turističnim delavcem ter izboljšajo storitve za stranke in razvoj novih izdelkov za turistična podjetja. Ta študija predstavlja model analize občutij, s katerim smo iz turističnih ocen o restavracijah v Dubaju prepoznavali implicitna občutja, ki obiskovalce mesta vodijo k odločitvam. Analiza občutij je bila opravljena z analizo ocen turistov o restavracijah v Dubaju, in sicer z uporabo metode spletnega razreza, z uporabo tehnik rudarjenja besedila s pomočjo programskega paketa R. Zbrane podatke smo nadalje analizirali z orodji za analizo občutij. S tem smo identificirali skrita občutja, ki smo jih nadalje

razvrstili v osem skupin. Analiza nam je pomagala odkriti implicitna občutja skupaj s pogostostjo pojavljanja posameznih kategorij. Na podlagi tega smo lahko ugotoviti tudi razlike med ocenami turističnega razpoloženja glede na različne kategorije restavracij. Prispevek ponuja model, s katerim lahko v prihodnosti poleg restavracij analiziramo tudi ocene, povezane z drugimi turističnimi proizvodi.

Ključne besede: turistične ocene, restavracije v Dubaju, analiza občutij, rudarjenje besedil, statistični paket R
Academica Turistica, 14(2), 165–174

Trajnostne inovacije: koncepti in izzivi za turistične organizacije
Mercedes Hernández Esquivel, Elva Esther Vargas Martínez, Alejandro Delgado Cruz in Juan Manuel Montes Hincapié

Turistična podjetja iščejo nove managerske strategije, ki bi jim pomagale ohraniti njihovo okolje in ustvarjati pozitivne učinke na družbeni prostor. Trajnostne inovacije predstavljajo možnost, s pomočjo katere lahko organizacije uvajajo spremembe, ne le v izdelke ali storitve, temveč tudi v svoj poslovni model, da bi dosegle ravnovesje med gospodarskimi, družbenimi in okoljskimi dejavniki. Namen pričujočega članka je prepoznati naravo in identificirati obseg obstoječe literature ter nadalje odkrivati vzorce interpretacije in raziskovalnih smeri, na podlagi katerih bi lahko ustvarili trdno izhodišče za akademsko in delovno skupnost. Odločili smo se za kvalitativen sistematičen pregled člankov, objavljenih v znanstvenih revijah, specializiranih za turizem, trajnost in upravljanje podjetij, z uporabo klasifikacije v zbirkah podatkov Web of Science in Scopus. Članke, objavljene v letih 2010 in 2020, smo filtrirali glede na merila ustreznosti. Raziskava vključuje pet kategorij: poslovni modeli, usmerjeni v trajnostne inovacije; trajnostne inovacije (radikalne ali postopne); dinamične zmogljivosti za trajnostne inovacije; vloga deležnikov v trajnostnih inovacijah in gonilniki trajnostnih inovacij.

Ključne besede: trajnostne inovacije, turistične organizacije
Academica Turistica, 14(2), 175–187

Analiza množičnih podatkov o konkurenčnosti trajnostnega turizma v provinci Vzhodna Java
Dias Satria and Joshi Maharani Wibowo

Provinca Vzhodna Java je bila znana kot ena od indonezijskih regij, ki je svojo regionalno gospodarsko rast povečala s turizmom. Cilj te študije je bil analizirati potencial konkurenčnosti trajnostnega turizma na podlagi podatkov o turističnih ocenah s spletnega mesta TripAdvisor v letu 2019. Podatki o turističnih ocenah v družabnih medijih ter TripAdvisor ocene so predstavljali primer množičnih podatkov (Big Data) za kvalitativno raziskavo, od koder so črpane informacije o turistični konkurenčnosti, kot so demografsko stanje, značilnosti destinacij in turistične potrebe. Izkazalo se je, da so izgrajene destinacije, kot npr. Jatim Park 2, trajnostne in konkurenčne kot naravne turistične destinacije, kot so krater Ijen in Bromo, Tengger in

Narodni park Semeru (BTSNP). Turizem bi lahko koristil regionalnemu gospodarstvu, če bi ga ustrezno raziskali in upravljali, zlasti za podaljšanje povprečne dobe bivanja in turistične potrošnje na območju destinacije Vzhodne Jave. Za uresničitev tega strateškega cilja v smislu povečanja konkurenčne sposobnosti in gospodarske dejavnosti smo podali štiri priporočila. Gre za naslednje štiri strategije: usklajevanje turističnih podjetij, utrjevanje skupne lokalne turistične znamke, lokalna turistična integracija in spodbujanje brezgotovinskih transakcij.

Ključne besede: množični podatki, turistična konkurenčnost, Vzhodna Java, trajnostni turizem
Academica Turistica, 14(2), 189–203

Uporaba Google Trends v mednarodnem turizmu: študija primera Češke in Slovaške

Patrik Kajzar, Radim Dolák in Radmila Krkošková

Prispevek obravnava uporabo Google Trendov v mednarodnem turizmu. Pozornost bo usmerjena v analizo vedênja čeških in slovaških turistov, ki so potovali v obmorska letovišča v letih 2010–2019. Namen prispevka je ugotoviti, ali obstaja povezava med podatki uradne statistike o tem, kam so potovali češki in slovaški turisti, in tem, kar so le-ti iskali v Googlovem iskalniku. Avtorji analizo Google Trendov primerjajo tudi s statističnimi podatki o čeških in slovaških turistih, ki potujejo v obmorska letovišča. V prispevku so uporabljeni tudi podatki iz leta 2010, povezani s priljubljenostjo čeških in slovaških destinacij, podatki od leta 2019 do decembra pa še niso na voljo. Ta članek bo zagotovil tudi podrobna statistična poročila z uporabo Spearmanovega koeficienta korelacije ranga. Zdi se nam pomembno omeniti, da se ta članek osredotoča le na analizo Google Trendov za potovalno kategorijo. Izbira destinacije je zapleten postopek, na katerega vplivajo številni dejavniki. Google Trendi so koristno orodje za napovedovanje potovanj v obmorska letovišča, vendar to ne odraža vedno priljubljenosti destinacije v primerjavi s statistiko.

Ključne besede: Google trendi, turizem, Češka, Slovaška, obmorska letovišča
Academica Turistica, 14(2), 205–216

Razlike v posledicah organizacijske ustvarjalnosti glede na velikost podjetij v turističnem sektorju: primer Bosne in Hercegovine

Danijela Madžar, Ines Milohnić, and Ivan Madžar

Namen prispevka je prikazati pomen organizacijske kreativnosti in preveriti, ali velikost podjetij v turističnem sektorju vpliva nanjo. V procesu upravljanja kreativnosti je ključno razviti sposobnost podjetja za kontinuirane spremembe in pogoste prilagoditve, hkrati pa ohraniti njegovo identiteto in vrednote. Osnovna hipoteza prispevka je, da obstajajo razlike pri upravljanju organizacijske kreativnosti med različno velikimi turističnimi podjetji. Rezultati raziskave so pokazali, da so večja podjetja uspešnejša pri obvladovanju kreativnosti, kar pojasnimo z lažjim dostopom do človeških, materialnih in finančnih virov. Na splošno je »obnašanje« podjetij v Bosni

in Hercegovini, zlasti v turističnem sektorju, razmeroma slabo raziskano. Rezultati pričujoče raziskave prispevajo nova dognanja o upravljanju kreativnosti v celotnem storitvenem sektorju ter specifično v turističnem sektorju Federacije Bosne in Hercegovine.

Ključne besede: upravljanje, organizacijska kreativnost, velikost podjetja, turizem
Academica Turistica, 14(2), 217–226

Mobilne naprave v turistični izkušnji: Tijuana, Baja California, Mehika
Ana María Miranda Zavala, Isaac Cruz Estrada in Margarita Ramírez Torres

Cilj te raziskave je analizirati digitalne storitve in orodja, ki se uporabljajo v mobilnih napravah, ter njihove koristi pri izkušnjah turistov, ki prispejo v mesto Tijuana v Mehiki. Prispevek preverja hipotezo, da uporaba digitalnih storitev na mobilnih napravah turistov prispeva k izkušnjam na destinaciji. Metodologija vključuje uporabo anketnega vprašalnika na 385 respondentih oz. turistih, ki so obiskali destinacijo. Izvedena je bila korelacija med spremenljivkami, uporabo mobilnih storitev in zadovoljstvom, faktorska analiza pa je pokazala pet komponent, povezanih s turističnimi izkušnjami. Ugotovljena je bila signifikantna korelacija med analiziranimi spremenljivkami, komponente faktorske analize pa so: neposrednost informacij in storitev na destinaciji, predvidevanje izkušenj, mobilnost, takojšnje sporočanje in zagotavljanje informacij v turističnih aplikacijah. Rezultati so pokazali povezavo med uporabljenimi storitvami preko mobilnih naprav in turistično izkušnjo pri načrtovanju ter bivanju na obiskani destinaciji.

Ključne besede: turisti, mobilne naprave, IKT, digitalne storitve, turistične izkušnje
Academica Turistica, 14(2), 227–240

Instructions for Authors

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the equation editor or MathType for equations. Whenever possible, use the SI units (Système international d'unités).

The title page should include the title of the article (no more than 85 characters, including spaces), full name of the author(s), affiliation (institution name and address) of each author clearly identified; linked to each author by use of superscript numbers, corresponding author's full name, telephone, and e-mail address.

Abstract. The authors are obliged to prepare two abstracts – one in English and one (translated) in Slovene language. For foreign authors translation of the abstract into Slovene will be provided.

The content of the abstract should include the purpose, methods, results, and contribution of the research. It should only contain the information that appears in the text as well. It should contain no reference to figures, tables and citations published in the main text, and should not exceed 250 words.

Beneath the abstract, the authors should supply appropriate keywords (3–6) in English and in Slovene. For foreign authors the translation of the abstract into Slovene will be provided.

The main text should contain a coherent and logical structure preferably following the IMRAD format (Introduction, Methods, Research [and] Discussion). However, other structures are also welcome (e.g. Introduction, Development and Conclusions) as long as the text maintains its logical structure and focus. Acknowledgments are optional.

The length of the articles should not exceed 9,000 words (including tables, figures, and references), double spaced, using Times New Roman font sized 12.

Tables. Each table should be submitted on a separate page in a Word document after References. Each table shall have a brief caption; explanatory matter should be in the footnotes below the table. The table shall contain means and the units of variation (SD, SE, etc.) and must be free of nonsignificant decimal places. Abbreviations used in the tables must be consistent with those used in the text and figures. Definition symbols should be listed in the order of appearance, determined by reading horizontally across the table and should be identified by standard symbols. All tables should be numbered consecutively (Table 1, Table 2, etc.).

Figures. Captions are required for all Figures and shall appear on a separate manuscript page, beneath table captions. Each figure should be saved as a separate file without captions and named as Figure 1, etc. Files should be submitted in *.tiff or *.jpeg format. Photographs should be saved at at least 300 dpi. Line art images should be saved at 1200 dpi. Lettering (symbols, letters, and numbers) should be between 8 and 9 points, with consistent spacing and alignment. Font face may be Serif (Minion) or Sans Serif (Myriad). Line width should be 0.5 point or greater. Any extra white or black space surrounding the image should be cropped. Ensure that subject-identifying information (i.e., faces, names, or any other identifying features) is cropped out or opaqued. Prior to publication, the author(s) should obtain all necessary authorizations for the publication of the illustrative matter and submit them to the Editorial Board. All figures should be numbered consecutively (Figure 1, Figure 2, etc.). The journal will be printed in black and white. If the paper contains graphs, we would appreciate that you also e-mail them in a separate Excel file.

References

References should be formatted according to the *Publication Manual of the American Psychological Association* (American Psychological Association, 2019).

The list of references should only include works that are cited in the text. Personal communications and unpublished works should only be mentioned in the text. References should be complete and contain all the authors that have been listed in the title of the original publication. If the author is unknown, start with the title of the work. If you are citing a work that is in print but has not yet been published, state all the data and instead of the publication year write 'in print.'

Reference list entries should be alphabetized by the last name of the first author of each work. Do not use footnotes or endnotes as a substitute for a reference list. Full titles of journals are required (not their abbreviations).

Citing References in Text

One author. Tourism innovation specific is mentioned (Brooks, 2010). Thomas (1992) had concluded . . .

Two authors. This result was later contradicted (Swarbrooke & Horner, 2007). Price and Murphy (2000) pointed out . . .

Three or more authors. Wolchik et al. (1999) or (Wolchik et al., 1999).

If two references with three or more authors shorten to the same form, cite the surnames of the first author and of as many of the subsequent authors as necessary to distinguish the two references, followed by a coma and et al.

List several authors for the same thought or idea with separation by using a semicolon: (Kalthof et al., 1999; Biegern & Roberts, 2005).

Examples of Reference List

Books

American Psychological Association. (2019). *Publication manual of the American Psychological Association* (7th ed.).

Swarbrooke, J., & Horner, S. (2007). *Consumer behaviour in tourism.* Butterworth-Heinemann.

Journals

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Wolchik, S. A., West, S. G., Sandler, I. N., Tein, J.–Y., Coatsworth, D., Lengua, L., … Griffin, W. A. (2000). An experimental evaluation of theory-based mother and mother-child programs for children of divorce. *Journal of Consulting and Clinical Psychology, 68,* 843–856.

Newspapers

Brooks, A. (2010, 7 July). Building craze threatens to end Lanzarote's biosphere status. *Independent.* http://www.independent.co.uk/environment/nature/building-craze-threatens-to-end-lanzarotes-biosphere-status-2020064.html

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Poirier, R. A. (2001). A dynamic tourism development model in Tunisia: Policies and prospects. In Y. Aposotolopoulos, P. Loukissas, & L. Leontidou (Eds.), *Mediterranean tourism* (pp. 197–210). Routledge.

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Price, G., & Murphy, P. (2000). The relationship between ecotourism and sustainable development: A critical examination. In M. Ewen (Ed.), *CAUTHE 2000: Peak performance in tourism and hospitality research; Proceedings of the Tenth Australian Tourism and Hospitality Research Conference* (pp. 189–202). La Trobe University.

Paper Presentation

Thomas, J. (1992, July). *Tourism and the environment: An exploration of the willingness to pay of the average visitor* [Paper presentation.] Tourism in Europe, Durham, England.

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Sedmak, G. (2006). *Pomen avtentičnosti turističnega proizvoda: primer destinacije Piran* [Unpublished doctoral dissertation]. University of Ljubljana.

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Salamon, L. M., Sokolowski, S. W., Haddock, M. A., & Tice, H. S. (2013). *The state of global civil society volunteering: Latest findings from the implementation of the UN nonprofitt handbook* (Comparative Nonprofit Sector Working Paper No. 49). Johns Hopkins University.

Web Pages

Croatian Bureau of Statistics. (2001). Census of population, households and dwellings. http://www.dzs.hr/Eng/censuses/Census2001/census.htm

Manuscript Submission

The main manuscript document should be in Microsoft Word document format and the article should be submitted to http://academica.turistica.si/index.php/AT-TIJ/about/submissions

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