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LOCAL PEOPLE'S VIEW ON TOURISM IN CONTEXT OF SUSTAINABLE TOURISM PRINCIPLES: AN IMPORTANCE-PERFORMANCE ANALYSIS

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ABSTRACT

Considering their central role as stakeholders at destination, local people's views and active participation in decision-making and implementation processes are important for the sustainability of tourism activities in the area. Therefore, it is of great importance to determine the local people's attitudes towards sustainable tourism and development. Goal of the current study is to reveal the importance and perceived performance of the local people towards sustainable tourism, in line with the sustainable tourism principles determined by the World Tourism Organization. In order to examine importance that local people give to these principles and perceived performance of their application, Importance-Performance Analysis (IPA) method was applied. Data was collected from 389 locals in Demre District of Antalya city in Turkey with the survey technique. According to the findings of IPA, local people reported high levels of importance to all sustainable tourism principles. On the other hand, perceived performance of local people towards application of all the principles, except "protection of biological diversity", shows low levels. Unique contribution of the current study is in providing the perspective on how local people evaluate sustainable tourism principles and emphasizes the awareness of important and perceived performance differences when it comes to sustainable tourism.

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INTRODUCTION

Acceleration of globalization and increase in industrialization in recent years have assured high living standards in developed countries, but also the environmental degradation due to the increase in consumption (Mebratu, 1998). Additionally, excessive use of resources, environmental pollution, forest destruction, and competition over resources among businesses (Ayuso, 2006) are among destructive effects of population on the environment. Due to these environmental problems, deterioration of tourism development and attractiveness of the touristic area can also occur (Zengin, 2006). Moreover, unplanned tourism development can harm the environment and, as the result of accelerated consumption, represents a threat for future generations (Nepal, 2000).

Nowadays, as an important economic and social phenomenon, tourism sector constantly records growth and development, in addition to creating deepening diversity. Due to its close connection with development, it is considered as a driver of socio-economic progress. Tourism represents one of the main sources of income for many developing countries (UNWTO, 2020a), with business volumes being equal or succeeding that of other leading products such as oil, cars or food products Based on the World Tourism Organization (UNWTO, 2020b) data, the number of visitors in the world in 2019 increased by 4% compared to 2018 (exceeded 1 billion 500 million), tourism revenues reached 1 trillion 700 billion dollars and the average per capita tourism expenditure amount exceeded 1133 dollars. In this state, tourism has become the most important industry, employing one in 10 people, providing 10% of the world's gross product, constituting 30% of the exports of the service sector, and realizing 7% of the world's exports. With 52 million 500 thousand visitors, Turkey broke a record in the number of visits, which is an increase of 14% in 2019. It entered into the world’s top 10 most visited countries, ranking on the 6th place.

Nowadays, the understanding of tourism is gradually moving away from its mass- tourism-oriented approach, which destroys nature and its socio-cultural values, towards a nature-based tourism approach, where nature and educated nature-friendly user profiles are in focus. Although mass tourism preserves its large share in international travel, nature-based tourism continues to increase (Eseretal., 2012). One of the reasons that trigger this state is changing tourist profiles (Tanrısever, 2019). Tourists have started to prefer calm and clean places, highlighted with untouched nature (Çelik, 2016). Since mass tourism has visible negative effects on both physical and social environment, and considering the tourists’ expectations, it has become vital to assure sustainability of the tourism sector. This is necessary in order to minimize the risk factors, characteristic for this industry (Altanlar & Akıncı Kesim, 2011). The profile of tourist involved in sustainable tourism assumes an individual who makes his/her own decisions, prefers sportive activities and cultural excursions in nature, and does preparation prior to visiting country or destination. At the same time, he/she shows respect for natural resources, and has high awareness of environmental protection (Higham & Carr, 2002). Keeping tourist satisfaction at high levels by providing meaningful experience, raising awareness among tourists about sustainability issues and encouraging them to participate in these is the main premise of sustainable tourism (Selvi & Şahin, 2012).

The local people living in a destination are one of the most important stakeholders in ensuring, protecting, and applying sustainability at destination. It is not possible to ensure sustainability in tourism and to implement sustainable tourism principles by ignoring or excluding local people from tourism management processes.

Through local people - visitors interaction established in accordance with the principles of sustainable tourism, it is possible to protect natural, historical, and cultural resources, to keep the number of visitors to the region under control, to contribute to the local economy, to ensure mutual tolerance, and to reduce prejudices (Bramwell & Sharman, 2002). Otherwise, it may cause problems and negative attitudes of local people towards tourism and tourists (Altanlar& Akıncı Kesim, 2011). Moreover, in order to assure successful and sustainable tourism, it is vital to adhere to the attitudes of local people (Brunt & Courtney, 1999). Otherwise, when opinion and perception of these stakeholders are not considered, assuring sustainability becomes impossible (Mathieson & Wall, 1989). Therefore, the current study aims to examine the thoughts of the local people towards sustainable tourism through their importance and perceived performance evaluation of the sustainable tourism principles, determined by the WTO. Another goal of the study is to understand whether there is a difference in given importance and perceived performance related to sustainable tourism principles according to socio-demographic characteristics. This will provide an insight into local community’s awareness of the sustainability concept, its issues and principles, perception of their role in the process of establishing and supporting sustainable tourism development, together with their evaluation of perceived performance in application of the sustainability principles.

LITERATURE REVIEW

Sustainable Tourism

The view that people can use nature as they desire for their own benefit changed in 1950s when the concept of sustainability was introduced (Barrow, 2006). However, this concept is used for the first time in the modern literature in the book titled “The Limits of Growth” published in 1972 by the think tank “Club of Rome” (Ehnert, 2009). The importance of sustainability concept was not understood until the 1972 and UN conference in Stockholm on “Human Environment” (Alkan, 2015). The UN World Commission on Environment and Development, published the report "Our Common Future" in 1987 also known as the "Brundtland Report". Here the sustainable development was defined as the one “that meets the needs of the present without compromising the ability of future generations to meet their own needs” (UNWTO, 1987, p. 16). Evaluation of decisions adopted at Stockholm Conference and defining them into policies was done at environment and development conference in Rio de Janeiro in 1992 (Karaçor, 2020), with sustainability becoming an important and popular concept for all countries worldwide (Yavuz, 2015). Among the first principles of sustainability is adoption of a human-oriented thinking system and the idea that every individual has an equal share of natural life (Kervankıran, 2011). Second principle that was in focus was the necessity to establish the goal of economic development and growth in such manner that it meets the needs of sub-societies and to determine the methods that will ensure the continuity of ecological sustainability (Karayılan, 2014). Finally, in 1993 the first issue of the Journal of Sustainable Tourism was published as the reflection of the academic world’s increased interest in the subject (Pünjer, 2013).

Although it has a long history, the concept of sustainability is still difficult and complex to define (Cooper et al., 2005). It can be considered as a participatory process that ensures the cautious use of all social, cultural, scientific, as well as natural and human resources of the society, creating a social perspective based on respect (Gladwin et al., 1995). Moreover, it assumes the efficient use of resources, widespread of clean production and recycling by reducing unwanted outputs and waste (Chapin et al., 1996). Based on these premises, the basic idea that constitutes the concept of sustainability is to benefit from natural and cultural resources without destroying their quality, while keeping in mind the needs of both present and future generations (Sarı Nayim, 2017).

By complying with the principles of sustainability, it is possible to establish a balance between the natural environment and human behavior (Atak, 2016). In this context, the concept and principles of sustainable tourism have emerged as a result of the reflections of sustainability principles on tourism phenomenon (Aydın Tükeltürk & Yılmaz, 2013). Sustainable tourism ensures quality growth that does not disrupt the environment but preserves the culture, history, and heritage of the local community (Edgell et al., 2008). Moreover, it meets the needs of tourists and local people, ensuring the protection of both natural and cultural environment and transferring it to future generations (Cernat & Gourdon, 2007). Besides being positive approach, aiming towards maximizing the harmony between the tourism industry, tourists, local people, and the environment (Garrod & Fyall, 1998), sustainable tourism also stipulates maximum attention to the protection of cultural integrity. On the other hand, it allows generation of the economic income by providing products and services (Jayawardena et al., 2008). Thus, implementation of sustainable tourism is possible through comprehensive examination of national or regional characteristics, determination of applicable policies and principles (Lickorish & Jenkins, 1997), as well as with the support of all participants, without damaging the country's ecological, social, and economic systems (Carey et al., 1997).

Besides benefits for today's societies, sustainable tourism also aims to ensure continuous protection of touristic destinations in the future regarding natural, social, and cultural resources (Belber, 2018). With an improved, manageable, and balanced approach and perspective that considers the carrying capacity of sustainable tourism (Edgell, 2006), destinations should envision attracting groups that are compatible with the supply in region or destination, moving away from solely demand-driven perspective (Gündüz, 2016). It should be managed with principles of niche marketing, aiming to maximize the satisfaction of both tourists and local people (Tahtasakal, 2019). Observed in this manner, sustainable tourism is the one that ensures future productivity and renewal of natural resources, that tourism experiences contribute to the traditions and lifestyles of people and societies, and that a fair share of the economic benefits is provided for local people and tourism activities at the destination (Butler, 1999).

Contribution of the sustainability concept to the preservation of natural, historical, cultural, and other resources at tourist destination is enormous for both current society and future generations. At the same time, sustainability can have a leading role in regional tourism development, and in the process of making and managing tourism investments in a way that will not cause environmental and socio-cultural damages within touristic destinations. In destinations with intense tourism activities, the concept of sustainable tourism is of great importance in ensuring the continuity and even further development of touristic attractions of the general and local environment. Thus, the sustainable tourism will enrich the visitors' and local people's satisfaction and strengthen the market power and popularity of the destination (Ercan, 2014).

According to Buckley (2012) tourism researchers started to examine social and environmental issues from the early 1970s (Young, 1973; Turner & Ash, 1975; Smith, 1977; Cohen,1978; Brougham & Butler, 1981; Liu & Var, 1986; Farrell & McLellan, 1987; Cater, 1987; Allen et al., 1988;). Sustainable tourism studies have attracted great interest in many scientific studies and have been one of the rapidly developing fields of tourism research in 1990s (Nash & Butler, 1990; May, 1991). In this period, the term "sustainable tourism" was used for the first time. During the 1990s, basic frameworks from the fields of tourism (Hall & Butler, 1995; Hughes, 1995; Clarke, 1997; Hunter, 1997; Butler, 1999), economics (Driml & Common, 1996; Garrod & Fyall, 1998) and environmental management (Buckley, 1996) were studied. In the 2000s, Sharpley (2000), Gössling (2002), Liu (2003), Saarinen (2006) and Lane (2009) have introduced several reconceptualizations and criticisms of sustainable tourism.

Sustainable tourism emerged as a partially negative and reactive concept in response to many tourism problems, such as environmental damage and significant negative impacts on society and traditional cultures (Bramwell and Lane, 1993). Slowly, tourism development was considered as a key solution that could create positive change through sustainable tourism ideas. In this context, sustainable tourism has contributed in identifying ways to assure positive benefits, as well as resident regulation and development control approaches (Bramwell & Lane, 2012).

The conception of sustainable tourism that embraces the principles of sustainable development, has gained great interest in recent years (Demunter, 2017). Besides achieving economical goals, sustainable tourism assumes evaluation of environmental and social dimensions by focusing on reducing, remediating, or improving negative environmental, social, and economic impacts (Loaiza et al., 2019). Finally, sustainable tourism contributes to the realization of the sustainable development goals agenda (SDGs) (UNWTO & UNDP, 2017).

When it comes to sustainable tourism, both innovation and adoption are critical for improving social and environmental performance across the entire industry. While tourism businesses often pioneer new approaches, these approaches need government legislations to expand. Within the scope of these legislations, there are regulations such as improvement of sustainability in accommodation businesses at destinations, planning, impact assessment, protection of biodiversity and heritage, pollution control, energy and water efficiency, recycling, etc. Voluntary private initiatives can contribute by initiating regulatory change (Buckley, 2012). Both tourism and sustainability are changing faster than the industry is able to embrace sustainability improvements, which is affecting the future predictions about sustainable tourism. Conflicting social and economic pressures are impacting future of tourism (Becken & Schiff, 2011). In this context, local people's awareness and attitude are of great importance in the implementation of the sustainability procedures and practices that will provide optimum benefit among the stakeholders.

Sustainable Tourism and Local People

Cooperation between different stakeholders (governments, local and regional organizations, associations, sector representatives, academics, and local people) is an important premise for the success of sustainable tourism (Gümüş Dönmez, 2016). It is possible to ensure the satisfaction of both local people and visitors through sustainable policies and planning. All stakeholders within the destination, especially local people, should be included in the policy- and plans-creation process regarding specific destination. Otherwise, incomplete, and insufficient application will come out (Genç et al., 2014). While tourists may be temporarily affected by the negative effects of tourism relations, such effect is constant on the local people and community (Prekarz & Callanan, 2013).

The goal of achieving success and sustainability in tourism is largely dependent on the acceptance of tourism plans by local people. Local people, the basic human elements of a destination, evaluate the costs and benefits of destination they live in as their hosts and make inferences about tourism. Their perceptions need to be analyzed in order to obtain better understanding of dynamics and evolution of sustainable tourism (Bimonte & Punzo, 2016). This issue is among the main activities that will help to obtain information about the sustainability of tourism. Since local people are primary mass at destination, it is inevitable to think about them when it comes to practical application of sustainable tourism. Giving priority to local people and including them in the destination managing process will assure that the plans come to life in the implementation phase without many difficulties. As one of the most important stakeholders at touristic destination, local people play a major role in supporting policies towards sustainable tourism in coordination with other stakeholders (Tokmak, 2019).

Local people need to understand, absorb, apply, and sustain the sustainability issue (Gündüz, 2017) because they can be directly or indirectly affected by the decisions made. Including local people in tourism-related processes and ensuring they have a word in decision making is considered important, as this may make them feel as a constructive part of tourism (Aas et al., 2005). Application of the policies for sustainability of tourism development is very important for the success of destinations (Yoon et al, 2001). When this is not achieved, changes in behavior and social habits of local people will cause negativity in terms of destination sustainability (Lickorish & Jenkins, 1997). This is especially the case if the living area of local people at the destination is disrupted, if there is a price increase, degeneration of the local language, or there is a need to protect the local socio-cultural structure from problems caused by visitors' consumption of alcohol and tobacco (Durovic & Lovrentjev, 2014). In addition, seasonal character of employment, increasing pressure on prices that further cause increase of life costs such as living or renting, are among the negative effects of tourism for local community (Brida et al., 2011).

During the high season, extreme flux of tourists, combined with traffic and parking problems at destination, may cause great pressure on the infrastructure of the region (Sheldon & Abenoja, 2001). Among other problems are increasing costs of living, the use of alcohol and illegal pills, environmental damage, and increasing pollution. Once the perception of the excessive negative effect of tourism occurs among locals, their support for tourism starts to decrease (Sinclair-Maragh et al., 2015). These damages induced by tourism are causes for the formation of negative attitudes among local people towards tourism and tourists (Almeida-Garcia et al., 2016). However, sustainable tourism assumes minimization of negative and maximization of positive effects (Çelik, 2016). Among the positive effects of tourism for local community are new employment opportunities (Andereck & Nyaupane, 2011), important revenue source, widening of the region's business environment, increase of the life quality among local people, assuring protection of the archeological heritage and monuments (Oviedo-Garcia et al., 2008). With sustainable tourism, the economy will revive, business diversity will increase, and, hence, improvements will occur in the working conditions and incomes of the local people (Baker & Cameron, 2008). In order to adopt the sustainable tourism idea, priority should be given to products such as local and authentic products and handicrafts, for which knowledge and skills of local people are vital. This, in turn, can provide them with a source of income (Tatar, 2016). At the same time, local people are potential domestic customers for tourism businesses (Sağır, 2016).

As local people (communities) are in many cases the most affected, they need to be considered and assured with participation in the decision-making process (Gani et al., 2012). By many researchers, taking the views of the local people (community) as a stakeholder in touristic destinations and their active participation in decision-making processes are accepted as key factors for sustainable development and sustainable tourism. Godfrey (1998) evaluated the attitudes of local tourism managers following the principles of sustainable tourism. In this assessment, it was emphasized the necessity of involving local people in the planning and management of the local environment through community participation. This aspect is considered vital in defining the future of tourism activity in the country. In the same study, it was stated that if there is seriousness in harmonization between tourism and the host community, consultation and dialogue with the local people are of vital importance. Thus, it is necessary to listen to what the local people have to say.

In their study, Olcer and Ekiz (2016) stated that tourism is expected to stimulate the economy in a developing region. Thus, tourism development should meet the expectations of the local people by providing economic, socio-cultural, and environmental benefits. It is suggested that local people's opinions about sustainable tourism should be taken and included in tourism planning and managing processes. In the study conducted by Ayad and Shujun (2013) among local people, it was determined that sustainable tourism development has positive effects on local community. Therefore, sustainable tourism development policies should be concentrated on tourism activities and projects that meet the expectations and needs of local people. In this context, raising awareness of the local people on sustainable tourism and taking their perspectives into account, as well as optimizing the benefits of sustainable development should be the main approach. Jeffrey and Jalani (2012) determined that local people attach great importance to the protection of the natural environment in the context of sustainable tourism. In their study examining the attitudes of the local people towards sustainable tourism development, Kostopoulou and Kyritsis (2003) revealed that the participants had a positive perception and that they cared about the necessity of planning, designing, and implementing activities according to the sustainable tourism approach.

A report called "Beyond the Green Horizon" was presented by the Tourism Concern (TC) and the World Wildlife Fund for Nature (WWF) at the United Nations Rio Conference in 1992, and it was adopted by the World Tourism Organization. According to this report, sustainable tourism principles, which are formulated in 10 articles, play a significant role in the contribution of local people to sustainable tourism (TC & WWF, 1992). In this context, emphasize is on the views of local people and ensuring their participation in the planning, decision-making, and action processes for sustainable tourism (Dağlı, 2018).

Importance-Performance Analysis

Importance-performance analysis (IPA) was first used in performance analysis for the automobile industry by Martilla and James (1977). This method was developed in tourism and hospitality industry in order to assess the importance of service features and customer satisfaction (Go & Zhang, 1997; Hollenhorst et al., 1986), more specifically for revealing product features that impact customer satisfaction and identifying factors that increase quality of a service (Bacon, 2003). Since it is not an expensive technique and it is easy to interpret the results (Bruyere et al., 2002), IPA has become a very popular method. Moreover, Oh (2001) states that its wide acceptance is due to ability to effectively reflect on obtained data and the strategic suggestions derived from these. In this way, it can be determined which of the examined product features are relatively more important for customers. Thus, effective marketing strategies can be developed by comparing the related product performances (Deng et al., 2008). Finally, business managers can make more rational decisions with limited resources and increased customer satisfaction. It is mainly used by researchers due to the positive correlation between performance and importance levels of features (Sampson & Showalter, 1999; Matzler et al., 2003). IPA was used in the previous literature in terms of evaluating the holiday destination (Pike & Ryan, 2003), in evaluating the dining experience qualities of restaurants (Hu et al., 2009), in restaurant positioning (Keyt et al., 1994; Hsu et al., 1997), in formulating and evaluating tourism policy (Evans & Chon, 1989), defining tourists' perceptions of the hotel industry (Lewis, 1985), in identifying tools to increase customer satisfaction (Almanza et al., 1994) and in enhancing hotel service providers' quality service expectations in order to determine customer perceptions (Martin, 1995).

Using a matrix design, IPA analysis is based on comparison between the importance of subject or dimension’s characteristics and the performance of these features. This can allow managers to make more accurate decisions, especially regarding to which areas limited resources should be transferred to (Albayrak & Caber, 2011). IPA framework defines the action levels that business managers should consider. This system consists of four quadrants (Table 1). Features in the first one are graded as those of high importance but low performance. This quadrant implies that managers need to take urgent measures in order to increase service or product performance, to plan performance-enhancing activities and to focus on this department. Second quadrant represents qualities that score high in both performance and importance. For these quadrant's features, it is important to preserve and continue with the same performance level as this will protect company's competitiveness and continuous commercial growth. Those features that are evaluated as a low priority in terms of both importance and performance are located in the quadrant number three. Thus, management should not pursue any action on these low priority attributes and should not divert management's scarce resources to customers' low priority characteristics. The fourth quadrant specifies features with high performance but low importance and priority. At this level, scarce resources in this section should be directed to other more productive and important activities of the company, primarily to those in the first quadrant (Obonyo et al., 2013).

The importance-performance analysis used in this study will enable the local people to reveal the level of importance given to the determined sustainable tourism principles, and the perceived performance level of all stakeholders in the context of applying sustainable tourism principles. Thus, this analysis will allow a comparative examination of the importance given to sustainable tourism principles and the perceived performance shown for the implementation of these.

Table 1. *Importance-Performance Matrix*

High Importance	I.Quadrant *Concentrate here* Need to Concentrate On	II.Quadrant *Keep up with the good work* Need to Protect
Low Importance	III.Quadrant *Low priority* Low Priority	IV.Quadrant *Possible Overkill* Possible Excesses
	Low Performance	High Performance

Resource: Martilla and James (1977)

RESEARCH METHOD

Research Setting

As of 2019, there are 407 5-star hotels in Antalya, which has 2.6 million population, and a total of 899 accommodation facilities certified by the Ministry of Culture and Tourism. There are 500,583 beds in 899 facilities in Antalya, which has 42 percent of 1 million 200 thousand ministry-certified beds across Turkey (Antalyaekspres, 2020). Almost all of the 4- and 5-star hotels in Antalya are located on the coast and serve to sea tourism (mass tourism). As can be seen from the data, the density of sea (coastal) tourism in Antalya exceeds the tourist carrying capacity of Antalya Province in terms of sustainability in tourism. Demre district which has 51 hotels, and 3504 beds is also under the pressure of mass tourism with its coastal and sea attractiveness.

The current study was conducted in Demre district of Antalya province, one of the 6 most important cities of the Lycian civilization. Demre district is located in southwestern part of the Antalya Province (Figure 2), which is considered Turkey's tourism capital and one of the most beautiful places on the Mediterranean coast (Figure 1). It was founded in the 5th century BC when it was disconnected from the sea as a result of the alluvium brought by the Demre stream. St. Nicholas Church, Myra Ancient City and its Theater, Andreake Ancient City, Rock Tombs, Simena Ancient City are only some of the extraordinary touristic attractions in this area. St. Nicholas, known as Santa Claus, was born in Patara and buried in Demre. In the honor of St. Nicholas, today known as the main saint of many countries, a ceremony is held every year on December 6, calling for peace, friendship, and brotherhood. He is also known as the Santa Claus in the children’s world. Demre is also known for its Kekova island and the sunken city, surrounded by clean sea and wonderful climate. However, despite all these beauties, Demre cannot get the deserved share from tourism. Although it has a great potential as a tourism destination, due to its historical background and geographical location, it is still undervalued because of the transportation difficulties and the scarcity of accommodation facilities. The majority of its economy is based on agriculture, with early vegetables grown in greenhouses (MCT., 2020). The reason for choosing Demre as an area to conduct the research is due to its extraordinary natural, historical, and cultural heritage combined with coastal tourism. Moreover, this area still has not suffered from negative effects of mass tourism, as it still has not been opened to tourism at a sufficient level.

Figure 1. *The Map of Turkey*

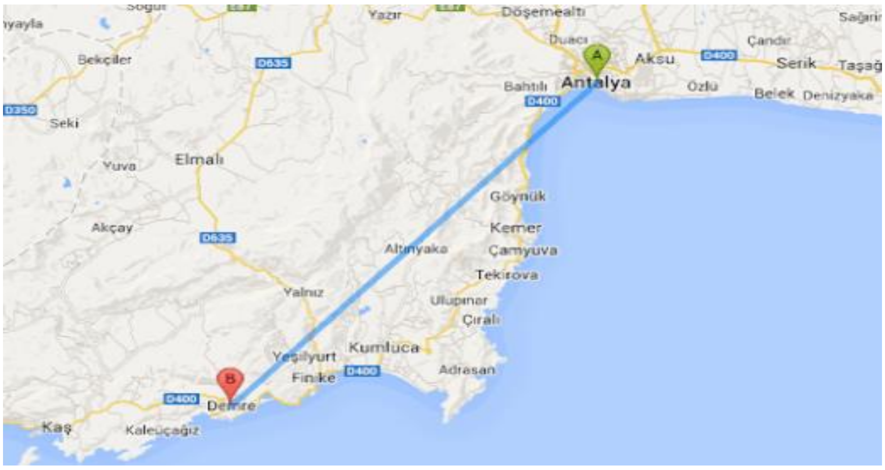

Figure 2. *The Map of Demre Town*

Data Collection

According to the statistical data for 2019, 26.362 people are living in Demre (Nufusu.com, 2020). The study population consists of people over the age of 18 living in Demre district. By adopting a quantitative research method, data were collected from 389 participants with a convenience sampling method and face-to-face survey technique. Participants were volunteers, over the age of 18, easily accessible and randomly selected among the citizens living in Demre District. The sample of 389 participants can represent the research population targeted in the study (Yazıcıoğlu & Erdoğan, 2004). As a non-random sampling method, in which the population sample is selected according to researcher's judgment, convenience sampling was adopted in collecting data. The researcher tries to select the units that he/she believes represent the sample in the best way from each part of the sample. This choice varies from person to person.

According to this method, the most easily found participant is the ideal one (Malhotra, 2004; Aaker et al., 2007). Kinnear and Taylor (1996) reported that there is the 53% rate of convenience sampling use in practice, while Kurtuluş (2004) noted that in Turkey this rate goes to approximately 90%.

Considering that the sample should appropriately represent the main mass, authors tried to reach individuals from different segments. For these reasons, in this study, a sample stack was formed from the segments that represent the local people. The questionnaire, which was prepared in line with the sustainable tourism principles (as 10 items) determined by the Tourism Concern (TC) and Worldwide Fund for Nature (WWF), and adopted by World Tourism Organization (UNWTO), was applied voluntarily to the local people living in Demre. Sustainable tourism principles have been translated from English to Turkish. The relevant principles were arranged in order to reveal the level of importance that local people attribute to these principles, and perceived performance in their implementation. Demographic-related questions were included in the first part of the questionnaire. Second part of the questionnaire consisted of 10 expressions that can reveal the importance that local people attribute to sustainable tourism principles. This part is followed by 10 expressions about local people's perceived performance of these sustainable tourism principles. For the second and third parts of the questionnaire, participants were asked to rate the expressions from strongly disagree (1) to strongly agree (5). To reveal the local people's attitudes towards the determined sustainable tourism principles, the survey was applied to 389 people living in Demre between November 2019 and June 2020, and SPSS 20.0 package program was used for the analysis.

RESEARCH RESULTS

Participants Demographic Characteristics

Important aim in this study was to reveal whether there are differences in the importance and perceived performance attributed to sustainable tourism according to demographic variables. Thus, to determine the demographic characteristics of the local people living in Demre, 5 questions related to gender, age, income, education, and profession were asked and percentages were given in Table 2.

The relations between the average level of importance to sustainable tourism principles according to the demographic characteristics of the participants and the average perceived performance levels in the context of the application of these principles were examined with t-Test. When looking at t-Test results, there is no significant difference in importance levels between gender, but there is a significant difference (t: 2.891 $p < 0.04$) between gender and perceived performance levels: female (mean: 30.09) were found to perceive a higher perceived performance level compared to men (mean: 26.84).

Table 2. *Demographic data*

Variables	N	%
Gender		
Male	217	55.8
Female	172	44.2
Total	389	100
Age		
18-25	150	38.6
26-35	108	27.8
36-45	78	20.1
46-60	35	9.0
61 and over	18	4.6
Total	389	100
Monthly Income		
0-1500	106	27.2
1501-2500	103	26.5
2501-3500	80	20.6
3501-5000	65	16.7
5001 and over	35	9.0
Total	389	100
Education		
Basic Literacy	18	4.6
Primary School	49	12.6
High School	142	36.5
Vocational School	79	20.3
Faculty	92	23.7
Master-PhD	9	2.3
Total	389	100
Profession		
Student	104	26.7
Housewife	25	6.4
Public Employee	61	15.7
Farmer	42	10.8
Tradesmen	64	16.5
Private Sector Employee	70	18.0
Private Sector Manager	11	2.8
Public Employee Manager	12	3.1
Total	389	100

Analysis of variance (ANOVA) is a method that allows analyzing the general variance belonging to the examined variable in the data set, obtained from the sample group by separating it into the elements that contribute to this change. Aim of the current study is to determine the importance given to sustainable tourism principles of some socio-demographic elements and the differences in perceived performance related to these principles with the ANOVA test. The test is supposed to show whether there is a significant difference between the importance and perceived performance levels of sustainable tourism principles according to participants' profession, income, education, and age. As a result of the t-test and ANOVA, data reveal the importance local people give to sustainable tourism principles as well as the perceived performance towards these principles according to their demographic characteristics. In line with these data, the ability of local administrators and destination organizations to infer the level of local people's knowledge and awareness about sustainable tourism provides important contributions to making the right strategic decision about the destination.

While there was no significant difference between the average importance levels of the participants according to their income, there was a significant one between their average perceived performance levels (F: 4.043, $p<0.03$). Participants whose income was between 3501-5000 TL had higher average perceived performance levels (mean: 31.95) than compared to other income levels. According to the education levels of the participants, a significant difference was found between both the average importance levels (F: 4.664, $p<0.000$) and the average perceived performance levels (F: 2.315, $p<0.043$). The higher the education level (e.g., primary education mean: 40.71 and faculty mean: 44.84), it was found that the importance levels increased, while the perceived performance levels (e.g., primary school mean: 29.61 and faculty mean: 26.09) decreased.

Results showed the differences between the participants' occupations according to both importance levels (F: 4.214 $p<0.000$) and perceived performance levels (F: 4.018 $p<0.000$). In this context, while the importance given by farmers (mean: 40.73) is lower than other professions, private sector managers' level of importance (mean: 47.36) is higher than other professions. When the perceived performance levels are examined, the perceived performance of the tradesmen is lower (mean: 22.89), while farmers' perceived performance (mean: 33.21) is higher than other professions. However, there was no significant difference between the average importance levels and average perceived performance levels of the participants according to their ages.

Table 3. *Averages of importance and perceived performance expressions*

Question No.	Expressions Used	Importance	
According to me in terms of sustainable tourism;		$\bar{x}$	Standard Deviation
1	Resources must be used in a sustainable manner.	4.455	0.844
2	Excessive consumption and waste should be reduced.	4.434	0.789
3	Biological diversity should be protected.	4.413	0.831
4	It should be included in tourism planning.	4.347	0.828
5	Local economies should be supported.	4.308	0.892
6	Local people should be included in decision making process.	4.118	1.000
7	Stakeholders and the public should be consulted.	4.275	0.935
8	Staff should be educated.	4.449	0.864
9	Tourism marketing should be done in responsible manner.	4.429	0.781
10	Scientific research should be conducted.	4.334	0.920
Question No.	Expressions Used	Perceived Performance	
According to me in terms of Sustainable Tourism in Demre		$\bar{x}$	Standard Deviation
1	Resources are used in the sustainable manner.	2.971	1.349
2	Excessive consumption and waste are reduced.	2.979	1.363
3	Biological diversity is protected.	3.012	1.293
4	It is included in tourism planning.	2.886	1.269
5	Local economies are supported.	2.933	1.239
6	Local people are included in decision making process.	2.789	1.351
7	Stakeholders and the public are consulted.	2.758	1.395
8	There is the sufficient educated staff.	2.655	1.298
9	Tourism marketing is done in responsible manner.	2.709	1.345
10	Scientific research is conducted.	2.586	1.459

10 sustainable tourism principles were translated and arranged in line with the study's goal to reveal the importance that the local people attach to the principles and their perceived performance. In Table 3, importance level and perceived performance averages are given in line with the answers given by the local people living in Demre. Importance level and perceived performance averages ranged from "strongly disagree (1)" to strongly agree (5)". According to average importance results, it was determined that "local communities should be included in decision-making processes" (4.118) is the expression with the lowest average while "resources should be used in a sustainable way" (4.455) was the one with the highest average. According to average perceived performance findings for Demre, the lowest expression is "scientific research is being done" statement (2.586), while the highest expression is "biological diversity is protected" (3.012).

The scattering made to form the importance level and perceived performance matrix is shown in Figure 3. First, the importance and perceived performance of the expressions were averaged. Secondly, the median of the 5-point Likert scale was taken to determine the cut-off points of the stated averages. As a measure of the central tendency, median values are theoretically preferred to the mean value because the mean may not be a true range scale (Martilla & James, 1977; Silva & Fernandes, 2011). This is the reason why median values were used. In general, it is the researcher's or manager's decision at what point the axes intersect. Changing the axes' intersections provides flexibility in interpreting results and determining product or service standards (Bruyere et al., 2002).

In the formation of crosshairs, the use of median that divides the series into two, according to the 5-point Likert scale, was deemed appropriate for this study. Although sustainable tourism principles have been put forward, it is necessary to take into account that there are not yet generally accepted indicators and sub-indicators to determine whether a tourism activity is sustainable. For this reason, the selection of crosshairs that outline the main indicators was made. According to Azzopardi and Nash (2013: 226), "the choice of crosshair points is rather subjective and depends on the researcher's objective". The matrix created is shown in Figure 4.

Concentrate here (High importance and low perceived performance)-Quadrant I: According to the median of the scale, it is seen that all sustainable tourism principles put forward by the WTO are given high importance by the local people. However, it was determined that their thoughts about the perceived performance level that should be applied in ensuring the sustainability of tourism is at a low level with respect to all principles, except the principle of "Protection of biological diversity-(A3)". According to the mean of data "Staff education-(A8)", and "Responsible tourism marketing-(A9)" are in this quadrant (Table 1).

Keep up with the good work (high importance and high perceived performance)-Quadrant II: According to the median of the scale "Biological diversity protection" is in this quadrant. However, according to the mean of the data "Use of resources in sustainable manner-(A1)", "Reduction of Excessive consumption and waste-(A2)", and "Protection of biological diversity-(A3)" are in this quadrant. Expressions in this segment of the matrix are those for which local people's view on importance and perceived performance is high and imply which elements should be protected (Table 1).

Low priority (low importance and low perceived performance)- Quadrant III: According to median of the scale there are no expressions in the possible overkill Quadrant of matrix. However, according to mean of the data, there are "Local people included in decision-making process-(A6)", "Stakeholders and the public should be consulted-(A7)" and "Conducting scientific research-(A10)" principles, where both the importance given, and the perceived performance are low (Table 1).

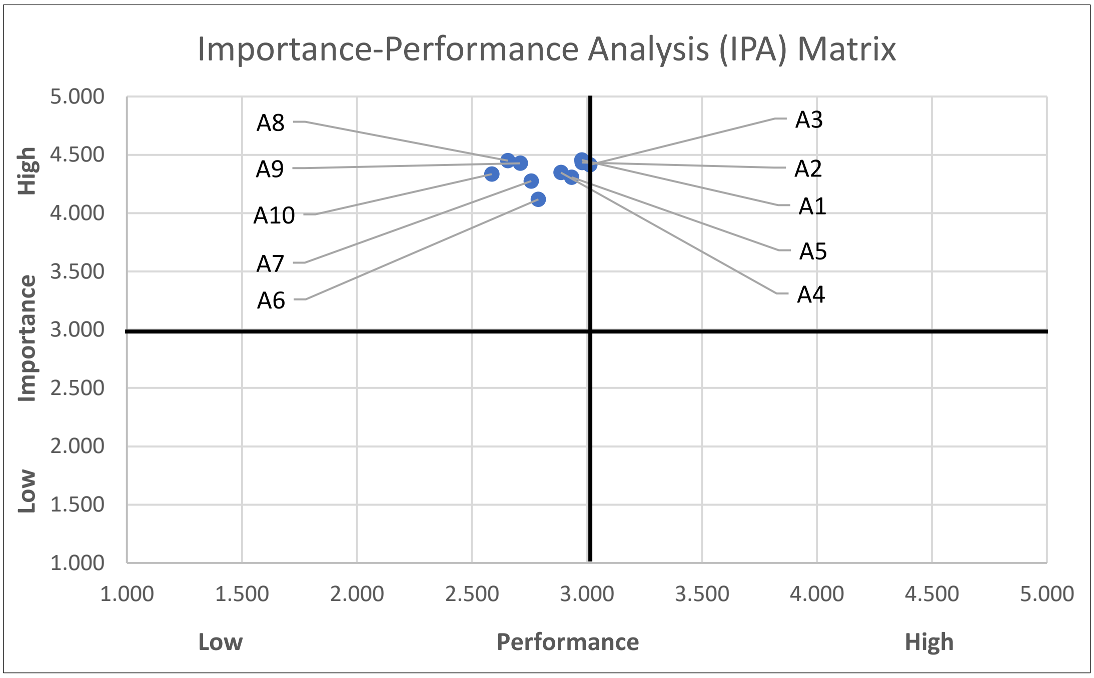

Figure 3. *Scattering of expressions by the median of the scale*

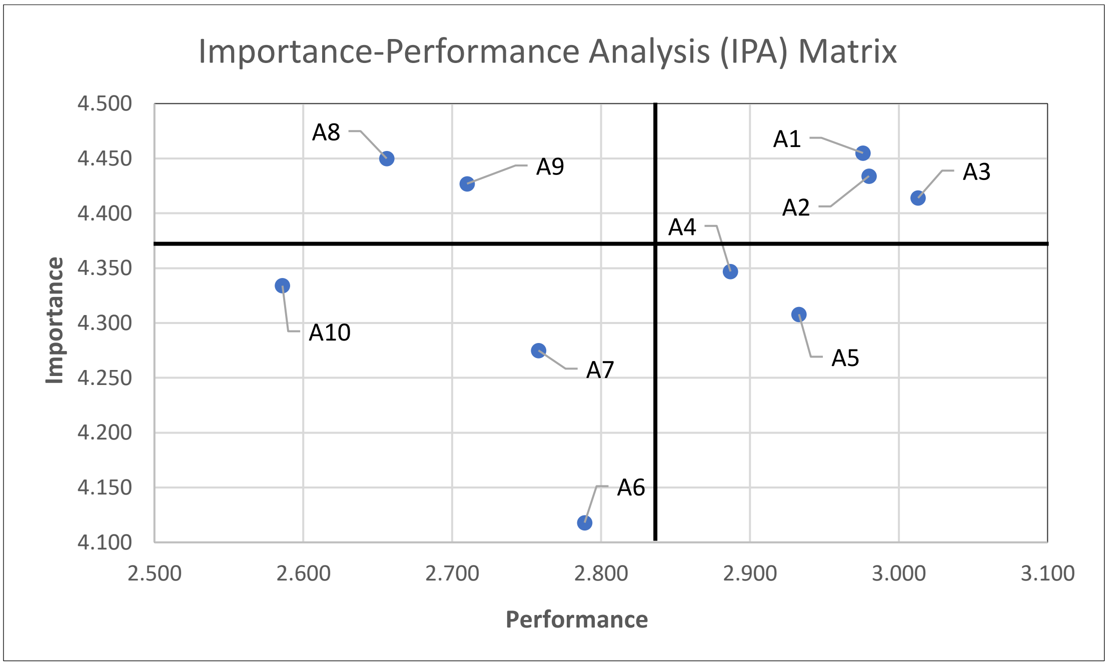

Figure 4. *Scattering of expressions by the mean of the data*

Possible Overkill (low importance and high perceived performance)-Quadrant IV: According to median of the scale, there are no expressions in the possible overkill Quadrant of matrix. However, according to mean of the data "Including in tourism planning-(A4)", and "Supporting local economies-(A5)" are in this quadrant (Table 1).

CONCLUSION

Besides their active participation in managing processes, it is of great importance to take into consideration the opinions of destination stakeholders in order to assure successful and sustainable touristic destination management. Thus, revealing the local people's attitudes, as one of the most important stakeholders at local destinations, towards implementation of sustainable tourism principles will make significant contribution to local destination management with limited resources.

The goal of the current study was to contribute to sustainable tourism literature by examining the attitudes of local people towards sustainable tourism principles. Accordingly, the results of the current study reveal the importance given to sustainable tourism principles by the local people living in Demre district and the perceptions of these stakeholders regarding the performance shown to these principles in the local destination. In evaluation of the perspective that the local people, as a targeted population in the study, have on sustainable tourism principles, it is of great importance to determine the attitudes of different segments so that useful managerial implications could be derived. For this reason, t-Test and ANOVA Test were conducted to determine the differences in the perspectives of the participants on sustainable tourism principles according to their socio-demographic characteristics. Data on social-demographic characteristics, collected through the survey, were analyzed with Frequency Analysis, t-Test, ANOVA test, while for examination of local people's attitudes towards sustainable tourism principles importance-performance analysis (IPA) was used. The data obtained as a result of the t-test and ANOVA test, applied to some socio-demographic elements, are expected to contribute to the decision-making processes of local governments and tourism management organizations towards sustainable tourism development.

As stated in the findings section of this research, according to the median of the scale, despite the high importance levels of the local people regarding sustainability, it was determined that the perceived performance shown by the public authority towards the sustainable tourism principles are rather low. It is gratifying that the local people living in Demre destination have high awareness and consciousness of sustainable tourism principles (Figure 3). However, in a detailed analysis based on the mean of the data, it is understood that the sustainable tourism principles such as "Sustainable use of resources", "Reduction of excessive consumption and waste", and "Protection of biological diversity" are among the principles that should be protected. It was also determined that “Training the personnel", and "Responsible tourism marketing" are the principles that should be focused on. However, it is understood that the principles of "Involving the local people in the decision-making process", "Consulting the stakeholders and the public" and "Conducting scientific research" are in the low priority category. The principles of “Including tourism planning” and “Supporting local economies” were determined to be in the possible overkill section (Figure 4).

Two graphs of scattering expressions of sustainable tourism principles were used in the importance-performance analysis. By using the median of the scale in the first chart, it is aimed to reveal the importance given by the local people to the sustainable tourism principles and the perceived performance levels for the same. These obtained data are important in terms of providing non-governmental organizations, local and national managers with an overview of the local people’s knowledge and awareness about sustainable tourism principles in the destination. In the second graph, the results obtained by using the average value of the data contribute to the rational decision-making processes of the responsible and authorized authorities with limited resources in sustainable destination management, as well as in more detailed planning and strategy development and implementation processes.

For the public authority to improve their low perceived performance regarding sustainable tourism principles, it is recommended that the local people should be seen as one of the most important stakeholders in decision-making processes and practices, and that sustainable tourism activities at destination should be carried out in coordination with local people. In this context, it is suggested that the public authority should implement a sustainable destination management model, taking into account the local people as one of the main stakeholders, as well as the unique characteristics and dimensions of the destination.

According to authors’ search, there is no study in the related literature that reveals the local people’s perspective on sustainable tourism with the importance-performance analysis. However, many studies reveal the relationship between local people and sustainable tourism. The results of several of these studies are discussed. According to Biçici (2013), local people generally participate in sustainable tourism development dimensions at high rates. As an indicator of the developed awareness of environmental protection among the public, the dimension in which the local people participate the most is environmental sustainability. Koçoğlu et al. (2020) stated that the local people attach great importance to paying attention to environmental issues when it comes to sustainable tourism development and that they are aware of the social costs that inevitably arise. In the study conducted by Sert (2019), it was shown that the thoughts of the local people towards tourism effects can be grouped under economic, social, and environmental dimensions. It was also emphasized that understanding, monitoring, and managing the impact of tourism on the host community is vital, as its success is highly dependent on the support of local people.

Gani et al. (2012) emphasized that the active participation of local people is vital in ensuring sustainability in tourism. Therefore, active participation of local people in managerial processes in tourism and recreation planning ought to be encouraged. Khalid et al. (2019), demonstrated an important correlation between the empowerment of local people and sustainable tourism development initiatives. In this context, the high level of community empowerment enables the local people to establish sustainable tourism development through their support for tourism in the local area. Thus, it can be concluded that it is important to evaluate the local people's perception on importance and performance regarding the elements of sustainable tourism development.

When the findings of this empirical study are examined, it is seen that it has administrative and practical consequences for both local governments and national decision-makers. Developing strategies that will raise awareness about sustainable tourism and taking into account the socio-demographic characteristics of the local people (education, occupation, etc.) are of great importance. For example, as the education level of the participants increased, their awareness of the importance of sustainable tourism principles increased, too. On the other hand, farmers give less importance to them than other professions. Considering these results, it is suggested to develop awareness-raising strategies on sustainability in tourism, which takes into account the psycho-social demographic characteristics of all local people, especially by local and national administrators. Secondly, it is suggested to develop supportive strategies by local and national authorities who appreciate and encourage local people who attach high importance to sustainable tourism principles. Third, it is suggested to develop complementary strategies that enable local people to participate, as one of the stakeholders, in tourism sustainability activities and decision-making processes. Finally, in the context of cost and benefit analysis of sustainable tourism, it is suggested to develop strategies that create synergy and enable all stakeholders, especially locals, to gain benefits from the tangible advantages of tourism.

Besides contributions, there are also some limitations in the current study. Data were collected within the short time range and in a specific geographical area. Therefore, the results obtained may not always be generalized. In future studies, explanatory factor analysis, importance-performance analysis, and/or other methods in the context of sustainable tourism development can be used by including sub-indicators of sustainable tourism principles, which are continuously developed by the World Tourism Organization. Besides conducting studies in different destinations, comparative studies can be carried out with other stakeholders separately or combined, in order to examine their perceptions on how to ensure the sustainability of the tourism sector.

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THE MANAGEMENT OF A GOVERNMENT-HOSTED FESTIVAL FROM STAKEHOLDERS' PERSPECTIVES: INTERNATIONAL MANISA MESIR PASTE FESTIVAL[1]

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ABSTRACT

The purpose of this study is to determine how a local government hosts and manages a large-scale festival from the perspectives of stakeholders, including the organizing committee members, government entities, academics, businesses, tourists, and residents. The study investigates the way International Manisa Mesir Paste Festival (hereafter Mesir Festival) is managed and detects how different entities explain the reasons of the success or failure of the public festival as well as providing recommendations to increase success. The research applies a qualitative method to explore the determinants of the success of this festival organization. In this study, researchers conducted 22 semi-structured interviews with different stakeholders. The findings reveal that public administration is prevalent and dominant in deciding the content and administration of the Mesir Festival. Three significant main themes were determined: shortcomings, benefits or contributions, and recommendations. The results indicate that the festival did not achieve any notable economic, social, or cultural gains, thus, shortcomings of the festival exceed its benefits. This research provides valuable insights into the study of festival management by extending our understandings of government-hosted and managed festivals.

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INTRODUCTION

Major targets of both for-profits and not-for-profits (public) festivals are ensuring the success and sustainability of the events. Profit seeking festivals consider cost and earnings from the festival operations and services and adopt a marketing orientation (Todd et al., 2017). From economic and tourism related functions, festivals play a significant role in tourism destination by influencing tourists' decision making, promoting tourism destination, enriching visitor experiences and building and contributing to the destination image (Adongo & Kim, 2018; Andersson & Getz, 2008; Gursoy et al., 2004).

Most festivals are organized by public sectors and they do not seek profit, but serve the community (Andersson & Getz, 2008, p. 206; Mair, 2019, p. 3). Governments and municipalities support local or community festivals and events because they yield a range of benefits such as attracting new visitors to the destination, providing entertainment and recreation for the participants, improving festival related venue structures and the quality of life of residents, exposing a local culture of the region to visitors and strengthening a feeling of belongingness (Cho et al., 2019; Liu et al., 2019).

In addition to the economic benefits, the social and cultural functions of festivals are of great importance for the destinations. Festivals add value to local culture, tradition and customs, as well as increase social cohesion, cultural and social progress (Frost & Laing, 2015; Mair, 2019; Quinn, 2006). Whether they are profit and not-for-profit sector festivals, some festivals have stalled or failed, some others have attained longevity and turned into hallmark tourist events and permanent business affairs (Todd et al., 2017).

The support of key stakeholders is fundamental to the realization of the economic, social, cultural, and ecological role of festivals at the tourism destination (Adongo & Kim, 2018; Andersson & Getz, 2008; Todd et al., 2017). For longevity and sustainability of festivals, all stakeholders must be involved in the planning process, and their goals and aspirations should be taken into account. Stakeholder theory (Freeman, 1984) assumes that an organization should consider and produce value for all stakeholders when committing their planning and operational actions.

Local festivals and events have become an important tourism product for attracting tourists to any destination (Adongo & Kim, 2018), and destinations use festivals as part of their destination marketing strategy (Getz, 2008). Economic, cultural, social, and environmental benefits are the goals that festival organizers, local authorities and funding agencies wish to achieve; however, there is less evidence as to whether festivals are successful in achieving these goals or how these goals can be achieved. Whilst the potential gains of festivals have been clearly stated in many studies, studies on how to best attain these desired gains remain insufficient (Mair & Weber, 2019, p. 210). Further, the reasons for the success or failure of festivals needs to be investigated in detail to contribute to the knowledge gap in festival research.

The study explores how Mesir Festival is managed and detects how different entities explain the reasons of the success or failure of the festival as well as providing recommendations to increase success. The Mesir Festival involves culture, history, faith, and health themes that bring people from all over the world to Manisa in Turkey (Döner & Tepeci, 2014). The festival has been celebrated for 483 years and was included on UNESCO's Representative List of the Intangible Cultural Heritage of Humanity in 2012. It is funded, staged and managed by an organizing committee which consists of the Governor Office, Metropolitan Municipality, Local Municipality, Association of Tourism and Promotion of Manisa and Mesir, and Provincial Culture and Tourism of Manisa. Considering the economic, social, and cultural effects of the festivals on the destinations, the governments assume various roles such as the host and manager of a festival, the provider of public resources, and the organizer of the festivals. Yet, it is rarely questioned how local municipalities or governments manage large-scale festivals and events involving numerous public, private, and civic organizations for their implementation (Cho et al., 2019, p. 174). The fragmented nature of previous research creates difficulties for researchers and practitioners in trying to determine existing knowledge and any research gaps (Mair & Weber, 2019).

LITERATURE REVIEW

Getz (2010, p. 30) defines festivals as "*themed and public celebrations*." Getz et al. (2010, p. 30) further asserted that "*festivals celebrate community values, ideologies, identity and continuity*." Festivals are a social phenomenon that are found in almost all cultures. In addition, cultural identities, historical continuity, and an ability to survive physically are believed to be strengthened by festivals (Arcodia & Whitford, 2006, p. 5). Considering that different cultural groups always need to celebrate creativity at a particular time and place (Turner, 1982, p. 11), festivals are intertwined with the social and cultural life of individuals. These events have become part of culture and social life (Derrett, 2004, p. 33). Festivals provide knowledge and recognition about history, culture, traditions, aesthetics, folklore, music, dance, food and drink, myths, and other experiences of destination in which they take place. The themes and types of festivals are varied such as arts, religion, agriculture, culture, history, and local community themes (Wilson et al., 2017).

Getz (1997) states that performances in cultural events such as festivals are tools for learning and observing cultural elements of attendees. From this perspective, the interactions of participants from different cultures are of most interest. Festivals that bring unique characteristics of region and its people, have a strong connection with the tourism phenomenon. The people of the region participate in festivals both as visitors and as employees and thus contribute to the return of social benefits. People feel more valuable, and social life is encouraged by festival participation (Gursoy et al., 2004). Sharing different cultures via exchange forums, developing an image of the venue as a cultural side, and entertaining attendees can be defined as the main purposes of festivals (Rolfe, 1992). Cultural festivals play an essential role for local communities in strengthening a sense of identity by promoting and preserving tradition and heritage. A local festival reflects a communities' core values and educates them about their history.

Festival Organizations

The purposes of festivals differ in several ways: they may pursue economic, cultural, social or environmental value, and they may be organized for not-for profit purposes or commercial purposes (Chang, 2020; Jarman, 2021). Festivals may be organized for urban regeneration, for changing a city's image, for destination marketing purposes and to serve as a showcase for creative industries such as music, visual arts, fashion design, and advertising (Chang, 2020).

The structures of festival organizations may be grouped into three models based on ownership and governance (Andersson & Getz, 2009, p. 255). A *public model* occurs when festivals are arranged and sponsored by a government or municipality in which costs and revenues are consolidated by government bodies and local authorities. Public festivals build upon local government grants and to some extent on ticket sales. In general, volunteers or workers of a public organization perform duties that they were assigned to do by their superiors. Decisions are taken by superiors in public festivals, but, centralized decision making benefits public festivals since decisions are taken quickly and implemented by everyone in the chain of command. *The non-profit model* associates institutions that actualize festivals by gathering resources from a range of stakeholders and generating actions that interest them in some way. In the *private business model*, firms invest capital and other resources in festivals to generate profits. Considering the stakeholders, the local authority is the most important stakeholder of public festivals since they provide grants for the occasion. On the other hand, festival participants and tourists are great contributors to non-profit and private festivals. For non-profit festivals, volunteers are also considered crucial. Interestingly, the literature does not refer media as a critical stakeholder in any type of festival, and public festivals consider the audience as a stakeholder of less importance (Andersson & Getz, 2009, p. 258-259).

The organization of events requires professionalism at every stage of management functions. The governance of festivals includes leadership, planning, decision making, organizational structure, and volunteer participation. Getz (2002) recognizes that planning, human resources, and organizational culture are the most important determinants of the success of festivals. Organizers express the growing complexity of organizing festivals, and a lack of expertise is obvious in the organization of the festivals (Frost & Laing, 2015). According to Wilkinson (1993), successful event management is possible only if three conditions can be fulfilled: definitions of duties and responsibilities should be stated accurately in order to ensure that the needs of the event management can be met; the assigned duties and responsibilities must be given to persons and groups with characteristics that can fulfil them; a formal and feasible structure and an open planning process are needed to fulfil responsibilities; and the needs and organizational structure that cannot be clearly defined will cause the activity to fail regardless of whether it is big or small (Tiew et al., 2021).

There has been increased government involvement in event and festival organizations because governments desire to have influence on how events are marketed and managed (Devine & Devine, 2015). The government, or any political power, seeks to manifest its values and get support from the public. Further, events can offer a marketing opportunity which some governments utilize to reimage and re-brand their country or a destination within the country. Thus, events play a critical role in positioning destinations against their competitors (Duffy & Mair, 2021).

Government involvement in festivals is desirable for economic, social and environmental concerns. A lack of interest and demand from the private sector enforce governments and public institutions to engage in events and festivals (Devine & Devine, 2015). Governments could benefit from festivals as these events can help overcome seasonality problems of tourist destinations and increase spreading earnings across the economy. Governments also bolster events for social equity considerations so that anyone in the community can afford to participate in some free-entry events; thus, increasing social cohesion, civic pride and mutual understanding. From an environmental mindset, however, events could place negative impacts on the resources and generate waste that have to be governed through different practices such as planning, regulations, penalties, or incentives. There are growing calls and pressures on governments to make certain that festivals are planned and realized in a sustainable way (Liu et al., 2019).

Festival Success

Festivals that support the development of the region and local people have become an integral part of tourism and marketing strategies today. As stated before, the economic, social, cultural, and ecological benefits are the goals that festival organizers seek to achieve at tourism destinations (Adongo & Kim, 2018). These benefits or impacts can be incorporated as a definition of festival success (Getz et al., 2010). Events and festivals have positive effects on the local economy by increasing income and creating employment opportunities for the local community. Festivals can be organized in off-seasons which create extra demand for tourism destinations and allow infrastructure and business areas to develop in the festival destination (Getz et al., 2010).

From a social perspective, festivals give opportunities for cultural sharing between different social groups and thus add to social cohesion within communities. Visitors get the opportunity to learn about unique cultural heritages and local traditions and customs. Moreover, social interaction leads to a sense of kinship in host communities, and this foster ties within society that enhance local pride in the community (Pavluković et al., 2017). Festivals also provide a space for displaying local culture to visitors and through cultural exchanges common understandings develop between hosts and guests. Festivals can create memorable experiences for visitors with attractive event programs (i.e., shows, stories, costumes) in the event venue (O'Sullivan & Jackson, 2002), thus promote destinations. Moreover, festival organizers show a greater awareness of green policies and develop events that are environmentally friendly (Adongo & Kim, 2018; Todd et al., 2017). Festivals often support public transport, lower on-site waste, reuse water, recycle, and promote green practices whenever possible which draws appreciation from environmentally sensitive participants.

In a competitive festival environment, assessing festival success is a complicated issue. Yeoman et al. (2021) point out that the current literature undertakes internal success factors of festivals with a limited probing of the external environment and its influences. For example, previous studies reported that major success factors were long term viability, the role of local communities, variety of the program, products and service quality, visitor satisfaction and loyalty, effective promotion and marketing practices, management of the event, and stakeholder collaborations. Many studies focused on economic returns, and others included social, cultural, and environmental impacts as criteria for success. Yeoman et al. (2021) conclude that festival success is determined by the external environment as well and do include external political, economic, social, technological, environmental, and legislative (PESTEL) factors.

The existing literature also concludes that some festivals have failed or stalled because of a lack of planning and management talent, inadequate promotion and marketing, unattractive venue, unchangeable event programs, a lack of sponsorship and budget, and inadequate collaboration among stakeholders (Getz, 2002). Unsuccessful festivals can have costs and negative impacts for the local community. These costs and impacts include negative environmental impacts (e.g., air and environmental pollution, congestion), increased prices of goods and services at the destination, and cultural degeneration and changes in the lifestyle of local people (Gursoy et al., 2002). Consequently, festival planners and organizers can achieve good results by determining the criteria that best evaluate festival success and by anticipating and eliminating failure factors and negative impacts.

Festival Stakeholders

Stakeholder refers to different groups of people that can influence or be influenced while organizing a festival. Freeman (1984, p. 25) defines stakeholders as "…*any group or individual who can affect or is affected by the achievement of the organization's objectives*." In a festival, there are various types of stakeholders such as visitors, residents, businesses, and public bodies which can have a direct or indirect effect on the process and success of the festival (Rust, 2020).

The stakeholder approach focuses on organizations' micro and macro environment that affect organizational processes. There are some strategic decisions about relationships with stakeholders such as growing, developing, maintaining, and abandoning (Batt & Purchase, 2004) or defending, monitoring, collaborating, and involving (Todd et al., 2017). This approach suggests that apart from the financial shareholders, there are other groups that may affect organization processes in different ways. Thus, festival managers must develop relationships among stakeholders so that they achieve collaboration and contributions from all parties.

Festival stakeholders may be classified in several ways. Reid and Arcodia (2002) offer a model indicating how events involve primary and secondary stakeholders; primary stakeholders are described as those on whom the festival is dependent (i.e., attendees, employees, participants, spectators, sponsors, suppliers, volunteers) whilst secondary stakeholders comprise businesses, essential services, government, host community, media, and tourist organizations. Primarily, stakeholders are categorized into internal stakeholders, who have a direct stake in the organization, and external stakeholders, whose stake is indirect. Liu et al. (2019, p. 297) suggested four main stakeholders for sustainable festival tourism: tourists, local people, government agencies (governorship, municipality, etc.), and businesses. In another classification, stakeholders were analyzed functionally as owners, employees, customers, suppliers, competitors, consumer advocates, environmentalist, special interest groups, media, governments, and local community organizations (Todd et al., 2017, p. 496).

Liu et al. (2019) assert that sustainable festivals should be encouraged, and this can be achieved by considering the perspectives and demands of all stakeholders. For the creation, stabilization, and sustainability of festivals, a communication network including official, state, and private stakeholders should be established, where information and ideas can be shared sincerely and openly and decisions taken with the participation of all parties (Getz, 2008; Quinn, 2006). The quality of relationships and cooperation between stakeholders has a direct impact on the success and sustainability of festivals. Liu et al. (2019) recognized the importance of multi-stakeholder participation in sustainable festival development and determined the sustainability indicators as environment, economy, politics, culture, society, and technology. According to the degree of importance among the four stakeholders in sustainable festival tourism, tourists were ranked the highest followed by residents, state institutions and business owners (Liu et al., 2019).

Previous research points out that stakeholder studies make businesses the center of attention, but neglect to investigate the content and dimensions of interactions and collaborations among stakeholders. Though different actors from the business world (i.e., stakeholders) gather ``*to find a common approach to an issue than effects them all and that is too complex to be addressed effectively without a collaboration*`` (Roloff, 2008, p. 234-5). Roloff (2008) contends that organizations collaborate in multi-stakeholder networks, but stakeholder theory focuses on organizations themselves, not on collaborations between them. Because any organization's stakeholder context is unique (Donaldson & Preston, 1995), there is a need to investigate how stakeholder interaction and collaborations produce value and achieve the best results in a festival setting.

International Manisa Mesir Paste Festival

Manisa, with over 417.000 inhabitants, is a historical city which is located in the Aegean Region of Turkey. It is close to Izmir and the airport. The first known settlements around the region date back to the 14th century BC (Tepeci et al., 2019). The destination is famous for its history and the cultural symbol of Mesir Paste. The Mesir Festival, which is celebrated every year on the last week of April, is the most prominent tradition among the cultural values of the destination. In 2012, the Mesir Festival was included on UNESCO's Representative List of the Intangible Cultural Heritage of Humanity. The festival contains many aspects, such as culture, heritage, tradition, religion, history, health, and gastronomy (Erdogan-Aksu, 2017). Although the main theme of the Mesir Festival is healthcare, it should be acknowledged that the festival has been shaped by the roots of historical tradition and spiritual rituals, of which religious and national values constitute a significant part (AREGEM, 2012).

The Mesir Festival has been celebrated since 1539. The festival, which has not lost its cultural and historical texture, has both art and cultural dimensions as well as health and faith tourism activities. Mesir paste contains 41 kinds of spices and is scattered to the public from the minarets of the historic Sultan Mosque. The activities listed on the event program are "music and dance activities," "visiting the historical mosques," "food contest," "festival cortege," "music and dance performances," "art events," "fairs and congresses" and "Mesir paste mixing ceremony" (Tepeci et al., 2019).

The emergence of Mesir paste as a medicinal food is based on a historical story (Erdogan-Aksu, 2017). Hafsa Sultan, mother of Sultan Süleyman the Magnificent, had contracted a disease that could not be diagnosed and cured in Manisa. For the treatment of this disease, *Merkez*

Efendi, the Central Head of the Sultan Mosque Madrasah prepared a paste consisting of a mixture of 41 kinds of plants and spices. This medicinal mixture, known today as Mesir paste, cured Hafsa Sultan in a short time. Hafsa Sultan, who is known for her kind personality, wanted to distribute the reclaimed mastic to the public on Nowruz Week (the first day of Spring). Mesir paste wrapped in small papers is thrown from the Sultan Mosque's minarets and rooftops. From that day onwards, this story provides the festive occasion in which Mesir paste is distributed from the Sultan Mosque in the same period every year.

The festival aims to let people re-enact this historical reality by bringing people to the mentioned historical period by embodying the festival with historical reenactments such as the ceremony representing Hafta Sultan's commendation to *Merkez Efendi,* the dissemination ceremony, praying ceremony for the souls of those who contributed to initiation of mesir, and a cortege march. Historical animation activities are social, cultural, educational, and entertaining, and consist of recreating and realizing facts and perspectives from the past, such as dressing in the clothes of the period, listening to their music, and eating their meals (Erdogan-Aksu, 2017, p. 95). The scattering of tons of mesir paste from the domes and minarets gathered around the Sultan Mosque is the most crowded and exciting part of the festival every year. The fact that this ritual is the last event of the last day of the festival and that it coincides with the weekend break contributes to the high level of participation.

As it can be understood from its historical story, the Mesir Festival is organized by the government. In the historical story, Merkez Efendi and Hafsa Sultan were scattering mesir paste from the minaret of the mosque to the public and now mesir paste is being scattered by the ruling protocol of the period today. Preservation of the festival within the scope of UNESCO Intangible Cultural Heritage List is a major factor for the government in its supporting the festival financially. The governmental institutions organizing the festival sponsor the festival and create economic vitality because the money is spent locally.

In the festival, to which the government officials personally attend as a protocol, the government ensures the continuation of the order and demonstrates its power (Erdogan-Aksu, 2017). The Mesir festival is an important event since it has a deep-rooted story and, thanks to this story, it connects the participants and acts as a scene for cultural communication. To increase this cultural communication and to bring the festival an international scope, the organizing committee promotes the festival in domestic and international arenas, and it invites ambassadors, students, athletes, folklore groups, and eminent guests to the festival from neighboring countries as well as sponsoring their travel and accommodation expenses. There is no entrance fee to the festival area, and all organized events are free of charge for participants. Thus, social, cultural, and political goals are given more weight and even preferred over economic gains.

METHODOLOGY

The present study investigates how a local government hosts and manages a large-scale festival from the perspectives of stakeholders, including the organizing committee, government entities, academics, businesses, tourists, and residents. The current study aims to describe and examine a limited situation in depth (Merriam, 2013) and to be limited by certain parameters such as a specific time and place (Creswell, 2013) which necessitated the case study design. The purpose of this case study is to understand and reveal the stakeholders' assessments of the Mesir Festival in terms of organizational structure, evaluation (shortcomings, perceived benefit, festival content, stakeholder participation, festival marketing) and longevity.

Table 1. *Dimensions and Sub-dimensions in Developing Interview Questions*

Dimensions	Sub-dimensions in developing interview questions	Source
Organizational structure	Organizing team Management responsibility Festival budget and sponsorship	Getz and Frisby (1988); Getz (1993); Allen et al. (2002); Preston (2012); Crespi-Vallbona and Richards (2007)
Evaluation	Festival program Cultural elements Benefits (economic, social, cultural) of organizing the festival regarding the Manisa destination Shortcomings of the festival Collaboration of stakeholders Festival marketing	Gursoy et al. (2004); Andersson and Getz (2008); Morgan (2008); Yan et al. (2012); Tanford and Jung (2017); Adongo and Kim (2018)
Longevity	Longevity of the festival Recommendations for improving	Getz (2002); Andersson and Getz (2008); Liu et al. (2019)

The main research question of the current study is how Mesir Festival is managed. Addressing this question, the study detects how different stakeholders explain the reasons of the success or failure of the public festival as well as provide recommendations to increase success. An interview form was developed for the field study. First of all, three dimensions and eleven sub-dimensions adapted from the festival tourism literature were determined for the basic research questions. Later, fifteen semi-structured interview questions were generated within the scope of these dimensions. The transformation of the determined dimensions into the questions was carried out by two expert researchers from the research team. A semi-structured question type was preferred because the sample unit consisted of different stakeholders and some stakeholders had insufficient information in some dimensions (for example, the organizational structure of the festival was not known by the tourists). Identified dimensions, sub-dimensions, and the relevant literature cited are shown in Table 1.

Sampling and Data Collections

Purposeful sampling was preferred for data formation. In the current study, it was necessary to use the purposive sampling method, one of the non-probabilistic sampling techniques, due to the fact that as the exact number of the population was not known, it was difficult to determine a sampling frame, and there is no generalization claim in the research. Maxwell (2018) states that one of the purposes of selecting purposive sampling is to select the groups and participants that will allow the research questions to be answered in the best way and one with which you can establish the most productive relationships. In accordance with the stated purpose, the research participants were selected from those who were thought to have more knowledge about the Mesir Festival and were involved in the organization of the festival.

In the phase of sampling, some organizing committee members were determined and interviewed. Then, some of them, in turn, guided us to find other stakeholders who could give detailed information about festival organization. Assuming that they will know more about the Mesir Festival, residents who have lived in Manisa for many years as well as tourists who had participated in the festival more than once, were chosen for data collection. The sample of the study comprises Metropolitan Municipality Officials assigned for the festival organization, the Vice Governor of Manisa, the Director of Association of Tourism and Promotion of Manisa and Mesir, and the Cultural Director of Provincial Directorate of Culture and Tourism, hotel and travel agencies managers, local residents, and festival tourists. The sample contains both governmental and non-governmental entities, private businesses, and other stakeholders such as residents and tourists. Researchers stopped the interviewing process when the data became saturated. Data saturation, meaning that no new codes emerged from the analysis, was reached after 22 interviews. Two additional interviews were performed in which data saturation was confirmed without additional material as suggested by Francis et al. (2010, p. 1234).

The current study is based on Lui et al.'s (2019) festival stakeholder classification. In this study, stakeholders were classified as business owners, government agencies, tourists, and residents. 22 stakeholders were interviewed during the data collection process of the current research. These participants consist of 8 tourism business owners and managers, 8 government agencies (5 public officials and 3 academicians at local university), 3 tourists, and 3 residents. The profiles of the participants are shown in Table 2.

Table 2. *Profiles of the Participants*

Stakeholders	**Respondents' Position**	**Gender**	**Age**
1. Travel Agency	Manager	M	43
2. Hotel	General Manager	M	45
3. Hotel	General Manager	M	38
4. Hotel	General Manager	M	48
5. Travel Agency	Manager	M	50
6. Hotel	General Manager	M	55
7. Hotel	General Manager	M	35
8. Hotel	General Manager	M	35
9. Şehzadeler Municapality	Public Relations Director	M	56
10. Metropolitan Municipality	Public Relations Director	F	45
11. Provincial Directorate of Culture and Tourism	Director	M	55
12. Association of Tourism and Promotion of Manisa and Mesir	President	M	56
13. Governor Office	Vice Governor	M	51
14. Academics	Associate Professor (History)	M	60
15. Academics	Professor (Tourism)	M	50
16. Academics	Professor (International Trade)	M	58
17. Tourist	Government employee	M	26
18. Tourist	Officer	F	28
19. Tourist	Civil servant	M	52
20. Resident	Volunteer-Graduate Student	F	28
21. Resident	Retired-Book seller	M	65
22. Resident	Officer	M	41

All interviews were recorded via voice recorder after permission had been granted by respondents. The duration of the interviews lasted approximately 45 to 90 minutes. Tourists and local people were interviewed at the researchers' offices, and the other participants were interviewed at their offices in their own institutions. Interviews were conducted face-to-face by a member of the research team with a prior appointment. Data collection was carried out between July 2018 and March 2019.

Validity and Reliability

All the authors of the study participated in the Mesir Paste Festival held in recent years, observed the organization, and the structure of the festival, and exchanged views with local people, organizing committee members, entrepreneurs, and visitors. Therefore, they were informed about the organization of the festival, its advantages, problems encountered, and its potential contributions. The observations and participations of the researchers improve the validity of qualitative studies (Creswell, 2013, p. 250-251). The data analysis was made with descriptive and content analysis methods. In addition, the word cloud analysis showed the visual representation of the text data related to the subject. The use of such different analyses and alternative approaches strengthens the internal validity of the research (Yıldırım & Şimşek, 2013, p. 291). The findings of the study were shared with the stakeholders and the stakeholders endorsed the findings that reflect the current state of the festival; thus, contributing to the validity (Yıldırım & Şimşek, 2013, p. 291).

The analysis of the findings was made by the authors separately and the results were compared. In general, it was observed that the analyses of the researchers were compatible with each other. These comparative analyses are important for the reliability of the study (Yıldırım & Şimşek, 2013, p. 291). In the study, a qualitative analysis program was used. The use of such programs increases the reliability of the study by minimizing human errors (Creswell, 2013, p. 254).

ANALYSIS AND RESULTS

Data obtained from interviews were subjected to content and descriptive analysis. The main themes and sub-codes resulting from the analysis were presented as the findings of the study. The researchers have transcribed all voice records into text file. Open coding method was applied for analyzing the texts (Corbin & Strauss, 1990). During open coding process, main themes and subthemes have been determined (Patton, 2002). The findings of the research were explained by referring to quotes derived from the interviewers. More than one researcher participated in the analysis process for the reliability and validity of the study. Data analysis was made in line with the principles of sufficient participation and maximum diversity (Merriam, 2013).

The interview data acquired from stakeholders were transferred to Nvivo 11 package program and subjected to content analysis. Four separate, independent researchers analyzed and compared the themes, codes, and data matching, and reached a consensus. Codes reiterating twice or less frequently were excluded from the analysis.

Themes and Codes

In the first stage of the analysis, questions about festival organization (stakeholders except 3 tourists answered these questions) were analyzed. These descriptive questions consist of questions about the organizing team, management responsibility and sponsorship. Participants (n=19) of the study stated that the organizing committee included various actors. In that committee, everybody had different duties and responsibilities. The head of the committee was the vice governor of Manisa. The committee consisted of five main actors including Governorship, Provincial Directorate of Culture and Tourism, Metropolitan Municipality, Şehzadeler Municipality, and Association of Tourism and Promotion of Manisa and Mesir. The festival budget is determined by the committee, and Manisa Metropolitan Municipality and Şehzadeler Municipality provide monetary support. The interview findings revealed that public administration at the committee was dominant. The private sector was not represented at the committee, and they were not included in the decision making of the festival.

In the second stage, the data obtained from the evaluation and longevity dimensions were analyzed. Three themes and 21 codes were attained as a result of the content analysis. The dimensions and sub-dimensions (organizational structure, evaluation and longevity, see Table 1) in the conceptual framework were renamed according to the codes that emerged as a result of the analysis (see Table 2). In the data analysis, themes of *shortcomings, benefits* and *recommendations* were noted. Table 3 presents the themes and codes attained. The codes were also shown in Table 3 with frequencies and based on the stakeholders who mentioned the specific code.

Ten negative codes were determined within the scope of "Shortcomings". Codes of "festival gaining an international scope in recent years", "contribution to the promotion of destination", "generating economic benefits" and "increasing social interactions and the sense of belongingness'" were determined under the theme of "Benefits or Contributions of Festival". Finally, "Recommendations for the Mesir Festival" theme included 7 subthemes.

Table 3. *Themes and Codes*

THEMES	CODES	TOURISM BUSINESSES (n=8)	PUBLIC INSTITUTIONS (n=5)	ACADEMICS (n=3)	TOURIST (n=3)	RESIDENT (n=3)	TOTAL (n=22)
Shortcomings of the Festival	(-) Inadequacy of the festival program content - not reflecting the local cultural values adequately - unfavorable content	6	-	1	2	3	12
	(-) Insufficient number of visitors	3	1	3	3	2	12
	(-) Lack of festival promotion	4	3	1	1	3	12
	(-) Lack of collaboration and support of stakeholders in the organization of the Mesir Festival	7	1	2	-	-	10
	(-) Insufficient economic benefits to the area	4	1	1	-	1	7
	(-) Souvenirs do not reflect the local cultural values	2	1	1	-	1	5
	(-) Decreasing number of visitors – decrease in interest	2	1	-	-	1	4
	(-) Negative environmental effects of the festival	-	-	1	1	2	4
	(-) Inadequacy of accommodation capacity	1	-	2	-	1	4
	(-) Lack of professional tourist guides and human resources at the destination	1	-	1	-	1	3
Benefits or Contributions	(+) Festival gaining an international scope in recent years	1	1	3	-	1	6
	(+) Contribution to the promotion of destination	1	1	-	1	1	4
	(+) Generating economic benefits	1	-	1	-	2	4
	(+) Increasing social interactions and the sense of belongingness	1	-	-	2	-	3
Recommendations	Stimulating promotion- prioritizing health themes in promotion	6	2	2	3	1	14
	Enhancing collaboration among stakeholders	3	5	3	-	3	14
	Improving and diversifying the festival program	5	1	2	1	3	12
	Integrated and experimental marketing	4	-	2	2	2	10
	Increasing the budget	3	-	2	-	1	6
	Offering variety of local souvenirs	1	-	2	1	1	5
	Physical improvements and arrangements at the festival area	2	-	2	-	-	4

Theme 1: Shortcomings of the Festival

Negative (10) codes appeared under the shortcomings of the festival theme (Table 3). Within the scope of negative evaluations, the codes stated by a great majority of the participants (n=12) were related to the inadequacy of the festival program content, insufficient number of visitors and a lack of promotion for the festival. According to the participants, the reason for insufficient number of visitors is the lack of festival promotion and inadequate aspects of the festival program content:

> *"…..None of the attendants from neighboring cities or invited participants arrive specifically to visit the festival. Ways to make the festival more attractive to tourists must be considered. People relate Mesir only with a cortege and the dissemination event (throwing Mesir Paste from the minarets). We know nothing of other aspects of the program. I don't think the core of the festival is well-represented."* [Respondent 2]

> *"Our biggest criticism is the failure to attract people and promote the event well enough. The festival is not adequately included in the national press. It's unknown even in Izmir (15 miles away from Manisa; the third biggest city in Turkey). There is almost no promotion involved here."* [Respondent 21]

Another negative aspect stated by the participants was the lack of collaboration between stakeholders and support for them (n=10). Moreover, insufficient economic benefits to the area (n=7), souvenirs which do not reflect the local cultural values (n=5), decreasing numbers of visitors and decrease in interest (n=4), and negative environmental effects of the festival (n=4) were also detected as shortcomings. Lack of collaboration and support for stakeholders have been stated most frequently by tourism businesses in the area (n=7). The lack of collaboration has been explained by participants that the tourism businesses in the area, members of the Tourism Management Association, or other stakeholders, primarily the university, are not included in the Mesir Festival Committee (the committee in charge of the organization). A participant stated this issue as follows:

> "*A committee led by the Metropolitan Municipality and the Governorship… They decide on their own…*" [Respondent 1]

Tour operators and local people state that there is a decline in the number of tourists. Moreover, participants asserted that the festival does not create enough economic benefits. The souvenirs which do not reflect the culture of the area were also detected as one of the shortcomings. A participant stated that nonlocal souvenirs are sold at the festival as shown in the following quote:

> *"We had a great idea about what we can do for souvenirs in Manisa. The artisans and craftsmen can make local souvenir products. The local artisans and craftsmen said that they can make local and cultural handmade products, but there was no action. Imported scarves and shawls are sold to foreigners who visit Manisa. Those are foreign things for Manisa"* [Respondent 21]

The festival also has some negative impacts on natural environment (n=4). After the mesir paste ceremony, there are lots of garbage around the event area and at the foot of Spil Mountain. In addition, mesir packaging was found to be of particular concern to local residents:

> *"Only mess and dirtiness remains. Environmental pollution is created in a large scale. Come and see what Ulupark looks like on Sunday, such a disrespect."* [Respondent 21]

> *"….however, I think it is also harmful to nature and the environment. The litterers come and watch the promenade from the mountainside. They destroy the fields there"* [Respondent 22]

The participants also mentioned weaknesses in regard to the accommodation capacity of Manisa and the lack of tourist guides in the area. First, Manisa does not have enough accommodation to host tourists for an international festival (n=4). Second, there is a lack of expert local professional tourist guides to introduce the destination to the guests and also insufficient qualified human resources in festival tourism (n=3). Respondents explained this issue in the following quotes:

> *" … but our hotels do not have enough capacity. People have to stay in the surrounding provinces. You invite them to Manisa. But they stay in Izmir. I think this is a big problem."* [Respondent 1]

> *"The manpower involved in the festival is inadequate and unqualified. Training people for the festival operations should be provided, and there should be some human resources to work voluntarily within the scope of the festival. University students can take part in paid and volunteer work within the festival, but they also need to be trained. The number of guides who can provide guidance services to visitor groups in Manisa is also insufficient."* [Respondent 18]

Theme 2: Benefits or Contributions of the Festival

Most frequently reiterating positive code (n=6) has been that the festival has gained an international scope in recent years. Opinions of participants stating this notion gather around two focal points. First, the notion that the festival's identity gained an international dimension after 2012, when it was included in the UNESCO Intangible Cultural Heritage List, despite not having a significant effect in practice. The second point is the festival program having an international dimension in recent years especially with inclusion of invited foreign ambassadors and folklore groups. However, all participants stating their opinion on this aspect (n=6) agreed that no foreign tourists visit the festival, and that the majority of foreign guests are either invited or assigned participants. The notion of internationalization was stated as follows by the participant 18:

> *"As of 2012, Mesir Festival has been included in UNESCO Intangible Cultural Heritage List, accelerating the efforts for internationalizing the festival before 2012. Visits by foreign tourists are also highly limited. Most foreign visitors are invited by town administrators, ambassadors, and folk-dance groups of mostly Balkan and Turkic republics."* [Respondent 18]

As a positive aspect in the impact of the Mesir Festival, it was stated that the festival contributes to the promotion of destination (n=4), generates economic benefits (n=4), and enhances social interactions and the sense of belongingness among residents (n=3). The following statements were made on this aspect:

> *"…contributes to the promotion of the region. [Respondent 1]" "…Additionally, I can say that it provides an environment to establish relationships and socialize among people from highly different economic, cultural, and professional groups due to its central location."* [Respondent 1]

> *"The festival provides short-term positive economic outputs for both local shops and accommodation businesses. During the festival, the population of the central city increases and the city marketplace becomes reinvigorated. Visitors do spend money, even if at a low level. For example, a person staying for a day at the organization area spends money for food and beverages, souvenirs, and shopping activities."*[Respondent 15]

Theme 3: Recommendations for Mesir Festival

Stakeholders made suggestions regarding how the Manisa Mesir Festival can attract more visitors. The recommendations are classified into seven key codes. First, improving promotion activities (n=14) was recommended by stakeholders. The suggestions offered in this regard include increasing the promotion budget, promoting the festival in TV programs, increasing social media displays, making interactive web pages, focusing on international promotions, promoting the festival by participating in fairs, changing the promotional language and deploying storytelling techniques, increasing the attraction of the destination with documentaries, contacting media representatives (and influencers), highlighting the theme of health in the festival, and thus addressing third age tourism needs and preferences.

Second, cooperation should be increased among all stakeholders. Participants suggested collaboration among all stakeholders in the mesir organization in general (n = 14). Within the area of festival shortcomings, the participants (n = 10) stated that there is no cooperation in the organization of the festival and that stakeholders should be included in all stages of festival organization. For instance, by improving collaborations with the university, the festival committee could offer more space (e.g., conference rooms, recreational and sport facilities, restaurants, cafes, and shopping mall) and activities (theatre, music, art exhibitions, handicrafts, fashion shows) to festival participants.

Third, a need to improve and diversify the festival program (n = 12) was expressed. Suggestions on this subject include organizing theater performances, focusing on entertainment, organizing different traditional competitions (horse riding, tennis tournament, art contest etc.), conducting conversation days, organizing various scientific events and conferences at festival time, organizing local food competitions, using different locations for mesir distribution (distribution in the form of giveaways to prevent congestion during distribution ceremony), and arranging mesir preparation workshops.

Employing integrated marketing communications and experiential marketing (n=10) were the fourth suggestion. This could be achieved by organizing mesir tour, creating routes in Manisa, forming package programs, and ensuring that festivals and other attractions are visited. The respondents (15 and 22) explained the integrated marketing communication issue with the following words:

> *"It would be wrong to wait for foreign visitors to come to Manisa only to attend the Mesir Festival. Cultural and historical values should be presented as visitor attractions to tourists. Manisa has three of the first seven churches of Christianity in Sardes, Theatre and Philadelphia, tour groups should be brought to Manisa at the week of Mesir to experience the city."* [Respondent 15]

> *"There is nothing in the festival to reflect our local culture. There is excavation in Sart. There is a small replica house. It is important to display all these riches and attractions of Manisa. The places in the city center should also be well organized so that tourists experience all touristic offerings and spend money."*[Respondent 22]

Participants suggested to carry out experiential marketing practices at the destination. Experiential marketing practices are related to the mesir ceremony and the active participation of its participants. For example, a participant (20) offers the following suggestion regarding experiential marketing:

> *"Big boilers should be set up in the city center at various points on the festival day. In these boilers, mesir paste should be prepared by mixing 41 kinds of spices in front of the tourists. Tourists should be given a chance and opportunity to prepare their own Mesir paste."* [Respondent 20]

Fifth, the budget needs to be increased (n = 6). It was stated that the budget should be increased in order to expand the promotion and program content of the festival. Further, with a higher budget a professional team may be hired to improve services and the content of the festival.

Sixth, souvenirs should be original and locally produced (n = 6). Participants state that souvenirs representing the region (e.g., Lydian coins, figures representing Aigiai and Sardes, various knick-knacks, statuettes, handicrafts, etc.) should be sold in shops.

Lastly, the seventh recommendation is that physical improvements and arrangements at the festival area must be considered (n = 4). For example, places where the public can watch the shows and seating places in the event area should be created.

Festival Perception

In the second stage of the analysis, stakeholders' descriptions of the Mesir Festival were examined and a word cloud was created. The main purpose of this analysis is to reveal the perspectives of the stakeholders towards the Mesir Festival. Less than three-letter words and conjunctions of "and" and "or" were not included in the analysis. In addition, the words Mesir, paste, and festival and words not directly related to the festival were excluded from the analysis. Suffixes, similar words and reinforcement suffixes taken by words were accepted as one word. Word strings that have a single meaning (e.g. distribution ceremony, Sultan Mosque) were combined before the analysis. The words used synonymously according to the meanings of the words are clustered as a single word. For example, the mosque used by the participants is the Sultan Mosque where mesir distribution is made. Therefore, Sultan Mosque and mosque are counted as the same word. The clustering of words was carried out by four independent researchers, word groups were compared, and a consensus was reached. A double-sided control was made in the translation of the words into English. The determined Turkish words were first translated into English by two expert academicians, then the translated words were further translated and checked by two different academicians, and a consensus was reached on the final words. Words with less than two repetitions are not included in the word cloud. Common words in the word cloud are shown in the center and in larger characters (Figure 1).

Figure 1. *Perception Against Mesir Festival: Word Cloud*

The frequency and percentage information of the words in the word cloud are included in Table 4. According to the findings, the first 10 words and word strings frequently used by stakeholders as the following: historical (f=47), distribution ceremony (f=33), stirring (f=26), traditional (f=24), Manisa (f=23), event (f=22), parade (f=19), health (f=16), and field (f=16). When Table 4 is examined, the words frequently used by the stakeholders can be grouped as the cultural value of the festival (historical, traditional, value, celebration, etc.), the festival program (distribution ceremony, stirring, parade, etc.), the relationship of the festival with tourism (cultural heritage list, tourism, participant, promotion, preservation, etc.), and the concepts related to economic activity (benefit, shopping, etc.).

Table 4. *Perception Against Mesir Festival: Word Frequency Distribution*

Word	**Similar Words**	**Frequency (f)**	**Percentage (%)**
Historical	historic, past, retrospective, annual, before, for years, centuries old, old, in old times, ago, before, back, in time, rooted, well established	47	10,28%
Distribution ceremony	throwing, scattered, passing out, grabbing, catching a piece of Mesir paste	33	7,22%
Stirring	blended, mixed, cooked, mixture, confection	26	5,69%
Traditional	custom, culture, essence, core, original, authentic, cultural, ritual	24	5,25%
Manisa	city of princess, city, province	23	5,03%
Event	events, art events, activities, organization	22	4,81%

Parade	cortege, member of Janissary band (of musicians)	19	4,16%
Health	wellness, welfare, healing, cure, medicine, ailment, physician	16	3,50%
Field	square, place, Cumhuriyet square	16	3,50%
People	human, individuals, kids	13	2,84%
Value	worthiness, richness, merit	11	2,41%
Celebration	celebrated, festivity	11	2,41%
Faith	belief, believe in	10	2,19%
Sultan Mosque	mosque, complex of buildings adjacent to a mosque	10	2,19%
Significant		9	1,97%
Ceremony	ceremonial, celebration	8	1,75%
Nowruz (new day)	on the day of Nowruz	8	1,75%
Exhibition	photography exhibition, art gallery	8	1,75%
Animation	costume, performer, representation, characters	8	1,75%
Participant	attendance, guest, visitation	7	1,53%
Cultural heritage list	list of the intangible cultural heritage of humanity	7	1,53%
Ottoman		7	1,53%
Community	People	7	1,53%
Program	scheduled, contents	7	1,53%
Pray	Islamic memorial service	6	1,31%
Dome	from minarets	6	1,31%
Concert	Concerts	6	1,31%
Shopping	sales, souvenir	6	1,31%
Food contest		5	1,09%
Sultan	Hafsa Sultan	5	1,09%
Metropolitan municipality		5	1,09%
UNESCO		5	1,09%
Association	society, committee	5	1,09%
Change		5	1,09%
Spices	herb, plant	5	1,09%
Demonstration	theatre, cinema, film	4	0,88%
Togetherness	unity, collectiveness	4	0,88%
Institution	establishment, organization, nongovernmental organization	4	0,88%
Ruler	Prince	4	0,88%
Booth		4	0,88%
Festivity		3	0,66%
Benefit	Contribution	3	0,66%
Preservation	protected, conserved	3	0,66%
Tourism	touristic, touristic	3	0,66%
Promotion		3	0,66%
Conference	panel discussion, conversation	3	0,66%
Merkez Efendi (Chief physician of the Sultan mosque)		3	0,66%
			100%

DISCUSSION AND CONCLUSION

The analysis of the interview data revealed that three significant main themes were determined regarding the perspectives of the 22 participants. These themes are called shortcomings of the festival, benefits or contributions of the festival, and recommendations for the festival. As can be seen from Table 3, shortcomings of the festival exceed the benefits. One can conclude that the management of the festival was not successful, and the festival did not accomplish its desired goals such as contribution to the promotion of destination and generating economic benefits.

For the shortcomings of the festival four categories were dominant and each category was mentioned by ten or more participants. First, the festival program is insufficient, and the content does not reflect local cultural values sufficiently. Thus, inviting artists who are not suitable for the sprit and identity of the festival, the lack of activities in the program, and the repetition of the same events every year cause a decrease in visitor interest. Nevertheless, festival attendees want to experience the authentic cultural and social values of destinations and expect to see a surprising and innovative festival program (Cho et al., 2019; Todd et al., 2017).

Second, although it has deep-rooted history and a world heritage, the Mesir Festival did not receive the necessary attention from tourists, and the number of visitors to Manisa was below the expectations of the stakeholders. The participants of the festival are generally local people, but it has not been successful in attracting domestic and foreign visitors. Third, there were inadequacies in the promotion of the festival. Some participants stated that the festival is almost not promoted and a bigger budget should be allocated for promotion. Social media promotion, promotion of the festival at tourism fairs, and the shooting of TV, documentaries, and films would be effective in the promotion of the festival. Mair and Weber (2019, p. 211) report that social media increases festival attendance as well as positive word of mouth marketing. Mesir is made of herbs and spices, and the basis of its historical story is health. An effective marketing language that emphasizes the health aspect and the authentic cultural values of Manisa on social media would stimulate attendance at the festival.

Fourth, a lack of collaboration and support of stakeholders emerged as another important negative category. A collaborative approach is not adopted in festival management. The Mesir Festival is held under the direction of the Mesir Committee, and the committee has 5 members—the Governor Office, Metropolitan Municipality, Local Municipality, Association of Tourism and Promotion of Manisa and Mesir, and Provincial Culture and Tourism of Manisa. The festival is arranged and sponsored by the metropolitan and local municipalities, and costs and revenues are consolidated by these local authorities. A public execution committee consisting of subordinates and officers of the governor’s office and municipalities perform routine duties of festival services that were assigned to them by their superior officers. From this structure, one can conclude that Mesir Festival in general lacks sophisticated management and professional expertise. Consequently, there is a need for active collaborations among all stakeholders including the tourism businesses, residents, tourists, associations, vendors, sponsors, environmentalist groups, and the media for festival sustainability (Adongo & Kim, 2018; Liu et al., 2019; Todd et al., 2017).

The sustainability of festivals has been related to the event life cycle (Getz, 2002). The event life cycle influences the management structure, when people remain on the organizing committee for a long time they do not have creative ideas to revitalize the event in the decline stage. Reliance on the same people for a long time to organize a festival and giving them excessive responsibilities may lead to burnout (Frost & Laing, 2015). This seems to be the case of the Mesir festival since governor and municipality officials are responsible for the planning and conducting of the festival though they are not experts on these issues. Conversely, as in the organization of the Mesir Festival, the decisions are taken by superiors in public festivals; centralized decision-making benefits public festivals since decisions are taken quickly and implemented thoroughly by everyone in the chain of command (Andersson & Getz, 2009; Devine & Devine, 2015).

For the benefits or contributions of the festival, four categories emerged as the festival gaining international scope, contributing to the promotion of destination, generating economic benefits, and increasing social interactions and a sense of belonging. The small numbers of mentions (three to six) of these benefits indicate that the festival has a limited benefit to the area. In recent years and especially in 2012, the festival was included in the UNESCO Intangible Cultural Heritage List, and foreign guests and officials (folklore teams, athletes, etc.) are invited. However, this internationalization effort does not mean that the festival is seen as an attraction factor by domestic and foreign tourists.

For the recommendations of the festival, there are some aspects of Manisa that need to be developed in festival tourism. These aspects are primarily prioritizing health aspects in festival promotion, enhancing collaboration among stakeholders, improving and diversifying the festival program, and including integrated and experimental marketing activities. Other shortcomings of the festival such as inadequate accommodation capacity, lack of professional guides and human resources in festival tourism, and poor quality of souvenirs available also need attention for festival operation. The first two of these shortcomings, in the case of high demand, can be overcome by utilizing the accommodations and human resources from the province of Izmir, which is geographically very close to

Manisa and considered as a well-developed tourism center. In addition, human resources can be trained by Manisa Celal Bayar University. Participants also evaluate the gift items sold at the festival as a weakness. In particular, the souvenirs presented and sold at the festival are criticized for not reflecting the culture of the region. However, considering the historical background of the region, there are many historical symbols that can utilized as souvenirs (e.g., money coins, ancient and natural landmarks).

The festival is not yet seen as a tourism activity by many stakeholders. The word cloud presented in the research supports this idea. The expressions used by the participants about the festival are concentrated on the cultural values of the festival, while the expressions about tourism are not frequently used. Participating stakeholders stated that to call the festival a tourism activity, it should be included in the integrated and experiential tourism marketing activities of the region. It is recommended that package tours should be organized for the natural and cultural attractions in the region (e.g., Sardes, Theatre, Philadelphia, Aigai, Spil Mountain, Kula houses, hot springs, etc.), tour routes should be determined and developed to be congruent with the festival dates. In the context of experiential marketing, the festival participants should be offered extraordinary experiences that will increase their entertainment-education-aesthetic-escape experiences. For example, in the entertainment-education experience axis, the participants could stir and cook Mesir Paste accompanied by a Chef, who work with participants by giving oral and applied knowledge.

The theoretical contribution of the study is threefold. First, this research provides valuable insights into the study of festival management by extending our understandings of government-hosted and managed festivals. The public committee is required to be expert in organizing and implementing the festival to improve economic, social, and cultural gains from the festival. Stakeholders' interactions and collaborations in festivals are pivotal for their success and sustainability (Adongo & Kim, 2018; Cho et al., 2019). Second, it adds to the knowledge in festival management literature by analyzing both shortcomings and benefits of festivals at the same time. The organizing committee and other stakeholders provided detailed information for the shortcomings, limited benefits of and recommendations for improving the festival. Previous research in general investigated gains of the festivals and these studies were insufficient to determine the attainment of the desired benefits (Andersson & Getz, 2008; Frost & Laing, 2015; Getz, 2008; Quinn, 2006). Third, this study explored the reasons for the failures or success of the festival. As stated before, major reasons for the failures are that a collaborative approach is not adopted in festival management and the organization of Mesir Festival in general lacks sophisticated management and professional expertise. On the other hand, the centralized decision making process benefits the Mesir Festival because decisions are taken by the public committee and these decisions are implemented thoroughly and quickly by the subordinates as previous studies suggested (Andersson & Getz, 2009; Devine & Devine, 2015).

The private sector, universities, local people, NGOs, trade associations, media are not represented in the organizing committee as stakeholders. However, the relevant literature (e.g., Adongo & Kim, 2018; Andersson & Getz, 2008) suggests that it is almost impossible to achieve success in destinations without an understanding of planning based on collaboration with all stakeholders. Many stakeholders participating in the research state that they want to feel a part of the festival and play a role in its management and planning. Considering these findings, it could be concluded that effective stakeholder collaboration will increase belief and a sense of ownership of the festival as well as triggering financial benefits and creating a moral voluntary service for the organization.

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EXAMINING THE IMPACTS OF RESTAURANT ATTRIBUTES ON SATISFACTION AND STORYTELLING: THE CASE OF TURKEY

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ABSTRACT

The current research aimed to search the impacts of restaurant attributes on satisfaction, and the impacts of satisfaction on storytelling in restaurants. The data was obtained from 226 academicians and administrators of 8 universities which were both public and private in Gaziantep, Hatay, Şanlıurfa, and Adana provinces of Turkey. The results revealed that food attributes, employees, and physical environment positively affect customer satisfaction. The results also revealed that satisfaction is a significant determinant of storytelling intention.

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INTRODUCTION

The cuisines that exist in the world date back to the early civilisations of Mesopotamia, Egypt, the Hellenic world, China, and Rome with many others (Aydin & Corbaci, 2019). As one of the most respected cuisines, the roots of Turkish cuisine reaches to Mesopotamia, either (Düzgün & Özkaya, 2015). With its multicultural, ethnically diverse, and historically rich background, Turkey has one of the prominent cuisines in the world (Tekiner, 2021). Additionally, climate, geography, trade, synthesis, and interaction of different communities have shaped the Turkish cuisine's distinguished food in terms of variety and flavour (Aydin & Corbaci, 2019). In Turkey, the cuisine varies geographically (Aslan Ceylan et al., 2019). Each region has their own food cultures (Batu & Batu, 2018). Especially Gaziantep, Hatay, Adana, and Şanlıurfa, which are the research areas of this

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study, differentiate themselves from other places in terms of local foods they offer. For example, there are about 600 recipes in Hatay (İflazoğlu & Sahilli Birdir, 2020). In addition, Oğuz et al. (2020) noticed that the cuisine of Adana is an effective element for branding. These destinations have been quite rich aspects culturally and historically. This cultural and historical richness of these destinations' food culture has been formed by different ethnic groups. Furthermore, these destinations have a wide variety of geographically certified products.

Food is not only a basic necessity for human beings (Hsu et al., 2018), it is also a way of having a great time (Şengül et al., 2018). Customers dine in various restaurants to have delicious food and experience pleasurable times (Şengül et al., 2018). Previous studies provide evidences that restaurant attributes influence the customer's restaurant experience (Nemeschansky, 2020). Customers expect restaurants to offer different types of meals, tasty food, service quality, and a welcoming ambience (Wu et al., 2020). The harmony of the restaurant elements, such as service quality, product quality, hygiene, atmosphere (Yüksel & Yüksel, 2003), the friendliness of employees (Medeiros & Salay, 2013), and pricing (Zhong & Moon, 2020) are major indicators of customer satisfaction in restaurants. Thus, it is critical for managers to discover the factors that impact consumers' perceptions (Mathayomchan & Taecharungroj, 2020). Especially today, consumers have many options to eat out. Therefore, in a diversified and expanding marketplace, consumers can simply switch restaurant preferences with ease (Cheng et al., 2021). In addition, the perceived attributes of a restaurant maintain the restaurant's reputation (Danthanarayana & Arachchi, 2020).

The connection between satisfaction and behavioural intention has been investigated by researchers (Lai, 2020). There are different forms of behavioural intentions including revisit intention and word of mouth (WoM) (Han & Ryu, 2007). Storytelling is considered a different type of WoM recently (Zhong et al., 2017), and includes communication instruments, such as stories and social media (Akgün et al., 2015). According to Grębosz-Krawczyk (2020: pp. 74) storytelling 'allows consumers to relive significant moments in their relationship with the brand and encourages them to create their own stories'. People use stories to share different types of information (Grębosz-Krawczyk, 2020). For example, online comments shared by visitors have been considered to be storytelling (Yoo & Gretzel, 2008). Also, any content shared on personal social media accounts can be treated as storytelling (Lund et al., 2018). Storytelling is an enjoyable activity which attracts people's attention (Mei et al., 2020). Also, people like to share and listen to stories (Bassano et al., 2019). If a story is interesting, it can extend beyond people's personal networks (Lund et., 2018) which may help to enhance restaurant reputation. Although storytelling has an impressive impact on marketing activities, it has received little attention from researchers (Keskin et al., 2016). In one of these studies, Cater et al. (2020) examined the storytelling intention of scuba diving tourists in Turkey. However, limited attention has been devoted to understanding the storytelling intention of consumers in the context of restaurant experience. Since storytelling can lead the development of a restaurant (Mossberg & Eide, 2017), it should be examined further.

Surprisingly, as far as we could tell, restaurant attributes have not been associated with satisfaction and storytelling in Turkey. In this sense, the present research provides a new perspective by examining the influence of restaurant attributes (food attributes, physical environment, employee, and price) on satisfaction and, in turn, storytelling. By doing so, we believe that this study will help us understand the restaurant service in Turkey from the point of view of the local population. Also, restaurant employees can benefit from this research by identifying key factors that satisfy customers, which in turn leads storytelling intention.

The rest of the paper is designed as follows: first, we reviewed the literature on food attributes, physical environment, employee, price, satisfaction, and storytelling, and then proposed hypotheses. This is followed by the presentation of our research method and results. Lastly, we discussed the results and implications of the study.

LITERATURE REVIEW

Food Attributes

Food quality comprises some significant aspects, such as food presentation, preparation, menu design, food variety, safety, appeal, and diet (Hanaysha, 2016; Kala, 2020; Kivela & Crotts, 2006; Raajpoot, 2002; Rozekhi et al., 2016). Food presentation and preparation can be used to attract customers and satisfy their needs. Food presentation means presenting and decorating foods attractively (Namkung & Jang, 2007), and using conventional, traditional, or cultural techniques in the preparation of food (Kala, 2020).

A considerable number of studies have showed that food quality has an effect on customer satisfaction (Al-Tit, 2015; Annaraud & Berezina, 2020; Correia et al., 2008; Ha & Jang, 2010; Han & Hyun, 2017; Kala, 2020; Kala &

Barthwal, 2020; Kozak & Rimmington, 2000; Meng et al., 2008; Namkung & Jang, 2007; Nield et al., 2000; Rajput & Gahfoor, 2020; Sulek & Hensley, 2004; Wijaya et al., 2013; Zhong & Moon, 2020). For instance, Sulek and Hensley (2004) and Namkung and Jang (2007) indicated that food quality is one of the most influential components in ensuring customer satisfaction. Similarly, Han and Hyun (2017) revealed that high quality of food has the effect of ensuring customer satisfaction. Recently, Zhong and Moon (2020) examined the factors which can affect customer satisfaction and reported that food quality positively affects customer satisfaction. Kala and Barthwal (2020) found that the quality of food contributes to customer satisfaction.

Previous studies also revealed that presenting attractive foods and using traditional or cultural techniques in preparation of food are also important for ensuring customer satisfaction (Babolian Hendijani, 2016; Chi et al., 2013; Erkmen, 2019; Truong et al., 2017). Chi et al. (2013) found that food presentation, one of the components of perceived food image, significantly influences customer satisfaction. Additionally, as Roozbeh et al. (2013) suggested, traditionally prepared foods can affect customer satisfaction. Therefore, the current study proposes the following hypothesis:

H_1: Food attributes positively affect customer satisfaction.

Physical Environment

Physical environment, in which goods and services are delivered (Ali et al., 2016), is important for influencing customer behaviours in the service industry, as individuals are aware of the physical surroundings of a restaurant (Han & Ryu, 2009). Previous studies found that physical environment is one of the main determinants of satisfaction (Ali et al., 2016; Cullen, 2004; Gunaratne et al., 2012; Han & Hyun, 2017; Han & Ryu, 2009; Heung et al., 2002; Kala, 2020; Kala & Barthwal, 2020; Liu & Jang, 2009; Truong et al., 2017). For instance, Cullen (2004) revealed that cleanliness and the location of restaurant are some of the key variables on decision making for selecting restaurants. Han and Ryu (2009) asserted that physical environment enhances customer satisfaction. Kala (2020) and Kala and Barthwal (2020) confirmed that the physical environment of a restaurant has an important impact on customer satisfaction. Thus, the current study proposes the following hypothesis:

H_2: Physical environment positively affects customer satisfaction.

The Employees

Employees can be seen as a link between the company and the customers (Alhelalat et al., 2017). Employees, playing a significant role in shaping customers' perceptions (Jeon & Choi, 2012), can develop awareness of customers and respond to their needs (Bulgarella, 2005). This can be critical in generating customer satisfaction (Kala, 2020). Several studies have explored the relationship between employee attributes and customer satisfaction (Babolian Hendijani, 2016; Gunaratne et al., 2012; Han & Hyun, 2017; Heung et al., 2002; Kala, 2020; Keh et al., 2013; Truong et al., 2017). Heung et al. (2002) revealed that employee attributes are important contributors to customer satisfaction. Gunaratne et al. (2012) maintained that employee attributes are significant predictors of overall satisfaction. In another study, Keh et al. (2013) identified that employee attributes (e.g., physical attractiveness, helpfulness) positively influence customer satisfaction. Babolian Hendijani (2016) suggests that employees wearing clothes reflecting regional culture can affect customer satisfaction. Recently, Han and Hyun (2017) reported that a high quality of staff service is very important in enhancing the degree of customer satisfaction. Based on the previous arguments, the current study proposed the following hypothesis:

H_3: Employee attributes positively affect customer satisfaction.

Price

Price is a sensitive factor that shapes consumers' experience and behaviour (Han & Ryu, 2009). For instance, an earlier study conducted in the service industry revealed that price is a significant element in the decision to switch to another company (Keaveney, 1995). Since price is an important factor in determining customer behaviour (Ryu & Han, 2010), it was investigated in different contexts such as hotels (e.g. Ali et al., 2016; Chiang, 2018) and restaurants (e.g. Han & Ryu, 2009; Zhong & Moon, 2020) to determine customer satisfaction. Correia et al. (2008) investigated the satisfaction of gastronomic visitors in Portugal and identified the finding that price and quality have an important impact on customer satisfaction. In addition, Han and Ryu (2009) reinforced the finding that price has a positive impact on customer satisfaction. Similarly, a recently published study showed that price positively influenced customer satisfaction (Zhong & Moon, 2020). Based on the previous arguments, it was hypothesized that:

H_4: Price positively affects customer satisfaction.

Satisfaction

Based on the review of literature, experiences in a restaurant considerably affect satisfaction level (Gupta et al., 2007; Rust & Zahorik, 1993; Yüksel & Yüksel, 2003). Kivela and Crotts (2006) mentioned that satisfaction depends on actual experience during a visit. As for satisfaction with the restaurant, the experiences of service and products' quality, timing with regard to service, menu, price, convenience, and the ambience of the facilities influence customer satisfaction (Andaleeb & Conway, 2006; Kivela et al., 2000; Sulek & Hensley, 2004). The high level of satisfaction would thus be associated with a high level of service quality in the minds of customers (Türker et al., 2019).

The effects of satisfaction on storytelling intention have been examined by a limited number of studies. Cater et al. (2020) investigated the effects of satisfaction on the storytelling intentions of scuba divers. The findings indicated that overall satisfaction positively influences storytelling intentions. Although, the positive impact on satisfaction on storytelling intention has not been investigated in the context of the restaurant business, the effect of satisfaction on WoM/e-WoM intentions has been examined by some previous studies (Jalilvand et al., 2017; Jeong & Jang, 2011; Uslu, 2020; Yang, 2017). Jalilvand et al. (2017) revealed a positive relationship between customer satisfaction and WoM intentions. Additionally, Jeong and Jang (2011) and Uslu (2020) maintained that satisfaction has positive effects on e-WoM. Thus, the current study proposed the following hypothesis:

H_5: Customer satisfaction positively affects storytelling intentions.

Storytelling

Storytelling is an important part of the consumer experience (Pearce & Packer, 2013) and can be defined as a way of distributing knowledge and experiences to others through narratives and anecdotes (Keskin et al., 2016). According to reviewed literature, storytelling has two main perspectives as (1) managerial and (2) consumer. From the managerial perspective, it is mainly used for marketing and management activities (Mossberg, 2008). From the consumer perspective, it is the action of transferring information to others (Yang, 2018). In other words, it can be stated that storytelling is a different version of word-of-mouth (Zhong et al., 2017). The main difference between WoM/e-WoM and storytelling is that WOM/e-WOM means reporting facts or providing information about a situation, place, or service, while storytelling is sharing information and experiences (Howison et al., 2017). Choi (2016) stated that storytelling includes non-verbal genres as a new way of communication (movies, dramas, etc.) as well as the verbal narrative of communication. Rapid growth of internet usage has changed the storytelling behaviour of consumers. Therefore, consumers can share and describe their memories via blogs or social media accounts like Facebook, Instagram etc. (Zhong et al., 2017). For instance, Akgün et al. (2015) found that the storytelling approach in travel writing can affect the behavioural intentions of customers towards destinations. Therefore, Mei et al. (2020) suggested that storytelling is important for the tourism industry, since tourists purchase not only products and services, but they also seek experiences and hedonic benefits.

The five hypotheses proposed determined the conceptual model framework of the research (Figure 1). The dependent variables of the model are satisfaction and storytelling. Food attributes, physical environment, employee, and price are independent variables as they are important influencers of customer satisfaction.

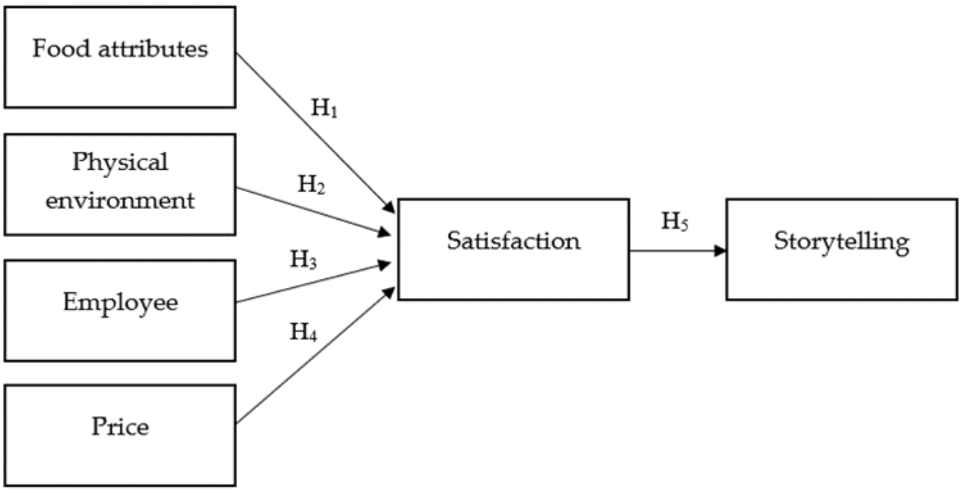

Figure 1. *Research Model*

METHODOLOGY

Measurements

The questionnaire has four sections. The first three sections are related to food and restaurant attributes, satisfaction, and storytelling respectively. The fourth section is related to demographic questions. Food and restaurant attributes and satisfaction items were adapted from Kala (2020); storytelling was adapted from Zhong et al. (2017). Respondents were asked to mark each of the statements using a seven-point Likert scale ranging from 'totally disagree' (score=1) to 'totally agree' (score=7). First, scale items were translated from English into Turkish, then translated from Turkish to English by two experts with highly advanced English, whose native languages are Turkish. In this way, the translated items were compared to their original forms to ensure the accuracy of iteration. Thirdly, a pilot test was conducted among 15 academicians to examine the suitability and comprehensibility of the items. In the last step, some modifications were made based on the pilot test's result. Items that needed simplification, rewording, and revision were dealt with. The last version of the questionnaire was developed and consisted of 30 items for the food and restaurant dimension, four items for the satisfaction dimension, and four items for the storytelling dimension.

Data Collection

Due to the COVID-19 pandemic issue, an online questionnaire was developed to collect the data. The sample for this research consisted of academicians and administrators of eight universities both public and private in Gaziantep, Hatay, Şanlıurfa, and Adana provinces of Turkey. E-mail addresses of the sample were compiled from the universities' websites. At the end of the collection period, 3548 e-mail addresses were obtained in total. Invitation e-mails were sent to academicians and administrators including information about the aim of the study and a link to the questionnaire between April and September 2020. This was followed by a reminder e-mail two weeks later. As a result, 226 surveys were received, which was a 6.4% response rate. Child (2006) suggested that the sample size should be five times greater than the number of items in the questionnaire (38 items) in order to perform factor analysis (as cited in Tekin & Özdemir, 2018; Yurdakal & Kırmızı, 2017; 2019). Therefore, the sample size was found sufficient to conduct further analysis.

Research Settings

Gaziantep, Hatay, Şanlıurfa, and Adana were determined as the research areas of this study. Gaziantep can be considered as a gastronomic city in terms of local products. There are 40 products geographically certified by the Turkish Patent Institution in the city, and this is the highest number in Turkey (TPTO, 2021). Additionally, Gaziantep is the first city which received the title of a city of gastronomy within the scope of the UNESCO Creative Cities Network in 2015 (Unesco, 2020). Hatay has also been confirmed as a city of gastronomy by the UNESCO Creative Cities Network for its cuisine in 2017 (Go Turkey Tourism, 2021). The city has nine geographically certified products (TPTO, 2021). Addition to those two, Şanlıurfa can be considered to be a city of gastronomy in the country (Çelik & Aksoy, 2017). The city has 30 geographically certified products (TPTO, 2021). Adana has many gastronomic elements due to long-term cultural interactions, the use of different techniques, and so on, in the region (Dinler, 2019). The city has 15 geographically certified products (TPTO, 2021). Based on aforementioned information, the current study was conducted in these cities.

Data Analysis

The data were analysed in two steps. First, we used SPSS 22 for the normality test, common method bias, descriptive statistics, and exploratory factor analysis (EFA). Second, PLS-SEM (Partial Least Square-Structural Equation Modelling) was used to assess the measurement and structural models (Chin, 2010). Skewness and Kurtosis values of items were used to test the normality (Hair et al., 2014). All items ranged from -3 to 3 which is indicating normal data distribution (Wells et al., 2015). In order to avoid common method bias, Harmon's single-factor approach was utilised (Min et al., 2016). The results showed that the single factor accounted for 48% of the variance (below 50%), indicating that there is no common method bias issue (Podsakoff & Organ, 1986).

RESULTS

Respondents' Profile

The majority of the respondents were male (55.8%). Based on age, 39.4% of the respondents were between 26 and 35 years old. The majority of the participants were academicians (86.7%), whereas administrative staff represented only 12.8% of the sample (see Table 1).

Table 1. *Socio-demographic Characteristics of the Participants*

	Characteristics	Frequency	Percentage
Gender	Female	100	44.2
	Male	126	55.8
Age	25 and below	10	4.4
	26-35	89	39.4
	36-45	77	34.1
	46-55	39	17.3
Occupation	Academician	196	86.7
	Administrative staff	29	12.8

Table 2. *EFA Results for Restaurant Attributes*

Factor and Items	Eigenvalue	Variance Explained	Cronbach's Alpha	Mean	Factor Loadings
Food Attributes (FA)	*14.65*	*24.46*	*0.94*	*5.53*	
FA1				5.64	0.80
FA2				5.85	0.75
FA3				5.26	0.74
FA4				5.66	0.71
FA5				5.63	0.69
FA6				5.82	0.69
FA7				5.91	0.67
FA8				5.5	0.65
FA9				5.31	0.65
FA10				5.54	0.63
FA11				4.77	0.59
Employee (EMP)	*2.26*	*19.88*	*0.94*	*5.36*	
EMP1				5.10	0.81
EMP2				5.35	0.79
EMP3				5.41	0.78
EMP4				5.43	0.77
EMP5				5.50	0.71
EMP6				5.36	0.69
EMP7				5.38	0.51
Physical environment (PE)	*1.88*	*19.68*	*0.92*	*4.87*	
PE1				4.81	0.81
PE2				4.85	0.80
PE3				4.97	0.69
PE4				5.17	0.69
PE5				4.80	0.68
PE6				4.51	0.65
PE7				4.93	0.63
PE8				4.94	0.59
Price (P)	*1.20*	*7.46*	*0.90*	*4.59*	
P1				4.55	0.88
P2				4.63	0.86

Kaiser–Meyer–Olkin (KMO) test = 0.94; Bartlett's test of sphericity = 5839.16 ($p<0.001$); Total variance explained= 71.50%

EFA

Because the items were translated and modified to Turkish culture, we conducted EFA on the 30 items of the food and restaurant using principal components analysis with varimax rotation. Two items (restaurants which had showcased local socio-cultural objects and the restaurants which offered a variety of menu items) with communality below .50 (Hair et al., 1998) were discarded. A revised EFA was carried out on the remaining 28 items. Four factors were determined, explaining 71.50% of total variance. The factors were defined based on the items they included as food attributes, employees, physical environment, and price (see Table 2).

Measurement Model

Before validating the structural model, it is suggested that the measurement model should be tested (Hair et al., 2014). In order to test the measurement model, we used reliability, convergent validity, and discriminant validity criteria (Taheri et al., 2020). The reliability was tested by factor loadings and composite reliability (CR). All factor loadings are above the accepted level of 0.6 (Chin, 1998). Also, the composite reliability (CR) values are greater than 0.7 (Hair et al., 2020), which confirms the items' reliability (see Table 3). Convergent validity was tested by measuring the average variance extracted (AVE). AVE value for each factor ranged from 0.62 to 0.91 (greater than 0.5 threshold values) (Hair et al., 2020). Therefore, convergent validity was maintained.

Table 3. *Measurement Model Assessment*

Factors and Items	**Loadings**	**CR**	**AVE**
Food attributes (FA)		*0.95*	*0.63*
FA1	0.83		
FA2	0.80		
FA3	0.86		
FA4	0.68		
FA5	0.82		
FA6	0.77		
FA7	0.82		
FA8	0.79		
FA9	0.79		
FA10	0.76		
FA11	0.78		
Employee (EMP)		*0.95*	*0.74*
EMP1	0.89		
EMP2	0.83		
EMP 3	0.87		
EMP 4	0.89		
EMP 5	0.83		
EMP 6	0.85		
EMP 7	0.81		
Physical environment (PE)		*0.94*	*0.66*
PE1	0.77		
PE2	0.84		
PE3	0.74		
PE4	0.85		
PE5	0.86		
PE6	0.84		
PE7	0.70		
PE8	0.86		

Price (P)		*0.95*	*0.91*
P1	0.95		
P2	0.96		
Satisfaction (SAT)		*0.94*	*0.82*
SAT1	0.92		
SAT2	0.92		
SAT3	0.90		
SAT4	0.87		
Storytelling (STE)		*0.87*	*0.62*
STE1	0.80		
STE2	0.79		
STE3	0.73		
STE4	0.82		

Regarding discriminant validity, we checked the heterotrait–monotrait ratio criterion (HTMT) (Henseler et al., 2015). The HTMT value should be lower than 0.90 (Smartpls, 2021). Table 4 summarises the HTMT values. Since the ratio for the combination of food attributes and satisfaction is 0.89, we additionally checked the HTMT inference criterion as an alternative criterion (Henseler et al., 2015). The HTMT inference value for the food attributes and satisfaction is 0.936 (<1) which establishes discriminant validity (Wells et al., 2016).

Table 4. *Discriminant Validity*

	EMP	**FA**	**PE**	**P**	**SAT**	**STE**
EMP						
FA	0.750					
PE	0.771	0.744				
P	0.528	0.548	0.387			
SAT	0.868	0.896	0.790	0.537		
STE	0.376	0.436	0.472	0.215	0.515	

EMP=Employee; FA= Food attributes; PE= Physical environment; P= Price; SAT= Satisfaction; STE= Storytelling

Structural model

The structural model was measured through Standardised Root Mean Square Residual (SRMR) fit index, path coefficients (*β*), coefficient of determination (R^2), significance level (t values), and the cross-validated redundancy (Q^2) (Lochrie et al., 2019). The SRMR value is 0.075, which is below the recommended limit of 0.08 (Hu & Bentler, 1999). Therefore, goodness-of-fit value reflects a satisfactory result. According to bootstrap analysis to test the hypothesis four of the five hypothesis were statistically significant and supported (see Table 5). In particular, food attributes significantly affect satisfaction ($\beta = 0.477$, $p < 0.01$), supporting H_1. Physical environment significantly affects satisfaction ($\beta = 0.124$, $p < 0.05$), supporting

H_2. In addition, the employees significantly affect satisfaction ($\beta = 0.371$, $p< 0.01$), and satisfaction significantly affects storytelling ($\beta = 0.495$, $p< 0.01$), supporting H_3 and H_5. However, satisfaction was not influenced by price, therefore, H_4 is rejected. The R^2 measure the explanatory ability of endogenous constructs. Satisfaction ($R^2= 0.809$) and storytelling ($R^2 = 0.245$) have a substantial and weak explanatory ability, respectively (Hair et al., 2011). Q^2 values of the endogenous variable were calculated to check the predictive relevance (Hair et al., 2020). Q^2 values of satisfaction and storytelling are 0.655 and 0.123, respectively. As it is greater than zero, the predictive relevance is acceptable (Hair et al., 2011).

Table 5. *Structural Model Statistics*

Structural estimates: hypothesis path	**Coefficient**	**t-value**	R^2	Q^2	**Results**
H_1 FA → SAT	0.477	8.104*	0.809	0.655	Supported
H_2 PE → SAT	0.124	2.275*			Supported
H_3 EMP → SAT	0.371	7.264*			Supported
H_4 P → SAT	0.024	0.679 (ns)			Rejected
H_5 SAT → STE	0.495	8.283*	0.245	0.123	Supported

EMP=Employee; FA= Food attributes; PE= Physical environment; P= Price; SAT= Satisfaction; STE= Storytelling

DISCUSSION

The current study aimed to investigate the impacts of restaurant attributes on customer satisfaction, and the impact of satisfaction on storytelling. The results reveal that the three of restaurant attributes (food attributes, employee, and physical environment) were important contributors to customer satisfaction. Therefore, the study reinforces the finding that food attributes, the employees, and the physical environment positively affect customer satisfaction. However, price was not found to be an important contributor to customer satisfaction. This finding differs from previous studies. Moreover, satisfaction is a significant determinant of storytelling intention.

Theoretical Implications

This study indicated that food attributes were significant in ensuring customer satisfaction. One can say that among the food attributes; serving food at the appropriate temperature, freshness, being prepared and presented in a traditional way, and taste have important effects on customer satisfaction. The finding that emerges from this study extends the previous findings that food attributes such as taste, temperature, and freshness positively affect customer satisfaction (Erkmen, 2019; Kala, 2020; Kala & Barthwal, 2020; Namkung & Jang, 2007; Roozbeh et al., 2013; Truong et al., 2017; Zhong & Moon, 2020).

The current study revealed that restaurants' physical environments affect customers' satisfaction. This finding supports those of earlier research (Han & Ryu, 2009; Heung et al., 2002; Kala, 2020; Kala & Barthwal, 2020; Truong et al., 2017). It was also found that the contribution of ambience and location of the restaurant, the attractiveness of the menu, and the cleanliness of the dining areas were important factors in customers' satisfaction. The findings of an earlier study carried out by Cullen (2004) revealed that cleanliness and the location of the restaurant are some of the key decision variables for selecting restaurants. It was also found that the contribution of quality and cleanliness of basic facilities (the hand-wash facility, the washroom, the car park etc.) to customers' satisfaction was low. The finding corresponds with those of previously published studies (Kala, 2020; Kala & Barthwal, 2020).

The study also indicated the strong effect of the employees on customers' satisfaction. The finding of this research is similar to those of earlier studies (Gunaratne et al., 2012; Heung et al., 2002; Kala, 2020). The interaction between employee and customer has a critical role in the formation of customer perceptions (Yüksel & Yüksel, 2003). This is because restaurant customers observe the behaviours and attitudes of employees before they give their decisions regarding the experience they had (Slack et al., 2020). Specifically, one of the crucial factors to achieve customer satisfaction in restaurants depends on the employees (Alhelalat et al., 2017).

The results further showed that price has no relationship with customer satisfaction which supports the findings of Iglesias and Guillén's (2004) study. Interestingly, customers have the opportunity to check the menu items' prices before ordering them. Thus, it can be concluded that customers develop expectation about the food before having it. After consuming the food, they compare the difference between performance and expectation. Accordingly, the restaurant customers felt they did not receive good value for the money they paid for the food. On the other hand, some studies (e.g. Correia et al. 2008; Han & Ryu, 2009) have suggested that there is a positive relationship between price and customer satisfaction. Therefore, it can be concluded that there is a lack of consensus on the relationship between price and customer satisfaction.

The present study discovered that satisfaction positively affects the storytelling intentions of customers in restaurant business. This result differs from the idea of Lin and Kim (2015) who stated that storytelling has an impact on tourism satisfaction. On the contrary, the finding that emerges from this research is similar to that of Jalilvand et al. (2017), Jeong and Jang (2011), and Uslu (2020), who stated that customers' satisfaction with the restaurant has a positive impact on WoM intentions. A possible explanation for this outcome is that satisfaction and storytelling could be interconnected. This is stated in the study undertaken by Son and Kim (2011) who reported that the increase in the level of tourists' satisfaction is related to positive WoM. This suggests a positive correlation may exist between satisfaction and storytelling intentions.

Managerial Implications

The current study also provides useful insights to restauranteurs and restaurant managers. Specifically, this study showed that three components (food attributes, employee attributes, and physical environment) of restaurants are significant contributors to customer satisfaction. The food attributes of the restaurants are the most important component in ensuring the customers' satisfaction. Restauranteurs need to understand the significant role of each element of these attributes and focus on them to increase the satisfaction level of customers.

The findings of this study revealed that employees are another important determinant of customers' satisfaction. Employees play an essential role in satisfying customers' needs in the service industry. Restauranteurs should organise training programmes to improve the employees' professional abilities in order to increase and maintain customers' satisfaction.

The study showed that the physical environments of restaurants affect customers' satisfaction. One may say that nowadays, people are more concerned with the interesting, relaxing, and attractive physical environments of companies. Therefore, physical environments can be used to attract customers and to satisfy their expectations. Restauranteurs should pay more attention to physical environments, such as inside ambience, interior design, seating arrangements, the cleanliness of dining areas, and so on, to increase the customers' satisfaction.

Surprisingly, price was not found to be significant contributor to customer satisfaction. Customers do not see the price in a reasonable range.

Restauranteurs can develop promotional activities to eliminate the perception of high price by customers. This is because negative perception of price may lead negative behaviours (Campbell, 1999). Given the relationship between satisfaction and storytelling, customers who are satisfied with the food attributes, physical environment, and employees are more likely to share their experiences through stories. Therefore, restauranteurs should find ways to encourage customers to share their food experience on social media accounts. In order to encourage customers, restauranteurs can offer discounts for those who share experiences on social media. In this way, restaurants may also overcome perceived high price.

CONCLUSION

This research may be one of a few attempts to assess the relationship of restaurant attributes-satisfaction-storytelling constructs in Turkey. The results of the study have significant implications for the understanding of how restauranteurs deliver desired local restaurant experiences to customers. This study revealed that restauranteurs should pay attention to food attributes, employee attributes, and the physical environment in order to enhance and maintain the customers' satisfaction, and to gain competitive advantages. This study also highlights that some important factors should be improved in order to enhance customer satisfaction.

LIMITATIONS AND FUTURE STUDIES

The current study has several limitations. First, only four destinations in Turkey – Gaziantep, Hatay, Şanlıurfa, and Adana – were investigated in the study. Other destinations in the country could be examined using a similar approach in future studies. Second, the sample of this research involved academicians and administrators of 8 universities (public and private) in Adana, Şanlıurfa, Hatay, and Gaziantep. Therefore, the results may not be generalisable to other restaurant customers. Future studies should be carried out with different groups with different demographic characteristics. Third, this study does not consider the direct and indirect relationship between restaurant attributes and storytelling. Future studies could identify the relationship between restaurant attributes and storytelling. Additionally, the small sample of 226 participants is another limitation of the study. Future studies should be carried out with a larger sample size.

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THE DESTINATION MEDIA PROFILE AND TOURIST TRAVEL INTENTIONS: THE MEDIATING EFFECT OF COVID-19 INDUCED PERCEIVED RISK

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ABSTRACT

Information symmetry is a critical antecedent to tourists' consumptive decision-making and conative behaviour, especially in times of crisis and uncertainty. The present study is novel in its interrogation of whether COVID-19 induced perceived risk has an intervening effect in the destination media profile - travel intentions nexus of tourists. The quantitative study adopted a cross-sectional approach. Data was generated via an online survey of a purposive-convenient sample. The respondent-driven snowball sampling approach resulted in a final international sample of 323 potential tourists. Exploratory and confirmatory factor analyses, linear regressions, and simple and parallel mediation analyses were employed. As it emerged from the study, a destination's media profile, directly and indirectly, influences the conative behaviour of tourists. At the same time, destination media profile has an apparent direct effect on perceived risk-oriented information symmetry. A partial diminishing intervening effect of COVID-19 induced risk is also established in the indirect relationship between destination media profile and tourists' post-crisis travel intentions.

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INTRODUCTION

The devastating global effects of the ongoing COVID-19 pandemic on tourism bear testament to the susceptibility of tourism to external shocks

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such as pandemics (Bhati et al., 2021; Rather, 2021). Health-related crises have predictably been associated with heightened perceived risk and the significant retardation of tourism demand. Recent history suggests that health-related crisis events significantly diminish tourism demand, buoyed by paradigm shifts in tourist behaviour (Villacé-Molinero et al., 2021). Depending on their duration and severity, natural (Ebola, H1N1; Severe Acute Respiratory Syndrome - SARS) and man-made (September 11 terror attacks) disasters may result in a phobia towards tourism activity, termed 'tourophobia' (Boto-García & Leoni, 2021; Çakar, 2021; Yildirim & Güler, 2022). For instance, the SARS epidemic of 2003 resulted in a 55% decrease in Japanese outbound tourists to international tourist destinations (Hajibaba et al., 2015), while over the same period, Taiwan experienced a 72% decline in inbound tourism (Mizrachi & Fuchs, 2016).

During crisis events, tourists become more circumspect in their consumptive decisions, mainly due to risk perceptions (Cahyanto & Liu-Lastres, 2020; Carballo et al., 2017). Therefore, it is vital to establish a better understanding of tourist behaviour post the crisis to better predict tourist's conative behaviour (Chiu et al., 2019), to utilise the data in the innovation and development of responsive tourism policy and products that support post-crisis tourism recovery and marketing strategies. The key to the formation of risk perceptions is information symmetry. Empirical evidence from the South Korean experience during the 2015 Middle East Respiratory Syndrome (MERS) outbreak shows that information asymmetry during public health crises was correlated to an increased uptake in the consumption of information related to the crisis from various media channels, including social media, interactive networks and online news platforms (Jang & Baek, 2019). This implies that during and post-crisis events, information symmetry from the *media* may be a critical antecedent to the conative behaviour of tourists - whereby information becomes vital to the affirmation or mitigation of risk and uncertainty (Jonas & Mansfeld, 2017; Williams & Baláž, 2015; Yildirim & Güler, 2022). Significantly, the proliferation of innovative technologies has transformed the communications (websites, social networks, mobile applications) landscape within the global tourism market. As a result, both new and traditional media-induced tourism destination media profiles become important heuristic cues that influence the travel intentions of tourists (Koo et al., 2016; Peters et al., 2011). It follows then that understanding the influence of extrinsic antecedents such as the destination media profile on the amplification or mitigation of perceived risk in tourist's post-crisis decision-making is also essential to the recovery of tourism demand (Adie, 2020; Kapuscinski & Richards, 2016; Khan et al., 2021).

There has, however, been limited academic inquiry into the relationship among destinations' media profiles, perceived risk, and travel intentions due to health-related crises (Al-Gasawneh, 2020; Yu et al., 2021). At the same time, Jonas and Mansfeld (2017) note a corresponding gap in research relating to the influence of media profile-related information on risk perceptions, albeit previous studies establishing the heterogeneity in the effect of various media-sourced information on the perceived risk and travel intentions of tourists, respectively (Al-Gasawneh, 2020; Bhati et al., 2021; Kaulu et al., 2020). The COVID-19 pandemic has re-invigorated academic inquiry into the role and influence of risk perceptions in tourist decision-making. Notwithstanding the emerging research around COVID-19 and its influence on tourism, a substantial proportion of contemporary studies on tourism (Bae & Chang, 2021; Boto-García & Leoni, 2021; Rather, 2021) have to date generally established the influence of pandemic-related risk on the travel intentions and tourist behaviour. However, limited insights have been provided into the impact of crisis-induced risk on the relationship between specific antecedents in tourists' decision-making process and their intended behaviour. To this end, the present study explores and examines the potential intervening effect of crisis-induced perceived risk in the destination media profile - travel intentions nexus.

LITERATURE REVIEW

Study premise

There are three major theoretical frameworks relevant to the potential mediation effect of perceived risk in the destination media profile – travel intentions nexus. First, the Theory of Planned Behaviour (TPB) (Ajzen, 1985, 1991) is a seminal explanatory framework in the tourism discourse that attributes tourist behaviour's likelihood to three dimensions: attitude, subjective norms, and perceived behavioural control. Contextually, the TPB implies that despite their intrinsic motives, tourists are more likely to engage in positive conative behaviour towards a destination if the destination: is associated with a positive image or perceptions (does not pose a psychological risk to the tourist); it is acceptable to the pervasive values and norms of the tourist and their social reference groups (represents minimal social risk); and will not result in uncertain or harmful outcomes that are beyond the control of the tourist such as health-related physical risk associated with COVID-19 infection (Lam & Hsu, 2004). Notably, the TPB acknowledges the susceptibility of tourist behaviour to subjective heuristic cues (Jonas & Mansfeld, 2017; Soliman, 2019).

Second, the role of media in influencing the *travel intentions* and *risk perceptions* of tourists is grounded in the media-centric Use and Gratification Theory (UGT) (Palmgreen & Rayburn, 1979) which posits that the choice of media, its utility and the extent of exposure to it inform the conative behaviour of its consumer(s). Whereby, tourists consume information from specific media channels to achieve the requisite information symmetry to effectively evaluate the destination's attributes (including risk assessment) concerning their intrinsic motives for engaging in tourism activity, thus impact their travel intentions (Koo et al., 2016). Moreover, the evaluation aspect of the UGT supports the role and effect(s) of media consumption in both perceived risk formation and behavioural outcomes, which in crises can be further explained by the third theoretical framework, Rogers' (1975) Protection Motivation Theory (PMT). The PMT propagates that individuals adapt and mediate their conative behaviour based on the subjective perceptions of risk to mitigate uncertainty, as well as their perceived susceptibility to potential health threats to their well-being, more so in post-health crisis travel and tourism contexts (Bhati et al., 2021; Boto-García & Leoni, 2021; Rogers, 1975). These subjective risk perceptions are predicated on the extent of either information symmetry or asymmetry concerning the pervasiveness of the crisis event. Hence, it is reasonable to consider the notion that the contemporary tourist's travel intentions may be particularly susceptible to the influence of a destination's media profile with the potential intervening effect of COVID-19 pandemic induced perceived risk.

Media profile and tourist behaviour

The attitudes of tourists towards tourism destinations are the consequence of the organic and induced stereotypes that tourists are exposed to through various communication channels, including travel and tourism websites (Garg, 2012), social media (Jalilvand et al., 2013), official tourism destination websites (Buhalis & Law, 2015), the traditional mass media (Koo et al., 2016), and entertainment content (Peters et al., 2011). These stereotypes are utilised as heuristic cues catalysing image (cognitive) and perception (affective) formation related to a specific destination (Al-Gasawneh, 2020; Latif et al., 2020). In an increasingly globalised world, tourists interact with various media platforms during their destination information search process (Bhati et al., 2021; Khan et al., 2021); thus positioning media channels as contemporary vectors of both objective and subjective information that tourists utilise to build a destination's media profile, more-so in situations of uncertainty (Al-Gasawneh, 2020; Jalilvand et al., 2013). As a result, the dual role of *media* in the contemporary tourism context is to reinforce tourists' travel motivations and decision-making process while informing tourists of the potential consequences of engaging in tourism activity (Koo et al., 2016; Oh et al., 2021).

Perceived risk and post-crisis travel behaviour

Risk (Bauer, 1960) in tourist behavioural studies refers to "the individual's feelings of uncertainty about the outcomes of a purchase, risk perception is understood in terms of how predetermined notions about particular places, objects, or activities, influence tourist behaviour," (Williams & Baláž, 2015, p. 274). The risk construct may be dichotomised into two distinct risk typologies: absolute/real and perceived risk. Actual risk is the objective evaluation of the likelihood of a negative outcome from a consumer's consumptive decision (Adam, 2015), while perceived risk may be characterised as an idiosyncratic and subjective belief that an action or decision may have an uncertain or negative outcome (Karl, 2018; Wolff & Larsen, 2016). Although the current COVID-19 pandemic poses an absolute risk to tourist health and safety, conventional wisdom suggests that tourists tend to make their consumptive decisions based on perceived risk, notwithstanding the absolute risk that may or may not exist (Carballo et al., 2017; Yang et al., 2015).

Perceived risk within the tourism context may be decomposed into nine typologies: health, financial, natural, political, physical, psychological, social, satisfaction, and terrorism risk (Deng & Ritchie, 2018; Qi et al., 2009; Sönmez & Graefe, 1998). Implying that risk as a multi-dimensional construct is highly subjective, resulting in a generally heterogeneous effect on tourist decision-making and travel behaviour (Lenggogeni et al., 2019). For instance, Qi et al. (2009) found that US students associated travel to China with safety concerns, cultural violence, socio-psychological, and cultural risk. While a survey of English and German tourists found that international tourists were influenced by health, delinquency, accident, environmental, and natural disaster risk in their decision-making (Carballo et al., 2017). However, another study found that physical risk only influenced German tourists when considering Turkey as a tourism destination (Yağmur & Doğan, 2017). While Wang (2017) found that Chinese tourists were affected by perceived natural and social risk when considering Taiwan as a tourism destination. Considering the COVID-19 pandemic, the present paper's scope is limited to physical, psychological, and social risks.

Several authors (Chiu et al., 2019; Deng & Ritchie, 2018; Fuchs & Reichel, 2006; Khasawneh & Alfandi, 2019) have assimilated health-related aspects as physical risk factors that may harm or endanger the health and well-being of tourists. To this end, physical risk "[…] refers to the possibility that an individual's health is likely to be exposed to injury and sickness because of conditions such as law and order, weather, and hygiene" (Fuchs & Reichel, 2006, p. 86). Psychological risk is associated with the perceived probability that tourism-oriented activity will either not meet the tourist's expectations based on their self-image or, more importantly, create anxiety for their safety, as well as exacerbate the general fear of disappointment (Chiu et al., 2019; Fuchs & Reichel, 2006). While, the social risk is associated with the prospect of the loss of acceptance or respect (social status) within the tourist's reference groups, including family, friends and the broader community as a result of consuming travel and tourism products (Deng & Ritchie, 2018; Hajibaba et al., 2015).

Hypotheses formulation

Prior tourism studies have established a correlation between the media-based profile of destinations and the travel intention of tourists. For instance, Jalilvand et al. (2013) concluded that eWord-of-Mouth through various media platforms positively influenced tourist perceptions and the travel intentions of tourists towards visiting Iran. Correspondingly, in the case of tourism to South Korea, Koo et al. (2016) established a strong positive correlation between international tourists' media exposure to the destination and their travel intentions. While more pertinently, Mizrachi and Fuchs (2016) observe that in crises such as the Ebola outbreak, mass media is critical to disseminating travel-related information as tourists proactively seek information to support their travel decisions and ultimately mitigate perceived risks. Hence, the following hypothesis was tested;

H1: *The destination media profile of a tourism location has a positive direct effect on tourists' travel intentions.*

Prior research has established the primordial role of the media and its various platforms in informing consumer perceptions in public health crises (Jang & Baek, 2019). To this end, from a sample of Israeli backpackers, Jonas and Mansfeld (2017) established the *interplay* between information sourced from various channels (including online travel forums and news sites) and risk perception formation at various stages of tourist's travel consumption process. Correspondingly, Kapuscinski and Richards (2016) observe that tourists' risk perceptions predicate the *media effect* and how the information is framed. The study with a sample of United Kingdom-based leisure tourists determined that media exposure and framing have an *amplifying* and *attenuating* effect on tourist risk perceptions. Contemporary studies illustrate this dichotomy in the net effect of media on risk perceptions. For instance, Rather (2021) opines that COVID-19 has a modifying effect on tourists, including heightened fear, uncertainty and heightened reactions. Whereas, Al-Gasawneh (2020) concludes the opposite, suggesting that social media, in particular, had a mitigating effect on the perceived risk and uncertainty associated with Saudi Arabia. To test the impact of media on the risk perceptions of tourists, the following hypotheses were formulated;

H2: *The destination media profile of a tourism location has a positive direct effect on perceived physical [$H2_a$], psychological [$H2_b$] and social [$H2_c$] risk associated with the COVID-19 pandemic.*

Perceived risk is a critical antecedent to travel intention formation (Hsieh et al., 2016). Tourists associate risk with threats to their subjective well-being (Holm et al., 2017). To this end, a nexus between perceived risk and both the notion of safety and tourists' intention to travel has been established (Deng & Ritchie, 2018). Prior studies (Cahyanto & Liu-Lastres, 2020; Karl, 2018; Wang, 2017) indicate that perceived risk diminishes tourists' travel intention. More pertinently, there is anecdotal evidence that health crises such as the various avian flu and Ebola outbreaks have an inverse correlation typically with the travel intentions of tourists (Boto-García & Leoni, 2021; Mizrachi & Fuchs, 2016). Thus, lower perceived risk stimulates consumption, whereas higher perceived risk makes consumers more circumspect in their consumptive decisions - prompting mitigating behaviour such as trip delays, cancellations or the avoidance of specific destinations (Cahyanto & Liu-Lastres, 2020; Hasan et al., 2017; Lee et al., 2012; Mizrachi & Fuchs, 2016). Hence, the following hypotheses were tested;

H3: *Perceived physical [$H3_a$], psychological [$H3_b$] and social [$H3_c$] risk associated with the COVID-19 pandemic has a negative direct effect on travel intention.*

There is an established predictive relationship between a destination's media profile and tourist's intention to travel (Jalilvand et al., 2013; Koo et al., 2016; Mizrachi & Fuchs, 2016); destination's media profile and perceived risk (Al-Gasawneh, 2020; Jang & Baek, 2019; Rather, 2021); as well as between risk perception and tourist's travel intentions (Cahyanto & Liu-Lastres, 2020; Hsieh et al., 2016; Karl, 2018). These *prior* relationships suggest that it may be reasonable to hypothesise an intervening effect of risk perceptions in the destination media profile – travel intentions nexus. Furthermore, PMT supports the intervening impact of crisis-induced risk in tourists' behaviour, including their behavioural intentions (Bhati et al., 2021; Boto-García & Leoni, 2021). Therefore, the following hypotheses were conceived,

H4: *Perceived physical [$H4_a$], psychological [$H4_b$] and social [$H4_c$] risk associated with the COVID-19 pandemic negatively mediate the relationship between destination media profile and travel intention.*

The conceptual framework is illustrated in Figure 1 is based on the hypotheses formulated for the study.

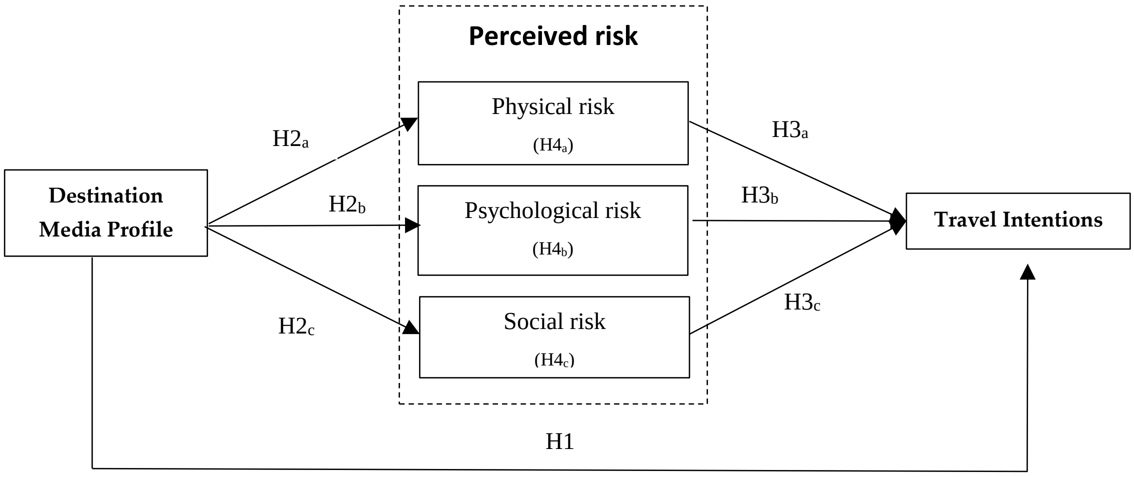

Figure 1. *Conceptual framework*

METHODOLOGY

A cross-sectional deductive study was conducted. A quantitative survey of potential tourists was conducted between May 7 and June 9, 2020, when a significant proportion of global countries instituted moratoriums on domestic and international travel and tourism. As a result, an online survey was conducted in line with most empirical studies (Li et al., 2021; Neuburger & Egger, 2021) conducted during the COVID-19 pandemic utilising social media platforms. The initial pool of respondents was drawn from Facebook as part of an unrestricted self-selected survey approach (Fricker, 2008; Latif et al., 2020), whereby visitors to North-West University's Tourism Research in Economics, Environs and Society (TREES) research unit Facebook page were invited to voluntarily participate in the study and presented with a link to the online survey hosted on the Google

Forms platform akin to the study by Villacé-Molinero et al. (2021). The TREES Facebook page was suitable for the study's purposes as it comprised international tourists and tourism practitioners with access to multiple social and professional tourism-oriented networks and individuals. Upon completion of the survey, respondents were requested to invite potential tourists within their online networks (Twitter, Instagram, Facebook, LinkedIn) to participate in the study as part of respondent-driven snowball sampling to recruit additional respondents for the survey (Moswete & Darley, 2012; Tyldum, 2020). As a result, 323 responses were generated. The sample achieved logical validity (Forer, 2014) as it was objectively suitable, with 90% of the respondents having travel experience before the pandemic and intending to engage in domestic (82%) and international (98%) travel before the year 2022, despite the COVDI-19 pandemic.

The measuring instrument

A novel English language self-administered questionnaire was developed to generate the required data. While the questionnaire comprised five sections, the data generated from four sections was relevant to the present study. The first section solicited the respondents' socio-demographic information (Table 1). Based on a five-point Likert scale of influence, where one = 'Not at all influential' and 5 = 'Extremely influential', the second section asked respondents to what extent of influence any destination's media profile would have on a potential tourist's travel intentions. The five statements for destination media profile were drawn from previous studies (see Adeola & Evans, 2019; Gong & Tung, 2017; Hyun, 2006; Kapuscinski & Richards, 2016; No & Kim, 2015). On a five-point Likert scale of agreement, where 1 = 'Strongly disagree' and 5 = 'Strongly agree', tourists’ perceived (physical health-related, psychological, social) risk was measured based on 12 statements adapted from the literature (see Matiza & Kruger 2021). The last section adapted five statements from the literature (see Khasawneh & Alfandi, 2019; Law, 2006; Olya & Al-ansi, 2018; Wang, 2017) to measure the travel intentions of potential tourists on a five-point Likert scale of likelihood, where 1 = 'Extremely unlikely' and 5 = 'Extremely likely'. The measuring instrument was employed with the approval of the North-West University’s Economic and Management Sciences Research Ethics Committee (EMS-REC) under ethical clearance number NWU-00625-20-A4.

Data analysis

A three-step data analysis process was undertaken. First, the data were assessed for factorability by employing Kaiser-Meyer-Olkin Measure of

Sampling Adequacy (KMO: >0.50) and Bartlett's Test of Sphericity ($p < 0.001$), before Principle Components Analysis (PCA: EV > 1) and Exploratory Factor Analysis (EFA: factor loading coefficient of ≥ 0.5) reduced the data into discernible factors (Hair et al., 2014; Watkins, 2018). The validity and reliability of the *priori* theoretical constructs established by the EFA were assessed using Confirmatory Factor Analysis (CFA) using IBM AMOS (v.26) (Hair et al., 2014; Wang et al., 2020). The goodness of fit between the model and the observed data was established based on the following statistics: CMIN/DF = between 1 and 3; Comparative Fit Index (CFI ≥ 0.95), the root mean square error of approximation (RMSEA < 0.06 to 0.08), and Standardised Root Mean Residual (SRMR < 0.08) (Gaskin & Lim, 2016; Schreiber et al., 2006). Composite Reliability (CR ≥ 0.70) and Average Variance Extracted (AVE ≥ 0.50) was deemed appropriate to determine the validity and reliability of the constructs (Hu & Bentler, 1999). The second step involved direct effect testing. Adopting Kane and Ashbaugh's (2017) approach, linear regressions assessed the statistical assumptions and subsequent viability of mediation analysis. The final step was the data analysis was, the Mediation Analysis (MA) in SPSS utilising the PROCESS Macro (v3.5) (Hayes, 2013), to explore the factors that may affect tourist's travel intentions as an outcome (Vo et al., 2020).

RESULTS

Table 1 summarises the socio-demographic profile of the respondents to the survey.

Table 1. *Respondent profile*

Demographic profile	Descriptive statistics
Gender	Male (38.1%); Female (61.3%); Transgender (0.3%); Rather not say (0.3%)
Average age	Between 24 and 44 years old (65.9%)
Highest Qualification	Post-graduate degree (67.8%); Bachelor's degree (19.2%)
Marital status	Single (never married) (44%); Married (44%)
Travel Companion(s)	Family (Adults and children) (26.6%); With my partner (22.6%); Alone (19.2%)
Region of residence	Africa (45.5%); Europe (23.5%)
Travel frequency	More than once (79.6%); Once (10.8%); None, I am yet to travel as a tourist (9.6%)
International travel in the next two years	Yes (82.4%); No (17.6%)
Domestic travel in the next two years	Yes (97.5%); No (2.5%)
Most influential channel for tourism decision-making	The internet (39.9%); Social media (26.3%); Word-of-mouth (20.7%)

Table 1 shows that from the sample of 323 respondents, the majority were female, while most respondents were young to middle-aged. The sample comprised chiefly highly educated individuals who were either single or married. Most respondents indicated that they travelled with their family and resided in Africa when the survey was conducted. A significant proportion of respondents had travelled more than once and, more importantly, indicated that they intended to travel domestically and internationally within the next two years. Table 2 presents the factor analysis results (dimension reduction) for destination media profile, perceived risk, and travel intentions.

Table 2. *Means, Standard deviations and EFA*

Factor	Items	Mean ($\bar{x}$)		Std. Dev (σ)		Comm.		Factor loading Coefficient	
		Min	Max	Min	Max	Min	Max	Min	Max
[1]**Destination Media Profile**	DMP1; DMP2; DMP3; DMP4; DMP5	3.03	3.62	1.155	1.193	0.466	0.595	0.683	0.771
[2]**Perceived Risk**									
Physical Risk	PHR 1; PHR 2; PHR 3; PHR 4	3.38	4.20	1.081	1.321	0.625	0.754	0.674	0.896
Psychological Risk	PSR 1; PSR 2; PSR 3	2.20	2.25	1.277	1.307	0.817	0.892	0.848	0.912
Social Risk	SCR 1; SCR 2; SCR 3; SCR 4	2.11	3.15	1.183	1.322	0.639	0.811	0.708	0.842
[3]**Travel Intention**	TRI 1; TRI 2; TRI 3; TRI 4	2.59	3.67	1.235	1.477	0.635	0.746	0.797	0.864

Oblimin rotation with Kaiser Normalisation [Factor loading coefficient (≥0.50)]
[1]KMO = 0.785; Bartlett's test of Sphericity = (χ^2 (10) = 448.661, p < 0.000)
[2]KMO = 0.813; Bartlett's test of Sphericity = (χ^2 (66) = 2199.928, p < 0.001)
[3] KMO = 0.723 Bartlett's test of Sphericity = (χ^2 (10) = 928.887, p < 0.000)

As Table 2 indicates, as a result of the EFA (Oblimin rotation with Kaiser Normalisation: ≥0.50), all five Destination Media Profile (*DMP*: Eigenvalue = 2.729, α = 0.789) items loaded on a single factor, explaining 54.57% of the variance in the data. Three perceived risk factors explaining a cumulative 69% of the variance in the data were also extracted by the EFA, namely: Physical Risk (*PHR*: Eigenvalue = 4.683, α = 0.838); Psychological Risk (*PSR*: Eigenvalue = 1.945, α = 0.928); and Social Risk (*SCR*: Eigenvalue = 1.673, α = 0.842). Five travel intention (*TRI*: Eigenvalue = 3.335, α = 0.874) items loaded on a single factor, explaining 67% of the variance in the data. The results of the EFA were reliable within the parameters recommended by Hair et al. (2014).

The CFA (maximum likelihood estimations) goodness of fit for DMP, Perceived risk factors, and TRI concludes that the constructs extracted by the EFA were valid (Gaskin & Lim, 2016; Hu & Bentler, 1999; Schreiber et al., 2006) within the fit index parameters indicating good fit between the respective models and the observed data as follows: χ^2=357.324; p<0.001

χ^2/df=2.077; CFI=0.950; SRMR=0.058; and RMSEA=0.058. Table 3 summarises the validity and reliability tests.

Table 3. *CFA validity tests*

Latent construct	Observed variables	Composite Reliability (CR)	Average Variance Extracted (AVE)	DMP	PHR	PSR	SCR	TRI
DMP	5	0.777	0.417	**0.646**				
PHR	4	0.843	0.574	0.297†	**0.758**			
PSR	3	0.930	0.816	-0.092	0.335†	**0.903**		
SCR	4	0.851	0.597	0.105	0.488†	0.352†	**0.772**	
TRI	5	0.879	0.596	0.225†	-0.323†	-0.340†	-0.346†	**0.772**

*p<0.050; **p<0.010; † p < 0.001

As Table 3 indicates, the CR for all constructs was ≥ 0.70 threshold (Hu & Bentler, 1999), while the AVE was above the ≥ 0.50 threshold, except for *DMP* (AVE = 0.417). However, the CR for *DMP* is ≥ 0.60, indicating adequate convergent validity of the construct (Fornell & Larcker, 1981). The diagonal coefficients extracted were within the recommended parameters and less than the squared AVEs, suggesting that discriminant validity was achieved for the perceived risk construct (Chang, 2004, Wang et al., 2020).

Direct effect testing

Table 4 shows that *DMP* (IV) was correlated to *PHR*, *SCR* (MVs) and *TRI* (DV). The *DMP-PSR* correlation was the exception, reporting a non-significant outcome suggesting a potentially non-significant *PSR* mediation path between *DMP* and *TRI*.

Table 4. *Pearson-product correlation matrix*

Variable	DMP	PHR	PSR	SCR	TRI
DMP	**1**				
PHR	0.227**	**1**			
PSR	-0.054	0.326**	**1**		
SCR	0.116*	0.426**	0.347**	**1**	
TRI	0.221**	-0.297**	-0.347**	-0.363**	**1**

* 0.05 level (2-tailed), **0.01 level (2-tailed)

All the perceived risk factors were cognate - reporting moderate correlations between r = 0.326 and r = 0.426. Intriguingly, perceived risk factors and travel intention reported moderate inverse correlations (Hasan et al., 2017; Karl, 2018). Subsequently, the data was assessed to ensure it met the statistical assumptions of linearity, homoscedasticity, normality and independence of observation before the mediation analysis could be conducted (Kane & Ashbaugh, 2017). Additionally, the data in Table 4 reported correlations below r = .50; hence multicollinearity was not a concern in the subsequent analyses (Kaulu et al., 2020). In Table 5, linear regressions showed the predictions: path c - X [*DMP*] on Y [*TRI*]; path a - X on M; path b - M [M_1 is *PHR*; M_2 is *PSR*; M_3 is *SCR*] on Y[*TRI*].

Table 5. *Direct effect verification*

	Unstandardised coefficients		Standardised coefficients			
	B	**Std. Error**	**β**	**t-value**	**Sig.**	**Hyp.**
X (*DMP*) – Y (*TRI*): path c	0.277	0.068	0.221	4.051	0.000***	H1
Physical risk (*PHR*)						
X (*DMP*) – M_1 (*PHR*): path a	0.253	0.061	0.227	4.166	0.000***	$H2_a$
M_1 (*PHR*) - Y (*TRI*): path b	-0.335	0.060	-0.297	-5.578	0.000***	$H3_a$
Psychological risk (*PSR*)						
X (*DMP*) – M_2 (*PSR*): path a	-0.074	0.076	-0.054	-0.971	0.332	$H2_b$
M_2 (*PSR*) - Y (*TRI*): path b	-0.321	0.048	-0.347	-6.620	0.000***	$H3_b$
Social risk (*SCR*)						
X (*DMP*) – M_3 (*SCR*): path a	0.134	0.064	0.116	2.095	0.037*	$H2_c$
M_3 (*SCR*) – Y (*TRI*): path b	-0.394	0.057	-0.363	-6.969	0.000***	$H3_c$

Statistically significant: *p < .05, **p < .01, ***p < .001

The models suggested no statistical violations in linear regression relationships (Field, 2013, Hayes, 2013; Kane & Ashbaugh, 2017). Table 5 shows statistically significant direct relationships on all paths, except for *DMP* predicting *PSR* (X on M: path a). Therefore, the following hypotheses were accepted: H1, since *DMP* is a statistically significant positive ($\beta = 0.221$, $p < .001$) predictor of *TRI*; $H2_a$ and $H2_c$, as *DMP* is a statistically significant positive predictor of *PHR* ($\beta = 0.227$, $p < .001$) and *SCR* ($\beta = 0.116$, $p < .05$); as well as $H3_a$, $H3_b$, and $H0_{3c}$, the perceived risk (*PHR*: $\beta = -0.297$, $p < .001$; *PSR*: $\beta = -0.347$, $p < .001$) and *SCR*: $\beta = -0.363$, $p < .001$) dimensions associated with the COVID-19 pandemic direct negatively predicted *TRI*, respectively. Notably, the regressions confirmed the statistical insignificance ($\beta = -0.054$, $p = 0.332$) of *DMP* as a predictor of *PSR*, corroborating the correlation statistic (Table 4). Thus, hypothesis $H2_b$ was rejected and excluded *PSR* from the mediation analysis. Ultimately, $H4_b$ was rejected, as no mediating effect was possible between *DMP* and *TRI* via *PSR* (see Mascha et al., 2013).

Mediation analysis

The MA proposed that COVID-19 induced perceived risk factors as respective mediators (M_1 = *PHR* and M_2 = *SCR*) intervened in the relationship between the *DMP* (X) and *TRI* (Y). The paths were relabelled as follows, *PHR*: X on $M_1 = a_1$; M_1 on Y = b_1 and *SCR*: X on $M_2 = a_2$; M_2 on Y = b_2, respectively. Table 6 summarises the mediation analyses' results utilising Model 4 of the PROCESS Macro (v3.5) plugin in SPSS (Hayes, 2013).

Table 6. *Mediation via perceived risk factors*

Path	B	SE	95% BootCI Lower Limit CI	95% BootCI Upper Limit CI	β	t-value	Sig.
DMP-TRI							
Path c: DV = *TRI*							
R^2=0.0486, F(1,321.0000)16.4069, p=0.0001 IV = *DMP*	0.2774	0.0685	0.1472	0.4122	0.2205	4.0505	0.0001***
DMP-PHR-TRI							
Path a_1: DV = *PHR*							
R^2=0.051, F(1,321.0000)17.3586, p=0.0000	0.2527	0.0607	0.1334	0.3721	0.2265	4.1664	0.0000***
IV = *DMP*							
Path b_1 and c: DV = *TRI*							
R^2=0.1757,F(1,320.0000)34.1063, p=0.0000							
IV = *DMP* (c′)	0.3817	0.0656	0.2527	0.5107	0.3034	5.8228	0.0000***
IV = *PHR* (b_1)	-0.4126	0.0587	-0.5282	-0.2971	-0.3660	-7.0239	0.0000***
Effect: a_1b_1	-0.1043		-0.1678	-0.0507			
DMP-SCR-TRI							
Path a_2: DV = *SCR*							
R^2=0.0135, F(1,321.0000)4.3888, p=0.0370	0.1344	0.0641	0.0082	0.2606	0.1161	2.0950	0.0370*
IV = *DMP*							
Path b_2 and c: DV = *TRI*							
R^2=0.2013, F(2,320.0000)40.3308, p=0.0000							
IV = *DMP* (c′)	0.3349	0.0633	0.2104	0.4594	0.2662	5.2924	0.0000***
IV = *SCR* (b_2)	-0.4277	0.0547	-0.5353	-0.3202	-0.3934	-7.8217	0.0000***
Effect: a_2b_2	-0.0575		-0.1174	-0.0002			

Note: *N*=323, statistically significant at *p < .05, **p < .01, ***p < .001

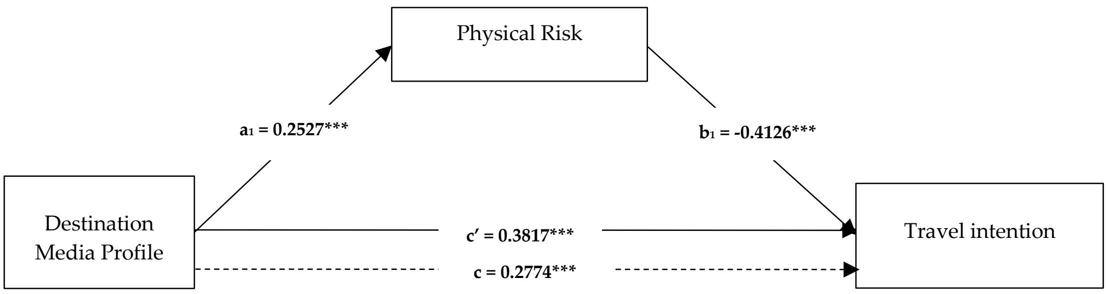

Figure 2. *Mediation via physical risk*

Statistical significance: *p <.05, **p < .01, *** p < .001
Note: The mediating effect of physical risk (*PHR*) in the relationship between a destination's media profile (*DMP*) and travel intention (*TRI*). Effects are unstandardised; a_1 is the effect of destination media profile on physical risk; b_1 is the effect of perceived physical risk on travel intention; c is the direct effect of destination media profile on travel intention; c' is the total effect of destination media profile on travel intention.

Statistically significant effects were established in both models for the intervening variables *PHR* and *SCR* in explaining the relationship between *DMP* and *TRI*. The mediation path coefficients utilise unstandardised coefficients in line with the literature (Fairchild &

McDaniel, 2017; Hayes, 2013; Preacher & Kelley, 2011). All the effects reported 95% bias-corrected confidence intervals (CI) based on 5000 bootstrap samples (Preacher & Hayes, 2004) did not include zero between the Lower limit (LL) and Upper Limit (UL); therefore, all the effects were significant.

As shown in Table 6 and illustrated in Figure 2, *DMP* had a positive direct effect on *PHR* ($a_1 = 0.2527$, $p < 0.001$), while *PHR* had a negative direct effect on *TRI* ($b_1 = -0.4126$, $p < 0.001$). The MA also indicates a significant negative indirect effect ($a_1b_1 = -0.1043$, $p = 0.000$) of *DMP* on *TRI* via *PHR*, 95% bootstrap CI (LL = -0.1678, UL = -0.0507). The range from the LL to the UL did not include zero; thus, the negative indirect effect was significant. Therefore, hypothesis $H4_a$ was supported; the influence of a destination's media profile on a tourist's travel intentions (likelihood to engage in tourism) was indirectly diminished by COVID-19 induced perceived physical risk. Figure 3 shows the mediating effect of *SCR*.

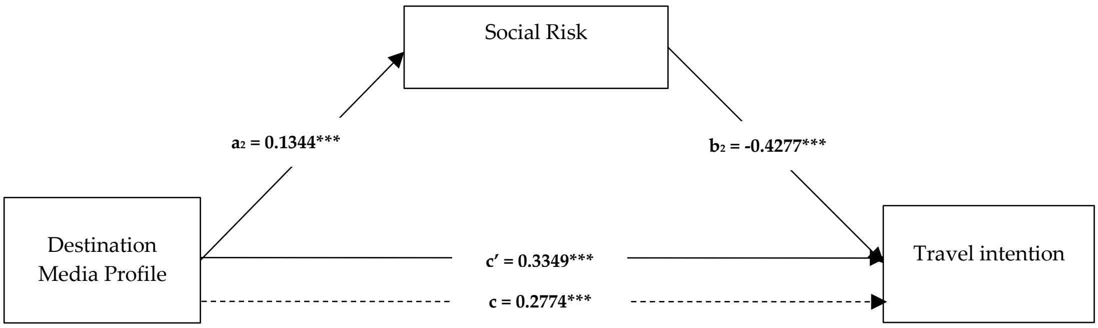

Figure 3. *Mediation via social risk*

Statistical significance: *p <05, **p < 01, *** p < 001

Note: The mediating effect of social risk (*SCR*) in the relationship between a destination's media profile (*DMP*) and travel intention (*TRI*). Effects are unstandardised; a_2 is the effect of destination media profile on social risk; b_2 is the effect of social risk on travel intention; c is the direct effect of destination media profile on travel intention; c' is the total effect of destination media profile on travel intention.

Also shown in Table 6 and illustrated in Figure 3, *DMP* had a positive direct effect on *SCR* ($a_2 = 0.1344$, $p < 0.001$), while *PHR* had a negative direct effect on *TRI* ($b_2 = -0.4277$, $p < 0.001$). The MA revealed a significant negative indirect effect ($a_2b_2 = -0.0575$, $p = 0.000$) of *DMP* on *TRI* via *SCR*, 95% bootstrap CI (LL = -0.1174, UL = -0.0002). The range from the LL to the UL did not include zero; therefore, the negative indirect effect was significant. Therefore, hypothesis $H4_c$ was supported; the influence of a destination's media profile on a tourist's travel intentions (likelihood to engage in tourism) was indirectly diminished by COVID-19 induced perceived social risk. In both mediation models, the R^2 statistic increased significantly with both *PHR* and *SCR*'s intervening effect, respectively. In the *PSR* mediation model, the R^2 statistic increased from 5% to 18%. In contrast, in the *SCR* mediation model, the R^2 statistic increased from the initial 5% to 20%, suggesting that both models were respectively ideal and had practical effect significance (Colignatus, 2018; Ferguson, 2009) and that *PSR* and *SCR* increased the proportion of variance in *TRI* that DMP may explain albeit being a diminishing effect. This inclination supported further analysis to explore whether a model incorporating *PHR* and *SCR* as parallel intervening variables would increase the proportion of variance in *TRI* that *DMP* may explain. The results of the parallel mediation analysis are illustrated in Figure 4.

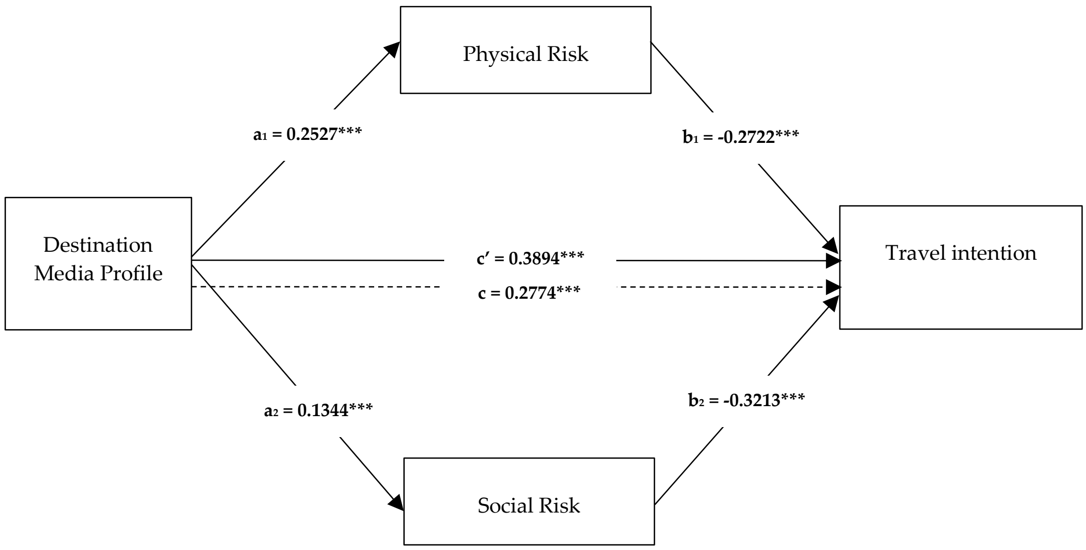

Figure 4. *Parallel mediation via physical and social risk*

Statistical significance: *p <05, **p < 01, *** p < 001

Note: The mediating effect of physical risk (*PHR*) and social risk (*SCR*) in the relationship between a destination's media profile (*DMP*) and travel intention (*TRI*). All presented effects are unstandardised; a_1 is the effect of destination media profile on physical risk; b_2 is the effect of physical risk on travel intention. a_2 is the effect of destination media profile on social risk; b_2 is the effect of social risk on travel intention. c is the direct effect of destination media profile on travel intention; c' is the total effect of destination media profile on travel intention with physical and social risk in the model.

The parallel mediation analysis results (95% bias-corrected CI based on 5000 bootstrap samples) did not include zero between the LL and UL; therefore, all the parallel mediation effects were significant. Figure 4 shows that the effect of *DMP* on *PHR* and *SCR*, respectively, held constant to the simple mediation models. However, paths b_1 and b_2 were different from the preceding models. *PHR* reported a weaker negative effect on *TRI* (b_1 = -0.2722, p < 0.001, LL = -0.3937 and UL = -0.1507), while *SCR* also reported a weaker negative effect on *TRI* (b_2 = -0.3213, p < 0.001, LL = -0.4362 and UL = -0.2064). On the other hand, bootstrapping analyses with 5000 samples, revealed a stronger significant negative total indirect effect of *DMP* on *TRI* through *PHR* and *SCR* (-0.0688 + -0.0432 = -0.1120, p = 0.000), 95% bootstrap CI (LL = -0.1889, UL = -0.0445), compared to the respective preceding individual indirect effects. *PHR* and *SCR* as intervening variables increased the proportion of variance in *TRI* that *DMP* may explain (R^2 = 0.2472, F(3,319.000) 34.9103, p=0.000) to 25%, indicating the practical effect significance of the parallel mediation model (Colignatus, 2018; Ferguson, 2009).

DISCUSSION

The empirical evidence from the simple mediation analyses demonstrates the expected sign, reporting the partial negative mediation effect of perceived *PSR* and *SCR* in the influence of *DMP* and the *TRI* of potential tourists, respectively. Furthermore, slightly superior results were achieved with parallel mediation analysis (Figure 4), showing a stronger significant negative indirect intervening effect of *PSR* and *SCR* on the relationship between *DMP* and the *TRI* of tourists. Figure 5 is the summative model of the intervening effect of risk perception in the *DMP-TRI* nexus.

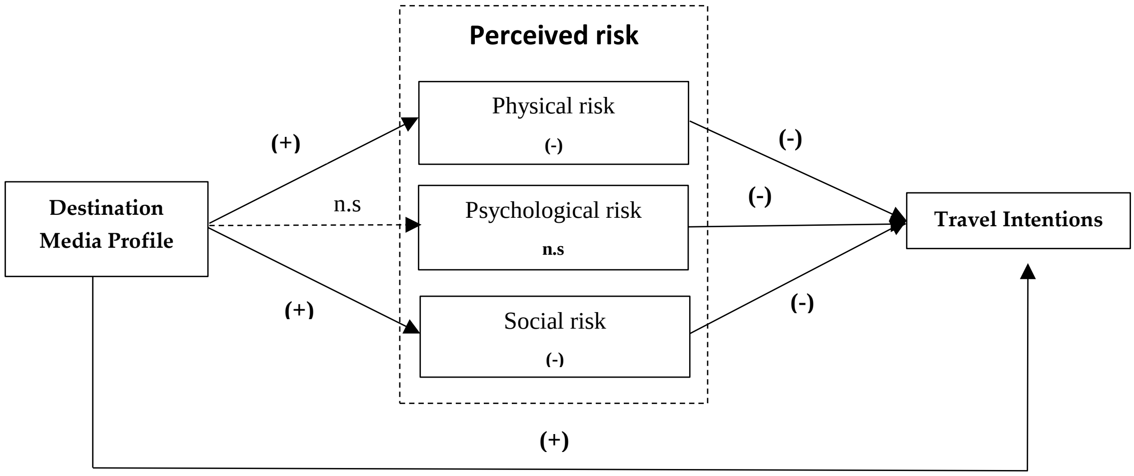

Figure 5. *Summative model for the mediating effect of perceived risk*

The influence of *DMP* on *TRI* despite the intervening influence of perceived risk corroborates with the UGT (Palmgreen & Rayburn, 1979) whereby, tourists actively seek a destination's information and utilise the destination's profile as a heuristic cue to achieve information symmetry to inform their travel behaviour and decision-making (Al-Gasawneh, 2020; Bhati et al., 2021; Koo et al., 2016). The partial negative mediation effect of

PSR is primarily buoyed by the PMT (Rogers, 1975), whereby health-related risk is associated with intervening need to avoid or mitigate the risk in their travel behaviour (Bhati et al., 2021; Boto-García & Leoni, 2021; Fuchs & Reichel, 2006). The partial negative mediation effect of *SCR* on tourist travel behaviour corroborates TPB (Ajzen, 1985, 1991) and is consistent with previous findings that suggest subjective norms and the inherent social risk induced by the COVID-19 pandemic are integral to tourist decision-making and ultimately influence tourist behaviour (Deng & Ritchie, 2018; Soliman, 2019; Wang, 2017).

The findings (Figure 5) also indicate the direct positive effects of the *DMP* on specific COVID-19 induced (*PSR* and *SCR*) risk perceptions, respectively. Previous studies (Jang & Baek, 2019; Kapuscinski & Richards, 2016; Rather, 2021) support the positive correlation between a destination's media profile and risk perception, where increased media exposure is associated with corresponding heightened perceived risk, particularly in the context of health crises. In line with contemporary studies (Boto-García & Leoni, 2021; Çakar, 2021; Li et al., 2021) on the impact COVID-19 induced risk on tourist behaviour, our study establishes a direct effect of perceived physical (Matiza & Kruger, 2021), psychological (Han et al., 2020) and social (Richard et al., 2020) risk on tourist behaviour such as travel intentions. As a result, a key preposition from our study is that the perceived risk induced by the COVID-19 is multi-dimensional - espousing physical health-related and social risk factors. Significantly, the heightened risk perceptions associated with COVID-19 have a discernible, albeit partial, negative intervening effect on the influence of a destination's media profile on the travel intentions of tourists. The study findings point to a potential paradigm shift in place branding and country image in the consumptive decision-making of tourists in the era of COVID-19.

CONCLUSION AND IMPLICATIONS

The present study is one of the first to establish the interaction of the triad of dimensions [media profile, perceived risk, travel intentions] within the African tourism context in the era of COVID-19. Particularly, physical and social risk are parallel mediating risk factors in the influence of destinations' media profiles and international tourists' travel intentions. The results cast a new light on the sustained role and relevance of a destination's (media) profile on tourists' travel behaviour in a post-COVID-19 crisis context, albeit in an environment characterised by heightened crisis-induced risk.

Theoretical implications

Theoretically, the findings enrich the extent of the academic literature by contributing empirical evidence that illustrates the interplay between TPB, UGT and PMT: thus, implying the extension of the seminal theory to the COVID-19 pandemic by modelling the relationship between a destination's media profile and the travel intentions of tourists via perceived COVID-19 induced physical and social risk. From a tourism research perspective, the study establishes the media profile as first, an antecedent to the post-crisis travel behaviour of tourists, and second, as an antecedent to perceived risk formation in times of crisis. Moreover, the empirical evidence contributes to the emerging literature - the multi-dimensional nature of the risk induced by the pandemic, more so its intervening effect in the contemporary destination media profile – travel intentions nexus.

Practical implications

From a practical managerial perspective, our findings provide vital and timely insights into tourist behaviour by predicting their travel intentions after the crisis. Media is critical to the success of risk mitigation strategies (Kapuscinski & Richards, 2016); however, this role has been amplified by the sheer scale, duration, and severity of the COVID-19 pandemic and its inherent impact on the psyche of tourists. The empirical evidence supports the prudence of tourism marketers proactively managing their destination media profiles. This may be achieved by maximising information dissemination and symmetry via a concerted multi-channel approach that incorporates social media, formal websites, and created content platforms. This approach must be complemented by incorporating crisis recovery communications with information about their destinations (Bhati et al., 2021; Rather, 2021). The seamless integration of destination (marketing) platforms with crisis recovery communication strategy would facilitate a more comprehensive approach to implement post-crisis marketing strategies associated with risk mitigation measures to curb the uncertainty and fear associated with travel and tourism.

Relatedly, for the foreseeable future, tourist behaviour and destination marketing post-COVID-19 will significantly be influenced by tourist well-being in terms of health and safety (physical risk), as well as the inherent influence of subjective norms (social risk) associated with the spread of the coronavirus (Çakar, 2021). By being more cognizant of the pandemic's complex cognitive and affective impact on tourists, tourism practitioners and suppliers will better manage the tourism demand recovery process (Oh et al., 2021). Whereby the effective harnessing of media content across various media platforms as a vector for *socially oriented tourism marketing* will complement both government and public health agency policy and strategy responses to the pandemic (social re-engineering); including the promotion of non-pharmaceutical interventions such as social distancing, sanitising, and mask-wearing in travel and tourism (Yu et al., 2021). Such an approach provides further impetus for integrating crisis management and recovery with the destination's media profile - promoting a more positive, safer and socially responsive destination image.

Conventional tourism products may not overcome the effects of the COVID-19 pandemic suggesting the need for innovative products that will satisfy tourists' evolving contemporary scenario or the *new normal*. Such innovations must extend to managing a destination's media profiles since a destination's media profile is often the first point of contact between the tourist and the destination. Constraints on travel and related activity correlate with tourists' increased reliance on media to provide the heuristic cues necessary to inform their consumptive decisions. As a result, destination marketers need to adopt responsive, location-specific online approaches to creating and promoting real-time value and product innovations (Khan et al., 2021). One approach may be engaging potential tourists through virtual reality (VR) and virtual tours. Whereby, by combining online platforms with more traditional forms of media such as entertainment content creation and co-creation through social media content (pictures, videos), tourism marketers can facilitate virtual tours and tourism product experiences as an immersive approach to information dissemination and product sampling during and post-the-crisis period (see El-Said & Aziz, 2021).

Study limitations and future research

Notwithstanding the study's significant theoretical and managerial contributions, three limitations are noted. First, the study was non-specific in terms of a particular source market or destination. However, the two characteristics were not associated with the explorative nature of the study's objectives. Additionally, the COVID-19 pandemic has had a generally homogenous effect on tourism destinations; hence a general exploratory approach was feasible for the present study. While a generic perspective was the aim of the study, future destination or source market-specific studies may benefit tourism practitioners within their respective localised contexts. Second, the study is cross-sectional, and the findings present a deductive snapshot of tourist behaviour at a specific time. This limitation is apparent in many previous tourist behavioural studies, and longitudinal comparative studies are recommended to consistently measure and detect changes in tourist behaviour, given the ongoing and complex nature of the COVID-19 pandemic. Third, the survey instrument was developed and administered in English due to funding and expertise constraints. It remains unclear to which degree language may have attributed to respondent participation or the final sample size; however, it is anticipated to have been minimal due to the universal nature of the English language.

Going forward, it will be critical for tourism researchers to acknowledge and map the trajectory of the paradigm shift in the psyche of tourists. In the period immediately preceded by the COVID-19 pandemic, reflexive policy and marketing strategies will significantly impact tourism recovery. More so when informed by evidence-based data from advanced tourism research on the pandemic and its effects on the consumptive decision-making process of tourists. More so, how the multifaceted effects of the pandemic influence the role of conventional heuristic cues such as destination profiles and destination brand image in tourists' decision-making and behavioural intentions.

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FORECASTING TOURIST ARRIVALS TO SANGIRAN USING FUZZY WITH CALENDAR VARIATIONS

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ABSTRACT

Fuzzy method has been widely used in time series forecasting. However, the current fuzzy time models have not accommodated the holiday effects so that the forecasting error becomes large at certain moments. Regarding the problem, this study proposes two algorithms, extended of Chen's and seasonal fuzzy time series method (FTS), to consider the holiday effect in forecasting the monthly tourist arrivals to ancient human Sangiran Museum. Both algorithms consider the relationship between Eid holidays as the effect of calendar variations. The forecasting results obtained from the two proposed algorithms are then compared with those obtained from the Chen's and the seasonal FTS. Based on the experimental results, the proposed method can reduce mean absolute error (MAE), root mean square error (RMSE), and mean absolute percentage error (MAPE) obtained from Chen's method up to 61%, 61%, and 58%, respectively. Moreover, compared to that obtained from the seasonal FTS, the proposed method can reduce the MAE, RMSE, and MAPE values up to 35%, 36%, and 29%, respectively. The method proposed in this paper can be implemented to other time series with seasonal pattern and calendar variation effects.

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INTRODUCTION

Fuzzy logic is useful and has many benefits in its applications in lightening daily human work such as washing machines, air conditioners, vacuum cleaners, antilock braking systems, etc. (Singh et al., 2013). Fuzzy theory and its applications have become a field of interest for many researchers. In medical application, Vlamou and Papadopoulos (2019) have discussed various types of fuzzy systems in early disease diagnosis. Recently, Tayyaba et al. (2020) have developed fuzzy-based devices in a smart home model for navigating blind people. Fuzzy also plays a major role in the field of time series forecasting (see Bas et al., 2021; Egrioglu et al., 2020; Gao & Duru, 2020; Koo et al., 2020).

Fuzzy time series (FTS) was firstly introduced by Song and Chissom (1993b). It was motivated by the ambiguity of human knowledge, which is usually expressed in natural language. FTS model is expressed in terms of the relationship between linguistic variables. FTS has been applied widely after Chen (1996) proposed FTS with a simpler calculation compared to those in Song and Chissom (1993b, 1993a, 1994). Chen (1996) applied FTS to model and forecast a yearly number of enrollments in Alabama University, which had a trend pattern. After that, many researchers developed weighted FTS models, namely Cheng et al. (2008), Lee and Javedani (2011), Lee and Suhartono (2010), and Yu (2005). On the other side, Alpaslan et al. (2012), Cagcag et al. (2013), Liu and Wei (2010), and Sarı (2012) started to combine the FTS with other methods to handle seasonal time series. Liu and Wei (2010) and Sarı (2012) applied moving average ratios to eliminate seasonal patterns before being modeled by FTS. Meanwhile, Alpaslan et al. (2012) and Cagcag et al. (2013) used neural network (NN) in identification the fuzzy relation. Aladag et al. (2012), Lee et al. (2012), and Alpaslan et al. (2012) considered seasonal autoregressive integrated moving average (ARIMA) in determining fuzzy relations. Recently, Sulandari et al. (2020) combined singular spectrum analysis to eliminate more complex seasonal patterns before implemented FTS.

So far, no study has focused on discussing FTS for modeling seasonal time series with the influence of calendar variations. The data with calendar variation effects have periodic and recurring patterns but with varying lengths. This kind of data is usually found in the monthly number of tourist arrivals (Sulandari et al., 2021), hourly electricity load time series (Sulandari et al., 2020), monthly inflow and outflow currency data in Bank Indonesia (Suhartono et al., 2019), inflation and money supply (Sumarminingsih et al., 2018), and monthly sales of clothes (Lee & Hamzah, 2010).

This study proposes a method with two scenarios of FTS algorithms to model and to predict the time series data with calendar variation effect. We implement the two algorithms to the number of visitors to the Sangiran museum. Although there is a large body of literature discussing and recommending ARIMA with dummy variables to deal with the effects of calendar variations (see Anggraeni et al., 2015; Lee & Hamzah, 2010; Ling et al., 2019; Suhartono et al., 2015; Suhartono, 2006), we did not choose to implement this method for two reasons. First, we consider that most time series forecasting contains vagueness, including data on the number of tourist arrivals, as described in Song and Chissom (1993b). Therefore, FTS is needed to accommodate ambiguity in its interpretation. Second, the preliminary study shows that seasonal ARIMA with dummy variables is not appropriate for modeling the data discussed in this paper because it does not meet all the assumptions required in seasonal ARIMA modeling. This is one of the reasons for the limitations of the ARIMA model in its application. On the other hand, FTS is more general. It not only works for modeling the data with linear but also nonlinear relationships. Moreover, it involves the ambiguity of human knowledge.

The proposed method is inspired by the dummy variable added to the ARIMA model in handling the calendar variation effect. We do not combine ARIMA with fuzzy as discussed in Aladag et al. (2012), Lee et al. (2012), and Alpaslan et al. (2012), though in general, the combination of methods offers better results. However, the combinations may require more complicated calculations, which do not necessarily give better results (Makridakis & Hibon, 2000). Therefore, finding a simpler method with high accuracy performance is an interesting challenge to be studied further.

This work proposes a simpler method by expressing the added dummy variable in ARIMA as a new group of fuzzy relationships, namely a group of relationships between holidays. In the implementation, we propose two algorithm scenarios. The idea of the first algorithm is to accommodate the effect of holidays, referring to the Hijri calendar in fuzzy relationship groups that are separate from the groups determined by seasonal patterns as the effect of the Gregorian calendar. Meanwhile, the idea of the second algorithm is almost the same. The difference is that this algorithm also considers the effect of holidays on the Gregorian calendar and defines them into the same groups that describe the effect of holidays on the Hijri calendar. Both of these algorithms are considered capable of increasing the accuracy of forecast results. To determine the effectiveness of the two proposed algorithms, we compared the mean absolute error (MAE), root mean square error (RMSE), and mean absolute percentage error

(MAPE) values of those obtained by Chen's (Chen, 1996) and seasonal FTS methods (Song, 1999). The finding of this study will be the starting point for future research on FTS modeling for data with calendar variation effects.

The organization of this paper is as follows. Section 2 describes the method used in the discussion, namely the proposed method and two other methods as a comparison method, namely Chen's and FTS. The result and discussion are presented in the next section. Section 3 explains the implementation of the two scenarios of algorithms from the proposed method to the data on the number of tourist arrivals at the Sangiran museum. Some examples of determining fuzzy relations and calculating forecast values are given as illustrations. Finally, the conclusion is presented in section 4.

METHOD

Here we provide the algorithm of Chen's FTS (Chen, 1996), Song and Chissom's (1999) seasonal FTS, and our two proposed methods. As stated in Song and Chissom (1993a, 1993b), FTS represented its model by the relationship between the successive fuzzy value. For the convenience of further discussion, let we notate $Y(t)$ and $F(t)$ for $t = 1, 2, \ldots, n$ are time series and FTS defined on $Y(t)$, respectively. Let U be the universe of discourse that can be partitioned into even lengthy and equal length intervals $u_1, u_2, \ldots, u_p$ and a fuzzy set A_i of U is defined by

$$A_i = \frac{f_{A_i}(u_1)}{u_1} + \frac{f_{A_i}(u_2)}{u_2} + \ldots + \frac{f_{A_i}(u_j)}{u_j} + \ldots + \frac{f_{A_i}(u_p)}{u_p} \quad (1)$$

for $i, j = 1, 2, \ldots, p$ and $f_{A_i}(u_j)$ is the grade of membership of u_j in A_i. In this case, $f_{A_i}(u_j) = 1$ for $j = i$, , $f_{A_i}(u_j) = 0.5$ for $j = i - 1$, and $j = i + 1$, and $f_{A_i}(u_j) = 0$ for others.

The fuzzy model discussed in this study is limited to the first-order FTS and seasonal FTS. The first order FTS is expressed as the relationship between $F(t)$ and $F(t\text{-}1)$, denoted as $F(t\text{-}1) \rightarrow F(t)$. Meanwhile, the first-order seasonal FTS is expressed as the relationship between $F(t)$ and $F(t\text{-}s)$, where s is the seasonal period. It is denoted as $F(t\text{-}s) \rightarrow F(t)$. Let $F(t\text{-}s) = A_i$, $F(t\text{-}1) = A_j$, and $F(t) = A_k$. The FLR then can be written as $A_j \rightarrow A_k$ for the first order FTS and $A_i \rightarrow A_k$ for seasonal FTS. In this case, A_i and A_j are the antecedents or left-hand side of FLR, while A_k is the consequent or right-hand side of FLR.

In this study, we modify the first order seasonal FTS, which involves FLR components that accommodate holiday effects. To determine the effectiveness of the proposed method, we compare it with the existing methods, namely Chen's and the seasonal FTS. The performance of the models is evaluated based on the MAE, RMSE, and MAPE values. The MAE and RMSE are scale-dependent measures commonly used to compare different methods applied to the same set of univariate time series data (Hyndman & Koehler, 2006). In contrast, MAPE is scaled independent and calculated based on percentage error. It has advantage in comparing methods when the values of time series data are large (Hanke et al., 2005). It is popular in measuring the accuracy of the tourism forecasting model (see, Chang & Liao, 2010; Chen, 2011; Chen et al., 2008; Sun et al., 2019; Wong et al., 2007). The MAE, RMSE, and MAPE can be calculated by formula (2), (3), and (4), respectively.

$$\text{MAE} = \text{mean}(|e_t|) \tag{2}$$

$$\text{RMSE} = \sqrt{\text{mean}(e_t^2)} \tag{3}$$

$$\text{MAPE} = \text{mean}(|E_t|) \tag{4}$$

where $e_t = Y(t) - \hat{Y}(t)$ and $E_t = 100e_t/Y(t)$. $Y(t)$ is the actual value at time t and $\hat{Y}(t)$ is the forecast value at time t.

Chen's Fuzzy Time Series

The algorithm of Chen's FTS is presented as follows.

Step 1: Define the universe of discourse, U.

Step 2: Define the fuzzy sets, A_1, A_2, …, A_p on U as in (1) and fuzzify the time series data.

Step 3: Define the fuzzy logical relationship (FLR) that is presented as $A_i \rightarrow A_k$ where A_i is the fuzzy value of observation at time t-1 and A_k is the fuzzy value of observation at time t. We can also rewrite this statement as $F(t\text{-}1) = A_i$, and $F(t) = A_k$, then the FLR is $F(t\text{-}1) \rightarrow F(t)$ or $A_i \rightarrow A_k$. Practically, there are two or more relationships with the same both antecedent and consequent. In this case, we do not take into account the repeated relationships, so those relations are counted only once.

Step 4: Define the FLR groups (FLRG). The FLRs are grouped based on their antecedents. For example, if we have Four FLRs, say, $A_1 \rightarrow A_2$; $A_1 \rightarrow A_3$; A_2

$\rightarrow A_3$, and $A_3 \rightarrow A_4$, we can obtain three FLRGs that are written as $A_1 \rightarrow A_2$, A_3; $A_2 \rightarrow A_3$; $A_3 \rightarrow A_4$.

Step 5: Calculate the forecast output by following these rules:

a. If the current state of the observation, $F(t)$, is A_i and based on the FLRG, we have $A_i \rightarrow A_k$ then $\hat{Y}(t+1) = m_k$ where m_k is the midpoint of u_k.

b. If the current state of the observation, $F(t)$, is A_j and based on the FLRG, we have $A_j \rightarrow A_{k_1}, A_{k_2}, \dots, A_{k_q}$ then $\hat{Y}(t+1)=(m_{k_1} + m_{k_2} + \cdots + m_{k_q})/q$ where $m_{k_1} + m_{k_2} + \cdots + m_{k_q}$ are the midpoint of $u_{k_1}, u_{k_2}, \dots, u_{k_q}$.

c. If the current state of the observation $F(t)$, is A_i and based on the FLRG has no relation with any other fuzzy values, $A_i \rightarrow \#$, then $\hat{Y}(t+1) = m_i$ where m_i is the midpoint of u_i.

Seasonal Fuzzy Time Series

The seasonal fuzzy time series (FTS) discussed in this study follows the rules in Song and Chissom's (1999) and Chen's method. The algorithm is explained in the following steps.

Step 1: Define the universe of discourse as Chen's.

Step 2: Define the fuzzy sets, A_1, A_2, …, A_p on U as in (1).

Step 3: Define the FLR. Different from Chen's, the FLR of seasonal FTS is defined as $F(t-s) \rightarrow F(t)$ where s is the seasonal period. For example, if $F(t-s) = A_i$ and $F(t) = A_j$, then the FLR is $A_i \rightarrow A_j$. As in Chen's, the repeated FLRs are counted only once.

Step 4: Define the FLR groups (FLRG). The FLRs are grouped based on their antecedent. For example, if we have Four FLRs, say, $A_1 \rightarrow A_1$; $A_1 \rightarrow A_1$; $A_2 \rightarrow A_3$, and $A_2 \rightarrow A_4$, we can obtain three FLRGs that are written as $A_1 \rightarrow A_1$; $A_2 \rightarrow A_3$, A_4.

Step 5: Calculate the forecast output by following these rules:

a. If $F(t-s+1)$ is A_i and based on the FLRG, we have $A_i \rightarrow A_k$ then $\hat{Y}(t+1) = m_k$ where m_k is the midpoint of u_k.

b. If $F(t-s+1)$ is A_i and based on the FLRG, we have $A_i \rightarrow A_{k_1}, A_{k_2}, \dots, A_{k_q}$ then $\hat{Y}(t+1)=(m_{k_1} + m_{k_2} + \cdots + m_{k_q})/q$ where $m_{k_1} + m_{k_2} + \cdots + m_{k_q}$ are the midpoint of $u_{k_1}, u_{k_2}, \dots, u_{k_q}$.

c. If $F(t\text{-}s\text{+}1)$ is A_i and based on the FLRG has no relation with any other fuzzy values, $A_i \rightarrow \#$, then $\hat{Y}(t+1) = m_i$ where m_i is the midpoint of u_i.

The Proposed Method

In this study, we propose a method with two scenarios of algorithms. The first algorithm considers the effect of holidays on the Christian calendar, while the second algorithm considers the effect of holidays on the Gregorian and Hijri calendars. These two algorithms are described in the following steps.

The 1st scenario of algorithm

The algorithm of the 1st proposed method is explained in the following steps.

Step 1: Define the universe of discourse as Chen's

Step 2: Define the fuzzy sets and fuzzify the time series data.

Step 3: Identify all the observations related to the holiday as affected by calendar variation, i.e. Eid Al-Fitr holiday, and highlight the values. In this case, we consider two groups of data. The first consists of all observations with highlight and the second consists of the non-highlight observations.

a. Define the FLR as in seasonal FTS for all non-highlight observations.

b. Define the FLR for all the highlight observations. The FLR is defined as the relation between the fuzzy value at the month affected by Eid Al-Fitr of the previous year with the fuzzy value at Eid Al-Fitr at the month affected by Eid Al-Fitr holiday of the following year. We notate this FLR by $G(g\text{-}1) \rightarrow G(g)$, where $G(g)$ is the fuzzy value of the month affected by Eid Al-Fitr holiday at year g. The illustrative example is discussed further in the discussion.

Step 4: Define FLRG based on step 3a and 3b. We have two groups of FLRGs, with and without highlight.

Step 5: Calculate the forecast value by following rules. In this case, we need to first check whether the observation in the period we are going to forecast is included in the highlight group or not.

a. If the observation is included in the non-highlight group then the forecast value at time, time $t + 1$ is based on $F(t\text{-}s\text{+}1)$ as in seasonal FTS.

b. If the observation is included in the highlight group then the forecast value at time $t+1$ where $t+1$ is the month affected by Ied Al-Fitr holiday at year g+1 follow these rules;

1) If $G(g)$ is A_i and based on the FLRG in the highlight group, we have $A_i \rightarrow A_k$ then $\hat{Y}(t+1) = m_k$ where m_k is the midpoint of u_k.

2) If $G(g)$, is A_i and based on the FLRG in the highlight group, we have $A_i \rightarrow A_{k_1}, A_{k_2}, \ldots, A_{k_q}$ then $\hat{Y}(t+1)=(m_{k_1} + m_{k_2} + \cdots + m_{k_q})/q$ where $m_{k_1} + m_{k_2} + \cdots + m_{k_q}$ are the midpoint of $u_{k_1}, u_{k_2}, \ldots, u_{k_q}$.

3) If $G(g)$, is A_i and based on the FLRG has no relation with any other fuzzy values, $A_i \rightarrow \#$, then $\hat{Y}(t+1) = m_i$ where m_i is the midpoint of u_i.

The 2nd scenario of algorithm

The algorithm of the 1st proposed method is explained in the following steps.

Step 1: Define the universe of discourse as Chen's

Step 2: Define the fuzzy sets and fuzzify the time series data.

Step 3: Identify and highlight all the observations related to the holiday that are influenced by calendar variation, namely the Eid Al-Fitr holiday and all observations in certain months where the number of tourist arrivals tends to be higher than other months. Then we have two groups of fuzzified data, with and without highlight.

a. Define the FLR as in seasonal FTS for all non-highlight observations.

b. Define the FLR for all the highlight observations. In this case, we need to define FLR in the following way.

1) Define the FLR as in the 1st algorithm Step 3b, that is the relation between the fuzzy value at the month affected by Eid Al-Fitr of the previous year with the fuzzy value at ied at the month affected by Eid Al-Fitr holiday of the following year.

2) Determine FLR, $F(t-s) \rightarrow F(t)$ where s is the seasonal period, based on the fuzzified value in the months affected by holidays according to the Gregorian calendar.

Step 4: Determine the FLRG based on Step 3a and Step 3b. We have two FLRG groups, one with highlights and the other without highlights. The first FLRG cluster is constructed from the FLRs obtained from Step 3a. The next FLRGs group is determined by considering that FLRs represent the relationship between holidays on both the Gregorian and Hijri calendars and collects them into the same group.

Step 5: Calculate the forecast value as in the 1st algorithm. However, first, check whether the observation in the period we are going to forecast is included in the highlight group or not.

a. If the observation is included in the non-highlight groups, then the forecast value at time $t + 1$ is based on $F(t\text{-}s\text{+}1)$ as in seasonal FTS as in the 1st algorithm Step 5a

b. If the observation is included in the highlight groups, it is still necessary to check whether the observation is related to the holidays on the Gregorian or the Hijri calendar.

1) If the observation is related to the holidays on the Gregorian calendar, then the forecast value at time $t + 1$ depends on the fuzzy value at time $t - s + 1$.

2) If the observation is related to the holidays on the Hijri calendar, then the forecast value at time $t + 1$ depends on the fuzzy value at the month that has a holiday effect on Hijri calendar in the previous year. The illustration example can be seen in the discussion.

In this work, we use the IF-THEN function in a Microsoft Excel spreadsheet to obtain forecast values by following the procedures of the seasonal FTS and the proposed methods. In addition, we use Matlab software to determine the forecast values based on the first-order Chen's algorithm. Readers who are interested in the code can contact the corresponding authors.

RESULTS AND DISCUSSION

This section discusses the two proposed methods to forecast the monthly tourist arrivals to Museum Sangiran. The data can be downloaded from www.bps.go.id. We used the monthly tourist arrivals from January 2014 to December 2017 as the training data and observations from January to December 2018 as the testing data. The plot of these time series data is depicted in Figure 1. The behavior of the training data from year to year from January to December can be seen in Figure 2.

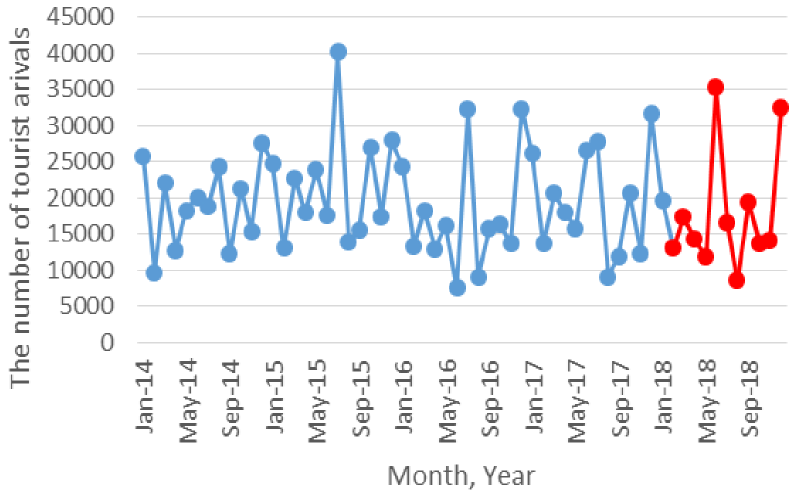

Figure 1. *The number of tourist arrivals to museum Sangiran from January 2014 to December 2018 with training data in blue color and testing data in red color.*

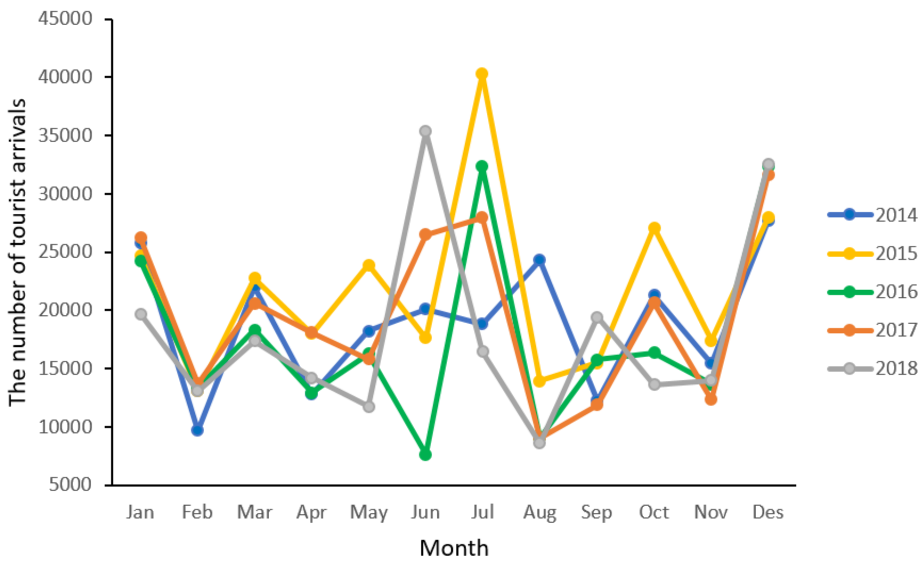

Figure 2. *Time series plot for the number of tourist arrivals from January 2014 to December 2017 (training data) based on behavior from January to December in each different year.*

Based on Figure 2, we can see that the pattern from year to year tends to be the same. However, several spikes were different from certain other months, namely on August 2014, July 2015, July 2016, and July 2017. In addition, we can see that the number of tourist arrivals on January and December tend to be higher than other months.

We define U = [6000, 41000] as the universe of speech for this case. In the experimental study, we divide U by three different interval lengths (denoted by p), i.e., p = 500, 1000, and 2000. Therefore, we have 68, 34, and

17 classes of intervals corresponding to the three interval lengths, respectively.

Since the calculations are almost similar, we discuss only the implementation of the methods with interval length $p = 2000$ and report the overall results. The universe of discourse, U = [7000, 41000] was partitioned into u_1 = [7000, 9000], u_2 = [9000, 11000], …, u_{17} = [39000, 41000]. The fuzzy sets on U are defined as follows:

$$A_1 = 1/u_1 + 0.5/u_2 + 0/u_3 + \ldots + 0/u_{16} + 0/u_{17}$$

$$A_2 = 0.5/u_1 + 1/u_2 + 0.5/u_3 + \ldots + 0/u_{16} + 0/u_{17}$$

$$\vdots$$

$$A_{17} = 0/u_1 + 0/u_2 + 0/u_3 + \ldots + 0.5/u_{16} + 1/u_{17}$$

and the fuzzified tourist arrivals presented in Table 1.

Table 1. *Fuzzified the training data on the number of tourist arrivals to Sangiran Museum*

Month	**Year**							
	2014		***2015***		***2016***		***2017***	
	Actual	**Fuzzified**	**Actual**	**Fuzzified**	**Actual**	**Fuzzified**	**Actual**	**Fuzzified**
Jan	25779	A_{10}	24727	A_9	24264	A_9	26234	A_{10}
Feb	9678	A_2	13080	A_4	13340	A_4	13734	A_4
Mar	22037	A_8	22775	A_8	18325	A_6	20609	A_7
Apr	12813	A_3	17991	A_6	12939	A_3	18108	A_6
May	18249	A_6	23903	A_9	16276	A_5	15837	A_5
Jun	20094	A_7	17644	A_6	7649	A_1	26508	A_{10}
Jul	18846	A_6	40253	A_{17}	32319	A_{13}	27904	A_{11}
Aug	24319	A_9	13924	A_4	9049	A_2	9049	A_2
Sep	12268	A_3	15512	A_5	15770	A_5	11903	A_3
Oct	21314	A_8	27114	A_{11}	16382	A_5	20671	A_7
Nov	15467	A_5	17434	A_6	13654	A_4	12365	A_3
Dec	27694	A_{11}	27953	A_{11}	32409	A_{13}	31629	A_{13}

Note: Green cells represent the influence of holidays referring to the Gregorian calendar in the corresponding month. Blue cells represent holiday effects, referring to the Hijri calendar.

The FLR and FLRGs of tourist arrivals by Chen's, seasonal FTS, and the proposed method can be obtained from Table 1. Chen's defined FLR based on the relationship between the fuzzy values at time t-1 with that at time t. For example, the fuzzified tourist arrival in January 2014 is A_{10}, and February 2014 is A_2, then the FLR is $A_{10} \rightarrow A_2$ (see Table 2). FLRs in green cells in Table 2 are determined based on the relations between the fuzzy values at time $t - s + 1$ and that at time t in green cells in Table 1. As an illustration, the fuzzy value in January 2014 is A_{10}, and the fuzzy value in

January 2015, then FLR, is defined as $A_{10} \rightarrow A_9$. While the FLR $A_9 \rightarrow A_{17}$ in blue cells in Table 2 is determined based on the month affected by the Eid Al-Fitr holiday in 2014, that is August 2014 and month affected by the Eid Al-Fitr holiday in 2015, that is July 2015. We consider the month those affected by the Eid al-Fitr holiday were August 2014 because the Eid Al-Fitr occurred in the last week of July. The same thing happened in July 2017.

Table 2. *FLRs of the tourist arrivals obtained by Chen's, Seasonal FTS, and the proposed method*

	Method			
	Chen's	*Seasonal FTS*	*Proposed method*	
			1st algorithm	**2nd algorithm**
	$A_{10} \rightarrow A_2$	$A_{10} \rightarrow A_9$	$A_{10} \rightarrow A_9$	$A_2 \rightarrow A_4$
	$A_2 \rightarrow A_8$	$A_2 \rightarrow A_4$	$A_2 \rightarrow A_4$	$A_8 \rightarrow A_8$
	$A_8 \rightarrow A_3$	$A_8 \rightarrow A_8$	$A_8 \rightarrow A_8$	⋮
	$A_3 \rightarrow A_6$	$A_3 \rightarrow A_6$	$A_3 \rightarrow A_6$	$A_5 \rightarrow A_7$
	$A_6 \rightarrow A_7$	$A_6 \rightarrow A_9$	$A_6 \rightarrow A_9$	$A_4 \rightarrow A_3$
	$A_7 \rightarrow A_6$	$A_7 \rightarrow A_6$	$A_7 \rightarrow A_6$	$A_{10} \rightarrow A_9$
FLR	$A_6 \rightarrow A_9$	$A_6 \rightarrow A_{17}$	$A_3 \rightarrow A_5$	$A_{11} \rightarrow A_{11}$
	$A_9 \rightarrow A_3$	$A_9 \rightarrow A_4$	⋮	⋮
	$A_3 \rightarrow A_8$	$A_3 \rightarrow A_5$	$A_4 \rightarrow A_3$	$A_9 \rightarrow A_{10}$
	$A_8 \rightarrow A_5$	$A_8 \rightarrow A_{11}$	$A_{13} \rightarrow A_{13}$	$A_{13} \rightarrow A_{13}$
	⋮	⋮	$A_9 \rightarrow A_{17}$	$A_9 \rightarrow A_{17}$
	$A_7 \rightarrow A_3$	$A_4 \rightarrow A_3$	$A_{17} \rightarrow A_{13}$	$A_{17} \rightarrow A_{13}$
	$A_3 \rightarrow A_{13}$	$A_{13} \rightarrow A_{13}$	$A_{13} \rightarrow A_{11}$	$A_{13} \rightarrow A_{11}$

Note: Green cells represent FLRs defined based on the green cells in Table 1. Blue cells represent FLRs defined based on the blue cells in Table 1.

Further, FLRG in Table 3 is determined based on a collection of FLRs that have the same antecedent. For Chen's and the seasonal FTS method, we can obtain thirteen FLRGs, as seen in Table 3. Meanwhile, for the 1st algorithm, we have two groups of FLRGs, each has twelve and three FLRGs, respectively. We can find antecedent A_9 in the two groups, but they have different FLRGs. In the first group (no highlight), $A_9 \rightarrow A_9$, A_{10}, A_5, while in the second group (orange highlight cells, $A_9 \rightarrow A_{17}$. This shows the difference in the effect of holidays on the number of visitors compared to those periodic seasonal referring to the Gregorian calendar.

Different behavior is shown by the results of grouping FLRG using the 2nd algorithm. In this case, we also consider the effect of holidays on the Gregorian calendar in addition to regular seasonal patterns. The blue and green cells in Table 2 are used in defining FLRG in the orange cells in Table 3.

Table 3. *FLRGs of the tourist arrivals obtained by Chen's, Seasonal FTS, and the proposed method*

	Method			
	Chen's	***Seasonal FTS***	***Proposed method***	
			1st algorithm	**2nd algorithm**
	$A_1 \rightarrow A_{13}$	$A_1 \rightarrow A_{10}$	$A_1 \rightarrow A_{10}$	$A_1 \rightarrow A_{10}$
	$A_2 \rightarrow A_8, A_5, A_3$	$A_2 \rightarrow A_4, A_2$	$A_2 \rightarrow A_4, A_2$	$A_2 \rightarrow A_4, A_2$
	$A_3 \rightarrow A_6, A_8, A_5, A_7, A_{13}$	$A_3 \rightarrow A_6, A_5$	$A_3 \rightarrow A_6, A_5$	$A_3 \rightarrow A_6, A_5$
	$A_4 \rightarrow A_8, A_5, A_6, A_{13}, A_7$	$A_4 \rightarrow A_4, A_2, A_3$	$A_4 \rightarrow A_4, A_2, A_3$	$A_4 \rightarrow A_4, A_2, A_3$
	$A_5 \rightarrow A_{11}, A_1, A_5, A_4, A_{10}$	$A_5 \rightarrow A_5, A_3, A_7, A_6$	$A_5 \rightarrow A_5, A_3, A_7, A_6$	$A_5 \rightarrow A_5, A_3, A_7, A_6$
	$A_6 \rightarrow A_7, A_9, A_{17}, A_{11}, A_3, A_5$	$A_6 \rightarrow A_7, A_3, A_9, A_1, A_{17}, A_4$	$A_6 \rightarrow A_7, A_3, A_9, A_1, A_4$	$A_6 \rightarrow A_7, A_3, A_9, A_1, A_4$
	$A_7 \rightarrow A_6, A_3$	$A_7 \rightarrow A_6$	$A_7 \rightarrow A_6$	$A_7 \rightarrow A_6$
FLRG	$A_8 \rightarrow A_3, A_5, A_6$	$A_8 \rightarrow A_8, A_6, A_{11}$	$A_8 \rightarrow A_8, A_6, A_{11}$	$A_8 \rightarrow A_8, A_6, A_{11}$
	$A_9 \rightarrow A_3, A_4, A_6, A_4$	$A_9 \rightarrow A_9, A_{10}, A_5, A_4$	$A_9 \rightarrow A_9, A_{10}, A_5$	$A_9 \rightarrow A_5$
	$A_{10} \rightarrow A_2, A_4, A_{11}$	$A_{10} \rightarrow A_9$	$A_{10} \rightarrow A_9$	$A_{11} \rightarrow A_5$
	$A_{11} \rightarrow A_9, A_6, A_9, A_2$	$A_{11} \rightarrow A_5, A_{11}, A_{13}$	$A_{11} \rightarrow A_5, A_{11}, A_{13}$	$A_{10} \rightarrow A_9$
	$A_{13} \rightarrow A_2, A_{10}, A_7$	$A_{13} \rightarrow A_{11}, A_{13}$	$A_{13} \rightarrow A_{13}$	$A_9 \rightarrow A_9, A_{10}, A_{17}$
	$A_{17} \rightarrow A_4$	$A_{17} \rightarrow A_{13}$	$A_9 \rightarrow A_{17}$	$A_{11} \rightarrow A_{11}, A_{13}, A_{15}$
			$A_{17} \rightarrow A_{13}$	$A_{13} \rightarrow A_{13}, A_{11}$
			$A_{13} \rightarrow A_{11}$	$A_{17} \rightarrow A_{13}$

Note: Orange cells represent the FLRGs determined from the green and blue cells in Table 2.

Based on Table 1 and Table 3, we can calculate the number of tourist arrival forecast values, both for insample and outsample data. We only show the forecast process for July 2015, May 2016, January 2018, June 2018, December 2018 by Chen's, seasonal FTS, the 1st and the 2nd proposed methods. Other forecast values can be obtained by the same procedure.

Chen's method

In Chen's method, the forecast value for time t+1 is calculated based on the fuzzy value at time t. Thus, predictions for July 2015, May 2016, January 2017, June 2018, and December 2018 are calculated based on the fuzzy value of the previous month, namely June 2015, April 2016, December 2016, May 2018, and November 2018, respectively (see Table 4). Furthermore, the forecasting value refers to the FLRG and the rules that have been explained before. For example, If the fuzzy value in June 2015 is A_6, then based on Table 3, A_6 has a relationship with A_7, A_9, A_{17}, A_{11}, and A_3. Then, the forecast value can be calculated by

$$\hat{Y}(\text{Jul } 2015) = (20000 + 24000 + 40000 + 28000 + 12000 + 16000)/6 = 23333.33.$$

Since we predict the number of tourist arrivals with discrete values, we round 23333.33 up to 23334. Predictive values for February 2015 and beyond can be calculated in the same way.

Table 4. *Forecast values obtained by Chen's method*

The number of tourists		Predicted based on		FLRG	Forecast value
Month, year	*Actual*	*Month, year*	*Fuzzy value*		
Jul, 2015	40253	Jun, 2015	A_6	$A_6 \rightarrow A_7, A_9, A_{17}, A_{11}, A_3, A_5$	23334[a]
May, 2016	16276	Apr, 2016	A_3	$A_3 \rightarrow A_6$, A8, A_5, A_7, A_{13}	21600
Jan, 2017	26234	Dec, 2016	A_{13}	$A_{13} \rightarrow A_2, A_{10}, A_7$	18667[a]
Jun, 2018	35375	May, 2018	A_3	$A_3 \rightarrow A_6, A_8$	21600
Dec, 2018	32516	Nov, 2018	A_4	$A_4 \rightarrow A_8, A_5, A_6, A_{13}, A_7$	21600

Note: [a]The result is rounded up since the observed data is the number of tourist arrivals in the form of discrete values.

Seasonal FTS

In this case, we can determine the predictive value in a similar way to that in Chen's method. However, it is noted that the predicted value here does not depend on the fuzzy value of the previous month but the value of the same month in the previous year. For example, we wanted to predict the number of tourist arrivals in July 2015. The prediction value is determined based on the fuzzy value in July 2014, which is A_6. Based on Table 3, A_6 is related to A_7, A_3, A_9, A_1, A_{17}, and A_4. Thus the forecast value is $\hat{Y}(\text{Jul } 2015) = (20000 + 12000 + 24000 + 8000 + 40000 + 14000)/6 = 19666.67$, and can be round up to 19667. The forecast values for May 2016, January 2017, June 2018, and December 2018 can be obtained in a similar way. The results are presented in Table 5.

Table 5. *Forecast values obtained by seasonal FTS*

The number of tourists		Predicted based on		FLRG	Forecast value
Month, year	*Actual*	*Month, year*	*Fuzzy value*		
Jul, 2015	40253	Jul, 2014	A_6	$A_6 \rightarrow A_7, A_3, A_9, A_1, A_{17}, A_4$	19667[b]
May, 2016	16276	May, 2015	A_9	$A_9 \rightarrow A_9, A_{10}, A_5, A_4$	20000
Jan, 2017	26234	Jan, 2016	A_9	$A_9 \rightarrow A_9, A_{10}, A_5, A_4$	20000
Jun, 2018	35375	Jun, 2017	A_{10}	$A_{10} \rightarrow A_9$	24000
Dec, 2018	32516	Dec, 2017	A_{13}	$A_{13} \rightarrow A_{11}, A_{13}$	30000

Note: [b]The result is rounded up since the observed data is the number of tourist arrivals in the form of discrete values.

The proposed method

a. by 1st algorithm

The 1st proposed algorithm adds a component of the FLRG group, formed from fuzzy values that reflect the influence of the Eid al-Fitr holiday, which refers to the Hijri calendar. So, there are two groups of FLRGs, and for simplicity, we present them into two blocks, without highlight and with highlight (orange cells), as shown in Table 3, column 3.

In this case, we have to check whether the months we observe have holidays related to Eid or not because there are differences in the rules for predicting the number of tourists in the months influenced by Eid al-Fitr holidays and those that do not. For example, to predict the number of tourists in May 2016, January 2017, and December 2018, we must see the value in May 2015, January 2016, and December 2018, respectively. As for predicting the number of tourists in July 2015 and June 2018, we consider the value in August 2014 and July 2017, respectively. So, we do not necessarily see the same month in the previous year, depending on the months that are also influenced by the Eid al-Fitr holiday. The blue cells in Table 6 show the months associated with the Eid holiday. Therefore, we must look at the FLRGs in the orange cells group in Table 3 to obtain the forecast values. From Table 6, we can see two FLRGs with the same antecedent but different consequences, $A_9 \rightarrow A_{17}$ and $A_9 \rightarrow A_9, A_{10}, A_5$. This relates to the FLRG, where the months we are observing belong, whether included in the white or blue cells. Furthermore, we can perform calculations in the same way.

Table 6. *Forecast values obtained by the 1st proposed algorithm*

The number of tourists		Predicted based on		FLRG	Forecast value
Month, year	*Actual*	*Month, year*	*Fuzzy value*		
Jul, 2015	40253	Aug, 2014	A_9	$A_9 \rightarrow A_{17}$	40000
May, 2016	16276	May, 2015	A_9	$A_9 \rightarrow A_9, A_{10}, A_5$	22000
Jan, 2017	26234	Jan, 2016	A_9	$A_9 \rightarrow A_9, A_{10}, A_5$	22000
Jun, 2018	35375	Jul, 2017	A_{11}	$A_{11} \rightarrow \#^c$	28000
Dec, 2018	32516	Dec, 2017	A_{13}	$A_{13} \rightarrow A_{13}$	32000

Note: [c] It has no relation with any other fuzzy values.

b. by 2nd algorithm

In this case, we must pay attention to the months in which there are holidays related to the Gregorian and Hijri calendars. For simplicity, we have presented three color categories of months in Table 1, white, blue, and green. These categories are considered to determine the forecast values. Thus, we first need to consider where the month we are observing is categorized. Furthermore, FLRG can be easily determined by considering the color. As illustrations, July 2015 and June 2018 are included in the blue category. It means that the number of visits is influenced by the Eid holiday. Therefore, the forecast value is based on the months in the previous year, which are also influenced by the Eid al-Fitr, namely August 2014 and July 2017, respectively. While May 2016 is included in the white category, the forecast value is based on the same month in the previous year. Jan 2017 and Dec 2018 were also predicted by the fuzzy value of the same month in the previous year. The important thing is the determination of FLRG, from which group we should refer, to obtain the forecast value. For example, in July 2015, May 2016, and January 2017, the three forecast values were affected by A_9 (see Table 7). However, because July 2015 and January 2017 were included in the highlighted category, the FLRG used as the basis for prediction was in the orange cells, namely the group affected by holidays. While May 2016 is in white cells, so we consider the white cells for the FLRG. The results can be seen in Table 7.

Table 7. *Forecast values obtained by the 2nd proposed algorithm*

The number of tourists		**Predicted based on**		**FLRG**	**Forecast value**
Month, year	***Actual***	***Month, year***	***Fuzzy value***		
Jul, 2015	40253	Aug, 2014	A_9	$A_9 \rightarrow A_9, A_{10}, A_{17}$	30000
May, 2016	16276	May, 2015	A_9	$A_9 \rightarrow A_5$	16000
Jan, 2017	26234	Jan, 2016	A_9	$A_9 \rightarrow A_9, A_{10}, A_{17}$	30000
Jun, 2018	35375	Jul, 2017	A_{11}	$A_{11} \rightarrow A_{11}, A_{13}, A_{15}$	32000
Dec, 2018	32516	Dec, 2017	A_{13}	$A_{13} \rightarrow A_{13}$	30000

Table 8. *Comparisons of MAE, RMSE, MAPE values obtained by Chen's, seasonal, and the two proposed algorithms for the training and testing data on the number of tourist arrivals to Sangiran Museum*

Method	***p***	**Training**			**Testing**		
		MAE	*RMSE*	*MAPE*	*MAE*	*RMSE*	*MAPE*
Chen's	500	3304.61	4577.82	19.69	8026.25	9720.64	46.36
	1000	4282.08	5353.05	24.44	8444.75	10215.19	48.57
	2000	5204.61	6580.69	30.49	8481.33	10037.29	52.25
Seasonal FTS	500	**1203.97**	**1952.14**	**7.38**	5205.08	6457.87	30.44
	1000	2788.64	3872.85	15.65	5142.67	6484.66	31.35
	2000	4169.92	5845.23	24.88	5178.50	6131.02	30.60
The proposed method							
1st algorithm	500	2041.08	4566.12	10.22	4007.25	5002.55	23.43
	1000	2091.78	3188.20	13.64	4545.42	5429.06	27.50
	2000	2817.89	3852.82	17.95	3512.08	4321.56	22.17
2nd algorithm	500	1916.58	3516.35	13.13	4746.75	5766.15	28.54
	1000	2110.08	3053.97	12.80	3642.67	4521.42	22.73
	2000	2806.11	3860.10	16.74	**3345.42**	**3949.41**	**21.74**

Note: Bold values represent the smallest value in each column.

The overall results are summarized in Table 8 by comparing the performance of Chen's method, seasonal FTS, and the proposed method in terms of MAE, RMSE, and MAPE. Table 8 shows that the proposed method can reduce the MAE, RMSE, and MAPE values from the Chen's, both on training and testing data. Meanwhile, the FTS seasonal method gives better results than the proposed method, only on training data with an interval length of 500. Thus, we can conclude that the FTS seasonal method and the proposed method are more suitable for data on the number of visitors to the Sangiran museum than Chen's method.

A visual presentation for comparison of forecast values with actual values can be seen in Figure 3. Based on Figure 3, the forecasting values obtained by the two algorithms in the proposed method tend to be closer than the values predicted by Chen's and seasonal FTS. The proposed method's ability to predict more accurately the number of visits in the months affected by holidays can significantly reduce the MAE, RMSE, and MAPE produced by the Chen method, i.e., up to 61%, 61%, 58%, respectively. Moreover, compared to that obtained from the FTS seasonal method, the proposed method can reduce the MAE, RMSE, and MAPE values up to 35%, 36%, and 29%, respectively.

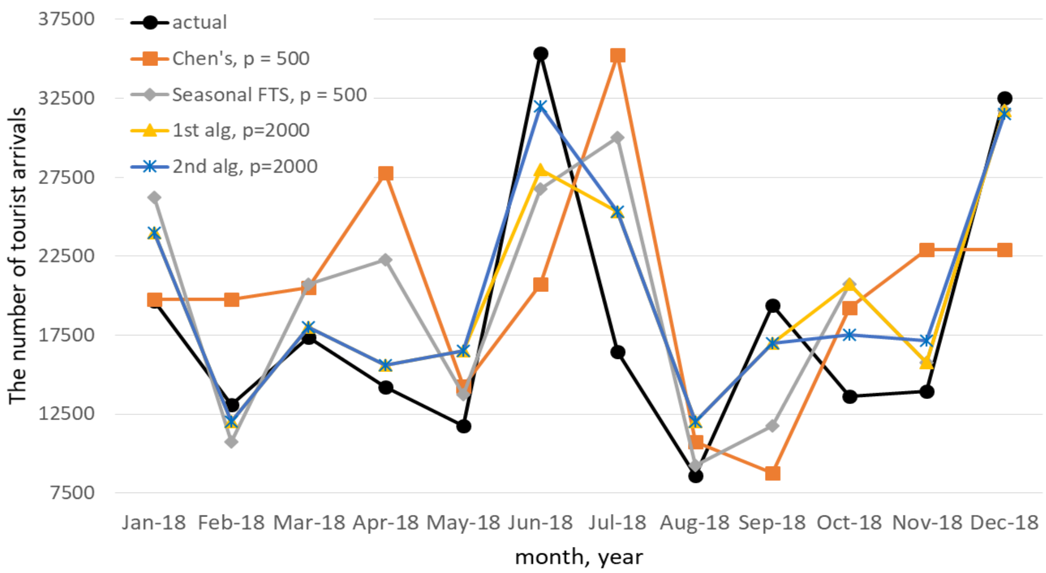

Figure 3. *Comparisons between the actual values of testing data with the forecast values obtained by Chen's. seasonal FTS, the 1st and the 2nd proposed algorithms*

Furthermore, we can predict tourist numbers for one next year similarly. Prediction of the number of tourists in January - December 2019 can be obtained based on the fuzzy values of the corresponding months in 2018 and the FLRGs presented in Table 3. We need to check each category of month we will observe because this relates to which FLRGs group we use as the basis for forecasting. As previously explained, to predict the number of visitors in certain months affected by holidays according to the Gregorian or Hijri calendar, we consider the FLRGs group in the highlighted cells in Table 3. For other months, we refer to the non-highlighted cells. The results can be seen in Table 9.

Table 9. *Forecast values of tourist numbers in 2019 obtained by the 1st and 2nd proposed algorithms with p = 2000*

The number of tourist in	Predicted based on		1st algorithm		2nd algorithm	
	Month, year	*Fuzzy value*	*FLRG*	*Forecast*	*FLRG*	*Forecast*
Jan, 2019	Jan, 2018	A_7	$A_7 \rightarrow \#^d$	20000	$A_7 \rightarrow \#^d$	20000
Feb, 2019	Feb, 2018	A_4	$A_4 \rightarrow A_4, A_2, A_3$	12000	$A_4 \rightarrow A_4, A_2, A_3$	12000
Mar, 2019	Mar, 2018	A_6	$A_6 \rightarrow A_7, A_3, A_9, A_1, A_4$	15600	$A_6 \rightarrow A_7, A_3, A_9, A_1, A_4$	15600
Apr, 2019	Apr, 2018	A_4	$A_4 \rightarrow A_4, A_2, A_3$	12000	$A_4 \rightarrow A_4, A_2, A_3$	12000
May, 2019	May, 2018	A_3	$A_3 \rightarrow A_6, A_5$	17000	$A_3 \rightarrow A_6, A_5$	17000
June, 2019	June, 2018	A_{15}	$A_{15} \rightarrow \#^d$	36000	$A_{15} \rightarrow \#^d$	36000
Jul, 2019	Jul, 2018	A_5	$A_5 \rightarrow A_5, A_3, A_7, A_6$	16500	$A_5 \rightarrow A_5, A_3, A_7, A_6$	16500
Aug, 2019	Aug, 2018	A_1	$A_1 \rightarrow A_{10}$	26000	$A_1 \rightarrow A_{10}$	26000
Sep, 2019	Sep, 2018	A_7	$A_7 \rightarrow A_6$	18000	$A_7 \rightarrow A_6$	18000
Oct, 2019	Oct, 2018	A_4	$A_4 \rightarrow A_4, A_2, A_3$	12000	$A_4 \rightarrow A_4, A_2, A_3$	12000
Nov, 2019	Nov, 2018	A_4	$A_4 \rightarrow A_4, A_2, A_3$	12000	$A_4 \rightarrow A_4, A_2, A_3$	12000
Dec, 2019	Dec, 2018	A_{13}	$A_{13} \rightarrow A_{11}$	28000	$A_{13} \rightarrow A_{13}, A_{11}$	30000

Note: [d] It has no relation with any other fuzzy values.

Since recent observations may significantly influence future values, we recommend updating the FLRGs when those data are available to consider the most recent information.

CONCLUSION

This paper presents a new method for forecasting the number of tourist visits to the Sangiran Museum. In the proposed method, we present two algorithmic scenarios. The first algorithm considers the effect of holidays referring to the Hijri calendar and the second algorithm considers the effect of holidays referring to the Gregorian calendar, in addition to the Hijr. Based on the experimental results, the proposed method produces smaller MAE, RMSE, and MAPE compared with Chen's and seasonal FTS. It means that the two algorithms in the proposed method can improve the accuracy of forecasting the historical number of tourist arrivals to the Sangiran Museum. The proposed method will be the starting point for developing FTS to model and forecast time series with seasonal patterns and calendar variation effects. In addition, clustering can be considered for further studies to group the effect of holidays to improve forecasting accuracy performance.

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A PRELIMINARY FIELD WORK ON DIGITAL HERITAGE AND THE USE OF VIRTUAL REALITY FOR CULTURAL HERITAGE MANAGEMENT

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ABSTRACT

This paper presents the results of a multidisciplinary research project carried on during the Covid-19 Pandemic and supported by TÜBİTAK (The Scientific and Technological Research Council of Turkey). The results are gathered from six months of field and office work, as the project was limited with this period. The archaeological site of Letoon in Muğla/Turkey has been chosen as the test area, specifically the triple temples of Leto, Apollo, and Artemis. Photogrammetric reconstruction of the current situation, as well as archaeologically accurate 3D models, have been created and converted into interactive immersive VR content to measure consumer behaviour and experience. These two different types of 3D content are integrated into the VR environment both separately and as a single content with switching from one to the other. After the creation process, the content was experienced by the visitors with different demographic characteristics and a survey was conducted to measure this experience.

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INTRODUCTION

The ancient sacred site of Letoon is in Western Lycia, today's Teke Peninsula, which is located in south-western Anatolia. It is now inside the modern settlement of Seydikemer in Muğla Province of Turkey. There are three temples at the core of the site, which was indeed not a settlement but a sacred site for western Lycia, especially in the Hellenistic Period. Temples are dedicated to the twin gods of the Hellenic Pantheon, Apollo and Artemis, with the third and biggest one being dedicated to their mother Leto, who also gave name to the site Letoon.

Another significance of the site is that it has been listed on the World Heritage List of UNESCO, in 1988. The archaeological excavations started in 1950, for both Letoon and Xanthos by the French Archaeology Mission led by Pierre Demargne, and since then carried on by Henri Metzger, Christian Le Roy, Jacques Des Courtils, and Laurence Cavalier until 2011. Between 2011 and 2020, the excavations have been carried on by Sema Atik, and in 2020 Erdoğan Aslan took over the mission.

The Doric Temple of Apollo is at the east of the temenos, just beside the mother-rock shaped as a Wall (Atik-Korkmaz, 2016, p. 193). The first excavations to unearth the building has begun in 1966 (des Courtils, 2003, p. 5). Before the Hellenistic temple, which can be observed today, there was a stone based wooden temple at the same place which is the only example of Lycian woodwork on a monumental building (des Courtils, 2003, p. 143-144; Heinze, 2014, p. 78). This early temple, which could not be dated yet, could be identified by the wooden column halls that observed by excavators (des Courtils, 2003: 14). There is a mosaic in the cella, decorated with a bow, a quiver, a lyra, and sun, all of which are related to Apollo (des Courtils, 2003, p. 143). This mosaic is the only solid evidence to identify the building as a temple of Apollo. After a re-study of the columns and very few pieces of the superstructure, the building is claimed to be not a pure Doric, but a hybrid of Doric and Ionic elements (Atik-Korkmaz, 2016, p. 196). The 3D reconstructions of the building have been created in regard of this study.

The aim of this paper is to represent the methodology and results of a completed multidisciplinary R&D Project conducted in a well-studied ancient site. It is essential to carry on such multidisciplinary field projects to produce original data regarding digital heritage and its practices. As this field of digital heritage is relatively new, there are both technical and practical problems waiting to be resolved. The two most important of them are the main targets of this study: user-friendly presentation of photo-realistic VR content and the consumer adoption of this new method of presentation. The "content creation" part of the study focuses on the concomitant use of two different types of 3D immersive content; photogrammetric 3D scans and CGI 3D reconstructions. A user-friendly presentation of these in a single content provides the ground for a survey to measure the consumer experience.

Although this paper is focused on digital heritage and its use in cultural heritage management in the case of Letoon, rather than digital archaeology; another conceptual study is being prepared by the corresponding author of this paper, which is concentrated on the newly emerging concept of digital archaeology and its presentational and data productive aspects. Combining the digital heritage and data productive virtual archaeology would create a modern and deeper view of ancient sites like Letoon.

The structure of this paper is also shaped around these two main targets. Methodology and Results, each has been presented in two separate parts regarding content creation and consumer experience. Literature review is also presented in two parts as the first focuses on the ancient site of Letoon which provides the essential data to produce especially the CGI 3D content, and the second part on the technology that makes it possible.

LITERATURE REVIEW

The Ionic Temple of Artemis is the least preserved and the smallest one of the three temples. It is in the middle of the other two and should be built in "in-antis" or "prostylos". The field observations and detailed documentation show a very elaborate masonry, though it is a very small temple. With two inscriptions found inside and in front of the temple, the building is dated to the middle of the 4th century BC (Metzger, 1979, p. 14; des Courtils, 2003, p. 142-147; Çevik, 2015, p. 81; Atik-Korkmaz, 2016, p. 197). One of the most unique features of the Artemis Temple is the mother rock right in the middle of it. This rock should be considered sacred even before the temple was there, might be like an intangible cult statue of the goddess.

The Ionic Temple of Leto is the best-preserved one of these three buildings, as 80% of it is observable. It is also the biggest of the three and is located at the closest point to the water spring (Hansen & Le Roy, 2012; Heinze, 2014, p. 80-82; Atik-Korkmaz, 2016, p. 200). The architectural decoration of the temple is easily observable and the temple is built in "distylos in antis" order (des Courtils, 2003, p. 150). There is a mother rock in the cella of Leto Temple as well as the Temple of Artemis; and there are the remains of a polygonal wall dated to an earlier phase of the building (Hansen & Le Roy, 1976, p. 317). Thus, there must be an earlier (may not be wooden) temple but it was not preserved in the Hellenistic temple like the example seen in the Temple of Apollo (Laroche, 2007, p. 169-174.). The dating of the Leto Temple is controversial, as the outer architectural decoration is dated to the 4th century BC, while the inner friezes of the cella are dated to the middle of the 2nd century BC (Atik-Korkmaz, 2016, p. 200-201).

May not be digital but virtual archaeology is not new as a concept, while the conventional reconstruction and restitution techniques are in use since the beginning, and have even been the most effective presentation methods of this multidisciplinary science. On-paper reconstructions, 2D drawings, 3D drawings, scaled solid models, etc. were indeed representing some kind of virtual reality back then, of course in the means of their time and technology. By the first emergence of VR technologies in the 1990, the concept immediately took the attention of the archaeology society. The "Computer Applications and Quantitative Methods in Archaeology" meeting in Barcelona, took VR into the account and brought it to the headline as early as 1998 (CAA, 1998). This meeting was the first evaluation of VR as a presentation and documentation method by archaeologists.

The sudden eagerness for VR in the late 20th century was destined to fall, as neither the hardware nor the software was ready for a mass effect. The devices were very big, bulky, and expensive, as well as the 3D content-creating software was light years away from the "Reality" part of VR. But the fire was already lit, and the enthusiasts carry on their work on 360° photos, object, and building scanning techniques, and 3D digital reconstructions, contributing to the concept of Digital Heritage. The ICOMOS Charter in 2008, set the criteria to be followed in Digital Heritage works, as international recognition and regulation of the concept (ICOMOS, 2008).

The second and final rise of VR was in the second half of the 2010s. As relatively inexpensive mobile devices accompany the realistic 3D modelling software, technology overcame the two downsides of the 1990s attempt, rising the opportunities to use this tech in closed environments and even in the field. Following this re-emergence, Digital Heritage which has come a long way while VR was waiting the tech to catch up, could be carried to a more immersive, more effective, and more realistic platform. Multidisciplinary scientific research and studies are being realised since then, mostly in communications, archaeology, heritage management, and tourism practices of VR (e.g. Gillings, 2000; Wheatley & Gillings, 2000; Gergen, 2002; Rose & Wylie, 2006; Barcelo, 2009; Smith, 2012; Farman, 2014; Liritzis et al., 2015; Bucher, 2017; Young, 2017; Goulding et al., 2018; Kidd, 2018; Rahaman, 2018; Doğan & Kan, 2020).

A review of these studies shows that most of them are focused on immersive presentation practices rather than data production, which is obviously the most attractive use of this technology. However, even the accurate space and size perception these contents provide is solely a special contribution to understanding and data production. Also creating realistic reconstructions of entire settlements can provide a more precise view of ancient urbanistic and relations of different parts of ancient settlements (like industrial instalments, ports, etc.). Even by showing the constructional relations between individual buildings, digital reconstructions have the potential to understand the motivations that create an entire silhouette of an ancient settlement.

METHODOLOGY

The main material of the study is the ancient city of Letoon. The city is within the borders of Seydikemer district of Muğla province in Turkey. Letoon, together with Xanthos, was included in the "UNESCO World Heritage List" as a cultural heritage by the United Nations Educational Science and Culture Organization- UNESCO on 9 / 12 / 1988. Other materials used in the study are Unmanned aerial vehicle and modeling software. DJI Phantom 3 Advanced is used for the acquisition of aerial images. For terrestrial image acquisition, Sony XX SLR Camera is used. The camera parameters of the UAV and Camera can be found in Table 1. Agisoft Metashape software packages are used for the virtual modelling, and Agisoft Photoscan has been used for photogrammetric 3D reconstruction. In the literature, the photogrammetric modelling of the cultural heritage has been widely applied (Grün et al., 2004; Eisenbeiss & Zhang, 2006; Ioannidis et al., 2005; Remondino, 2011). The method of this study consists of 4 stages: (1) Photogrammetric reconstruction, (2) 3D virtual modelling of the temples, (3) virtual reality development, and (4) measuring of impacts on the visitors. Each stage is detailed below.

Table 1. *Parameters of the Drone and Camera*

Materials	Type	Image size	Focal length	Pixel dimensions
UAV	Frame	4000x3000	3.61mm	1.56 x 1.56 µm
Camera	Frame	6000x4000	28mm	6x6 µm

Photogrammetric 3D Modelling

The photogrammetric modelling phase consists of image acquisition, image correction, image processing, and 3D modelling (Figure 1). Within the scope of the study, obtaining photogrammetric images from the air and from the ground forms the basis of the modelling phase of virtual reality. A standard unmanned aerial vehicle (UAV) and an internal camera are used to acquire images aerially. A high-resolution camera is preferred for terrestrial photographs.

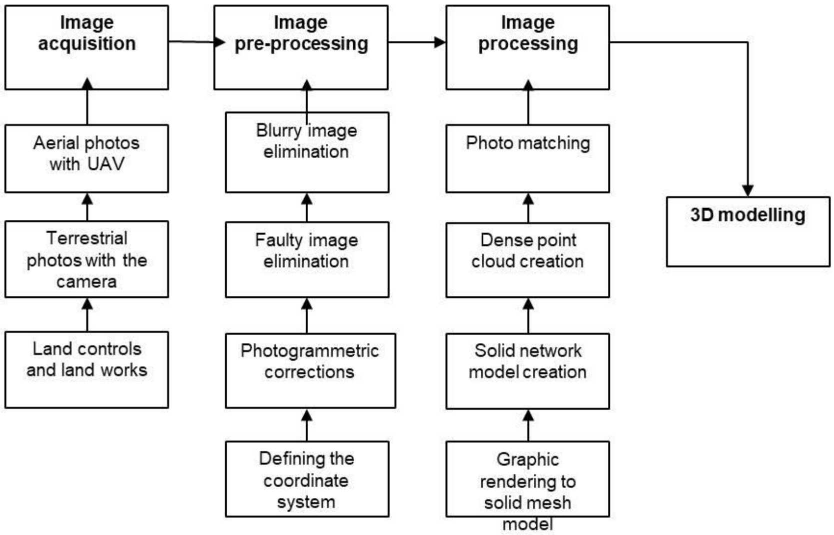

Figure 1. *Photogrammetric 3 D modelling method flow chart*

Obtaining three-dimensional metric information about an object with the photogrammetry method consists of two stages, internal and external orientation. With the interior orientation, the geometric relationships between the camera plane and the photographic plane are defined, where two important parameters are the focal point position and focal length. The cameras that these two parameters are precisely determined and presented to the users are metric cameras. In cases where these are not available, it is possible to determine these parameters with self-calibration. However, lens distortion values should also be calculated in order to eliminate these effects in modelling by considering lens defects.

In order to take aerial photographs, the flight plan, which covers the borders of the ancient city of Letoon, was planned with the use of the Pix4D interface. Five different flights have been carried out in the region. The flights are planned in 2 ways as orthogonal and oblique angles. Orthogonal images are acquired as GRID, covering an area of 200x350 m with a resolution of 3.09 cm/px from a height of 50 m. Oblique images are taken as circular with a resolution of 2.19 cm/px from 30 m height. A total of 600 images were obtained with the UAV. Terrestrial images include 3300 photographs in 6000x4000 pixel resolution.

The external orientation defines the relationship between the image plane and the modelled object. Thus, a triangle is formed with at least two images of the object, and by its solution, the 3-dimensional position of any point on the photograph is obtained. Exterior orientation has two stages: relative orientation and absolute orientation.

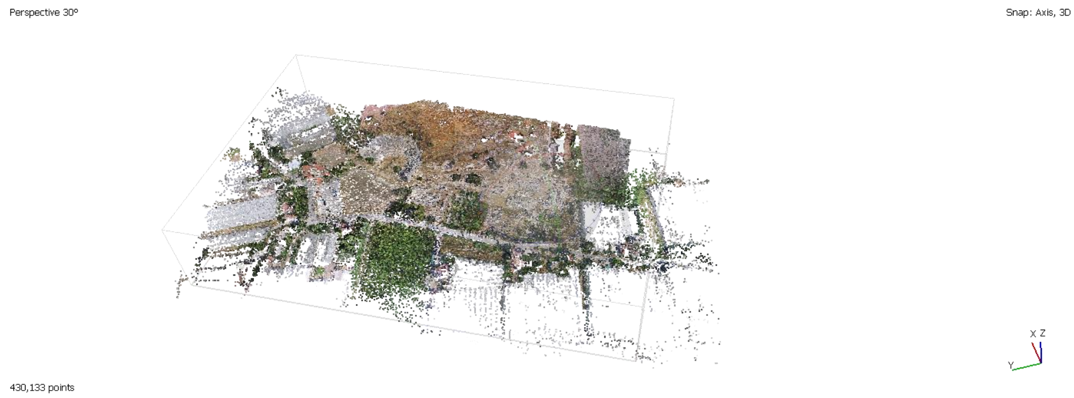

Figure 2. *Point cloud data of study area*

The relative orientation in Agisoft creates sparse points, and the absolute orientation is done with Ground Control Points, which allows calculating georeferenced dense point cloud of the temples. Figure 2 shows the sparse and dense point cloud of the area. After creating the dense cloud, a 3D solid reconstruction model is created and exported accordingly to be used in VR development (Figure 3).

Figure 3. *Reconstruction model of study area*

3D Virtual Models

For the 3D virtual model phase, the results of the observations and fieldwork of the project team have been compared with the previous virtual modelling attempts (Hansen, 1991; Cavalier & des Courtils, 2013). Although the previous works are not lacking in accuracy, presentation techniques and visual quality is limited by the competence of the time being, which is to be expected. While these works may be considered quite successful, they are much focused on the Temple of Leto and less on the other two temples of Apollo and Artemis. Thus, the previous modelling works were partly useful for our study (Figure 4).

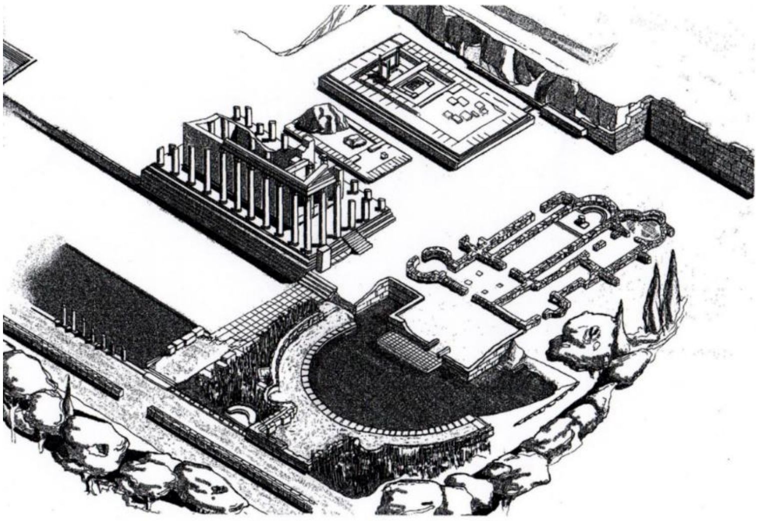

Figure 4. *Example for previous modelling attempts (Excavation archive)*

As expected, the priority is to create archaeologically accurate 3D virtual models, which are based on photographic documentation and 2D detailed drawings, as well as previously published material (Figures 5-6). Measuring, drawing, and photographic documentation are supported by a detailed investigation, in order to re-examine the whole field and answer the questions remaining from the previous works. A combination of the different previous attempts is only possible with such investigations.

While the main aim of all the content is to be applied to an interactive VR environment, there is an important choice to make. Recent VR goggles are basically mobile devices with limited technical capabilities, especially considering memory, CPU, and GPU specifications. So, the specific requirements of interactive digital content supported by high-resolution photogrammetric 3D models, are far beyond their capacity, though it is a very simple and easy task to present the content as 360° renders. At this point, there have been two choices for the project; one to compromise the academic accuracy in geometric details and create a fake perception of reality which would cause the interactive experience to lack the aesthetic and informative aspects desired, and the second to go in full detail and create a very detailed interactive and realistic content but face the technical difficulties during the presentation phase.

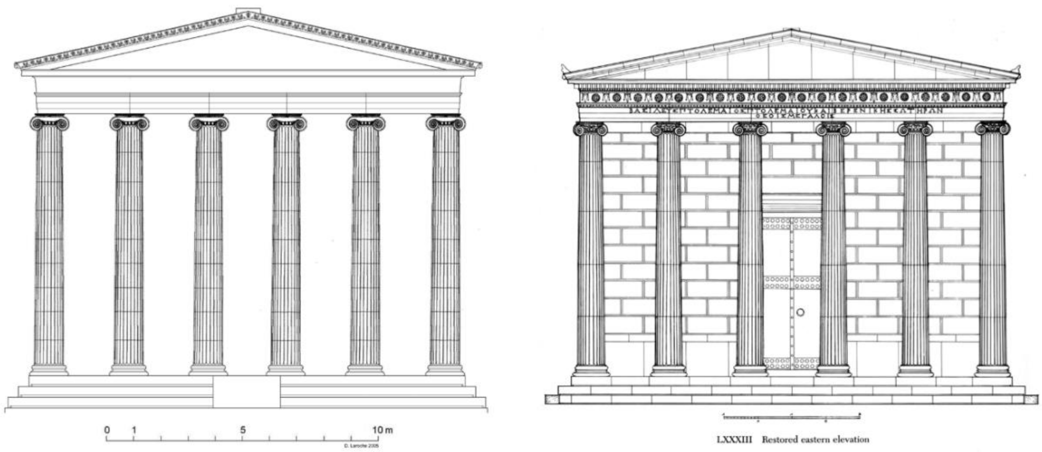

Figure 5. *Example for previous reconstruction attempts (Cavalier & des Courtils, 2013)*

Although this might be a difficult choice for a commercial content creator, it was an easy one for an academic research project, the focus of which is to face the problems and solve them. Thus, the second option is chosen, and two different kinds of presentations have been prepared. The mobile experience is set to be dependent on 360° renders as the interactive content needed to be experienced while connected to a powerful PC.

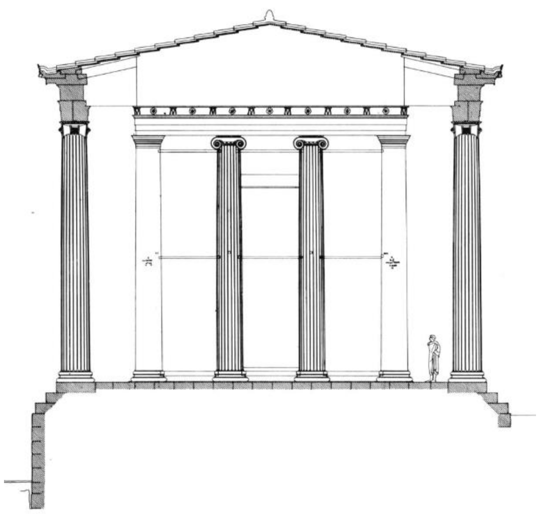

Figure 6. *Example for previous reconstruction attempts (Hansen, 1991)*

Figure 7. *Example for the 360 degree renders*

Figure 8. *Example for the combined content*

Virtual Reality Development

As mentioned above, two different options are used to present the content created. The 360° renders that have been put in order to give a walk-around feeling, have been rendered by 3DsMax and directly exported for the mobile VR goggles, while a second software, a game engine is used to combine the photogrammetric 3D reconstructions with 3D virtual models and create an interactive VR content: Unreal Engine (Figures 7-9). The final content was 28GB in size, which is obviously quite beyond the capabilities of a mobile device and needed to be experienced with the support of a powerful PC. But the uncompromising result is a perfectly realistic and archaeologically accurate 3D reconstruction of the ancient site of Letoon, which can be experienced in an interactive VR environment with complete freedom of an actual physical visit. Although the conceptional technical preparations have been made in order to carry the interactive content to the mobile experience, the period of the project was not enough to practically apply those to the content created. An ongoing new research aims to solve this problem of practicality with a combined effort of low-poly modelling and encoding.

Figure 9. *The final content*

User Impact

The effect of the produced content has been measured by a survey. The survey was conducted via questionnaire and designed to have two sections; one is to gather information demographics of the participants and the second part to include the scale developed by Rese et al. (2014, 873-4) and based on the study of Bilici and Özdemir (2019, p. 2023-4) which was the Turkish adaptation of this study to measure the experience and perceptions on the use of VR applications. The questionnaire used in the study was developed through three stages. First, researchers translated the questionnaire from English to Turkish, and then two independent researchers translated the questionnaire back into English. Secondly, two professionals from the field of tourism compared the translation-backward translation study with the original in order to eliminate idiomatic and colloquial expressions. (Netemeyer et al., 1991, p. 323-5). Finally, instructions of the survey were adapted to the VR experience of the Letoon cultural heritage site.

Random sampling method was used in selecting the study sample. Population frame obtained from the District Governorship of Fethiye. According to data obtained, the total number of visitors to the Letoon cultural heritage site has been reported as about 8655 visitors. Referring to Sekaran (1992, p. 227-9), for a given population of 8655, the sample size for a study should be determined as 368. In order to reach this sample, the potential visitors were foreseen as being tourists, the students of tourist guidance department, and the academics. However, when the trial run was ready in November, this number could not be reached due to the pandemic conditions. The visitor number to the site was very low, and the students were attending their classes online from different locations. Besides, some of the available potential participants were reluctant to participate because of the hygiene concerns related to Oculus which is used by wearing it. Despite these limitations, we have reached a sample of 102 participants between the dates of November 16th and December 9th, 2020. The data were analysed by SPSS 22.0.

Table 2. *Exploratory Factor Analysis (EFA)*

Items	**Perceived Enjoyment and Usefulness**	**Perceived Informativeness**	**Perceived Ease of Use**
The VR app invites you to discover the Letoon cultural heritage site.	.83		
It is fun to discover the scan function and its elements.	.82		
It would be beneficial for other users to experience VR app.	.80		
Using VR app is really fun.	.79		
The scan function and its elements are impressive.	.76		
It is a good idea to use VR app in the Letoon cultural heritage site.	.72		
VR app is an attractive choice for getting more information about the Letoon cultural heritage site.	.67		
The VR app showed the information I expected.		.90	
The VR app provides detailed information about the Letoon cultural heritage site.		.86	
The VR app provides the complete information about the Letoon cultural heritage site.		.84	
The VR app provides information to compare the Letoon cultural heritage site to other sites.		.81	
The VR app provides information that helps me in my decision.		.78	
It was easy to learn how to use the VR app.			.89
Handling the scan function and its elements was easy.			.80
I found the VR app to be very easy to use.			.79
The VR app was intuitive to use.			.70
Mean	4.70	3.53	4.27
Explained variance (%)	27.37	23.97	16.20
Eigenvalue	5.98	2.54	2.27
Reliability	.895	.916	.795

KMO = 0.84, Bartlett's Test = 975.563 ($p < .01$)

The scale developed by Rese et al. (2014) includes 17 items and 4 dimensions entitled perceived enjoyment, perceived usefulness, perceived ease of use, and perceived informativeness. Respondents were asked to indicate their level of VR experience with these 17 items by using a 5-point Likert scale (1= strongly disagree to 5= strongly agree). After conducting preliminary tests, we identified that one item didn't fit into the factor structure. Therefore, this incompatible item with factor structure was eliminated. Finally, exploratory factor analysis (EFA) was performed for 16 items (α=.86) and resulted in the three-factor model (Table 2). The Keiser-Meyer-Olkin overall measure was .83 which is pointing to the adequacy of the sampling and Bartlett's test of Sphericity (χ^2= 975.563, $p<0.000$, df= 120) was also significant at 0.01 level (Kaiser, 1974, p. 33-36).

RESULTS

Archaeology and Scientific Accuracy

Although the research based on excavations and observations has been quite productive and satisfying over the decades, it was possible to generate new information depending on observations of some stonemason signs; and complete the superstructural decoration of the temples (Figure 10).

Figure 10. *Architectural decoration of the Leto Temple*

Before the modern digital reconstructions, the archaeological reconstruction attempts suffered from the incapability of technical capacity and showed a lack of interest in details under a certain scale, just because of these limitations. However, the emergence of VR and especially the interactive contents which give complete freedom of observation to the user comes with the necessity of an indispensable elaboration on details. So, the content created in the project shows a complete attention to details like 5x5cm profiles on the krepidoma of the Leto Temple, as well as the hybrid columns of Apollo Temple with narrowing fillets (Figures 11-12).

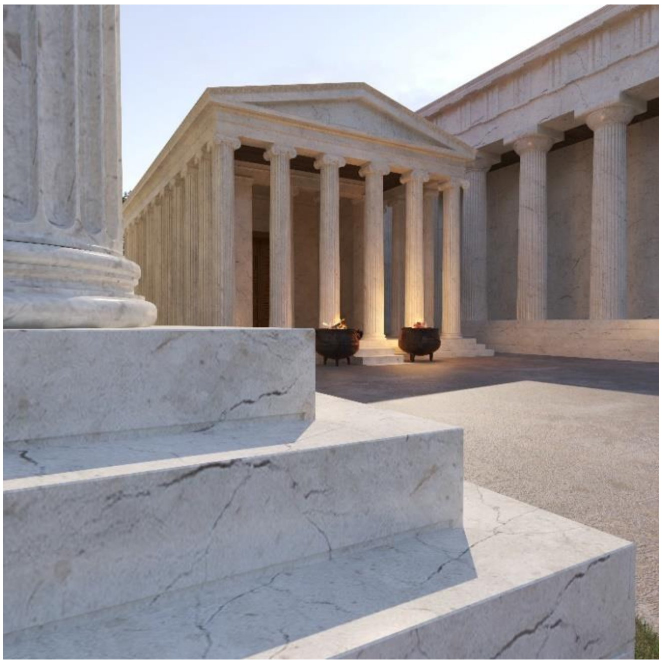

Figure 11. *The krepidoma of Leto and the hybrid columns of Apollo Temples*

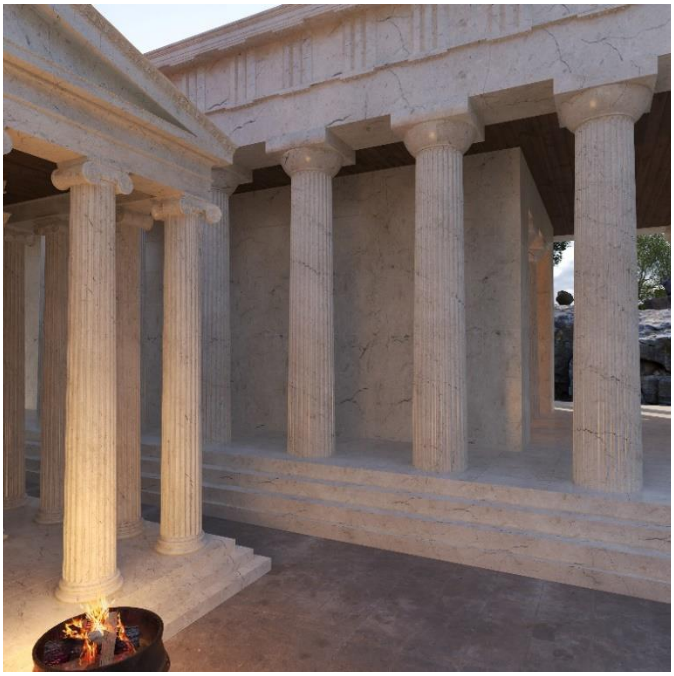

Figure 12. *The krepidoma of Leto and the hybrid columns of Apollo Temples*

Content Creation

As mentioned in the Method section, the most important result of the content creation process of the project is the technical limitations of the mobile VR devices. The dilemma of “quality vs quantity”, which has been the basic issue in any mass production for thousands of years, showed itself again. The two alternative presentation methods discussed, have their own advantages and disadvantages as listed below:

- In the interactive content, the user is able to manage the whole experience of their own will and has the freedom of observing any detail, from any distance, at any time. There is no limitation of a pre-created route. Also, it is possible to add some triggers to activate certain animations like changing the time period being visited, etc. This kind of game-like experience is obviously more immersive and even more educative with the support of verbal and scripted information, as none of them is “volant” anymore. This being the upside, the downside of this method is obviously its technical requirements. The freedom earned “in the virtual environment” must be paid for with the freedom “in the real world”, because the device must be connected to a PC. So, this method does not support the field experience of VR, at least not yet.
- In the content that has been created by 360° renders, the user has to move on a pre-created route and even not with the sense of walking but jumping, teleporting between viewpoints. They are limited by these viewpoints’ distance and angle, which are pre-determined by the content creator. It is still possible to change the periods to be visited, but this transition cannot be supported by animations. Also, adding verbal and scripted content to these 360° renders, is only possible by converting them into a full-scale mobile application. Besides these downsides, the only but vital upside of the method is accessibility and being suitable for the field experience.

One can easily and accurately assume that this dilemma is temporary and will be left behind very soon. To get to that point, however, projects must be carried on both by academics and commercial companies. The results from the “User Impact” part of this study indicate a considerable demand for such content.

User Impact

In the scope of the study, it was aimed to reach possible visitors from different occupational and age groups. The information about the participants' demographics can be seen in Table 3.

Table 3. *The Demographics of the participants*

		n	%
Gender			
	Female	51	50.0
	Male	51	50.0
Age			
	<= 20	2	2.0
	21-30	17	16.7
	31-40	41	40.2
	41-50	25	24.5
	51-60	6	5.9
	>= 61	11	10.8
Current Education			
	Primary	3	3.0
	High school	19	18.8
	Undergraduate	39	38.6
	Graduate	40	39.6
	Missing	1	1.0
Occupation			
	Company Employee	17	16.67
	Academician	23	22.55
	Student	14	13.73
	Tourist Guide	16	15.69
	Officer	6	5.88
	Business Owner	8	7.84
	Retired	15	14.71
	Other	3	2.94
Total		**102**	**100**

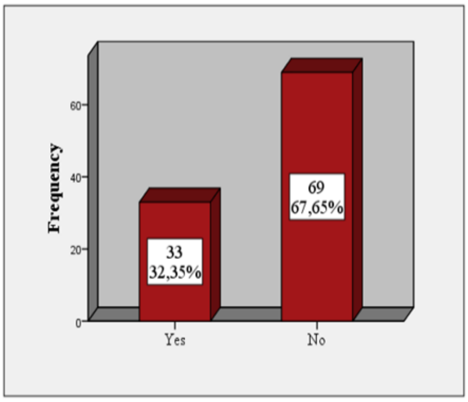

Figure 13. *Previous experience of VR use*

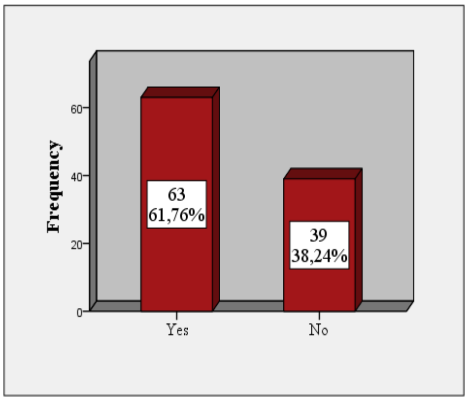

Figure 14. *Knowledge on VR app*

The survey data gathered has provided valuable information on the participants' previous knowledge and experience of VR applications. The majority of the participants (67.65%) have never used VR applications (Figure 13) but most of the participants (61.76%) have some knowledge of the subject (Figure 14). For the aim of the present study, their opinions on the potential use of VR technologies in virtual tourism were asked and 97.06% of the participants reported that VR would be used in the sector.

The participants' perceptions of the use of VR can be seen in Table 4. The data showed that they really enjoyed using the VR application for the Letoon cultural heritage site ($\bar{x}$ = 4,87) while the application was reported as not providing complete information they wanted to know ($\bar{x}$ = 3.01).

Table 4. *The participants' experience on using VR app*

Items	Mean	SD
I found the VR app to be very easy to use.	4.60	.68
The VR app was intuitive to use.	**3.55**	**1.06**
It was easy to learn how to use the VR app.	4.47	.82
Handling the scan function and its elements was easy.	4.49	.82
Using VR app is really fun.	**4.87**	**.53**
The scan function and its elements are impressive.	4.64	.67
It is fun to discover the scan function and its elements.	**4.78**	**,54**
The VR app invites you to discover the Letoon cultural heritage site.	4.68	.72
VR app is an attractive choice for getting more information about the Letoon cultural heritage site.	4.62	.61
It is a good idea to use VR app in the Letoon cultural heritage site.	4.67	.68
It would be beneficial for other users to experience VR app.	**4.73**	**.57**
The VR app showed the information I expected.	3.67	1.13
The VR app provides detailed information about the Letoon cultural heritage site.	**3.50**	**1.12**
The VR app provides the complete information about the Letoon cultural heritage site.	**3.01**	**1.26**
The VR app provides information that helps me in my decision.	3.87	1.10
The VR app provides information to compare the Letoon cultural heritage site to other sites.	3.65	1.16

Participants considered the VR application on cultural heritage sites as being valuable ($\bar{x}$ = 4.77) (Table 5). In addition, they thought that the VR application was a convenient application that carried the users out to the positive outcomes ($\bar{x}$ = 4.71). Overall, it can be concluded that the attitude of the participants is favourable.

Table 5. *The participants' attitude towards using VR app*

Items	Mean	SD
I think VR app about cultural heritage sites is a valuable application.	4.77	.53
VR app provides good creative ideas about cultural heritage sites.	4.62	.70
VR app is an inspirational tool for the creative ideas on cultural heritage sites.	4.65	.61
VR applis ideal to provide an overview about cultural heritage sites.	4.69	.53
I think VR app is an convenient application in the cultural heritage sites and it carried the users out to the positive outcomes.	4.71	.62
Total Mean	**4.68**	**.462**

The behavioural intention to use VR were also analysed (Table 6). It can be concluded that they would use the VR applications about the cultural heritage sites in the future ($\bar{x}$ = 4.67) and they would also recommend their friends to use those applications ($\bar{x}$ = 4.64).

Table 6. *Behavioural intention to use*

Items	**Mean**	**SD**
I will use the VR applications about cultural heritage sites in the future.	4.67	.68
…. download or use other VR apps about cultural heritage sites immediately.	3.66	1.18
… give the VR app priority over the books/brochures and catalogues.	3.77	1.17
… give the VR app priority over getting information on the cultural heritage sites than the other options.	3.60	1.28
I will recommend using VR app to my friends.	4.64	.74
I will use the VR app regularly in the future.	3.99	1.08
Total Mean	**4.05**	**.79**

The results of the correlation analysis (Table 7) showed that there was a moderately significant positive relation (r = .61) between perceived enjoyment and usefulness and attitude towards the use of VR. There were also somewhat lower but again positive relations between the perceived enjoyment and usefulness and perceived informativeness of the application (r = .43), and also between perceived enjoyment and usefulness and perceived ease of use (r = .20). Besides, another moderately significant positive relationship was found between the participants' attitude towards the use of VR and their behavioural intention to use the VR application (r = .61).

Table 7. *The results of the correlation analysis (n=102).*

	M	**SD**	**1**	**2**	**3**	**4**	**5**
1.Attitude towards Use of VR	4.68	.462	-				
2.Perceived Enjoyment and Usefulness	4.70	.486	.61**	-			
3.Perceived Informativeness	3.53	.996	.43**	.43**	-		
4.Perceived Ease of Use	4.27	.672	.20*	.10	.16	-	
5.Behavioral Intention to Use	4.05	.785	.61**	.44**	.37**	.26*	-

*Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed)

The multiple linear regression analysis was run to examine the effects of perceived enjoyment and usefulness, perceived informativeness, and perceived ease of use on the attitude towards the use of VR. The results showed that in the regression model (F = 24.57, p = .000), the factors of perceptions on VR use explained 43% of the variance. Both the perceived enjoyment and usefulness and perceived informativeness are significant predictors of the attitude towards the use of VR (Table 8).

Table 8. *The results of multiple linear regression analysis*

	β	t	p
Perceived Enjoyment and Usefulness	0.53	6.18	.00*
Perceived Informativeness	0.19	2.20	.03*
Perceived Ease of Use	0.14	1.47	.15
R^2 = .43 F = 24.57 p = .000			
*Dependent Variable: The Attitude towards Using VR			
The Attitude towards Using VR	0.62	7.88	.00*
R^2 = 0.38 F = 62.10 p = .000			
**Dependent Variable: Behavioural Intention to Use			

CONCLUSION

It is obvious that the available software and hardware are more than capable to produce realistic and scientifically accurate content, but the limitations of mobile viewing devices have compromised the user experience. However, by the time this paper is prepared, a new version of the primary game engine used in this project has been launched, which has been focused directly on this problem; and this indicates that the software developers are sharing the same concerns with the content creators. Considering these new game-changing developments in graphic visualisation technologies, emerging faster than a paper to be published, it would be safe to suggest that the following projects and VR attempts will be able to focus on different details, like adding more information, more user-friendly interfaces, and even more details on models.

The user effect results also prove a necessity for ever-developing content creation, as it is quite obvious that the hardware needed to view these contents is highly affordable and one thing the consumer needs is the satisfying content itself to supply the huge demand. However, the important thing is that consumer habits should be carefully examined especially during the Covid-19 pandemic. The pandemic created an ever-lasting fear of using unowned devices. Thus, cloud or even browser-based content sharing should be adopted to let the consumer use their own device without the necessity of downloading huge content.

Finally, this 6-month limited research shows that the future of cultural tourism, as well as cultural heritage management, lies in the Digital Heritage contents, which need to be developed both in quality and quantity.

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A META-ANALYSIS OF THE ANTECEDENTS AND CONSEQUENCES OF DELIGHT IN TOURISM AND HOSPITALITY RESEARCH

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ABSTRACT

Customer delight is a concept that has recently gained momentum in consumer behavior, marketing, and hospitality literature. This study investigated the antecedents and subsequent of delight in a hospitality context. A meta-analysis was conducted, including 22 articles and producing 141 independent effect sizes. Results revealed a strong relationship between experiential context (service quality, physical environment, and authenticity), positive emotions, and surprise as antecedents of delight, with behavioral intentions, satisfaction, and loyalty as consequences of delight. Furthermore, gender was tested as a moderator, yielding a strong relationship between surprise and loyalty. Practical and theoretical implications are discussed as well as future research perspectives.

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INTRODUCTION

The concept of customer delight emerged in the 1990s as an extension of satisfaction (Rust & Oliver, 2000), emphasizing the emotional response produced by customers when experiencing a product or service (Chandler, 1989). The key to delighting customers resides in firms' capabilities to provide experiences that yield a pleasurable experience by exceeding

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satisfaction (Patterson, 1997) to a positively surprising degree (Finn, 2012; Rust & Oliver, 2000). Delight is also considered as an expression of emotional effect that can be assimilated to a high arousal manifestation of satisfaction (Oliver, 2010). Although satisfaction and delight are two different constructs, scholars prior to the 1990s seemed to equate them. Since the 1990s, an important body of marketing and consumer behavior literature departed from the classical assumption that delight and satisfaction are the same concepts and went on to investigate on the two constructs separately.

In general, findings from those studies went in the direction that rather than merely satisfying customers, managers ought to delight them. For instance, delight has been assessed as a stronger predictor of loyalty than satisfaction (Reichheld & Teal, 1996; Torres & Kline, 2006). This follows that satisfied customers may still leave a firm suddenly because of a lack of interest or commitment (Dolnicar et al., 2015; Kumar et al., 2013; Schneider & Bowen, 1999); however, they are less likely to do so if they are delighted customers. According to Magnini et al. (2011), very satisfied guests are more likely to engage in positive word-of-mouth and recommending behaviors as compared to satisfied guests; as well, delighted guests display a higher tendency for such behavioral responses as compared to very satisfied guests. Consequently, hospitality organizations have come to terms that delight needs to be integrated within their strategic goals and objectives (Kim & Mattila, 2010; St-James & Taylor, 2004; Vanhamme & de Bont, 2008), understanding that delighted customers are often more loyal and profitable to the business. The concept of delight carries uniqueness as compared to satisfaction given that it entails an emotional dimension involving surprise and joy (Plutchik, 1980, 2003). This is supported by scholars in consumer behavior literature who agree delight is a positive emotional state well beyond satisfaction (Füller & Matzler, 2008; Loureiro & Kastenholz, 2011; Plutchik, 1980, 2003). Assuming this distinction between the constructs of satisfaction and delight, it follows that in the service-settings industry, firms should aim at delivering delight beyond satisfaction, which occurs through delivering service with a surprising or unexpected value exceeding customers' expectations. In fact, positive surprise is a necessary precondition for customers to be delighted by a service (Finn, 2005; Oliver et al., 1997; Rust & Oliver, 2000; Vanhamme & De Bont, 2008).

Although the concept of delight has itself been discussed in the literature as an antecedent or outcome of other constructs, there exists scarcity in terms of studies investigating an overall model in the form of a meta-analysis. Even though Torres and Ronzoni (2018) conducted a systematic literature review of the concept of delight, the purpose of this study is to offer an objective view of the antecedents and outcomes of delight. This meta-analysis represents a direct answer to opportunities and research agenda of delight cited in Barnes and Krallman (2019), who advocated for further investigation beyond joy and surprise, as well as investigating different moderators. The notion of delight has evident ramifications in the literature and industry, however variances regarding the concept itself subsist, especially in terms of antecedents and outcomes. Hence, the current study adds to the consumer behavior literature with a broad outlook on the concept of delight in hospitality.

A notable aspect of the literature regarding delight and its related constructs is the inconsistency of findings within different studies, and difficulty in measuring it (Ali et al., 2018). This lack of coherence within published studies in the literature indicates a need for further clarity in conceptualizing delight. There exists broad agreement that managers need to delight customers by creating surprise (Torres & Kline, 2013) rather than simply satisfy them. In other words, delighting customers should be the highest desired end in cognitive-affective evaluations. Though, it remains unclear which levers should be activated in order to delight customers in hospitality organizations. It is also less clear which antecedents should be prioritized for desired outcomes in customers' evaluations of their services. In view of the above information, it is evident that it would be difficult for a traditional study to comprehensively capture the extent of antecedents and consequences of customer delight. An appropriate means to come through this maze is to use meta-analysis. Meta-analytical research investigates conclusive definitions and allows the researchers to jointly analyze the results with diverse methods, samples, and industry scenarios (Dickersin, 2002). Consequently, this study aims at a) exploring the magnitude of relationships between delight antecedents and subsequent, and b) whether gender plays a moderating role.

CONCEPTUAL FRAMEWORK

The concept of delight has first been discussed within emotion literature in the 1980s with notable studies such as Plutchik's (1980) model of primary emotions, and the following studies that treated delight as a positive emotion (e.g., Morgan & Heise, 1988; Plutchik, 1980; Storm & Storm, 1987). Oliver (2010) provided a definition of delight, 'an extreme expression of affect' and stressed that it is 'a high-arousal manifestation of satisfaction' (p. 22). Patterson (1997) explained that delight is what results when an experience goes beyond satisfaction, producing a highly pleasant experience. Although considered by some scholars as more important than satisfaction, delight remains an under-researched construct within consumer behavior literature (Ali et al., 2018). As explained by Finn (2005), the notion of customer delight stems from works on affective and experiential emotional responses to consumption (Westbrook, 1987; Holbrook & Hirschman, 1982). On one hand, delight as an emotion involves a cognitive component (experiential) influenced by joy and involving high levels of pleasure and arousal (Kim et al., 2015; Oliver, 2010) while on the other, delight leads to a positive emotional (affective) state involving- beyond pleasure and joy—a surprise effect as expectations are exceeded (Magnini et al., 2010).

Delight has often been examined in parallel with satisfaction, even though the two concepts are different (Kim et al., 2015). In reality, delight can be viewed as an extension of satisfaction, a higher end than satisfaction on the spectrum of customers' cognitive evaluations of services (Finn, 2005). For instance, while satisfaction can generate pleasure, it does not necessarily entice arousal (Wang, 2011). As compared to satisfaction, delight prompts a highly positive response, with even higher impacts on post-consumption behaviors, i.e., loyalty (Ahrholdt et al., 2017; Ali et al., 2018; Kim & Perdue, 2013; Ou & Verhoef, 2017). Nonetheless, studies with contradictory viewpoints exist within the literature (e.g., Alexander, 2010; Finn, 2012), supporting the viewpoint that delight is not an extreme form of satisfaction (Ma et al., 2017). Although they are distinct constructs, empirical evidence has been provided for the simultaneous occurrence of delight and satisfaction. Customer delight as a concept recently received considerable attention from researchers in consumer behavior literature with subjects related to the tourism industry (Ahrholdt et al., 2017; Torres & Ronzoni, 2018), whose findings attest that delight is mainly influenced by cognitive-affective antecedents.

Experiential Antecedents: Service Quality, Physical Environment, and Authenticity

The results from Wang's (2011) study revealed that service quality influenced repurchase intentions consumer delight rather than consumer satisfaction. Similarly, Rivera et al. (2019) also discussed in their study about the impact of service quality on behalf of employee behavior on delight, suggesting a positive relationship. Furthermore, Ellis et al. (2019) investigated the impact of service quality performance by experience and interaction on delight, amongst other variables. These authors pointed out in their results that investing in increasing service quality will yield delighted customers. In a similar study, Ahrholdt et al. (2017) also confirmed the important function of service quality in predicting delight and loyalty. As well, the atmosphere, and experiential antecedent, were also strongly related to delight. Moreover, Chua et al. (2015) discussed in their results that the functional congruity of the physical environment and the facilities were positively related to delight. In a winery setting, Bufquin et al. (2018) empirically prove that the perceived congruence between the brand image and the surrounding physical environment had a positive effect on delight. Lastly, Jiang (2020) provided empirical support for the strong positive relationship between authenticity and delight, which was also previously confirmed by Kageyama (2016) in the context of service encounters. In light of the prided literature, the following hypothesis is proposed:

H1: *Experiential antecedents (such as service quality, physical environment, authenticity) have a positive direct impact on delight.*

Positive Emotions and Surprise

Delight occurs as an emotional reaction when consumers experience surprisingly high echelons of performance, arousal or activation, and positive affect (Oliver et al., 1997). The construct involves a positive emotional condition, which is a crucial condition for delight to occur. Loureiro (2014) demonstrated in their study that positive emotions—manifested as positive affect and arousal—play an important part in the mediation between surprising consumption and delight. This conceptualization was also confirmed in similar studies (Dixon et al., 2010; Kumar et al., 2001). Positive emotions have widely been assessed as an essential predictor of customer delight (Bowden & Dagger, 2011; Finn, 2005; Oliver et al., 1997). Regarding surprise, while it has been assessed as positively related to delight (Crotts & Magnini, 2011; Finn, 2005; Oliver et al., 1997; Torres et al., 2020), scholars such as Chitturi et al. (2008) and Ma et al. (2013) indicated surprise was not a prerequisite of delight; for Bowden and Dagger (2011), "surprising consumption was found to be negatively related to delight" (p. 517). This infers that even though surprise can cause delight, there certainly exist other ways to reach this emotional state (Kumar et al., 2001; Loureiro, 2010). Stemming from the above discussion, the following hypotheses are posited:

H2: *Positive emotions are positively related to delight.*

H3: *Surprise is positively related to delight.*

Behavioral Intentions

Customer delight is an emotional response to experience and, as such, becomes critical in influencing future behavioral intentions (Schlossberg, 1993; Schneider & Bowen, 1999). Bartl et al. (2013) found that delighted customers were more prone to display behavioral outcomes, including loyalty and purchase intentions. Delight is elicited while the service is being delivered, and involves a pleasurable and intense service experience, which in turn entails an emotional response/state stronger than satisfaction (Kwong & Yau, 2002; Patterson, 1997). Similarly, as compared to satisfaction, delight has been weighed more significant in impacting loyalty, repetitive purchase behaviors, but also competitive advantages (Torres & Kline, 2006; Wang, 2011). In fact, prior studies have evaluated customer satisfaction as a crucial but less important determinant of customer loyalty (Dolnicar et al., 2015; Kumar et al., 2013), suggesting the construct of delight acts as reinforcement to satisfaction in order to create loyalty (Albayrak & Caber, 2015; Magnini et al., 2011; Torres et al., 2014). Several studies have assessed that the effect of delight on behavioral intentions is non-linear (Finn, 2005, 2012; Keiningham & Vavra, 2001; Rust & Oliver, 2000). Conversely, in the context of websites, Bartl et al. (2013) found that delight's effect was stronger than satisfaction in impacting purchase intentions.

The positive effect of delight in inducing behavioral intentions with regards to repurchases and word-of-mouth was supported by several studies in consumer behavior and marketing literature (Barnes et al., 2010; Chitturi et al., 2008; Kumar, 1996; Oliver et al., 1997; Paul, 2000). In their study evaluating emotions and behavioral intentions of visitors to a winery, as influenced by architectural congruence perceptions, Bufquin et al. (2018) found delight has a positive effect on spreading positive word of mouth and intention to revisit. In fact, delightful experiences likely lead to loyal customers, who, in turn, contribute at spreading positive word-of-mouth (Akamavi et al., 2015; Arnold et al., 2005; Kumar et al., 2013). Jiang (2020) found customer delight has a positive effect on the propensity to engage in positive word-of-mouth intentions. In addition, Paul (2000) also reported customer delight brings about positive word-of-mouth.

Numerous researches in the literature also investigated the outcomes of customer delight. One of the most prominent subsequent is loyalty (Dey et al., 2017; Finn, 2005, 2006; Kim, 2011; Kim et al., 2015; Loureiro, 2010; Oliver et al., 1997; Wang, 2011). Consquently, firms should aim at delighting customers beyond merely satisfying them (Hwang & Hyun, 2017; Lyu &

Hwang, 2017; Magnini et al., 2010; Torres & Kline, 2006; Voss et al., 2008). Customer delight occurs when the provided service positively exceeds customers' expectations, resulting in pleasure, joy, and unexpected level of surprise. As such, the construct has been discussed as a crucial driver of customer loyalty (Berman, 2005; Finn, 2005; Oliver et al., 1997). An important body of literature agrees delight has a stronger effect than satisfaction when it comes to affecting behavioral intentions (Bartl et al., 2013). Similarly, delight has been assessed as stronger than satisfaction in predicting loyalty (Chitturi et al., 2008). In the literature regarding the subsequent of delight, there also exists a lack of coherence within findings per the different published studies. In this picture, the disagreements are also related to satisfaction. For instance, in a study having satisfaction and loyalty as concurrent constructs, Bowden and Dagger (2011) found satisfaction to be the main driver of repurchase intentions and even concluded customer delight did not cause loyalty. Similarly, Finn (2005) also found satisfaction to have a stronger positive effect on intention, while Kim (2011) found no relationship between delight and loyalty. Other interesting findings include Loureiro (2010), which found satisfaction to be more important in determining loyalty than delight, but also Rust and Oliver (2000) who found that customer delight can lead to positive outcomes only in the course that satisfaction is having a strong effect on repurchase intentions. The following hypotheses emerge from the above discussion:

H4: *Delight has a positive direct impact on behavioral intentions.*

H5: *Delight has a positive direct impact on satisfaction.*

H6: *Delight has a positive direct impact on loyalty.*

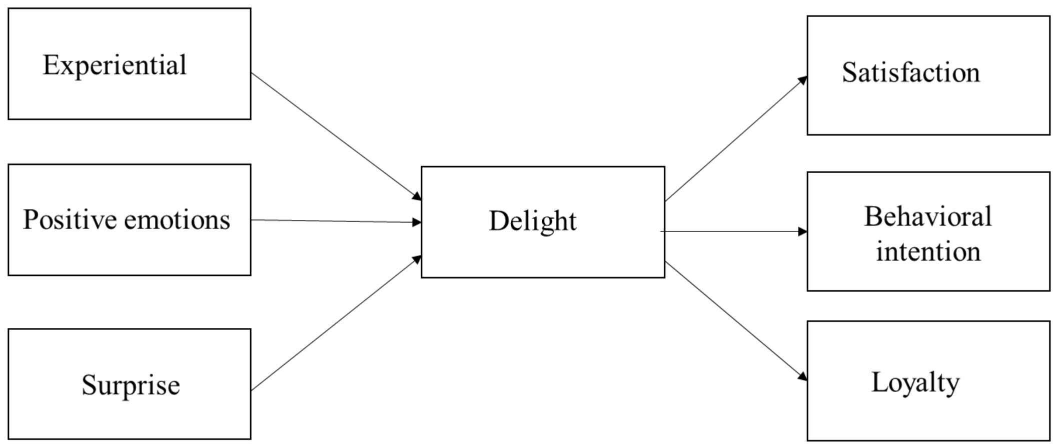

Figure 1. *Conceptual Framework of Delight Relationships*

The conceptual framework depicting delight antecedents and outcomes is presented in Figure 1. As well, all considered constructs are defined in Table 1.

Table 1. *Construct Definitions*

Construct	a.k.a.	Definitions	Representative Studies
Antecedents			
Experiential antecedents	Service quality, physical environment, authenticity	Experiential antecedents are those that the customer experiences while on the property	Tanford (2016)
Emotions	Positive and negative consumption emotions, affect, hedonic value	"A mental state of readiness that arises from cognitive appraisals of events or thoughts; has a phenomenological tone; is accompanied by physiological processes; is often expressed physically; and may result in specific actions to affirm or cope with the emotion, depending on its nature and the person having it."	Bagozzi et al. (1999, p. 184)
Surprise	Positive and negative surprise	Surprise constitutes a major feature of the organizational entry experience and simply represents a difference between an individual's anticipation and subsequent experience. Surprises can be positive and/or negative, and anticipation may revolve around the job, the organization or self	Louis (1980)
Subsequent			
Behavioral Intentions	Revisit/repurchase intentions, word-of-mouth, positive - word-of-mouth, switching intentions	Intention to revisit, recommend, and say positive things about the brand/property (often combined into a composite measure); willingness to pay more for preferred brand, likelihood to switch	Tanford (2016)
Satisfaction	Satisfaction	Satisfaction is a positive reaction resulting from favorable appraisals of consumption experiences	Oliver et al. (1997)
Loyalty	Customer loyalty brand loyalty	"A deeply held commitment to re-buy and re-patronize a preferred product or service constantly in the future"	Oliver (1977, p. 34)

Gender as a Moderator

Gender has long been associated and examined in the context of consumer behavior. An extensive amount of research has been done on the topic of males and females regarding various buying and consuming activities. Several researchers, such as Petrides and Furnham (2006), Kolyesnikova et al. (2009), and Vitz and Johnston (1965) concluded that gender also reflects trait differences. Palan (2001) presented that femininity is correlated with relational and independent aspects, while masculinity is linked with rationality, assertiveness, independence. Chang and Chieng (2006) found that gender identity can be used to predict certain attitudes in consumers. In the context of experiential antecedents, gender has been explored by several researchers such as Franck (1985), who explored the social construction of the physical environment, or Schmidt and Sapsford (1995), who examined the issues in gender and the servicescape; whereas Narula et al. (2022) further suggested that female travelers' expectations on servicecape focused more on personalization services. Brebner (2003) empirically proved that females experience certain emotions much more intensely than males. Similarly, female and male appear to be different in adaptability and dealing with challenges (Çizel, 2018). In the context of hospitality products, Velez (2011) discussed that women have been documented to be the head decision making authority for households. Hence the following hypotheses were also developed:

H7**:** *Gender will moderate the relationship between a) experiential antecedents and delight, b) positive emotions and delight, c) and surprise and delight.*

H8**:** *Gender will moderate the relationship between a) delight and behavioral intentions, b) delight and satisfaction, c) delight and loyalty*

Figure 2 depicts the relationships between delight and its antecedents and outcomes, as influenced by gender.

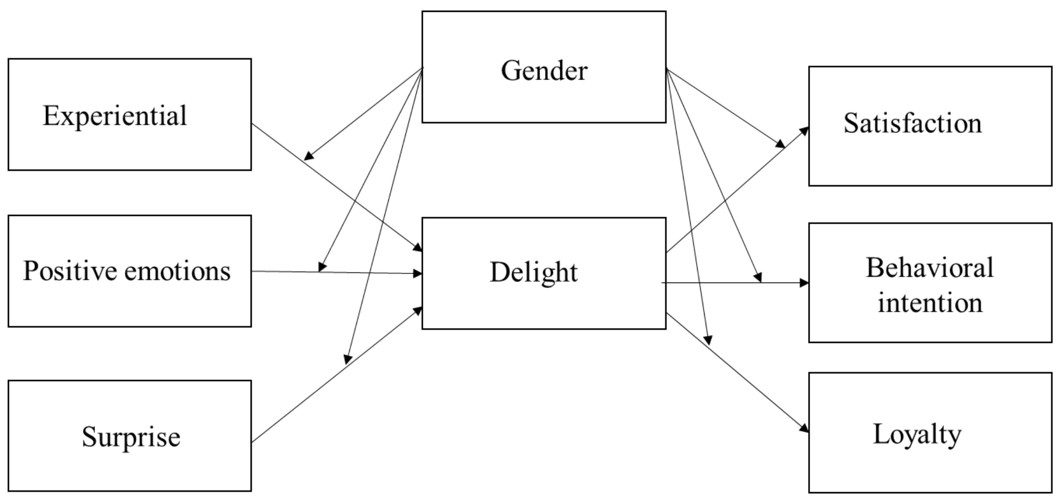

Figure 2. *Gender as a Moderator*

METHODS

Literature Search

For a successful meta-analysis, a comprehensive compilation of literature is essential (Borenstein et al., 2011; Lipsey & Wilson, 2001). As the current study aimed to analyze the concept of delight with the hospitality and tourism field, a literature search was conducted via four systematic procedures. First, an initial search was performed using all journals available on the *Scimago Journal & Country Rank* (SJR) under the subject area of Tourism, Leisure, and Hospitality Management. Similar step was taken by Güzeller & Çeliker (2018) and Kirtil & Aşkun (2021) through a bibliometric analysis search, where SJR was considered as one of the sources when conducting the search. This initial step yielded a total of 123 journals. Second, in order to broaden the inclusion criteria beyond the scope of only research papers, the *Scholar Commons* database was used to retrieve Theses and Dissertations. Third, additional searches were conducted using the databases of Science Direct, Scopus, Emerald Library, Taylor & Francis, and Elsevier, using the keyword "delight," as adding other attributes to the term would limit the results. Fourth, Google Scholar was also queried to make sure no papers were missed. These searches yielded a total of 3097 from which only 22 yielded the effects needed. A total of 141 effects measuring the relationships proposed in the hypotheses, were found. Figure 3 is a PRISMA flowchart that shows the identified papers, and study selection process (Moher et al., 2009).

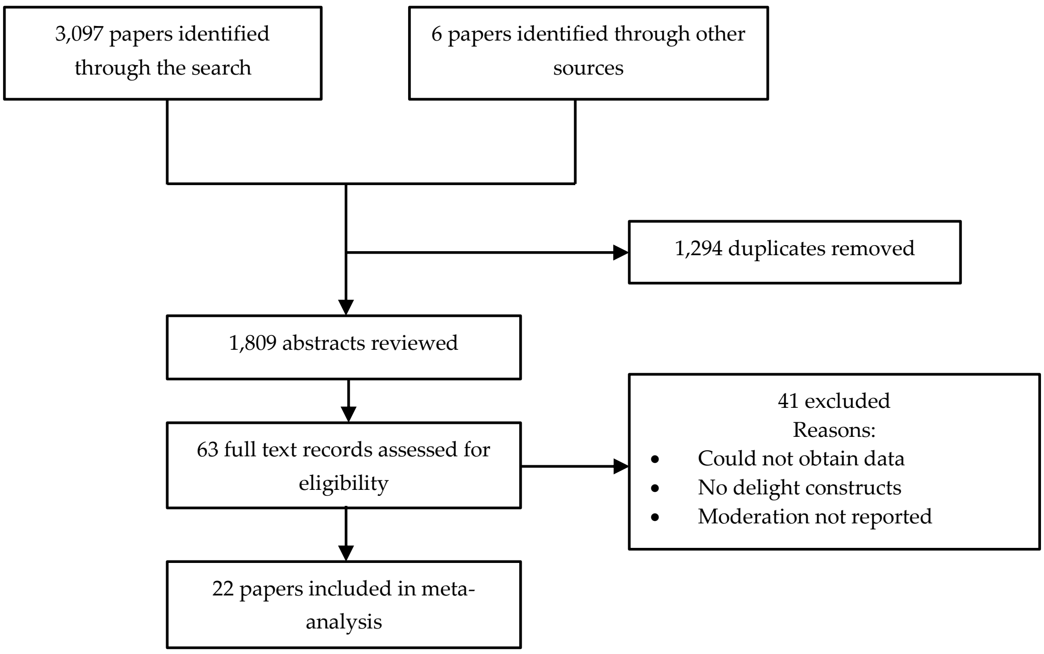

Figure 3. *Study Selection Flowchart*

Coding Studies

Following the keyword search, a total of 3097 papers were collected and examined for their relative fit for the purposes of this study. As such, they were assigned with the codes “Yes,” “No,” or “Maybe”. When an article fell under the “No” or “Maybe” field, a reason for such categorization was provided. As well, the antecedents, subsequent, moderators, and mediators were recorded. Once this master list was completed, the authors checked the papers categorized under “Maybe” and decided on which of them could be used for analysis. Following this initial selection, a second list was created with all papers labelled “Yes”—including article titles, journal names, author names, year of publication, statistical indexes, and the application area of research. Statistical indexes recorded in the present analysis included correlations, sample size, reliability, as well as the percentage of female participants for a potential moderator.

Performing the current meta-analysis involved using the correlation coefficient r for measuring the size of the effect on the variables in the construct. In all of the cases, the correlation matrix or correlation between the variables of interest was reported. Psychometric meta-analysis by Schmidt and Hunter (2014) was adopted, two programs were used in the data analysis process, one being open psychometric meta-analysis (Wiernik, 2017), and the other Meta essentials correlation data 1.2. According to Rosenthal and Rubin (1991), the fail-safe number k provides an estimate of the required number of nonsignificant studies needed to alter the size of the total effect of the relationship toward nonsignificant. Therefore, a significant effect size requires the calculation of the fail-safe number, which equals k [(r/0.05) − 1].

RESULTS

Analysis of Main Effects

Table 2 and Table 3 display the direct effects of respectively antecedents of delight and subsequent of delight. Studies on delight antecedents, positive emotions, and surprise, had the largest combined effect size, whereas delight on behavioral intention were the largest in terms of sample sizes. Academic interests in understanding the construct of delight can be considered a more recent trend, as shown through its number of sample sizes, and its combined effect sizes. Overall, experiential, positive emotions, and surprise had a significant impact on delight, with the effect sizes of .53, .68, and .68, respectively, and a significant p-value. Therefore, hypotheses

H1, H2, and H3 were supported. Regarding the subsequent of delight, satisfaction, behavioral intention, and loyalty all had a significant relationship with delight, with the effect size of .55, .63, and .49, respectively. Therefore, hypotheses H4, H5, and H6 were supported. In addition, a forest plot is also included to provide a visual representation of the correlation range from the main effects (Figure 4). The correlation range, which is plotted at the top of the plot, is formed by the x-axis. Each row-except for the bottom row-depicts a study correlation corresponding to a main effect estimate, depicted using a point within a 95% confidence interval. In statistical terms, the use of an estimate of an interval—within which the "true" correlation (in the population) would lie—is considered a correct way to represent each study's correlation range in a main effect from a meta-analysis.

Table 2. *Main Effects of Antecedents of Delight*

Antecedents of delight	*k*	*N*	Combined effect size	p-value	95% conf. Int.	Q	P_Q	I^2	Fail-safe-k number
Experiential	8	2306	.53	<.05	.46, .79	138.63	<.05	94%	67
Positive emotions	7	3172	.68	<.05	.71, .91	223.03	<.05	97%	88
Surprise	6	4790	.68	<.05	.71, .91	151.30	<.05	96%	88

Note: k = number of studies used from analysis; N = aggregated samples of the assessed studies; Combined effect size = the total effect size found in the studies; p-value = degree of significance of the effect size; 95% Conf. Int. = minimum and maximum confidence interval; Q = test of heterogeneity to the individual an aggregate level; P_Q *= heterogeneity significant level;* I^2 *= percentage of variation across studies that is due to heterogeneity; fail-safe k number = a statistic to estimate the number of studies needed for the result to become non-significant.*

Table 3. *Main Effects of Subsequent of Delight*

Subsequent of delight	*k*	*N*	Combined effect size	p-value	95% conf. Int.	Q	P_Q	I^2	Fail-safe-k number
Satisfaction	7	4673	.55	<.05	.55, .75	111.34	<.05	93%	69
Behavioral intention	10	5651	.63	<.05	.60, .91	159.41	<.05	94%	116
Loyalty	7	5426	.49	<.05	.45, .70	207.41	<.05	97%	61

Note: k = number of studies used from analysis; N = aggregated samples of the assessed studies; Combined effect size = the total effect size found in the studies; p-value = degree of significance of the effect size; 95% Conf. Int. = minimum and maximum confidence interval; Q = test of heterogeneity to the individual an aggregate level; P_Q *= heterogeneity significant level;* I^2 *= percentage of variation across studies that is due to heterogeneity; fail-safe k number = a statistic to estimate the number of studies needed for the result to become non-significant.*

In addition to the forest plot, a funnel plot was generated to evaluate the small study bias. Figure 5 displays the funnel plot which is a scatterplot visually depicting meta-analysis bias. In general, a symmetrical plot is perceived as good indicator for less bias; however, assessing symmetry with regards to a funnel plot is usually subjective (Sedgwick, 2013). According to the current study's funnel plot, there is a level of asymmetrical pattern based on our observations. Asymmetry funnel plot can be caused by many reasons. Therefore, to better justify publication bias, the present study adopted Egger et al.'s (1997) method and used Egger's test of regression for funnel plot asymmetry. The results from Egger's test *SE*=0.08, *CI* [0.75,1.07], p = 0.11, indicate that the funnel plot is not asymmetric, and therefore there is no significant bias detected (Sterne et al., 2011).

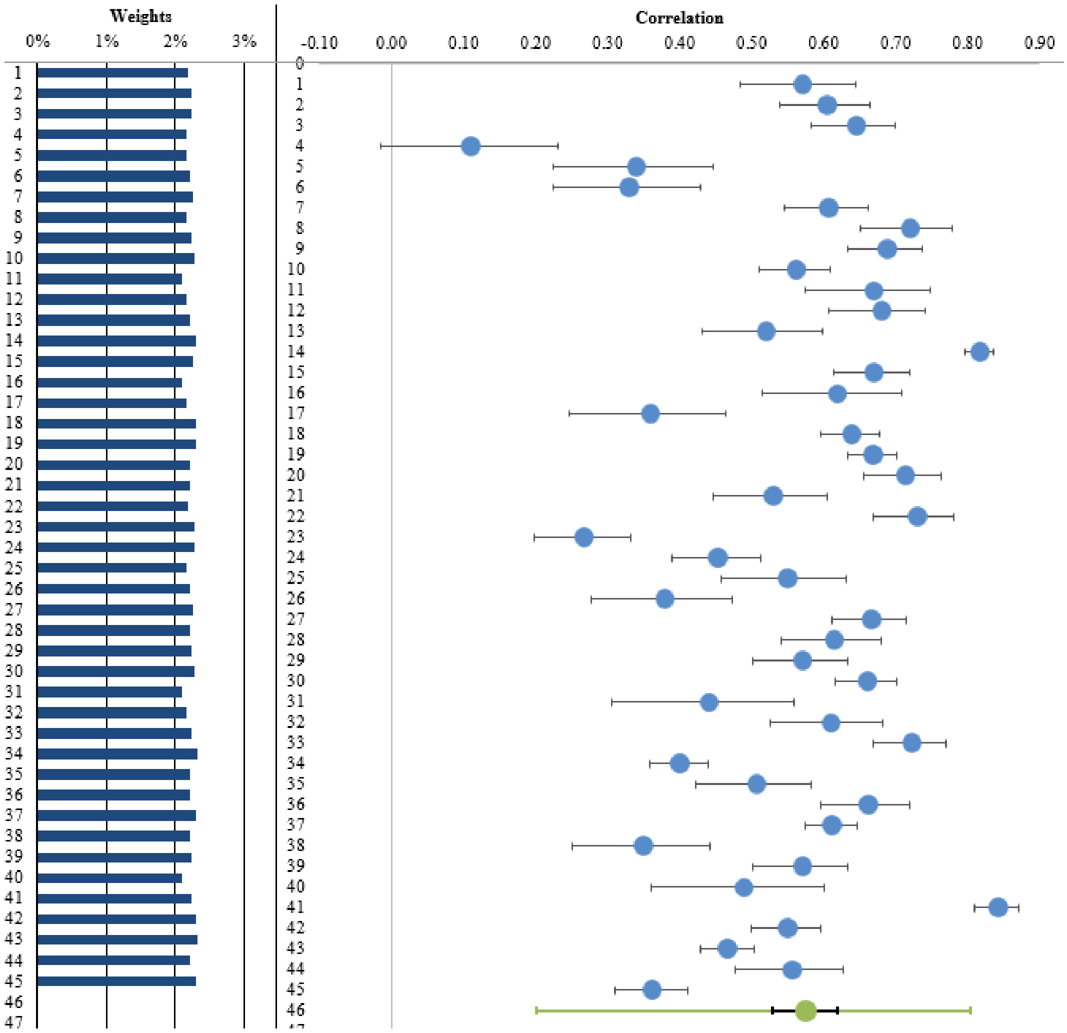

Figure 4. *Forest Plot for Studies' Correlations of all the Main Effects*

Analysis of Moderator Effects

Heterogeneity shows the extent to which effect sizes vary within a meta-analysis. From the result of the heterogeneity test, the antecedents and subsequent of delight all indicate statistical significance, with *p* values <.001. The yield study number of current meta-analysis is not large in quantity, and Cochran's Q is highly dependent on the size of the meta-analysis. Thus, I^2 is reported in addition to Cochran's Q. I^2 = 100% x (Q-df)/Q I^2 is not sensitive to changes in the number of studies in the analyses: when I^2 is larger than 75%, it shows substantial heterogeneity (Higgins et al., 2003). From the heterogeneity test, all the antecedents and all the subsequent are showing I^2 > 75%, which indicates that there should be shared variance among the relationships. Therefore, gender was tested as a moderator, and it was found that gender can moderate the relationships of surprise on delight (β= -.64, *p* =.039) and delight on loyalty (β= -.74, *p* =.013). Since gender was coded as percentage female participants in the sample, the finding indicates that female customers are at a higher level of need for surprise to achieve delight, and higher delight level is required to achieve loyalty. Based on the findings, H7c and H8c were supported, which confirms moderating effect of gender in the relationships between surprise and delight, and delight and loyalty respectively. However, there was no moderating effect of gender on the relationships between experiential antecedents and delight (H7a), positive emotion and delight (H7b), delight and behavioral intentions (H8a), and delight and satisfaction (H8b) (See Table 4).

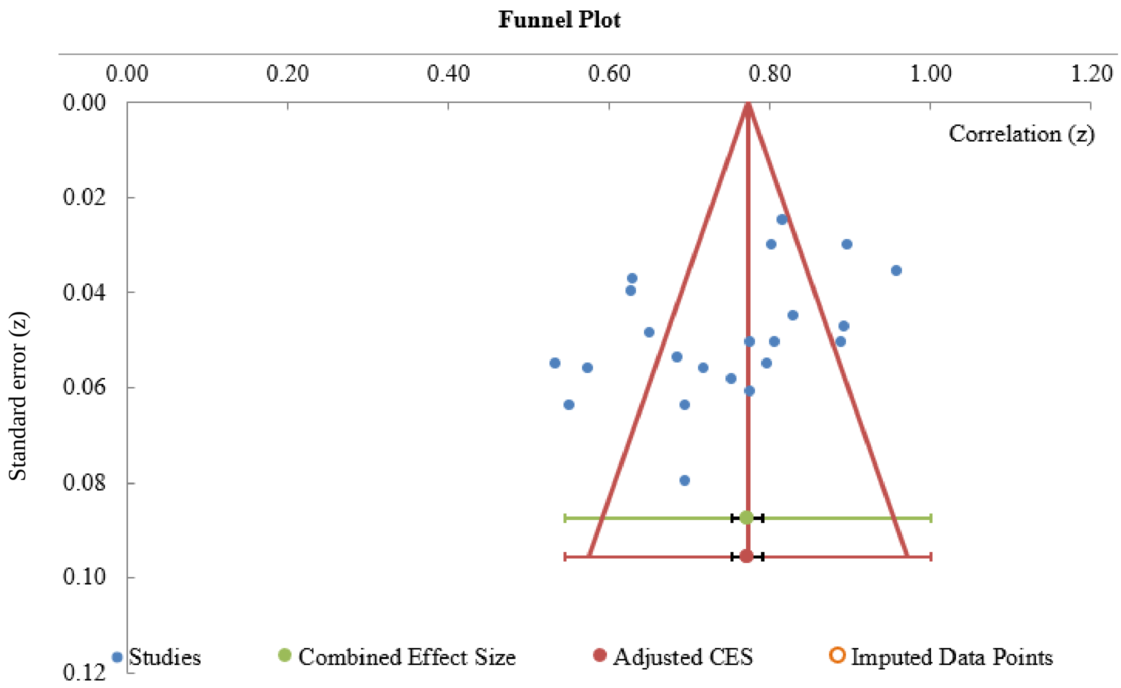

Figure 5. *Funnel Plot*

Table 4. *Gender as a Moderator*

Variables	*k*	*N*	*SE*	CI LL	CI UL	β	Z-value
Experiential	8	2306	0.09	-0.27	0.13	0.43	7.39
positive emotions	7	3172	0.19	-0.43	0.42	0.31	4.83
surprise	6	4790	0	-0.02	-0.01	-0.64	-9.31 *
Satisfaction	7	4673	0.06	-0.01	0.06	-0.45	-5.73
Behavioral intention	10	5651	0.03	-0.01	0.01	-0.27	-9.27
Loyalty	7	5426	0	-0.02	0	-0.74	-13.46 *

*Note: k = number of studies used from analysis; Sample size N = aggregated samples of the assessed studies; SE = the standard error; CI LL = 95% confidence interval lower bound; CI UL = 95% confidence interval upper bound; β = beta coefficients; * p-value < 0.001.*

Overall, the main effects of delight had a great impact on satisfaction, behavioral intention, and loyalty, while experiential, positive emotions, and surprise had a great impact on delight. The overall effect sizes of main effects and sample size demonstrate the significance of the relationships. In addition, the moderator effects indicated that gender could moderate the relationship of surprise and delight as well as delight and loyalty. Figure 6 depicts the overall results of the proposed model.

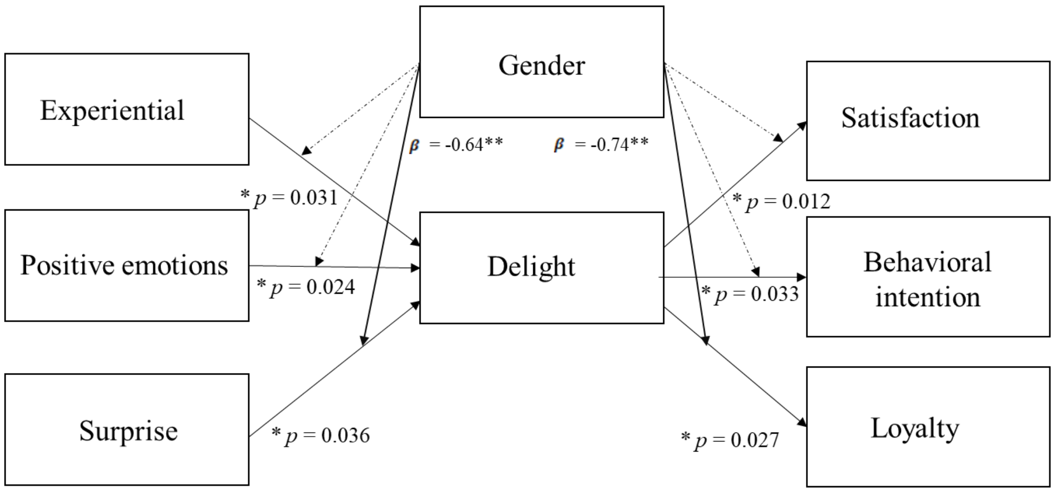

Figure 6. *Results of Proposed Model*

Note: Dotted line shows the unsupported relationships; * p < 0.05, **p < 0.01

DISCUSSION AND CONCLUSION

This study examined antecedents and subsequent of delight. Per the research questions proposed above, this study aimed at 1) examining the magnitude of relationships between delight and its antecedents, and 2) whether gender was a moderator of the antecedents and subsequent of delight. Informed by the literature search, this study proposed experiential antecedents (i.e., service quality, physical environment, and authenticity) as well as positive emotions and surprise as antecedents of delight, while behavioral intentions, satisfaction, and loyalty were assessed as subsequent of delight. Moreover, gender was proposed to moderate the relationships between delight and its antecedents on one hand, and delight and its subsequent on the other. Relationships between those constructs were statistically tested through analysis of main effects, and moderator effects, and hypotheses 1 to 6 were supported. Among the supported hypotheses, the finding suggested that delight has a strong association with positive emotions, surprise, and experiential factors. In addition, satisfaction was found to be an outcome of delight, given that adopted scales from the literature considered delight as an affective factor conducive to satisfaction.

Regarding the moderator effects, gender was found to moderate the relationships between surprise and delight, delight and loyalty; but not to experiential antecedents and delight, positive emotion and delight, delight and behavioral intentions, delight and satisfaction. Gender as a key variable in moderating consumer evaluation has been discussed (Holbrook, 1986), and gender is used as basic market segmentation (Darley & Smith, 1995). While some argued that gender differences are not significant, (e.g., O'Keefe, 2015), some literature suggested that gender differences vary in many ways. For example, men often make decisions based on judgment on selected information, whereas women could be perceived as "comprehensive processors", mainly assimilating all available information to make a decision (Kim et al., 2007). Others implied that women tend to respond more to nonverbal stimuli and are more sensitive to subjective and intuitive cues (Haas, 1979). Therefore, the debate on gender as a moderating role indicated the complexity of gender influences. In this study, only two relationships were tested significantly moderated by gender: surprise and delight, and delight and loyalty.

Furthermore, the study provided future research directions through the analysis of previous research efforts and the significant relationships therein. The construct of delight has garnered much attention in the fields of hospitality and tourism. The examinations on delight have included the analysis of different fields, including tourism experience, theme park, customer service, hospitality consultant, retail, restaurants, employee delight, and information technology. The majority of articles adopted scales from the studies of Finn (2005) study and Oliver et al. (1997). This study clarified the definition of delight and how delight is different from other related constructs, such as satisfaction. In addition, 22 published articles were synthetized with the goal of drawing informative conclusions that may not be pulled when evaluating the studies individually. Results from testing the 12 hypotheses proposed provided strong support for the statistically significant relationships among delight's different dimensions. Consequently, the definitive proposition incorporates delight's important role in achieving satisfaction, behavioral intentions, and loyalty.

Theoretical and Practical Implications

The current meta-analysis contributes to the related literature on delight in three different ways. First, an in-depth examination of the construct of delight is provided, along with an analysis of its antecedents and subsequent from different dimensions. Since the number of studies was limited, the links among the antecedents and subsequent delights were not able to get tested for integrating the multiple dimensions. Based on prior related research, the current study proposed and confirmed the framework of antecedents and subsequent of delight, which is more comprehensive and representative of the different dimensions. Second, while the relationships tested showed the significance, a meta-analysis was able to reveal how the relationships vary. Out of all the relationships, it was determined which factors had the largest impact based on the combined effect size and sample numbers. The results of this study deserve to be considered, especially given that existing literature has largely focused on loyalty and behavioral intentions, based on the number of direct effects and sample sizes. This study also demonstrated the potential of delight for serving as a strong antecedent of behavioral intention and loyalty.

The present meta-analysis also contributes to the existing literature on delight in its relationship with satisfaction by assessing satisfaction as a subsequent of delight. The inconsistent findings among the various relationships between those two constructs has been poorly conceptualized (Ma et al., 2017). This can be attributed to the fact that delight has mostly been examined from a business standpoint, neglecting in the process consumers' goals (Füller & Matzler, 2008). Previous research has assessed the uniqueness of delight (as compared to satisfaction) as a construct, especially due to the fact that it brings about emotional responses involving surprise and joy (Plutchik, 2003; Wu et al. 2015). In this sense, delight can be perceived as an emotion or affect response (Kim et al., 2015). Previous research also assessed affective responses as antecedents of satisfaction (Arnold et al., 2005; Finn, 2005; Oliver et al., 1997; Schümmer, 2007), which imply that satisfaction is an antecedent of delight. This study adds to the related literature through establishing satisfaction as a subsequent of delight. Future studies will need to further analyze the link between satisfaction and delight; notwithstanding, in the case of a meta-analysis, the number of direct effects may be limited by the number of studies involved.

Despite the positive, significant effect of delight and satisfaction, the combined effect size, and the number of direct effects were found relatively lower than behavioral intention. This shows that although the previous literature drew a link between delight and satisfaction, the behavioral intention is the main focus, such as revisit, purchase, and recommendation intentions (Bufquin et al., 2018; Kageyama, 2016; Ma et al., 2017; Robinson, 2012). As it has been previously mentioned, delight can be viewed as an emotion (Kim et al., 2015), which incorporates in its process the goals of consumers in their experiences (Füller & Matzler, 2008). This is consistent with Fredrickson (2001, 2004) who assessed that behavioral intentions result from emotions in line with the success of those goals' realization. In the same vein, Jiang (2020) explains that customers may spread positive word-of-mouth as a response to hedonic emotion, and with the desire of re-living it through sharing. This meta-analysis also found delight to be an antecedent of loyalty. This relationship is consistent with those in consumer behavior literature (e.g., Barnes et al., 2010; Chua et al., 2017; Kim et al., 2015; Ma et al., 2017).

The findings also provided evidence of gender playing an important role among two relationships, which are between surprise and delight and delight and loyalty. In other words, females and males react differently when surprise is involved, and it leads to a different degree of loyalty. Females seem to be more sensitive to surprise and show a higher level of loyalty when they feel delighted. Consistent with prior research, this study assessed that surprise plays a key role in evoking delight (Bartl et al., 2013; Torres et al., 2020), confirming its antecedence to delight.

This finding is similar to Crotts and Magnini's (2011) who found that surprise is a crucial factor in eliciting delight. It is important to nuance however that in service industry, the quality of the experience matters much more than the sole need to create surprise. In fact, a body of research considered that consumers do not need to be 'consistently' surprised to feel delighted (Chua et al., 2017; Kumar et al, 2001; Loureiro, 2014; Ma et al., 2013, Torres & Kline, 2006, 2013), but also that delight may be experienced based solely on joy (Barnes et al., 2010; St-James & Taylor, 2004).

In terms of practical implications, all the antecedents and subsequent variables found in the study were recognized critical for achieving competitiveness. Thus, our findings carry managerial implications for the tourism and hospitality industry, from both employees and customers' stand of point. First of all, a positive experience and positive emotions can benefit the businesses and lead to higher satisfaction, loyalty, and intention to revisit, recommend, or repurchase. Employees' delight is as important as customers'; thus, they are the experience creators for customers (Kim et al., 2016). Second, female and male process certain emotions differently (Brebner, 2003). From a strategic perspective, it is much important for managers, employees, and hospitality marketers to recognize the differences and promote differently and induce the desired attitude in target markets. Third, emotional experiences and feelings customers and employees deserve managerial attention. Marketers should reinforce multiple dimensions in their promotional efforts. Hospitality workers should make an effort to create delight, surprise, and other positive emotions beyond satisfaction so that businesses can benefit from behavioral intention and loyalty. Nordhorn et al. (2018) explained that consumers' response to good and quality service is shaped in emotional terms as at that point, intangible aspects of the experience become as much important as tangible attributes in stimulating emotional reactions (Nordhorn et al., 2018; Rivera et al. 2019). As such, companies should focus on eliciting delight in consumers by providing services generating positive emotions (arousal and positive affect).

Limitations and Future Research Directions

This study adopted a meta-analysis analytical tool in exploring the relationships with delight. As for most research studies, the current examination is not exempt of limitations. First, not all previous studies related to delight could be included in the sample, due to the language barriers, availability of online resources, and data availability presented in the articles. A second limitation pertains to an inherent aspect of meta-analysis, which is the inability to capture qualitative studies and failure to include all characteristics of the samples, sometimes resulting in a loss of contextual information (Field, 2003). Delight, as an emotional construct, has been studied by qualitative researchers, however, the findings of qualitative studies are not able to contribute as data for meta-analysis methods. As a consequence, this study failed to report all the details and variation in samples, such as demographic information other than gender. Since individual studies report different demographic aspects of sample by using different categories, the total sample demographic is unobtainable. The third limitation lies in meta-analyses' high reliance on data reported within published studies and for which significant relationships exist. Thus, the findings of this study is a reinforce and a consolidate result from a set of study. The unpublished studies were relatively limited. Fourth, the current study provides a conceptualized and operationalized construct of delight.

In order to enhance the validity and reliability of the findings, future studies may consider multiple-item scales when measuring delight. In addition, future studies should distinguish satisfaction and delight in definition, conception, and composition. Relationship between satisfaction and delight should be studied further and deeper, it should not be limited in one scale. More scale development studies are encouraged to contribute on measuring delight.

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THE RELATIONSHIP BETWEEN LEISURE SATISFACTION AND LIFE SATISFACTION: A META-ANALYSIS STUDY OF YEARS 1999-2019

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ABSTRACT

Studies which focused on relations between the perception of leisure and well-being concepts are observed frequently in literature. Studies that measure the relationship between "life satisfaction" and "leisure satisfaction" concepts are prominent within these studies. The aim of this study was to get a cumulative result by integrating the findings of the studies examining the same concepts through meta-analysis. For this purpose, academic studies published between 1999 and 2019 were screened and included from several databases. As a result, 21 studies were found fulfilling the inclusion criterion, set by the researchers, in order to retrieve studies presenting a correlation coefficient between variables "life satisfaction" and "leisure satisfaction". This search resulted with a sample size of 83,632. The overall sample consisted of women, disabled individuals, residents of a defined district, university students, immigrants, and adults from various countries. Studies were analyzed by the free trial version of Comprehensive Meta-Analysis Software 2.0 (CMA 2.0). Findings indicated that leisure satisfaction and life satisfaction showed a positive relationship with a medium level of effect size. Future researchers who will address these concepts in their studies would benefit from conducting moderating analyses to explore how concepts in issue vary depending on the characteristics of the study, such as the sample characteristics.

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INTRODUCTION

After being accepted as a domain of life (Sirgy et al., 2006), the number of studies focusing on the concept of leisure, its benefits and the positive feelings perceived by individuals during participation increased in the literature (Agyar, 2014). When leisure was compared with the daily activities that an individual performs, such as working, sleeping, or cleaning, it was found out to provide more opportunities to increase the life satisfaction. The important point here is that the leisure activity should be chosen freely with an intrinsic motivation (Broughton & Beggs, 2007; Edginton et al., 1998). Studies on leisure and leisure satisfaction were applied to different samples, such as elderly people (Brown & Frankel, 1993); caregivers (Chattillion et al., 2012), adolescents (Chen et al., 2013), university students (Elkins et al., 2007), online game players (Hou et al., 2007), married couples (Johnson et al., 2006), hikers (Kyle et al., 2003), immigrants (Walker et al., 2011), people with psychiatric disabilities (Lloyd et al., 2001), and dancers (Ayyildiz & Gokyürek, 2016). Additionally, studies related with leisure satisfaction were implemented in different settings and countries, such as Australia (Hribernick & Mussap, 2010), Canada (Chun et al., 2012), European Union Countries (Gimenez-Nadal & Sevilla-Sanz, 2011), Taiwan (Chen et al., 2012), China, Japan, and South Korea (Liang et al., 2013). In the related literature, life satisfaction was one of the positive outcomes that leisure satisfaction was often correlated with. Life satisfaction is defined as an evaluative judgement of one’s life (Pavot & Diener, 2008), and this concept was related to leisure participation and its positive outcomes. Since leisure satisfaction is one of the most emphasized positive outcomes of participating in leisure activities in literature, the focus of the current study was on the relationship between leisure satisfaction and life satisfaction.

Purpose of The Study

This study takes advantage of meta-analysis by combining multiple studies that shows correlation between these concepts to provide a broader perspective for research in this field. Outcomes were anticipated to contribute to the better understanding of the effect size of the correlation between leisure satisfaction and life satisfaction, and also to provide valuable insights for both academics and practitioners in leisure field.

LITERATURE REVIEW

Beard and Ragheb (1980, pp. 22) stated that in many fields of life, such as job, family or retirement, research was conducted on the evaluation of satisfaction by individuals. To gain more insight on how leisure impacts an individual's life, they suggested a scale to measure "leisure satisfaction" which they defined as positive perceptions of what individuals feel as a result of participating in leisure activities. Soon the concept was embraced by researchers in leisure sciences and was studied many times in different countries in a variety of samples. Employees from Australia were subjects of a study where their leisure satisfaction was compared according to occupations and gender. Males showed higher levels of leisure satisfaction, while occupational groups did not show any significant differences (Kabanof, 1982). Employees were examined in a study inquiring the relationship between job satisfaction, leisure satisfaction and psychological health (Pearson, 1998). Elderly individuals from Canada were inquired about the relationship of leisure opportunities, constraints, motivation, satisfaction, and leisure participation, and it was found that motivation was a predictor of leisure satisfaction, which affected leisure participation (Losier et al., 1993). In a sample of individuals over 65 years old; age, living alone, and health status were found to affect leisure satisfaction (Broughton & Beggs, 2007). When leisure gardening was considered, the participants with a more serious participation level to the activity indicated more satisfaction than the other ones and expressed that gardening contributed to their life satisfaction (Cheng et al., 2010). People with disabilities also constituted the sample for studies concerning leisure satisfaction. One of the studies focused on people with mental disabilities who registered to rehabilitation services in Australia. The results of the study indicated that leisure satisfaction was changing according to the disability and individuals with less social contact had lower leisure satisfaction (Lloyd et al., 2001). In a study applied to disabled employees, leisure satisfaction and leisure constraints were inquired, and differences were obtained according to gender and frequency of leisure participation (Celik et al., 2014). Dementia caregivers were also examined and the results revealed that leisure satisfaction may protect caregivers from a kind of cardiovascular risk (Chattillion et al., 2012). Besides caregivers, patients were also subjects of studies related to leisure satisfaction (Chiang et al., 2011). Young offenders in an inpatient psychiatric hospital were subjects of a study related to their leisure behavior modeling and relationships showed significance between leisure motivation and satisfaction scales, while perceived freedom showed negative correlations (Munchua et al., 2003). The satisfaction derived from family recreation and family life were also examined. Agate et al. (2009) presented that, positive relationships existed between satisfaction in family leisure and family life. Similarly, positive correlations were found out in a study conducted in Turkey (Aslan, 2009). In addition to studies handling family leisure, a sample of fathers and their adolescent children in United States were investigated according to the effect of father involvement in family leisure and functioning and showed significant results (Buswell et al., 2012). Besides leisure satisfaction concerning families, recreation among couples was also studied. The relationship of leisure participation and leisure satisfaction to marital satisfaction was inquired, and satisfaction with couple leisure was found to be a significant predictor of marital satisfaction (Johnson et al., 2006). Leisure attitude, satisfaction, and perceived freedom were explored among dyads in families and significant correlations were obtained (Siegenthaler & O'Dell, 2000). In a study by Chen et al. (2012), adolescents from Taiwan were the target population and the impact of expectation and experience on service satisfaction was examined. It was found out that adolescents' service quality expectations directly affected their leisure satisfaction. In another study handling adolescents, the concepts of motivation, involvement, and satisfaction in leisure were examined. In the study it was suggested that involvement in leisure had impact on leisure satisfaction, so adolescents should learn to be involved in leisure activities and get family support (Chen et al., 2013). University students are another group whose leisure behavior was frequently studied. Undergraduate students from USA were subjects of a research inquiring the academic stress, anxiety, time management, and leisure satisfaction. According to the results, anxiety, time management, and leisure satisfaction were all related with academic stress (Misra & McKean, 2000). When it comes to leisure satisfaction, residents from different parts of the world were also examined. Samples taken from China, Japan, and North Korea were examined according to the relationship between their leisure satisfaction and perceived life quality. As a result, in South Korea, a positive correlation was detected between the two variables (Liang et al., 2013). In a study applied to Taiwan residents, the relationship between personality traits and leisure satisfaction was measured and extraversion was found to be an enhancer while neuroticism was an inhibitor of leisure satisfaction (Lu & Kao, 2009). A study on German residents examined the retirement period and detected differences according to demographic traits and participation duration in leisure activities (Pinquart & Schindler, 2009).

In order to show positive psychological effects of leisure, subjective well-being, psychological well-being, and life satisfaction were investigated in some studies. Among these, life satisfaction is a concept which was defined as one of the components of subjective well-being and was claimed to represent an overall evaluation of a person's quality of life (Pavot & Diener 2008). According to Diener et al. (1999), subjective well-being is a construct consisting of emotional responses such as positive and negative effects, domain satisfactions and global judgements of life satisfaction. The domain satisfactions mentioned here were family, work, health, leisure, the person him/herself, the group of the individual, and financial situation.

The ongoing research concerning subjective well-being indicated that life satisfaction functioned as a separate component from positive and negative affect (Sirgy et al., 2006). As a separate concept, life satisfaction was explained by researchers theoretically with top-down and bottom-up approaches, where the first explains the concept by traits and the second by satisfaction in multiple domains (Erdogan et al., 2012). Lachman et al. (2018) conducted four survey studies and showed the positive affect of life satisfaction variables mentioned in bottom-up approach. In this study, personality traits mentioned in top-down approach were also effective. The concept of life satisfaction was related with different variables such as demographics (Burnay et al., 2005; Fugl-Meyer et al., 2002; Georgellis et al., 2009). Besides demographic variables, some studies related life satisfaction with negative life events (Jovanovic, 2019; Luhmann et al., 2012). In other studies, life satisfaction was related with traits such as personality traits (Ali, 2019; Gale et al., 2013; Jovanovic, 2019; Wimmelmann et al., 2020). Meantime, the studies following bottom-up approach related life satisfaction with the variables constituting satisfaction domains, such as work (Coad & Binder, 2014; Rode, 2004), family (Schnettler et al., 2020), health (Wang et al., 2020), economic status (Camfield & Esposito, 2014), and leisure (Lachman et al., 2018).

With the introduction of domain satisfaction concept to the bottom-up approach, life satisfaction, by its nature, was related with the concept of leisure satisfaction as it is considered as one of its domains (Sirgy et al., 2006). Even in a study of four surveys conducted by Lachman et al. (2018), leisure satisfaction was found to be the domain that indicated the most considerable effect on life satisfaction among European individuals. The relationship of life satisfaction and leisure satisfaction was studied in different samples such as recreation participants in parks (Beşikçi et al., 2019), young people participating in camps (Ercan, 2016), and university students (Özmaden, 2019). In order to collect the analysis results from studies that questioned the relationship between two concepts as “life satisfaction” and “leisure satisfaction”, and integrate the findings for a systematic examination, the method of meta-analysis was used. The aim of the current study was to provide an overall correlation coefficient for the relationship of these concepts.

METHODOLOGY

In this research, PRISMA guidelines were followed for reporting the results (Moher et al., 2009). This study is a meta-analysis of research published between 1999-2019, reporting the correlation between leisure satisfaction and life satisfaction. Meta-analysis is used for integrating the results of similar studies and providing an estimate of effect size (Lopez-Archeiz et al., 2018; Petrie et al., 2003). Meta-analysis combines results of several studies with their statistical analyses and reinterprets their findings (Dempfle, 2006). Glass (1976, pp. 3) defined meta-analysis as the “analysis of analyses” and this analysis enables researcher to achieve a common judgement after the integration of results from several independent studies belonging to a certain field of research. The aim of conducting a meta-analysis is to combine a huge amount of quantitative findings by considering effect-sizes and to systematically analyze these findings in order to provide meaningful generalizations (Cohen et al., 2007). Effect size was developed by Cohen as a fundamental aspect of meta-analysis and defined as “prevalence of a fact in a population” (Gedik & Üstüner, 2017). Additionally, effect size is a standardized measurement of the observed effect (Field & Gillet, 2010). It is of crucial importance that the statistical methods used in studies are transformed into common measures. Meta-analysis studies focus on integrating results from different types of research (Topçu, 2009). The correlation coefficient (r) calculated between two continuous variables is an effect size index (Borenstein et al., 2013; Gedik & Üstüner, 2017). In this study the six steps defined by Field and Gillett (2010) for a typical meta-analysis study are followed. After the formulation of a research question the following steps are taken in meta-analysis: (1) reviewing the literature, (2) defining and applying inclusion and exclusion criteria, (3) calculating effect sizes for every included study, (4) conducting meta-analysis, (5) publication bias and moderator analyses, and finally (6) reporting the results. In this study, a trial version of CMA 2.0 package was used for data analysis.

Search Strategy and Data Collection

In meta-analysis studies, the screening of published works and unpublished dissertations handling the related research question provides researcher with opportunity to use the results obtained from a bigger sample and see them from a broader perspective (Bakioğlu & Göktaş, 2018; Field & Gillett, 2010). In order to retrieve the research data, Springer, Wiley Online Library, EBSCO Host, Science Direct, Taylor & Francis, Emerald, Jstor, Proquest, Scopus, Ulakbim, Web of Science, and Sobiad databases were examined for “leisure satisfaction” and “life satisfaction” in title and subject terms and “correlation” in whole text. Additionally, Google Scholar was screened for “leisure satisfaction” and “life satisfaction” terms. The data collection period was in February 2019.

Data Coding

A form was used in order to code the data. On this form, year of the research, author or authors of the study, country, language, number of participants, correlation coefficients, characteristics of the sample, ages of participants, study method, and journal of publication were coded. The reliability check was done by controlling the coding of two researchers by using intercoder reliability formula (see Equation 1) (Miles & Huberman, 1994:64), the correspondence between the coders was determined as 100%.

$$\frac{\text{number of agreements}}{(\text{total number of agreements } + \text{ disagreements})} x100$$

Equation 1. *Intercoder reliability formula*

Risk of Bias Assessment

In meta-analysis applications, publication bias is a potential problem occurring from the unification of various problems (Çarkungöz & Ediz, 2009). The main reason for this bias is explained by the situation that journals showed a tendency to accept studies mostly having significant results and, on the contrary, to reject studies with non-significant results (Üstün & Eryılmaz, 2014). Publication bias affects the mean effect size and causes an overestimated effect size (Borenstein et al., 2013). In this study, funnel plots, Begg and Mazumdar rank correlation and Rosenthal’s fail-safe N were utilized to inquire about publication bias. The plotted effect sizes are displayed against the sample size, standard error, conditional variance, or some other measure in the funnel plot (Field & Gillet, 2010). Results from small studies are expected scatter widely at the bottom and the spread will narrow among larger studies. With the existence of no bias, the plot is resembling an inverted symmetrical funnel (Sterne & Harbord, 2004). Meanwhile Rosenthal's fail-safe N (FSN) shows how many new studies we should add necessarily to make the effect invalid (Üstün & Eryılmaz, 2004) or in other words, make the result of a significant meta-analysis result insignificant. This is a method for estimating the number of unpublished studies that are necessary to transform a significant population effect size estimate into a non-significant one (Field & Gillet, 2010). Begg and Mazumdar rank correlation method can be listed as another method that can be used to calculate the risk of publication bias as a complementary method to the funnel plots (Begg & Mazumdar, 1994; Guzeller & Celiker, 2020). In this method, after calculating Kendall tau-b coefficient if there is no publication bias, coefficient approximates to 1 and two-tailed p value becomes >0.05 (Celiker et al., 2019).

Inclusion Criteria

The studies selected for meta-analysis were as follows:

- Studies in English and Turkish languages
- Full-text studies
- Studies providing n (sample size) and r (correlation coefficient)
- Studies published between 1999-2019

945 studies obtained from literature research were examined according to inclusion criteria and among them 21 studies met the criteria. The sample sizes and correlation coefficients were obtained from the tables given in the articles.

Exclusion Criteria

At the first step of literature search, 915 articles, 20 dissertations, 1 conference paper and 9 books were obtained. Among these studies, 51 duplicate publications were excluded from the analysis and 894 studies were reached. Among these 894 studies, the ones that were not related with the topics were removed and 225 studies were obtained. After the exclusion of 133 studies that did not have full text articles, the remaining 92 publications were checked if they reported a correlation coefficient between "leisure satisfaction" and "life satisfaction". 71 more studies were excluded according to presence of a correlation report. A total of 21 studies were included in the meta-analysis (Figure 1). Table 1 shows the characteristics of these 21 studies.

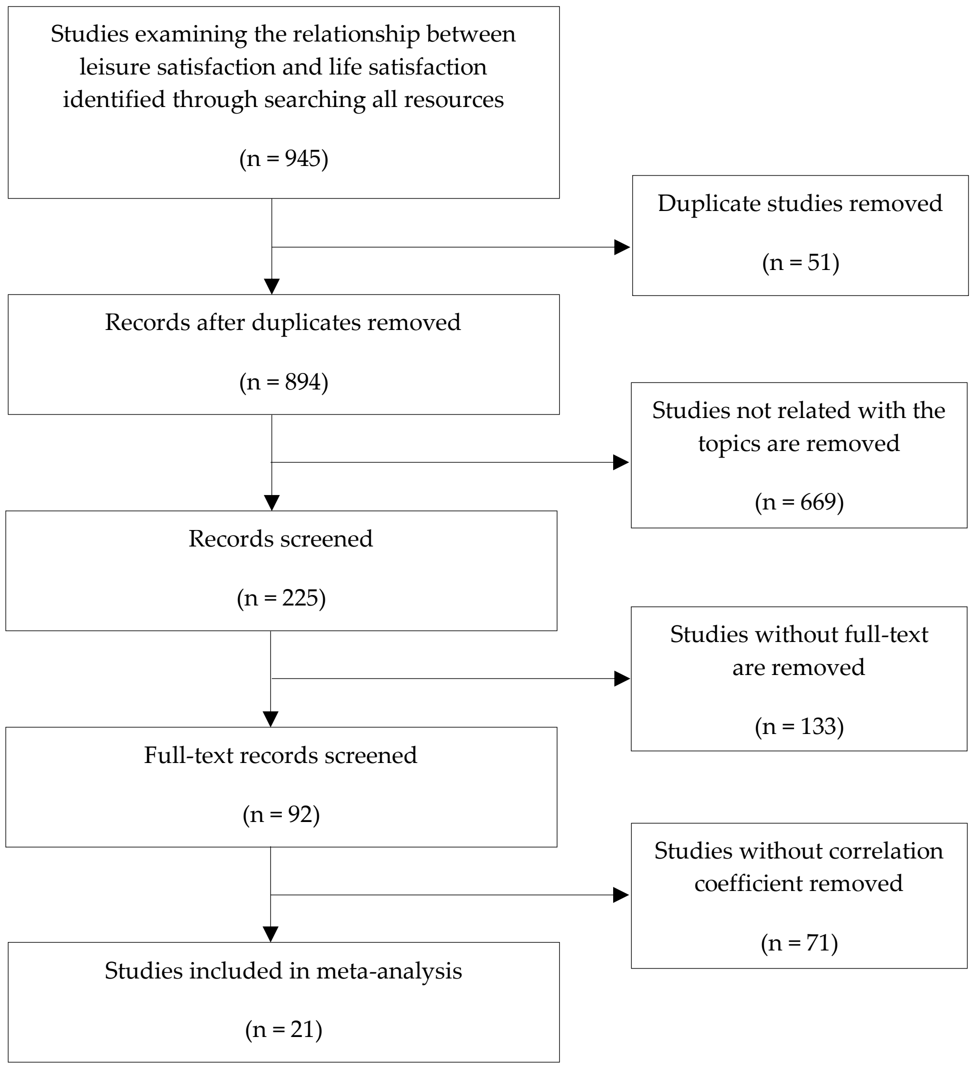

Figure 1. *Inclusion and Exclusion Process Data Flow Diagram According to Prisma Method*
[Source: Moher, D., Liberati, A., Tetzlaff, J., Altman. D. G., The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoSMed, 6*(6), e1000097.]

Calculation of Bias in the Studies

In this study, publication bias was checked by Begg and Mazumdar rank correlation, Rosenthal's fail-safe N and funnel plots.

Table 1. *Characteristics of Studies Included in Meta-Analysis*

No	1
Year, Author	2014, Agyar
Country	Turkey
Language, Type of Study	English, Article
Sample size (N)	1,437
Correlation Coefficient (r)	0.405
Characteristics of Sample, Age of Sample	Women, 18-65
Journal of Publication	Social Indicators Research
No	2
Year, Author	2016b, Kim, Schilling, Kim, & Han
Country	South Korea
Language, Type of Study	English, Article
Sample size (N)	182
Correlation Coefficient (r)	0.635
Characteristics of Sample, Age of Sample	Adults with intellectual disability, 20-69
Journal of Publication	Journal of Mental Health Research in Intellectual Disabilities
No	3
Year, Author	2005, Michalos
Country	Canada
Language, Type of Study	English, Article
Sample size (N)	315
Correlation Coefficient (r)	0.43
Journal of Publication	Social Indicators Research
No	4
Year, Author	2016a, Kim, Roh, Kim, & Irwin
Country	South Korea
Language, Type of Study	English, Article
Sample size (N)	189
Correlation Coefficient (r)	0.631
Characteristics of Sample, Age of Sample	People with intellectual disability, 10-79
Journal of Publication	Therapeutic Recreation Journal
No	5
Year, Author	2010, Hribernik & Mussap
Country	Australia
Language, Type of Study	English, Article (research note)
Sample size (N)	487
Correlation Coefficient (r)	0.61
Characteristics of Sample, Age of Sample	Adults, not stated
Journal of Publication	Annals of Leisure Research
No	6
Year, Author	2013, Yerlisu Lapa
Country	Turkey
Language, Type of Study	English, Article
Sample size (N)	397
Correlation Coefficient (r)	0.479
Characteristics of Sample, Age of Sample	Adults, not stated
Journal of Publication	Procedia - Social and Behavioral Sciences
No	7
Year, Author	2013, Shin & You
Country	South Korea
Language, Type of Study	English, Article
Sample size (N)	3,188
Correlation Coefficient (r)	0.20
Characteristics of Sample, Age of Sample	High School students, not stated
Journal of Publication	Journal of Pacific Rim Psychology

No	8
Year, Author	2008, Gökçe
Country	Turkey
Language, Type of Study	Turkish, Thesis
Sample size (N)	454
Correlation Coefficient (r)	0.055
Characteristics of Sample, Age of Sample	Residents, 15-55
Journal of Publication	
No	9
Year, Author	2004, Lucas
Country	Germany
Language, Type of Study	English, Conference Paper
Sample size (N)	2,451
Correlation Coefficient (r)	0.53
Characteristics of Sample, Age of Sample	Residents, not stated
Journal of Publication	
No	10
Year, Author	2007, Kovacs
Country	USA
Language, Type of Study	English, Thesis
Sample size (N)	420
Correlation Coefficient (r)	0.44
Characteristics of Sample, Age of Sample	College Students, 17-62
Journal of Publication	
No	11
Year, Author	2018, Walker & Kono
Country	Canada
Language, Type of Study	English, Article
Sample size (N)	395
Correlation Coefficient (r)	0.60
Characteristics of Sample, Age of Sample	Employees, 18+
Journal of Publication	The Journal of Positive Psychology
No	12
Year, Author	2017, Walker & Ito
Country	Canada
Language, Type of Study	English, Article
Sample size (N)	115
Correlation Coefficient (r)	0.22
Characteristics of Sample, Age of Sample	Chinese-Canadian immigrants, not stated
Journal of Publication	Leisure Sciences
No	13
Year, Author	2017, Wollbring
Country	Germany
Language, Type of Study	English, Article
Sample size (N)	13,550
Correlation Coefficient (r)	0.289
Characteristics of Sample, Age of Sample	Residents, 18 +
Journal of Publication	Journal of Happiness Studies
No	14
Year, Author	2012, Bann et al.
Country	USA
Language, Type of Study	English, Article
Sample size (N)	5,399
Correlation Coefficient (r)	0.63
Characteristics of Sample, Age of Sample	Residents, 18+
Journal of Publication	Quality of Life Research

No	15
Year, Author	2011, Bellani & D'Ambrosio
Country	9 EU Countries
Language, Type of Study	English, Article
Sample size (N)	49,273
Correlation Coefficient (r)	0.346
Characteristics of Sample, Age of Sample	Residents, not stated
Journal of Publication	Social Indicators Research
No	16
Year, Author	2018, Chang, Lin, & Song
Country	China
Language, Type of Study	English, Article
Sample size (N)	663
Correlation Coefficient (r)	0.395
Characteristics of Sample, Age of Sample	Adults (Residents), 40-65
Journal of Publication	Applied Research Quality of Life
No	17
Year, Author	2010, Cheng, Patterson, Packer, & Pegg
Country	Australia
Language, Type of Study	English, Article
Sample size (N)	433
Correlation Coefficient (r)	0.641
Characteristics of Sample, Age of Sample	Adults (Residents), 55-84
Journal of Publication	Annals of Leisure Research
No	18
Year, Author	2016, Chick et al.
Country	Taiwan
Language, Type of Study	English Article
Sample size (N)	1,766
Correlation Coefficient (r)	0.728
Characteristics of Sample, Age of Sample	Adults,18-59
Journal of Publication	Leisure Sciences
No	19
Year, Author	2012, Gandelman, Piani, & Peree
Country	Uruguay
Language, Type of Study	English, Article
Sample size (N)	1,437
Correlation Coefficient (r)	0.154
Characteristics of Sample, Age of Sample	Adults (Residents), 18+
Journal of Publication	Journal of Happiness Studies
No	20
Year, Author	2014, Grund & Fries
Country	Germany
Language, Type of Study	English
Sample size (N)	253
Correlation Coefficient (r)	0.42
Characteristics of Sample, Age of Sample	Students, not stated
Journal of Publication	Learning and Instruction
No	21
Year, Author	2004, Hawkins, Foose, & Binkley
Country	Australia and USA
Language, Type of Study	English, Article
Sample size (N)	828
Correlation Coefficient (r)	0.521
Characteristics of Sample, Age of Sample	Adults, 50-90
Journal of Publication	World Leisure Journal

RESULTS

Meta-Analysis Results

According to Table 2, the effect size level of 21 correlation reporting studies was r=0.463. The effect size level can be accepted as medium according to Cohen's effect size classification. As a result, the obtained effect size indicated that the two variables: life satisfaction and leisure satisfaction affected each other positively.

Table 2. *Findings of Meta-Analysis Results for the Correlation Between Life Satisfaction and Leisure Satisfaction*

Number of studies	Total sample size	r	95% CI	p	I^2
21	83632	0.463	0.394; 0.526	0.00	98.95

Study Name	Statistics for each study					Correlation and 95%CI
	Correlation	Lower Limit	Upper limit	Z-Value	p-Value	
Ağyar (2014)	0,405	0,361	0,447	16,269	0,000	
Kim et all.(2016)	0,635	0,539	0,714	10,031	0,000	
Michalos (2005)	0,430	0,335	0,516	8,123	0,000	
Kim,Roh et all.(2016)	0,631	0,537	0,710	10,134	0,000	
Hribernick&Mussap(2010)	0,610	0,551	0,663	15,596	0,000	
Yerlisu Lapa(2013)	0,479	0,399	0,551	10,355	0,000	
Shin&You (2013)	0,200	0,166	0,233	11,441	0,000	
Gökçe(2008)	0,055	-0,037	0,146	1,169	0,242	
Lucas(2004)	0,530	0,501	0,558	29,199	0,000	
Kovacs(2007)	0,440	0,359	0,514	9,643	0,000	
Walker&Kono(2018)	0,600	0,533	0,660	13,724	0,000	
Walker&Ito(2017)	0,220	0,038	0,388	2,367	0,018	
Wolbring(2017)	0,289	0,273	0,304	34,624	0,000	
Bann et all.(2012)	0,630	0,614	0,646	54,463	0,000	
Bellani&D'Ambrosio(2011)	0,346	0,338	0,354	80,107	0,000	
Chang et all.(2018)	0,395	0,329	0,457	10,731	0,000	
Cheng et all.(2010)	0,641	0,582	0,693	15,757	0,000	
Chick et all.(2016)	0,728	0,705	0,749	38,816	0,000	
Gandelman et all.(2011)	0,154	0,103	0,204	5,878	0,000	
Grund&Fries(2014)	0,420	0,313	0,517	7,079	0,000	
Hawkins et al.(2004)	0,521	0,470	0,569	16,593	0,000	
	0,463	0,394	0,526	11,694	0,000	

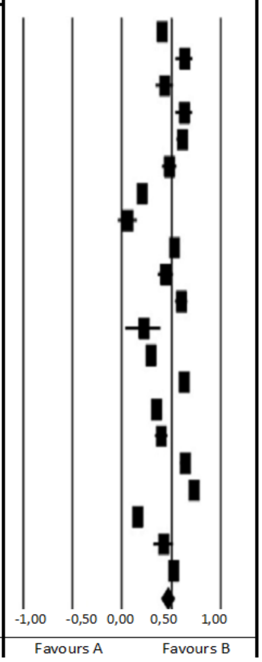

Figure 2. *Forest Plot for Meta-Analysis of Included Studies*

Effect Sizes

Figure 2 presents the Forest plot of meta-analysis results of 21 studies examining the correlation between leisure satisfaction and life satisfaction. It could be observed from the figure that the correlation values changed between 0.055 and 0.728. Calculations made under random effects model shows that the effect size of the 21 studies was 0.463 in the positive direction (95% CI: 0.394-0.526).

Publication Bias

Figure 3 shows Funnel Plot of the included studies. When the funnel plot was examined for testing publication bias, all the studies were found to be distributed at the middle or top parts of the plot, which indicated that publication bias was neglectable. In order to get more precise results, funnel plot analysis was supported by Begg and Mazumdar rank correlation methods and Rosenthal's fail-safe N.

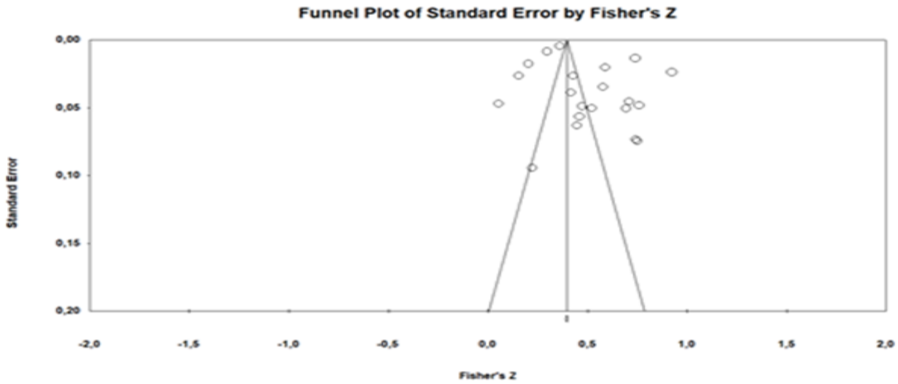

Figure 3. *Funnel Plot*

Table 3 presents Rosenthal's fail-safe n calculations for the 21 studies included in this study. According to the results, fail safe number derived from this meta-analysis study was 2,069. In order to change significant p value (p<0.001) to p>0.05 value obtained in this study or make the meta-analysis result insignificant, 2,069 studies with null effect size were needed. That means if we want to make the findings of these 21 studies invalid, 2,069 studies with opposite results were required. Another method used for publication bias was Begg and Mazumdar rank correlation test. According to the insignificant result of this test's Kendall's tau-b coefficient, the studies are proven to be free from publication bias (tau-b=0.191; p>.05).

Table 3. *Rosenthal's Fail-Safe N Calculations for the Included Studies*

Z-value for observed studies	87.75
P-value for observed studies	0.00
Alpha	0.05
Tails	2.000
Z for alpha	1.96
Number of observed studies	21
Fail-safe number	2069.00
(Number of missing studies that would bring p-value > alpha)	

Heterogeneity Tests

Testing heterogeneity is important in meta-analysis as it indicates the existing moderator variables, and it is one of the assumptions of random-effects model used in meta-analysis. In this study, Q statistic was used to test the null hypothesis that included studies sharing a common effect size (Borenstein et al., 2013; Üstün & Eryılmaz, 2014).

According to the results of heterogeneity tests presented in Table 4, Q value was 1,901.9. Chi-square value with alpha= 0.05 and degrees of freedom= 20 taken from Chi-square table was 31.410.

Table 4. *Heterogeneity Test Results*

Q	Df (Q)	P	I^2
1901.93	20	0.00	98.95

Q value (1,901.93) exceeded Chi-square value, (31.410), exhibiting that the distribution of effect size was heterogenous. The random effects model was used for the interpretation of the results because of the existence of heterogeneity. Another statistic used in measuring heterogeneity was I^2 test. According to Higgins et al. (2003), 25% showed low, 50% moderate, and 75% high level of heterogeneity, indicating that the I^2 result in this study showed high level of heterogeneity. Meta-analysis results are in Table 2.

DISCUSSION AND CONCLUSION

A meta-analysis that examines the relationship between leisure satisfaction and life satisfaction is featured in this study. The aim of the study was to consolidate the results of other studies that measures the correlation between leisure satisfaction and life satisfaction in different populations in order to achieve an overarching analysis with substantially more statistical power than any individual analysis solely based on one single study. By using meta-analysis, the results of the studies examining relationship between life satisfaction and leisure satisfaction were further interpreted, and referring to the results, a final judgement concerning this relationship was obtained. For this purpose, 21 studies which fulfilling the pre-defined criteria were examined. 18 of these studies were articles and 3 were theses. 20 of these studies were English and 1 was Turkish. These studies provided a sample size of 83,632. The samples in the included studies belonged to various groups such as women, disabled individuals, residents of a certain district, immigrants, and adults from different countries. Except 1 study, in all the other studies multivariate statistical methods were utilized. The study analysis was conducted by a trial version of CMA 2.0 meta-analysis package. Results of random effects model were interpreted due to the heterogeneity test values. The findings of the study indicated that leisure satisfaction and life satisfaction showed a positive relationship with a medium level of effect size. In literature, besides the analyzed 21 studies, there are other studies showing positive correlation results of life satisfaction with overall leisure satisfaction (Beşikçi et al.,2019) or with subscales of leisure satisfaction (Özmaden, 2019).

Research Limitations

Although this study brings an integrated point of view to the correlation of life satisfaction to leisure satisfaction and has the advantage of reinterpretation of various studies' results, there are some limitations mostly resulting from the criteria settled by the researchers. Thus, number of the studies was too limited to conduct moderator analyses. The analysis included only studies of the last 20 years. Language limitations and accessibility to full text were the other causes of the study's limitations. Finally, studies published after the data collection period of this study were not included in meta-analysis.

Recommendations

Recommendations are presented here for future research. In order to increase the power of the studies, the criteria of the "Year of publication" could be widened. Researchers who are interested in these concepts are recommended to conduct a moderating analysis to investigate whether the relationship between the abovementioned concepts vary depending on the characteristics of the study, such as the characteristic of the sample. For more detailed information in the field of leisure, meta-analysis studies could be conducted for different aspects of leisure related with positive or negative psycho-social perceptions.

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