GeoJournal of Tourism and Geosites

Year XVII

2024 / no. 2 supplement

vol. 54

Editura Universității din Oradea

GTG

GeoJournal of Tourism and Geosites

Oradea University Press

ISSN 2065-0817, E-ISSN 2065-1198

The Journal is issued under aegis and with financial support of:

University of Oradea, Romania
Department of Geography, Tourism and Territorial Planning
Territorial Studies and Analysis Centre
1 University St., 410087, Oradea, Romania

Gdansk University of Physical Education and Sport, Poland
Faculty of Tourism and Recreation
ul. Kazimierza Górskiego 1, 80-336 Gdańsk, Poland

GTG
GeoJournal of Tourism and Geosites

Year XVII, no. 2 supplement, vol. 54

Oradea - Gdańsk
2024

PUBLICATION REQUIREMENTS OF ARTICLES IN THE GEOJOURNAL OF TOURISM AND GEOSITES

The Editorial Board goes trough each article, which in then submitted to two referees' judgment. Names of referees are confidential to the Editorial Board. Authors may be asked to make revisions to their manuscript. If substantial revision is required manuscripts may be re-reviewed before a decision to accept/publish is made. Final acceptance of manuscripts for publication is at the discretion of the Editors.

Authors alone are responsible for the opinions expressed in their papers.

The GeoJournal of Tourism and Geosites
is indexed in:

SCOPUS: http://www.scopus.com/

GEOBASE: https://www.elsevier.com/

INDEX COPERNICUS: http://journals.indexcopernicus.com/karta.php?action=masterlist&id=3947
IC Value: **134.41** - 2022; **134.64 -** 2021; **132.41** - 2020; **121.20** - 2019; **121.25** - 2018; **109.97** - 2017; **88.82** - 2016; **84.53** - 2015; **68.79** - 2014; **6.59** - 2013; 2012; **4.84** - 2011; **4.83** - 2010; **4.15** - 2009; **3.91** - 2008

Review accredited by **C.N.C.S.I.S.,** "**C**" Categoryhttp://vechi.cncsis.ro/cenaposs/2008/Arhiva/reviste_cat_C_08.pdf

ULRICHSWEB – GLOBAL SERIALS DIRECTORY
http://www.ulrichsweb.com/ulrichsweb/ulrichsweb_news/uu/newTitles.asp?uuMonthlyFile=uu201003/new_titles.txt&Letter=G&navPage=9&

WORLDCAT: http://www.worldcat.org/search?q=GeoJournal+of+Tourism+and+Geosites&qt=owc_search

SCIPIO: http://www.scipio.ro/web/geojournal-of-tourism-and-geosites

EBSCO: http://www.ebscohost.com/titleLists/hjh-subject.pdf

HOSPITALITY & TOURISM COMPLETE: https://www.ebscohost.com/titleLists/hjh-coverage.xls

HOSPITALITY & TOURISM INDEX: https://www.ebscohost.com/titleLists/hoh-coverage.htm

CAB Abstracts: https://www.cabi.org/SerialsCited/1429.txt

ERIH PLUS: https://dbh.nsd.uib.no/publiseringskanaler/erihplus/periodical/info.action?id=495196

DOAJ - DIRECTORY OF OPEN ACCES JOURNALS: https://doaj.org/search

Price of journal:

Individual	10 €
Institutional	15 €
Annual subscription	20 €

Address of the Editorial Office:
University of Oradea Department of Geography,
Tourism and Territorial PlanningTerritorial Studies and Analysis Centre 1 Universităţii St.,
410087, Oradea, Romania, Phone/fax: +40 259 408 475 e-mail: gtg.uoradea@yahoo.com

On line version:
http://gtg.webhost.uoradea.ro

C O N T E N T S

* * * * * *

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.771-783
DOI 10.30892/gtg.542spl01-1252

PURCHASING TOURISM SERVICES THROUGH ONLINE TRAVEL AGENCY: DOES ELECTRONIC WORD-OF-MOUTH HAVE INFLUENCE? AN EMPIRICAL STUDY ON BANGLADESHI TOURISTS

Kamal HOSSAIN
Department of Business Administration, Faculty of Business Studies, Pabna University of Science and Technology, Pabna, Bangladesh, e-mail: hossain.kamal7523@gmail.com

Subrata KUMAR*
Department of Business Administration, Faculty of Business and Economics, Central Women's University, Dhaka, Bangladesh, e-mail: sbrtds88@gmail.com

Rubaiyat SHABBIR
Department of Tourism and Hospitality Management, Faculty of Business Studies, Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj, Bangladesh, e-mail: rshabbir10@gmail.com

REDWANUZZAMAN
Department of Business Administration, Faculty of Business Studies, Pabna University of Science and Technology, Pabna, Bangladesh, e-mail: redwan@pust.ac.bd

Citation: Hossain, K., Kumar, S., Shabbir, R., & Redwanuzzaman. (2024). PURCHASING TOURISM SERVICES THROUGH ONLINE TRAVEL AGENCY: DOES ELECTRONIC WORD-OF-MOUTH HAVE INFLUENCE? AN EMPIRICAL STUDY ON BANGLADESHI TOURISTS. *Geojournal of Tourism and Geosites*, 54(2spl), 771–783. https://doi.org/10.30892/gtg.542spl01-1252

Abstract: Tourists nowadays are more dependent on online reviews to make different travel decisions. Electronic word of mouth has been playing a key role in influencing the purchase intention of tourists who travel through an online travel agency. In this context, the study aims to explore how electronic word-of-mouth determinants influence travellers' intention to purchase tourism services from online travel agencies in Bangladesh. Based on Social Exchange Theory information quantity, information quality, information credibility, and information usefulness of electronic word of mouth are identified as the four factors determining the purchase intentions toward buying services through an online travel agency. A total of 302 people participated and replied to the questionnaire, making up the sample. For the analysis, SPSS version 25 integrated with AMOS version 26 was employed. Structural equation modeling was used to test the hypothesis. The analysis revealed that, except for information quantity, the three other independent variables that determine e-WOM - information quality, information credibility, and information usefulness significantly affect tourists' service purchasing intentions from OTAs. The current research findings provide meaningful, practical implications for online travel service providers, online service agents, and managers of different tourism platforms to develop and implement strategies to manage online reviews across different online platforms to generate better responses from travelers.

Keywords: Online Travel Agency, Social Exchange Theory, Purchase Intention, Electronic Word of Mouth, Online Tourism, Information Quantity, Information Quality, Information Usefulness

* * * * * *

INTRODUCTION

Nowadays, to ensure a smooth transaction online, customers depend more on online reviews (Fachrurazi et al., 2022). Consequently, customers' buying habits are influenced by the reviews of other customers (Kuppelwieser et al., 2021). Users of electronic platforms have grown significantly, and this has given them more freedom to engage with one another, express themselves honestly, and spread the word about their experiences online (Khasawneh et al., 2021). Buyers' inclinations to purchase are strongly affected by electronic word of mouth (e-WOM) in virtual communities (Akbari et al., 2022). Thus, to create better relationships with existing and prospective customers, tourism-related service companies have started interacting on social media platforms (Thaothampitak and Wongsuwatt, 2022). Some contemporary research was conducted on the effect of e-WOM determinants on different behavioral aspects. Moreover, the findings of most of the studies are not consistent. Therefore, this research will add a substantial knowledge resource to the current literature in the fields of e-WOM and OTA. OTA is an intermediary organization that arranges attractive travel packages for tourists through its website or applications (Talwar et al., 2020). There has been a sharp increase in online customer reviews of travel-related services on social sites (Salminen et al., 2020; Hossain et al., 2023). Past studies regarding OTA were concentrated on different issues other than e-WOM. However, there is a lack of studies on the impact of online reviews on OTA. Therefore, this research will add fresh knowledge to the literature from the perspective of OTA. Bangladeshi people are looking to adopt different services online. According to The Business Standard (2021), Bangladesh, with a population

* Corresponding author

of 164.5 million, 58% internet penetration, and an e-commerce market worth $2 billion. OTAs occupy about 05% of the total travel market in Bangladesh, which is expected to rise to 45% by 2025. Since the 1990s, Bangladesh's tourism and hospitality industries have proliferated while remaining relatively small (Sardar et al., 2020). Existing customers share their travel experiences with those companies on different social platforms without hesitation, and potential customers evaluate the reviews before planning a trip (Ahani et al., 2019). So, it is necessary to understand the customer's review pattern and its impact on customer behavior. Most of the studies were carried out by researchers in this area on customers outside Bangladesh, but to the knowledge of the authors of this research, no prominent study has been found on Bangladeshi tourists' behavioral intention to purchase services through online travel agencies about the determinants of e-WOM. So, it is essential to critically investigate the elements of e-WOM that have a major impact on Bangladeshi customers' travel service purchase intentions. Therefore, this study is significant for online travel agencies, social media managers, travel service planners, and providers seeking to market their travel-related goods and services online in Bangladesh. Objectives of the study:

- To identify the determinants of e-WOM that affect travel service purchase intention through OTA.
- To investigate the impact of e-WOM determinants on the purchase intention through OTA by Bangladeshi tourists.

LITERATURE REVIEW

Theoretical Background

Electronic word-of-mouth has been studied through relevant theories and models to investigate different aspects of consumer behavior towards online reviews, including the influence of tourism service purchase intentions from OTA. The social exchange theory (SET) (Homans, 1958) is a widely used one that describes a person's actions as the final result of an exchange process designed to maximize gains while minimizing expenditures. By providing information on various aspects of the travel services offered by the OTA, EWOM determinants aid visitors by enabling them to make informed decisions about whether or not to purchase the OTA. According to this procedure, if they receive favorable feedback, they purchase, and if they do not, they refrain from doing so. According to SET theory, this is a reciprocal process. Therefore, information quality, innovativeness, information quantity, social influence, information usefulness, attitude towards information, and information credibility of e-WOM have been identified as predictors of tourism service purchase intention through online travel agencies.

Online Travel Agency (OTA)

In the tourism industry, OTA has become a part and parcel for both tourists and service providers. Online travel agencies (OTAs) are intermediaries who provide targeted customers with travel-related products online. Travel-related items, including travel arrangements such as flights, voyages, cruises, vacation packages, and hotel rooms, are included in this category (Talwar et al., 2020). Online travel agency (OTA) promotes and sells lodging in exchange for transaction commissions as their primary duty. They frequently offer other services connected to travel, such as airlines and car rentals. According to Talwar et al. (2020), utilizing OTAs for service enables customers to cut expenses while saving time and physical work on their purchases. Additionally, it offers consumers services by doing informational searches and previewing travel-related goods proposed by Vila et al. (2021). Since they guarantee consumer value by offering good usability, readily available information, financial security, and transaction security, online travel firms have already established themselves as a handy method for arranging and reserving tours. Pinto and Castro (2019) assert that the travel business is becoming more competitive, so OTAs are attempting to stand out by utilizing strategies that cater to customer tastes and their multi-criteria choice. According to Guillet et al. (2019), reserving hotel rooms online has grown in popularity. OTA is not an exception here. Tourists who have already taken services from online platforms leave their positive and negative opinions on social sites. The planning procedure for the potential consumer is more heavily influenced by this review (Aisha et al., 2024; Pop et al., 2021). As an emerging industry, Bangladeshi OTAs are also very keen to exercise strategies that improve the quality, credibility, usefulness, and quantity of e-WOM to influence repurchase intention (Kalam et al., 2022).

Electronic Word-of-Mouth (E-WOM)

Since the inception of social media, people have started interacting with each other to share their views. E-WOM refers to the interactive and ongoing process of exchanging information about goods, services, brands, and enterprises with potential, current, or previous customers that is available to a vast users online (Ismagilova et al., 2020). It is the information that customers share online with one another regarding their interactions with a company. When consumers are happy with the services provided by an online travel agency, they may recommend their goods, which encourage them to stay loyal and spread the word about the company's products by encouraging favorable word-of-mouth about their interests through different types of online platforms like Facebook, Twitter, LinkedIn, etc. According to Seo and Park (2018), users can exchange views and opinions about items they bought online through websites and social media. Any information that clients who traveled earlier published online about a product or business was highlighted as e-WOM (Hung and Khoa, 2022; Zhai et al., 2022). Happy customers may provide a good review, whereas dissatisfied customers may do the opposite (Li et al., 2020). In contrast to what companies advertise about them, e-WOM serves customers by offering explicit information about other consumers' viewpoints and experiences (Akbari et al., 2022). Customers can now post good brand recommendations on Facebook and other social sites (Alrwashdeh et al., 2019). Researchers have investigated the effects of e-WOM determinants on purchase intention from different perspectives like information quantity (Hung et al., 2023; Ilhamalimy et al., 2021), information quality (Filieri, 2015), information credibility (Siddiqui et al., 2021), and information usefulness (Leong et al., 2021).

Consumers can learn about the quality of goods and services through e-WOM messages, which are an effective tool in this regard, as proposed by Jain et al. (2022). Agag et al. (2016) stated that positive word of mouth about an online travel community directly and efficiently influences consumers' feelings. Numerous studies have demonstrated the direct impact that e-WOM has on buyer intentions. Ladhari and Michaud (2015) stated that positive and negative internet comments help consumers learn more about a hotel's status. Still, negative reviews will likely change their opinions of that hotel undesirably. Cheng et al. (2021) indicated that e-WOM was discovered to be extremely influential in customers' purchasing intentions. Direct e-WOM between consumers might alter consumer preferences and real purchasing behavior; hence, more research into linked market effects is required (Rosario et al., 2020). Since there is increase in the number of e-WOM users, the influence of e-WOM has consequently become a crucial issue to be researched (Díaz et al., 2017).

Information Quantity (IQN)

Information quantity is regarded as one of the significant resources in the service industry. The volume of online opinions that customers expose on social media platforms is called information quantity (Reyes-Menendez et al., 2019). According to Chakraborty (2019), customers evaluate internet reviews as more knowledgeable and informative as they get them in numbers. One of the important e-WOM communication elements is the number of online opinions (Mainolfi and Vergura, 2021). It has been shown that the volume of e-WOM increases product recognition, popularity, and sales (Hung et al., 2023). Additionally, Ilhamalimy et al. (2021) discovered that buyers' opinions of a product's trustworthiness are positively impacted by the amount of e-WOM since a vast amount of e-WOM indicates that many individuals bought the goods and showed interest in the products. Consumers usually prefer to assume that products with many internet reviews are more preferred than those with few, even though the study in e-WOM has produced contradictory results about the effect of multiple reviews on customers' buying intentions (Zahratu and Hurriyati, 2020). The variety of research to date indicates that as online review volume rises, so does positive e-WOM (Sun and Zhang, 2024; Sijoria et al., 2018). Some notable earlier studies (Filieri et al., 2014) showed a strong correlation between the volume of e-WOM and its impact on customer behavior. Therefore, we can hypothesize that the information quantity of the e-WOM may predict the purchase intention of services through an online travel agency.

H1. Information quantity of e-WOM significantly affects the tourism service purchase intention through the online travel agency.

Information Quality (IQ)

The standard of the review content that creates real interest for the customers is regarded as information quality (Guo et al., 2020). In this research, we have adopted the definition of information quality from Cao et al. (2020). According to them, the reflection of value and the reflection of utility constitute information quality in e-WOM. Additionally, information quality facilitates data transfer and is a crucial factor in user confidence in commercial websites. Information quality is shown to predict e-WOM information acceptance, adoption, and purchase intentions, as claimed by Filieri (2015). From a tourism perspective, the decision of where to go might be a little difficult because travel involves a variety of goods and services, including - hotels, transportation, attractions, and auto rentals. As a result, consumers must gather a great deal of data before making a purchase. Furthermore, each customer has individual travel requirements and preferences, and they might have different interests. Kabadayi et al. (2019) demonstrated that visitors frequently think about the information at hand before making decisions. So, the quality of the reviews is an indicator of how well or poorly the services, goods, or locations are rated by previous customers. If they discover that the review quality is good, they feel interested to buy, visit, or spread the information, they will neglect it, if the review quality is below standard (Wong et al., 2020). Information quality greatly affected by many factors, one of them is the quality-of-service system. System quality also influences buyer satisfaction, ultimately impacting a social commerce web's desire to purchase (Filieri et al., 2017). Thus, it can be hypothesized that the information quality of the e-WOM may predict the purchase intention of online travel agencies.

H2. Information quality of e-WOM significantly affects the tourism service purchase intention through the online travel agency.

Information Credibility (IC)

Information credibility is the level of a person's feelings that the information being presented is reliable and trustworthy (Rieh et al., 2017). Prospective customers are increasingly using online customer reviews as a quality measure. Therefore, a higher percentage of favorable reviews suggest a more objective assessment and a wider audience's acquaintance with the items, raising its perceived credibility (Siddiqui et al., 2021). The caliber of the materials may influence a customer's evaluation of a source's reliability in a consumer review (Torabi and Bélanger, 2022). In reality, the information quality level indicates the information source's knowledge and reliability. A reviewer's source of data that offers precise, factual, and thorough information on the pertinent characteristics of the travel services can be viewed as much more trustworthy than one that provides a condensed, shallow, and opinionated account of the same (Ali et al., 2019). Many prior literatures acknowledged the quality of e-WOM, particularly in the tourism industry; several factors affect tourists' acceptance of e-WOM, but information credibility is the most crucial of them (Reyes-Menendez et al., 2019). The information source's credibility is a critical aspect in assisting customers in appraising web data. Credibility can be ensured by source credibility (Zahratu and Hurriyati, 2020). So, a hypothesis can be made as follows:

H3. Information credibility of e-WOM significantly affects the tourism service purchase intention through the online travel agency.

Information Usefulness (IU)

Information usefulness is another e-WOM feature influencing consumers' purchasing intentions (Zarifah and Hafiz, 2020). It is a useful assessment of the accuracy of the information that determines whether or not customers want to embrace the information after reading comments or reviews posted online. Information adoption is a process that involves providing consumers with relevant information and inviting their suggestions for words and thoughts (Hussain et al., 2017). In this paper, information usefulness is considered as the applicability of the information with a simpler and easier way to plan a tour. If people consider the information useful, they will be highly interested in interacting with it. Cheng et al. (2021) stated that it is the level to which travelers feel that information offered in the customer opinion is beneficial, and thereby assisting them in making the trip decision (Che et al., 2017). Pinto and Castro (2019) found that information usefulness in customer reviews might help clients gain confidence in the sources. When customers receive reliable data, their likelihood of committing to purchase might improve since it will raise their trust in their capacity to make the decision. Meanwhile, Lăzăroiu et al. (2020) identified that the applicability of the material in the online assessment could help customers develop confidence in the sources. Also, e-WOM information's usability significantly impacted passengers' behavioral intentions (Zarifah and Hafiz, 2020). Information usefulness has been identified as one of the greatest elements of purchase intention (Leong et al., 2021). Therefore, the following hypothesis can be formulated:

H4. The information usefulness of e-WOM significantly affects the tourism service purchase intention through the online travel agency.

E-WOM Determinants and Purchase Intention

Purchase intention generally refers to people's likelihood of buying goods or services (Tien et al., 2019). The buying intention of the customers is greatly influenced by the opinion of the other customers online (Ghimire et al., 2023; Sutanto and Aprianingsih, 2016). When the review contents on the different digital platforms are robust and favorable, there is a strong possibility that purchase intention will result (Evans and Erkan, 2015). Therefore, when e-WOM information is reliable and helpful, it is embraced by consumers (Poturak and Softić, 2019). The intent to buy is a crucial component of consumer behavior. E-WOM elements like the quantity of the opinions (Hung et al., 2023), the applicability of the information (Al-Haddad et al., 2022), and the trustworthiness of the online opinion (Hossain, 2023; Yusuf et al., 2018) have proven impacts on purchase decisions. It is clear from the abovementioned study that e-WOM elements are thought to be significant determinants of buying intention. In light of the literature review, this research proposes a theoretical structure as a research model to answer the research questions (Figure 1).

Overview of the Proposed Research Model

The researchers propose a theoretical framework for this study in the context of the previously mentioned literature. Through integrating "The frameworks of the effectiveness of electronic word of mouth (e-WOM) on consumer purchase intention among generation-y" (Zulkiffli et al., 2017:18–26) and "Impact of electronic word of mouth to the purchase intention – the case of Instagram" (Ho et al., 2021:1019–1033), the authors propose the framework of e-WOM influenced tourism service purchase intention through OTA purchase intention (Figure 1). The conceptual model foresees how various independent factors will affect the dependent variable. The suggested model below attempts to establish the causal link among the study factors to explore the impact of e-WOM's information quantity, information quality, information credibility, and information usefulness on Bangladeshi tourists' intention to purchase tourism services.

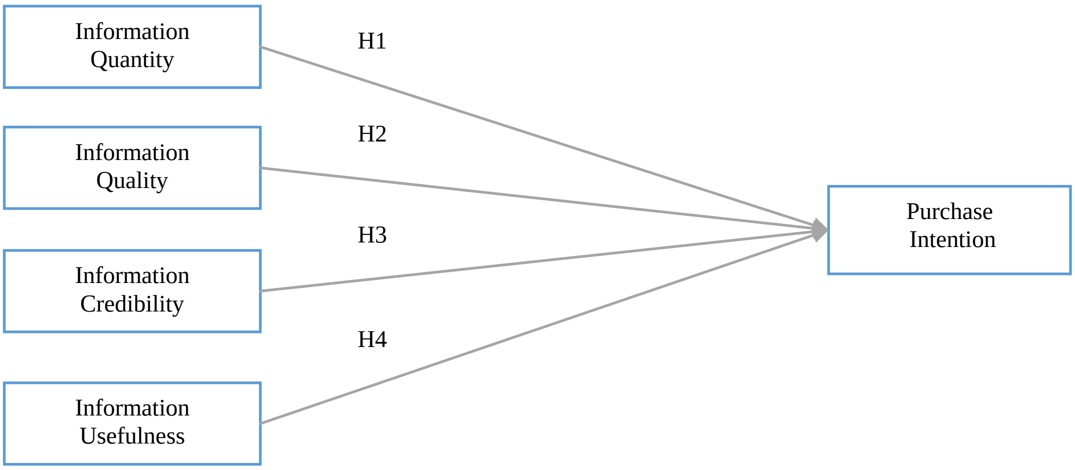


Figure 1. Proposed model of e-WOM effect on the tourism service purchase intention through an online travel agency (OTA) (Source: Authors' creation based on Zulkiffli et al., 2017; Ho et al., 2021)

METHODOLOGY

Data Collection and Survey Administration

The researchers have employed both qualitative and quantitative approaches in conducting this investigation. The authors gathered secondary data from numerous prominent nationally and internationally published research papers and authentic website sources. On the other hand, to get the primary data from the respondents, Bangladeshi tourists who evaluate e-WOM in order to interact with an online travel agency have been selected. For this study, judgmental sampling was utilized, as the respondents were chosen based on their e-WOM involvement (Etikan and Bala, 2017). Data collected from both online and offline sources. Printed questionnaire was distributed to the personally available respondents. Again, some travel-related Facebook groups and pages have been selected as advised by several researchers who have conducted similar studies (Troise et al., 2020) to identify the target responders who go online. Initially, the respondents were asked one filtering question: “Do you evaluate online reviews for traveling online? The study continued with the respondents who gave positive answers. A Google form has been sent through Facebook to gather primary data. A 5-point Likert scale questionnaire was sent on October 5th, 2023, and it remained open until December 20th, 2023. Informed consent was obtained from all participants for the study. Before diving into extensive data collection, a pilot survey was conducted with 50 samples, including 25 items from prior studies. 22 items were retained based on the survey result analysis and opinions from the experts. A total of 339 responses from Facebook page visitors were obtained. Data is collected, filtered, coded, and revised before being reviewed. Following the elimination of the inaccurate and unusual replies, 302 correct and usable data were selected for the research. A countless number of people use online reviews to interact with OTAs. Hence, to arrive at a decent sample size, we have used a method similar to that of Alshibly (2020) where the total sample will be 10 multiplied by the number of measurement items. So, our sample size is 302, which exceeds the recommended number (10*22 = 220). Again, a sample size of 302 is adequate to conduct this research using SEM (structural equation modeling) (Hair, 2017).

Measurement and Scaling

The final questionnaire contains 22 items which were used to assess travelers' intentions to purchase tourism services and e-WOM, of which 18 items of information quality, information credibility, information usefulness, and purchase intention were adopted from Zarifah and Hafiz (2020) and 4 items on Information Quantity construct were adopted from (Sutanto and Aprianingsih, 2016; Seo and Park, 2018; Bataineh, 2015) (Table 1). The items were slightly edited to fit the framework of the study. A 5-point Likert scale is used to evaluate the items, where 1 = "strongly disagree," 2 = "disagree," 3 = "neutral," 4 = "agree," and 5 = "strongly agree."

Table 1. Sources of Items

Constructs	Code	Source	Cronbach’s Alpha
Information Quantity	IQN1	(Sutanto and Aprianingsih, 2016)	0.832
	IQN2		
	IQN3	(Seo and Park, 2018)	0.88
	IQN4	(Bataineh, 2015)	0.73
Information Quality	IQ1	(Zarifah and Hafiz, 2020)	0.952
	IQ2		
	IQ3		
Information Credibility	IC1		0.969
	IC2		
	IC3		
	IC4		
	IC5		
Information Usefulness	IU1		0.970
	IU2		
	IU3		
	IU4		
	IU5		
Purchase Intention	PINT1		0.962
	PINT2		
	PINT3		
	PINT4		
	PINT5		

Data Analysis Procedure

A two-step data analysis method was followed, as advised by Anderson and Gerbing (1988). Initially, exploratory factor analysis (EFA) was done via the principal components analysis (PCA). Sampling sufficiency and data normality were examined during the EFA through KMO (Kaiser- Meyer- Olkin) and Bartlett's tests; confirmatory factor analysis (CFA) was employed to judge the validity and reliability of the variables. Second, path analysis was conducted using SEM (structural equation modeling) by utilizing SPSS 25 integrated with AMOS 24 to test the proposed theoretical framework by confirming the goodness of fit metrics.

Data Analysis and Findings

Data analysis was conducted in two phases as suggested by Anderson and Gerbing (1988), initially confirmatory factor analysis was conducted then structural equation modeling (SEM) utilized to test the causal relationships of the variables.

Analysis of Descriptive Statistics

In this section, researchers looked at the demographics of the chosen sample. The descriptive data of sample by age, gender, education, monthly income, and past online shopping experience are exhibited in Table 2 and Figure 2.

Table 2. Demographic data of the sample (Source: Survey data, 2023)

Variables	Variables Categories	Frequency	%
Type of Gender	Male	187	61.92
	Female	115	38.08
Level of Age	18-40	265	87.75
	41-60	37	12.25
Education	Secondary level	41	13.58
	Higher secondary level	67	22.19
	Graduates and above	194	64.24
Monthly Income (Taka)	5000-10000	64	21.19
	10001-20000	82	27.15
	20001 and above	156	51.66

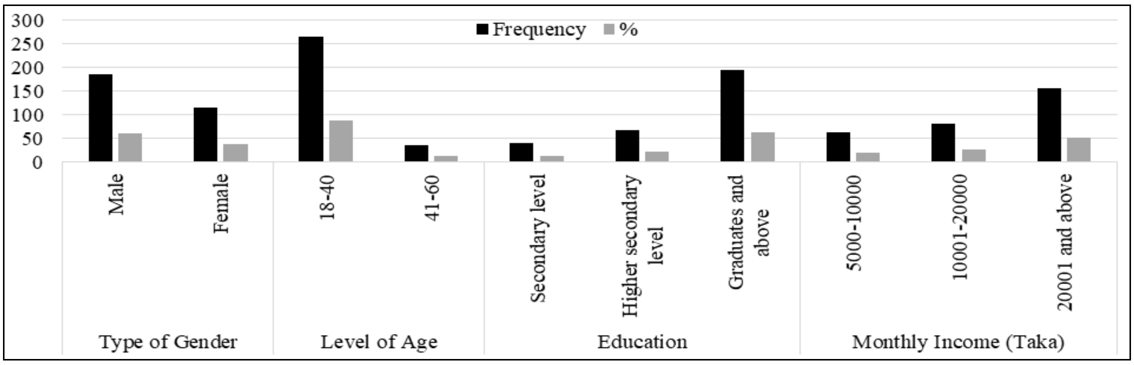


Figure 2. Demographic data (Source: Survey data, 2023)

Exploratory Factor Analysis

To conduct EFA, principal component analysis was used with varimax rotation to confirm loading maximum items on distinct constructs. Factors having an Eigenvalue of 1 or more than 1 were extracted. Cronbach's alpha was used to judge the reliability. The parameters for determining the internal consistency reliability according to Cronbach's alpha indicates that the value more than 0.9 is excellent, more than 0.7 but less than 0.9 is Good, more than 0.6 but less than 0.7 is acceptable, more than 0.5 but less than 0.6 is Poor and below 0.5 is unacceptable (George and Mallery, 2016) in this study Cronbach’s alpha ranging from 0.856 to 0.951 which is falling in the 'Good' range. The reliability of the survey data is displayed in Table 3, which shows that Cronbach’s alpha of all the variables is above 0.80, proving acceptable internal consistency of the variables. Additionally, KMO and Bartlett's tests indicated the sufficiency and normality of the sample of the research for factor analysis (Kaiser, 1974), since the value of 0.890 was above the threshold value (>0.50) to determine whether the sample was adequate (Nunnally, 1978).

Table 3. Validity and reliability test results of the measurement model (Source: Survey data, 2023) Extraction method: Principal component analysis (PCA). Rotation method: Varimax with Kaiser Normalization. IQN = Information quantity, IQ = Information quality, IC = Information credibility, IU = Information usefulness, PINT = Purchase intention

Constructs	Code	Factor Loading	Cronbach’s Alpha	CR	AVE	Eigen value	Total variance explained
Information Quantity	IQN1	0.860	0.891	0.893	0.676	3.04	13.82
	IQN2	0.860					
	IQN3	0.891					
	IQN4	0.840					
Information Quality	IQ1	0.890	0.856	0.860	0.674	2.37	10.75
	IQ2	0.897					
	IQ3	0.799					
Information Credibility	IC1	0.835	0.912	0.914	0.680	3.79	17.23
	IC2	0.897					
	IC3	0.815					
	IC4	0.852					
	IC5	0.795					
Information Usefulness	IU1	0.889	0.951	0.951	0.796	4.29	19.49
	IU2	0.884					
	IU3	0.894					
	IU4	0.906					
	IU5	0.852					
Purchase Intention	PINT1	0.808	0.944	0.945	0.774	3.95	17.97
	PINT2	0.831					
	PINT3	0.829					
	PINT4	0.820					
	PINT5	0.865					

Confirmatory Factor Analysis (CFA)

The validity and reliability of the construct were evaluated using CFA. Additionally, to ensure the fitness of the measurement model, the study has looked at the values of CMIN/df = 1.701, CFI = 0.974, RAMSE = 0.48, GFI = 0.910, and RMR = 0.038, (Table 6) which indicate a satisfactory fit suggested by (Hair, 2017), NFI = 0.939, TLI = 0.969, and the other indices are within the threshold according to Jain and Chetty (2022); Byrne (2001) to determine the fitness to develop a measurement model. Figure 3 displays the CFA diagram.

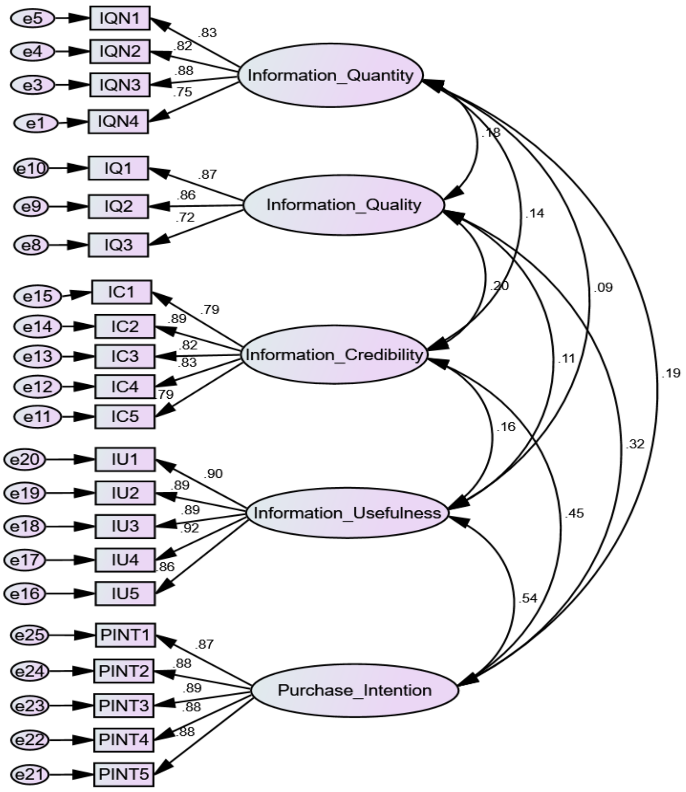


Figure 3. Confirmatory factor analysis (Source: Own survey, 2022; Note: x2/df=1.764; GFI=0.905; AGFI=0.882; RAMSE=0.050, RMR=0.074; NFI=0.935; IFI=0.971; TLI=0.967; PCFI=0.853; PNFI=0.822)

Convergent Validity and Discriminant Validity

Factor loading was employed to assess convergent validity, while average variance extracted (AVE) was used to judge discriminant validity. To hold a specific item, the factor loading advised by Hair (2017) needs to be greater than 0.7, and the AVE value needs to be greater than 0.05. In this study, the mentioned values have been achieved. Composite reliability (CR) has been incorporated in the evaluation of construct reliability. The composite reliability is assessed by the degree to which the construct's elements capture the latent concept. As proposed by Hair (2017), the CR estimates, that quantify the level of variance that can be attributed to the construct, ought to be higher than 0.60. So, the finding shown in Table 3 proves that the measurement model is satisfactory in relation to composite reliability.

For determining the discriminant validity, Fornell and Larcker's (1981) criteria were used for evaluation. The criteria stated that to confirm discriminant validity, the AVE value of a factor necessarily be greater than the corresponding MSVs. MaxR (H) values are also larger than 0.80. Again, the square root of AVE ought to be higher than the inter-variable correlation. The bold components in Table 4 represent the square root of AVE having a larger value than the correlation across variables; all indicators meet the empirical requirements, providing additional support for the discriminant validity.

Table 4. Discriminant validity–Fornell–Larcker criterion (Source: Survey data, 2023; Note: CR = Composite Reliability; AVE = Average Variance Extracted; MSV = Maximum Shared Variance; MaxR (H) = Maximum Reliability; Significance of Correlations: *p < 0.05, **p < 0.01)

Constructs	MSV	MaxR(H)	Information Quantity	Information Quality	Information Credibility	Information Usefulness	Purchase Intention
Information Quantity	0.037	0.901	**0.822**				
Information Quality	0.100	0.877	0.185**	**0.821**			
Information Credibility	0.205	0.920	0.144*	0.198**	**0.825**		
Information Usefulness	0.290	0.953	0.091	0.112	0.159*	**0.892**	
Purchase Intention	0.290	0.945	0.192	0.317	0.453	0.538	**0.880**

Again, the HTMT ratio was evaluated to judge discriminant validity, advised by Franke and Sarstedt (2019) in light of new critiques of Fornell and Larcker's (1981) criterion given by Henseler et al. (2015). We applied the plugin supplied by Gaskin et al. (2019), the "Master Validity Tool" AMOS Plugin, to conduct the study because the AMOS package lacks the HTMT test.

The measurements can be distinct when the HTMT ratios are less than or equal to 0.85 or 0.90. Otherwise, the measures become inconsistent if the HTMT rates are higher than the cut-off figures. None of the HTMT ratios is greater than 0.85, (see table 5) indicating that the respondents effectively recognized that five different constructs were used. Considering the aforementioned, it can be claimed that the measurement model showed satisfactory levels of validity and reliability.

Table 5. HTMT analysis (Note: HTMT analysis using Gaskin et al., 2019, tools)

	1	2	3	4	5
1. Information Quantity					
2. Information Quality	0.188				
3. Information Credibility	0.151	0.218			
4. Information Usefulness	0.088	0.123	0.163		
5. Purchase Intention	0.185	0.344	0.464	0.542	

Structural Equation Modeling (SEM) and Hypothesis Testing

SEM was used to test the hypothesis. Figure 4 discovers the structural model to ensure model fitness: Chi-square and the degree of freedom were 358.050 and 203, respectively, CMIN is 1.764 ($p<0.001$), CFI= 0.971, GFI= 0.905, TLI= 0.967, RMR= 0.74, RMSEA= 0.50. To take the model into consideration, the Cmin/df number must be lower than 3. In this study, it is 1.764, indicating a satisfactory fit, according to Hair, 2017. Figure 4 displays the structural model of the research. In the structural model, AMOS suggested modification indices have been utilized in similar constructs. The model modification was utilized within the residual errors related to identical factors. We find a plausible justification for the residual error correlations within a component (Gerbing and Anderson, 1984; Hermida, 2015). Table 6 displays all the model fit values that justify the model's fitness since all the values are above the threshold suggested by Jain and Chetty (2022); Byrne (2001). Only the AGFI value is approaching 0.90, which is just below the standard, although Hu and Bentler (1999) considered the AGFI value in some cases acceptable at 0.80 to 0.90. The R^2 value indicates the strength of the structural model, which displays the total variations of independent constructs (Barclay and Smith, 1995). In this study, the analysis showed an R^2 value of 0.44, which confirms moderate explanatory strength.

Hypothesis Testing

On achieving satisfactory model fitness of the measurement model, a structural model was approached and also found good model fit as well (Table 6). SEM was utilized to evaluate the causal association between the dependent variable and the four independent variables. The result found from the SEM analysis shows that the information quantity has no significant influence on purchase intention, but the other independent variables—information quality, information credibility, and information usefulness have a substantial influence on the tourism service purchase intention through OTA. Table 7 displays a summary of the hypotheses testing.

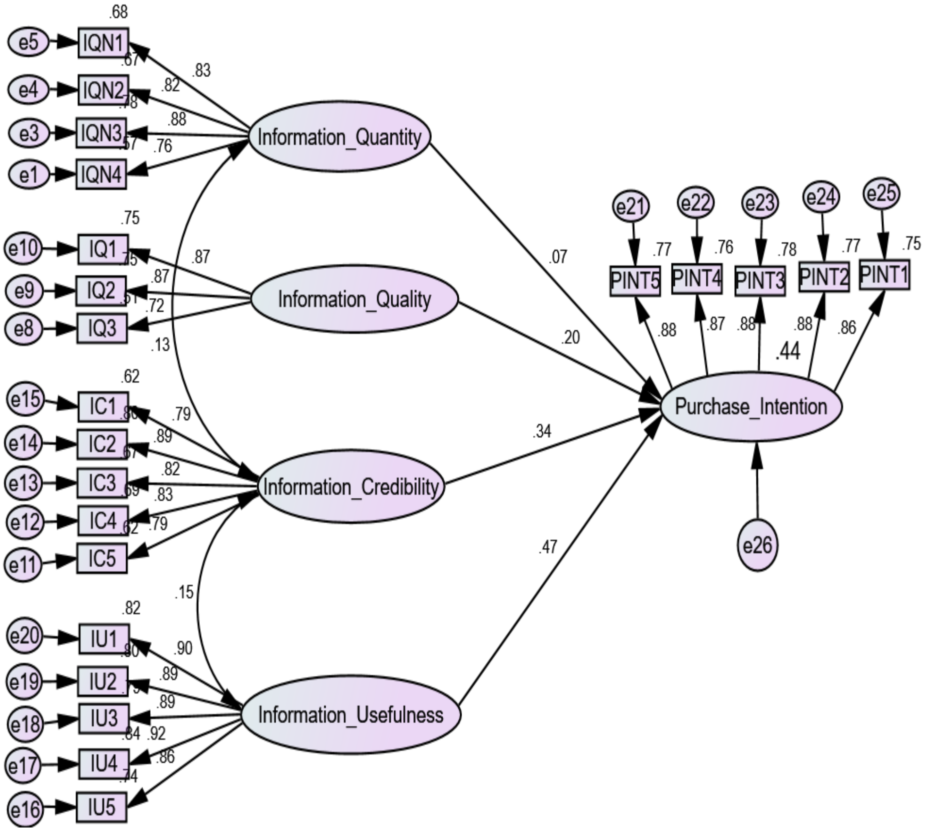


Figure 4. Tourism service purchase intention model (Source: Survey data, 2023)

Table 6. Goodness of fit indices of both measurement and structural model
(Source: Thresholds adapted from Jain and Chetty, 2022; Byrne, 2001)

Fitness indices		Thresholds	Model	
			Measurement	Structural
Absolute Fit values:	CMIN/DF	1-3	1.701	1.764
	GFI	> 0.90	0.910	0.905
	RMR	< 0.05, <0.08	0.038	.074
	RMSEA	< 0.05, <0.08	0.48	0.50
	AGFI	> 0.90	0.886	0.882
Comparative/incremental Fit values:	CFI	> 0.90	0.974	0.971
	NFI	> 0.90	0.939	0.935
	IFI	> 0.90	0.974	0.971
	RFI	> 0.90	0.929	0.926
	TLI	> 0.90	0.969	0.967
Parsimonious Fit values:	PGFI	> 0.50	0.716	0.726
	PNFI	> 0.50	0.809	0.822
	PCFI	> 0.50	0.839	0.853

DISCUSSION

This research aimed to answer two research questions. First, to find out which e-WOM factors substantially influenced tourism service purchase intention from the online travel agency, and second, to look into how e-WOM affects tourism service purchase intention through the OTA. SEM analysis was utilized to examine the significance level of all variables of e-WOM in this research, findings showing that except information quantity (H1), all the other variables—information quality (H2), information credibility (H3), and information usefulness (H4)—of e-WOM showed a profound effect on travel service purchase intention through OTA and thereby rejected all the null hypotheses but H1 (see table 7). From the findings, it is evident that if tourists find quality online reviews that are credible and equally useful to their decision-making, they become motivated to purchase travel services from travel agencies.

According to the findings, information quantity (H1) and the traveler's purchase intention from OTA show no significant relationship since information quantity has a p-value (.137) which exceeds the threshold value (0.05). This is an interesting finding because many research conducted in the recent past (Hung, 2023; Ali and Cai, 2022; Sijoria et al., 2018) contradicts the result. In this research, the reason behind such a finding may be that the Bangladeshi social media platforms are overwhelmed by unverified information, misinformation, and self-promotion (Islam et al., 2020).

Hence, some of the studies (Miah et al., 2017) based in Bangladesh have suggested minimizing fraudulent reviews on websites like TripAdvisor. Since most of the respondents to this research are young and educated, they probably understand that a self-generated or uncensored countless number of firm-generated reviews may contribute to increasing the e-WOM information quantity. As a result, they are not motivated by the countless number of reviews. So, the e-WOM quantity does not always reflect the actual scenario of the tourists' experience. Although, this result is supported by Filieri, 2015; Zahratu and Hurriyati, 2020.

Information quality (H2) witnessed a significant influence on tourists' desire to purchase travel services from OTAs since the factor information quality (.198) has a significance value less than (<) (.001). This is quite understandable because the availability of factual, valid, trustworthy information is what potential travellers seek from different social platforms. So that they can confidently and reliably make their purchase decision online, this result aligns with the studies of some other prominent researchers (Wong et al., 2020; Chen et al., 2021; Ali and Cai, 2022) but this finding is opposite to the findings of Zahratu and Hurriyati, 2020; Al-Haddad et al., 2022. This outcome indicates that the quality of online comments is a better predictor of OTA service purchase intention. In order to boost the quality of e-WOM that finally results in consumer recommendations and buying intentions, it is crucial to supply and sustain the promised services by OTA.

In this research, the factor information credibility (H3) (.345) also has a significance value less than (<) (.001), which specifies that information credibility influences tourism service purchase intention from OTAs significantly. This result also signifies the result of Chen et al., 2021; Zhang and Watts, 2008; Yusuf et al., 2018. This indicates that Bangladeshi travelers are more sensitive to an online review's trustworthiness and source credibility. Because the demand for credible information is so important to Bangladeshi tourists because a number of infamous media present false, distorted, and partial information. But authentic and factual information is so essential to a smooth tour experience. OTA needs to monitor the reviews for authenticity, as credibility also contributes to the firm's reputation (Reyes-Menendez et al., 2019). However, the result contrasts with Al-Haddad et al., 2022; Zahratu and Hurriyati, 2020.

Finally, information usefulness (H4) was also discovered to have a substantial favorable effect on purchase intention from OTA because information usefulness (.473) has a significance value less than (<) (.001). The reason behind this finding is that the tourists always seek information which is practically usable and truly contribute to decision making. Informative, factual and updated information substantially improve the usefulness. This finding is similar to other studies (Al-Haddad et al., 2022; Zarifah and Hafiz, 2020; Leong et al., 2021). This finding indicates that travelers feel information from online reviews containing real applicability and usability as per their necessity tends to influence their purchasing decision from OTA positively. It also signifies that the information must be pertinent to the purposes of the users. Participants are more inclined to engage with the information they see as valuable.

Table 7. Hypothesis Statements (Note: H=Hypothesis; P= Probability, ***<0.001)

	Dependent variable	Independent variable	Estimates	Std. Estimates	Standard Error (SE)	Critical Ratio (CR)	P value	Results
H1	Purchase Intention	Information Quantity	.062	.750	.042	1.486	.137	Rejected
H2	Purchase Intention	Information Quality	.238	.198	.063	3.792	***	Supported
H3	Purchase Intention	Information Credibility	.352	.345	.054	6.489	***	Supported
H4	Purchase Intention	Information Usefulness	.417	.473	.046	9.026	***	Supported

CONCLUSION

Theoretical Contribution

An increasing number of travelers are using Internet marketplaces to purchase travel-related services. As a result, the number of online travel agents is growing while their competition is intensifying. In these circumstances, OTA assessment from online reviews is important. This study found a positive correlation between the OTA purchase intention and the e-WOM components. The paper's conclusions, however, may be applied specifically to management.

First of all, the relationship between E-WOM components and the use intentions of online travel agencies has not yet been well investigated. For researchers in this subject, this work will close a knowledge gap.

Secondly, a positive impact of information quality, information usefulness, information credibility and OTA use intention was found, which includes new knowledge in the area of tourism research. Additionally, the insignificant relationship between information quantity with OTA purchase intention is a unique finding of this study. Thirdly, no other studies in the field of e-tourism have integrated SET theory and investigated the influence of e-WOM elements. Second, it was discovered that information quality, information usefulness, information credibility, and desire to use an online travel agency (OTA) had a favorable influence, including new information in the field of tourism research. A unique result of this study is the lack of significance between the quantity of information and OTA purchasing intention. Thirdly, SET theory integration and e-WOM element investigation have not been done in any previous e-tourism research.

Managerial Implications

This study has significant managerial implications. Bangladeshi travelers are new to the world of online tourism, but their interest in involving themselves with this outstanding digital service has been increasing day by day. However, online travelers in Bangladesh have credibility issues because it is common to get defrauded by unethical online sellers. As a result, OTA service providers may make several attempts to influence users to spread more credible, useful, and quality reviews online. Some recommendations based on the research findings are presented here. First, OTA operators should present information on their website based on its significance, such as showing product ratings given by customers that would influence the online review's usefulness and credibility. If the reviews are provided by customer category, such as male travelers, female travelers, solo travelers, family travelers, etc., the usefulness of the reviews can be boosted. Second, instead of displaying self-ratings of their services, OTAs can proactively make an effort to display reviews of satisfied existing and previous customers in front of potential customers who are inclined to read online reviews on their website and social media handles. That will greatly contribute to improve credibility. Third, online travel agencies might offer alternatives or the most relevant services near the requested service on the website homepage to increase user usability. The information presented by companies must be accurate, complete, and updated to improve services and, consequently, their usefulness. Fourth, a more realistic and less ostentatious promotion style is recommended while advertising travel services. A significant difference between what is presented in brand communications and what customers experience may lead more customers to give poor ratings. Fifth, OTA can publish guest reviews on its website to increase credibility.

Again, managers should remember the importance of many positive reviews online. So, marketers should encourage past and present travelers to post more authentic and positive reviews online. The results of our study also point to another management application that managers should not only actively work to improve the quality of reviews but also concentrate on the authenticity and usability of the same. Companies ought to be aware that online reviews significantly influence customer behavior and work to promote and control e-WOM activities. Customer compliments and criticisms need further consideration. Customer satisfaction must be closely assessed to spot issues and implement the required changes. Managers of OTA and hotels ought to carefully evaluate e-WOM determinants and be cognizant of how users interpret pertinent information if they want to improve the quality, credibility, and usefulness of reviews regarding their travel services on online platforms and ultimately influence purchase intention.

Future Research Directions

This research found that service purchase intention through OTA is greatly influenced by e-WOM determinants. Findings reveal that all the determinants of e-WOM except information quantity have a substantial direct influence on tourism-related services purchase intention through OTA. The present research makes some significant contributions. First, by investigating how e-WOM variables affect OTA service purchase intention, this study offers companies helpful guidance for designing effective marketing plans and creating services that will help customers who are guided toward making a purchase intention through positive e-WOM. Second, this research is a forerunner in the field of OTA in Bangladesh because few studies were conducted on the e-WOM's influence on purchase intention in different fields other than OTA, but this investigation tested the impact of online reviews on travel service purchasing intentions through online travel agencies on Bangladeshi tourists for the first time. Third, this finding of the direct relationship of e-WOM with OTA service purchase intention is bringing fresh knowledge to the body of literature in the area of online tourism, especially OTA. Future studies can be conducted on the other e-WOM elements that have an impact on OTA service purchase intention. The researcher can further enrich the literature on OTA adoption by applying theories and models like the technology acceptance model (TAM) (Davis, 1989).

Author Contributions: Conceptualization, S.K. and K.H; Methodology, S.K. and K.H; software, S.K. and R.S.; Validation, R.S. and R.Z.; Formal analysis, K.H. and S. K.; Investigation, R.S. and K.H; Data curation, S.K. and R.S.; Original draft preparation, S.K. and K.H.; Review and editing, K.H. and R.Z.; Visualization, R.S. and K.H.; Supervision, K.H. and R.Z

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Agag, G., & El-Masry, A.A. (2016). Understanding consumer intention to participate in online travel community and effects on consumer intention to purchase travel online and WOM: An integration of innovation diffusion theory and TAM with trust. *Computers in Human Behavior*, 60, 97–111. https://doi.org/10.1016/j.chb.2016.02.038

Ahani, A., Nilashi, M., Yadegaridehkordi, E., Sanzogni, L., Tarik, A.R., Knox, K., Samad, S., & Ibrahim, O. (2019). Revealing customers' satisfaction and preferences through online review analysis: The case of Canary Islands hotels. *Journal of Retailing and Consumer Services*, 51, 331–343. https://doi.org/10.1016/j.jretconser.2019.06.014

Aisha, F.M., Salem, A.E., Almakhayitah, M.Y., Ghazy, K., AL-SMADI, H.M., Gozner, M., & Elsayed, A.S.M. (2024). Understanding the influence of food value on fast-food customer behavior: a study on the mediating role of blogger reviews and moderating effect of content credibility. *GeoJournal of Tourism and Geosites*, 52(1), 9-19. https://doi.org/10.30892/gtg.52101-1178

Akbari, M., Foroudi, P., Fashami, R.Z., Mahavarpour, N., & Khodayari, M. (2022). Let us talk about something: The evolution of e-WOM from the past to the future. *Journal of Business Research*, 149, 663–689. https://doi.org/10.1016/j.jbusres.2022.05.061

Al-Haddad, S., Sharabati, A.A., Harb, L., Husni, A., & Abdelfattah, M. (2022). E-WOM and consumers' purchase intention: An empirical study on Facebook. *Innovative Marketing*, 18(3), 149–158. https://doi.org/10.21511/im.18(3).2022.13

Ali, F., El-Sappagh, S., & Kwak, D. (2019). Fuzzy Ontology and LSTM-based Text Mining: A Transportation Network Monitoring System for Assisting Travel. *Sensors*, 19(2), 234. https://doi.org/10.3390/s19020234

Ali, Z.S., & Cai, H. (2022). Who Decides Where to Go for a Coffee? e-WOM and Consumers' Purchase Intention. *Strategies Journal of Marketing*, 4(1), 24–58. https://doi.org/10.52633/jms.v4i1.141

Alrwashdeh, M., Emeagwali, O.L., & Aljuhmani, H.Y. (2019). The effect of electronic word of mouth communication on purchase intention and brand image: An applicant smartphone brands in North Cyprus. *Management Science Letters*, 505–518. https://doi.org/10.5267/j.msl.2019.1.011

Alshibly, H.H. (2020). Investigating the effectiveness of business intelligence systems: A PLS-SEM approach. *International Journal of Management Sciences and Business Research*, 9(9), 33-49.

Anderson, J.M., & Gerbing, D.W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423. https://doi.org/10.1037/0033-2909.103.3.411

Bataineh, A.Q. (2015). The Impact of Perceived e-WOM on Purchase Intention: The Mediating Role of Corporate Image. *International Journal of Marketing Studies*, 7(1). https://doi.org/10.5539/ijms.v7n1p126

BSS (2021). Online travel agencies to experience exponential growth: Stakeholders. *The Business Standard*. (January, 2023). https://www.tbsnews.net/bangladesh/online-travel-agencies-experience-exponential-growth-stakeholders-213754

Byrne, B.M. (2001). Multivariate applications book series. Structural equation modeling with AMOS: Basic concepts, applications, and programming. *Lawrence Erlbaum Associates Publishers*, Mahwah, NJ, US.

Cao, Y., Zhang, J., Ma, L., Qin, X., & Li, J. (2020). Examining User's Initial Trust Building in Mobile Online Health Community Adopting.*International Journal of Environmental Research and Public Health*, 17(11), 3945. https://doi.org/10.3390/ijerph17113945

Chakraborty, U. (2019). The impact of source credible online reviews on purchase intention. *Journal of Research in Interactive Marketing*, 13(2), pp.142–161. https://doi.org/10.1108/jrim-06-2018-0080

Che, J.W., Cheung, C.M., & Thadani, D.R. (2017). Consumer purchase decision in Instagram stores: The role of consumer trust.

Chen, Y.L., Chang, C.L., & Sung, A.Q. (2021). Predicting eWOM's influence on purchase intention based on helpfulness, credibility, information quality and professionalism. *Sustainability*, 13(13), 7486. https://doi.org/10.3390/su13137486

Cheng, G., Cherian, J., Sial, M.S., Mentel, G., Wan, P., Otero, S.Á., & Saleem, U. (2021). The Relationship between CSR Communication on Social Media, Purchase Intention, and E-WOM in the Banking Sector of an Emerging Economy. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(4), 1025–1041. https://doi.org/10.3390/jtaer16040058

Davis, F.D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *Management Information Systems Quarterly*, 13(3), 319. https://doi.org/10.2307/249008

Díaz, A., Gómez, M., & Molina, A. (2017). A comparison of online and offline consumer behaviour: An empirical study on a cinema shopping context. *Journal of Retailing and Consumer Services*, 38, 44–50. https://doi.org/10.1016/j.jretconser.2017.05.003

Evans, C., & Erkan, I. (2015). The influence of electronic word of mouth in social media on consumers' purchase intentions. In Managing intellectual capital and innovation for sustainable and inclusive society: Managing intellectual capital and innovation; Proceedings of the MakeLearn and TIIM Joint International Conference, 2007, ToKnowPress.

Etikan, I., & Bala, K. (2017). Sampling and Sampling Methods. *Biometrics & Biostatistics International Journal*, 5(6), 215–217. https://doi.org/10.15406/bbij.2017.05.00149

Fachrurazi, F., Silalahi, S.A.F., Hariyadi, H., & Fahham, A.M. (2022). Building halal industry in Indonesia: the role of electronic word of mouth to strengthen the halal brand image. *Journal of Islamic Marketing*. https://doi.org/10.1108/jima-09-2021-0289

Filieri, R., & McLeay, F. (2014). E-WOM and Accommodation. *Journal of Travel Research*, 53(1), 44–57. https://doi.org/10.1177/0047287513481274

Filieri, R. (2015). What makes online reviews helpful? A diagnosticity-adoption framework to explain informational and normative influences in e-WOM. *Journal of Business Research*, 68(6), 1261–1270. https://doi.org/10.1016/j.jbusres.2014.11.006

Filieri, R., McLeay, F., & Tsui, B. (2017). Antecedents of travelers' satisfaction and purchase intention from social commerce websites. In Information and Communication Technologies in Tourism 2017: Proceedings of the International Conference in Rome, Italy, January 24-26, 2017,517-528, *Springer International Publishing*.

Fornell, C., & Larcker, D.F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39–50. https://doi.org/10.1177/002224378101800104

Franke, G.R., & Sarstedt, M. (2019). Heuristics versus statistics in discriminant validity testing: a comparison of four procedures. *Internet Research*, 29(3), 430–447. https://doi.org/10.1108/intr-12-2017-0515

Gaskin, J., James, M., & Lim, J. (2019). "Master Validity Tool", AMOS Plugin

George, D., & Mallery, P. (2016). IBM SPSS Statistics 23 Step by Step: A Simple Guide and Reference. https://ndl.ethernet.edu.et/bitstream/123456789/28322/1/Darren%20George_2016.pdf

Gerbing, D.W., & Anderson, J.M. (1984). On the Meaning of within-Factor Correlated Measurement Errors. *Journal of Consumer Research*, 11(1), 572. https://doi.org/10.1086/208993

Ghimire, B., Dahal, R.K., Rai, B., & Upadhyay, D. (2023). Employee performance factors in the Nepalese commercial banks: Insights from emerging markets. *Journal of Logistics, Informatics and Service Science*, 10(2), 29-42. https://doi.org/10.33168/jliss.2023.0203

Guillet, B.D., Kozak, M., & Kucukusta, D. (2019). It's in the air: Aroma marketing and affective response in the hotel world. *International Journal of Hospitality & Tourism Administration*, 20(1), 1–14. https://doi.org/10.1080/15256480.2017.1359727

Guo, J., Wang, X., & Wu, Y. (2020). Positive emotion bias: Role of emotional content from online customer reviews in purchase decisions. *Journal of Retailing and Consumer Services*, 52, 101891. https://doi.org/10.1016/j.jretconser.2019.101891

Hair, J.F. (2017). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). *Los Angeles: Sage*.

Henseler, J., Ringle, C.M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Hermida, R. (2015). The problem of allowing correlated errors in structural equation modeling: concerns and considerations. *Computer Methods Social Science*, 3 (1), 5–17.

Ho, V.T., Phan, N.L., & Le-Hoang, P.V. (2021). Impact of electronic word of mouth to the purchase intention - the case of Instagram. *Independent Journal of Management & Production*, 12(4), 1019–1033. https://doi.org/10.14807/ijmp.v12i4.1336

Homans, G.C. (1958). Social Behavior as Exchange. *American Journal of Sociology*, 63(6), 597–606. https://doi.org/10.1086/222355

Hossain, Z., Rahman, M., Hossain, K., & Kumar, S. (2023). Investigating Tourists' Online Travel Agency Selection Intention: An Empirical Analysis on Bangladesh. *GeoJournal of Tourism and Geosites*, 50(4), 1212–1223. https://doi.org/10.30892/gtg.50401-1119

Hossain, Z. (2023). A Modified Innovation Resistance Theory Approach to E-Tourism Resistance Intention in Bangladesh. *Journal of Technology Management & Innovation*, 18(4), 59–71. https://doi.org/10.4067/s0718-27242023000400059

Hu, L., & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55. https://doi.org/10.1080/10705519909540118

Hung, N.P., & Khoa, B.T. (2022). Examining the structural relationships of electronic word of mouth, attitude toward destination, travel intention, tourist satisfaction and loyalty: a meta-analysis. *Geo Journal of Tourism and Geosites*, 45, 1650-1660. https://doi.org/10.30892/gtg.454spl15-986

Hung, S., Chang, C., & Chen, S. (2023). Beyond a bunch of reviews: The quality and quantity of electronic word-of-mouth. *Information & Management*, 60(3), 103777. https://doi.org/10.1016/j.im.2023.103777

Hussain, S., Ahmed, W., Jafar, R.M.S., Rabnawaz, A., & Jianzhou, Y. (2017). e-WOM source credibility, perceived risk and food product customer's information adoption. *Computers in Human Behavior*, 66, 96-102.

Ilhamalimy, R.R., & Ali, H. (2021). Model Perceived Risk and Trust: e-WOM and Purchase Intention (The Role of Trust Mediating in Online Shopping in Shopee Indonesia. *Dinasti International Journal of Digital Business Management*, 2(2), 204–221. https://doi.org/10.31933/dijdbm.v2i2.651

Ilhamalimy, A.K.M.N., Laato, S., Talukder, M.S., & Sutinen, E. (2020). Misinformation sharing and social media fatigue during COVID-19: An affordance and cognitive load perspective. *Technological Forecasting and Social Change*, 159, 120201. https://doi.org/10.1016/j.techfore.2020.120201

Ismagilova, E., Slade, E.L., Rana, N.P., & Dwivedi, Y.K. (2020). The Effect of Electronic Word of Mouth Communications on Intention to Buy: A Meta-Analysis. *Information Systems Frontiers*, 22(5), 1203–1226. https://doi.org/10.1007/s10796-019-09924-y

Jain, M., Dixit, S., & Shukla, A. (2022). Role of e-service quality, brand commitment and e-WOM trust on e-WOM intentions of millennials.*The International Review of Retail, Distribution and Consumer Research*, 33(1), 23–43. https://doi.org/10.1080/09593969.2022.2070860

Jain, R., & Chetty, P. (2022). Confirmatory Factor Analysis (CFA) in SEM using SPSS Amos. [online] *Project Guru*. [Accessed 07 Apr. 2023]. https://www.projectguru.in/confirmatory-factor-analysis-cfa-in-sem-using-spss-amos/

Kabadayi, S., Ali, F., Choi, H., Joosten, H., & Lu, C. (2019). Smart service experience in hospitality and tourism services. *Journal of Service Management*, 30(3), 326–348. https://doi.org/10.1108/josm-11-2018-0377

Kaiser, H.F. (1974). *An index of factorial simplicity. psychometrika*, 39(1), 31-36.

Kalam, A., Hossain, M.A., MinHo, K., Beg, M.R., & Nikhat, S.R. (2022). The Role of Social Media in Tourism Development: A Multimodal Mediation Analysis of an Emerging Economy.

Khasawneh, M.A., Abuhashesh, M., Ahmad, A., Alshurideh, M.T., & Masa'deh, R. (2021). Determinants of E-Word of Mouth on social media during COVID-19 Outbreaks: An Empirical study. *In Studies in systems, decision and,* 347–366. https://doi.org/10.1007/978-3-030-67151-8_20

Kuppelwieser, V.G., Klaus, P., Manthiou, A., & Hollebeek, L.D. (2021). The role of customer experience in the perceived value–word-of-mouth relationship. *Journal of Services Marketing*, 36(3), 364–378. https://doi.org/10.1108/jsm-11-2020-0447

Ladhari, R., & Michaud, M. (2015). eWOM effects on hotel booking intentions, attitudes, trust, and website perceptions. *International Journal of Hospitality Management*, 46, 36–45. https://doi.org/10.1016/j.ijhm.2015.01.010

Lăzăroiu, G., Neguriţă, O., Grecu, I., Grecu, G., & Mitran, P.C. (2020). Consumers' Decision-Making Process on Social Commerce Platforms: Online Trust, Perceived Risk, and Purchase Intentions. *Frontiers in Psychology*, 11. https://doi.org/10.3389/fpsyg.2020.00890

Leong, C.M., Loi, A.M.W., & Woon, S. (2021). The influence of social media e-WOM information on purchase intention. *Journal of Marketing Analytics*, 1-13.

Li, H., Liu, Y., Tan, C.W., & Hu, F. (2020). Comprehending customer satisfaction with hotels: Data analysis of consumer-generated reviews. *International Journal of Contemporary Hospitality Management*, 32(5), 1713-1735. https://doi.org/10.1108/ijchm-06-2019-0581

Mainolfi, G., & Vergura, D.T. (2021). The influence of fashion blogger credibility, engagement and homophily on intentions to buy and e-WOM. Results of a binational study. *Journal of Fashion Marketing and Management*, 26(3), 473–494. https://doi.org/10.1108/jfmm-03-2020-0050

Miah, S.J., Hasan, N., Hasan, R., & Gammack, J.G. (2017). Healthcare support for underserved communities using a mobile social media platform. *Information Systems*, 66, 1–12. https://doi.org/10.1016/j.is.2017.01.001

Nunnally, J.C. (1978). An overview of psychological measurement. Clinical diagnosis of mental disorders: A handbook, 97-146.

Pinto, I.M., & Castro, C. (2019). Online travel agencies: factors influencing tourist purchase decision. *Tourism & Management Studies*, 15(2), 7–20. https://doi.org/10.18089/tms.2019.150201

Pop, R., Săplăcan, Z., Dabija, D., & Alt, M. (2021). The impact of social media influencers on travel decisions: the role of trust in consumer decision journey. *Current Issues in Tourism*, 25(5), 823–843. https://doi.org/10.1080/13683500.2021.1895729

Poturak, M., & Softić, S. (2019). Influence of Social Media Content on Consumer Purchase Intention: Mediation Effect of Brand Equity. *Eurasian Journal of Business and Economics*, 12(23), 17–43. https://doi.org/10.17015/ejbe.2019.023.02

Reyes-Menendez, A., Saura, J., & Martínez-Navalón, J.G. (2019). The Impact of e-WOM on Hotels Management Reputation: Exploring TripAdvisor Review Credibility With the ELM Model. *IEEE Access*, 7, 68868–68877. https://doi.org/10.1109/access.2019.2919030

Rieh, S.Y. (2017). Credibility and Cognitive Authority of Information. *In Encyclopedia of Library and Information Sciences*. https://doi.org/10.1081/e-elis4-120044103

Rosario, A.B., De Valck, K., & Sotgiu, F. (2019). Conceptualizing the electronic word-of-mouth process: What we know and need to know about eWOM creation, exposure, and evaluation. *Journal of the Academy of Marketing Science*, 48(3), 422–448. https://doi.org/10.1007/s11747-019-00706-1

Salminen, J., Hopf, M., Chowdhury, S.A., Jung, S., Almerekhi, H., & Jansen, B.J. (2020). Developing an online hate classifier for multiple social media platforms. *Human-centric Computing and Information Sciences*, 10(1). https://doi.org/10.1186/s13673-019-0205-6

Sardar, S., Hossain, M.E., Hossain, M.I., & Islam, M. (2020). Factors affecting visitor's satisfaction: an empirical study on the Paharpur Buddha Vihara, Naogaon, Rajshahi. *Int. J. Manag. Account*, 2(4), 61-73. https://doi.org/10.34104/ijma.020.061073

Seo, E.K., & Park, J. (2018). A Study on the Influence of the Information Characteristics of Airline Social Media on e-WOM, Brand Equity and Trust. *The Open Transportation Journal*. https://doi.org/10.2174/1874447801812010289

Siddiqui, M.H., Siddiqui, U., Khan, M.Z.A., Alkandi, I.G., Saxena, A.K., & Siddiqui, J.H. (2021). Creating Electronic Word of Mouth Credibility through Social Networking Sites and Determining Its Impact on Brand Image and Online Purchase Intentions in India. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(4), 1008–1024. https://doi.org/10.3390/jtaer16040057

Sijoria, C., Mukherjee, S., & Datta, B. (2018). Impact of the antecedents of e-WOM on CBBE. *Marketing Intelligence & Planning*, 36(5), 528-542.

Sun Wei, & Zhang Xiaojuan (2024). The Impact of Online Review Community Characteristics on Users' eWOM Recommendation Intention: The Mediating Role of Flow Experience. *Journal of System and Management Sciences*, 14(1), 340-360. https://doi.org/10.33168/jsms.2024.0120

Sutanto, M.A., & Aprianingsih, A. (2016). The Effect of Online Consumer Review Toward Purchase Intention: A Study in Premium cosmetic in Indonesia. *International Conference on Ethics of Business, Economics, and Social Science*, 53(2), 1689-1699.

Talwar, S., Dhir, A., Kaur, P., & Mäntymäki, M. (2020). Barriers toward purchasing from online travel agencies. *International Journal of Hospitality Management*, 89, 102593. https://doi.org/10.1016/j.ijhm.2020.102593

Thaothampitak, W., & Wongsuwatt, S. (2022). The Effect of e-WOM on Foreign Students' Travel Intention Related to Visiting Tourism Destinations along Thailand's Andaman Coast in the Wake of the COVID-19 Pandemic: Mediating Roles of Destination Image. *Journal of Community Development Research (Humanities and Social Sciences)*, 15(1), 62-75. https://doi.org/10.14456/jcdr-hs.2022.6

Tien, D.H., Amaya Rivas, A.A., & Liao, Y.K. (2019). Examining the influence of customer-to-customer electronic word-ofmouth on purchase intention in social networking sites. *Asia Pacific Management Review*, 24(3), 238-249. https://doi.org/10.1016/j. Apmrv.2018.06.003

Torabi, M., & Bélanger, C.H. (2022). Influence of social media and online reviews on university students' purchasing decisions. *International Journal of Internet Marketing and Advertising*, 16(1/2), 98. https://doi.org/10.1504/ijima.2022.120968

Troise, C., O'Driscoll, A., Tani, M., & Prisco, A. (2020). Online food delivery services and behavioural intention – a test of an integrated TAM and TPB framework. *British Food Journal*, 123(2), 664–683. https://doi.org/10.1108/bfj-05-2020-0418

Vila, T.D., González, E.G., Vila, N.A., & Brea, J.A.F. (2021). Indicators of Website Features in the User Experience of E-Tourism Search and Metasearch Engines. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(1), 18–36. https://doi.org/10 .4067/s0718-18762021000100103

Wong, E., Rasoolimanesh, S.M., & Sharif, S.P. (2020). Using online travel agent platforms to determine factors influencing hotel guest satisfaction. *Journal of Hospitality and Tourism Technology*, 11(3), 425–445. https://doi.org/10.1108/jhtt-07-2019-0099

Yusuf, A., Hussin, A.R.C., & Busalim, A.H. (2018). Influence of e-WOM engagement on consumer purchase intention in social commerce. *Journal of Services Marketing*, 32(4), 493–504. https://doi.org/10.1108/jsm-01-2017-0031

Zahratu, S., & Hurriyati, R. (2020). Electronic word of mouth and purchase intention on Traveloka. *Advances in Economics, Business and Management Research*. https://doi.org/10.2991/aebmr.k.200131.008

Zarifah Dhabitah Mahat, N., & Hafiz Hanafiah, M. (2020). Help me Tripadvisor! Examining the relationship between Tripadvisor e-WOM attributes, trusts towards online reviews and travellers behavioural intentions. *Journal of Information and Organizational Sciences*, 44(1), 83-112. https://doi.org/10.31341/jios.44.1.4

Zhai, L., Yin, P., Li, C., Wang, J., & Yang, M. (2022). Investigating the Effects of Video-Based E-Word-of-Mouth on Consumers' Purchase Intention: The Moderating Role of Involvement. *Sustainability*, 14(15), p.9522. https://doi.org/10.3390/su14159522

Zhang, W., & Watts, S.W. (2008). Capitalizing on Content: Information Adoption in Two Online communities. *Journal of the Association for Information Systems*, 9(2), 73–94. https://doi.org/10.17705/1jais.00149

Zulkiffli, W.F.W., Hong, L.M., Ramlee, S.I.F., Yunoh, S.M., & Aziz, C. (2017). The Effectiveness of Electronic Word-Of-Mouth (Ewom) On Consumer Purchase Intention Among Generation-Y. 9. *Int. J. Account*, 2(6), 18-26.

Article history: Received: 23.02.2024 Revised: 14.05.2024 Accepted: 07.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.784-793
DOI 10.30892/gtg.542spl02-1253

IS VIETNAM'S TOURISM DEMAND MODEL COMPATIBLE WITH THE EXTENDED GRAVITY MODEL?

Phuong Nu Minh LE[*]
University of Economics, Hue University, Faculty of Economics and Development Studies, Planing and Investment Department, Hue City, Vietnam, e-mail: lenuminhphuong@hueuni.edu.vn

Citation: Le, P.N.M. (2024). IS VIETNAM'S TOURISM DEMAND MODEL COMPATIBLE WITH THE EXTENDED GRAVITY MODEL? *Geojournal of Tourism and Geosites*, 54(2spl), 784–793. https://doi.org/10.30892/gtg.542spl02-1253

Abstract: The purpose of this study is to use an extended gravity model to examine the factors that influence the demand for tourism from origin nations to Vietnam. Data from eleven major marketplaces were gathered for the study between 2005 and 2020. The research employs stepwise regression techniques to choose variables and testing procedures to identify the most suitable model among Ordinary Least Squares (OLS), Random Effects Model (REM), Fixed Effects Model (FEM), and Feasible Generalized Least Squares (FGLS) models. The gravity model comprises variables associated with geographic features, tourism supply capacity, demand attributes, and interconnected variables. Surprisingly, geographical distance holds no statistical significance in the international tourist demand model based on the gravity model, a phenomenon bolstered by globalization. Conversely, the emerging investment factor in restaurants and hotels emerges as the most pivotal determinant influencing tourism demand. Hence, the tourism sector must devise nation-specific policies that target key influencing factors and actively appeal to potential source markets to attract visitors.

Keywords: gravity model, Vietnam, tourism demand, FGLS, FEM, stepwise regression

* * * * * *

INTRODUCTION

As globalization spreads, the tourism industry faces escalating competition, prompting leaders of nations to frequently adopt strategies aimed at attracting visitors to their countries. Hence, researchers, operators, and tourism businesses are keenly interested in identifying the factors that impact the influx of foreign tourists to a country. Accurately gauging the capacity to allure international tourists is crucial for the tourism sector in efficiently managing and enhancing the suitable technical tourism infrastructure. The gravity model stands as the most widely used model for evaluating tourism demand (Peng et al., 2015; Wu et al., 2017; Song et al., 2019; Rosselló-Nadal and Santana-Gallego, 2022; Song et al., 2023). Furthermore, Song et al. (2023) synthesize existing literature and acknowledge that the integration of supply and demand in tourism models represents a novel research direction that has emerged recently. Hence, this research constructs a tourism demand framework using the gravity model and formulates constituent variables derived from factors such as geographical proximity, tourism demand, and destination capacity.

Foreign tourist arrivals (FTA) are the most frequently used measure. As delineated by Sheldon (1993), Peng et al. (2015), Wu et al. (2017), Song et al. (2019), Rosselló-Nadal and Santana-Gallego (2022) and Song et al. (2023), quantifying tourism demand via the enumeration of FTA serves as the cornerstone for tourism product providers in directing their investments and aligning their service capacities with the volume of visitors. Moreover, evaluating tourism demand by considering international tourist spending is a valid criterion, but ensuring its accuracy compared to tourist numbers is challenging, potentially due to the limited sample size (Song et al., 2019). In addition, the number of nights spent at a destination is often recorded by accommodation establishments and can be used as a criterion to measure tourism demand (Song et al., 2019; Rosselló-Nadal and Santana-Gallego, 2022; Song et al., 2023). In the context of assessing methodologies for quantifying tourism demand, the metric of international tourist arrivals emerges as the paramount indicator for gauging demand with the utmost precision, rendering it highly appropriate for evaluating tourism influx in the host nation. Vietnam's tourism source market primarily consists of 72% from the Asia-Pacific region, with 14% from Europe, and 7% from North America (Vietnam's MCST, 2014). Vietnam is currently experiencing significant variation in international tourist numbers by country. This underscores the imperative for research aimed at discerning the factors influencing the nationality-specific influx of international tourists into Vietnam. This holds importance both in scientific and practical terms as it assists Vietnam in identifying its target international tourist market and adjusting policies to attract visitors from specific countries based on influencing factors.

This study aims to enhance the current literature in four key contents. Firstly, it will entail the identification of the most suitable variables for inclusion in the gravity model and the subsequent validation of the significance of geographical distance as a main factor influencing tourism demand. Furthermore, the study explores the effects of foreign direct investment (FDI) and capital investment in the hospitality industry, augmenting the standard set of variables found in the general research on tourism demand (Song and Li, 2008; Song et al., 2019; Rosselló-Nadal and Santana-Gallego, 2022;

[*] Corresponding author

Song et al., 2023). Previous studies exploring the cause-and-effect connection between FDI and Vietnam's tourism industry (Suntikul et al., 2010; Nunkoo and Seetanah, 2018; Le et al., 2022) require validation when assessing tourism demand. Additionally, the study appraises the impact and statistical relevance of variables describing the economic conditions in the tourists' home countries and Vietnam's supply capacity. Lastly, the study utilizes dynamic panel data to scrutinize the impact and statistical significance of variables delineating the economic situations in the tourists' home countries and Vietnam's service capacity, indicating a policy framework for the future enhancement of the international tourism market.

The article is structured into five sections. The next section offers a literature review on international tourism demand. Following that, it covers data compilation, model testing, and the choice of an appropriate panel data model. Finally, the study presents results, discussions, conclusions, and policy implications in subsequent sections.

A theoretical foundation for the gravity model in tourism

Establish a gravity-based tourism demand model

The theory of economic gravity is predicted in bilateral economic relations and applied in the analysis of international trade flows, FDI, or international tourist flows based on economic size and distance between two countries. Applying gravity theory to build a tourism demand model (TD_{ij}) based on three groups of factors: a group of factors affecting the supply of the host country (M_i) and group of factors affecting tourist demand in visitor country (M_j), the distance between the two countries (D). The interplay of pull factors (in destination countries) and push factors (in origin countries) significantly influences the flux of international tourists, rendering all three sets of factors pivotal in ascertaining the level of tourism demand. Alternatively, gravity theory posits that the assumption of tourists between two countries is contingent upon the size of their respective economies (measured by GDP/GNP) and their relative wealth (indicated by GDP/GNP per capita). According to statistics of Wu et al. (2017) Rosselló-Nadal and Santana-Gallego (2022) and Song et al. (2023), the utilization of GDP/GNP per capita in research studies is threefold higher than the incorporation of GDP/GNP.

The basic gravity model of tourism demand is as follows:

$$FTA_{ij} = G\frac{M_i \ M_j}{D_{ij}} \qquad (1)$$

In which:

FTA_{ij}: stands for foreign tourist arrivals from the origin country (i) to the destination country (j)

M_i: Variables impacting the host country's supply

M_j: Variables impacting the demand from tourists in the country (j)

G: Attractiveness index/Connection index; D_{ij}: distance between 2 countries

Logarithmic transformation of equation (1) reveals:

$$LnFTA_{ij} = LnG + lnM_i + lnM_j - lnD_{ij} \qquad (2)$$

Variables impacting the host country's supply (M_i)

The cost of tourism products within a destination serves as the primary determinant of tourism demand. The total cost of travel includes both package tours and individual services. Consequently, in practical terms, determining the price of travel services is a complicated task, and the tourist price index is its own set of challenges to collect (Nguyen, 2022). In scholarly investigations, the CPI is a commonly adopted indicator where data for two indicators is absent (Seifi et al., 2020; Nguyen, 2022; Song et al., 2023). The relationship between price changes and demand fluctuations does not show a continuous line. Indeed, if a price adjustment occurs, but it is not significant enough for a tourist, or falls below their threshold, the change may not even affect demand. For example, Kulendran (1996) addressed the case of English and Japanese tourists visiting Australia, and Chasapopoulos et al. (2014) studied the situation of tourists visiting Greece. Travelers commonly neglect to recognize the advantages and financial implications of a specific service during their voyage. Simultaneously, some experiences cannot be hedonic pricing and implicit prices are created by non-commercial products such as landscapes, the hospitality of residents, etc.

Rising costs of tourism at a destination adversely impact the demand for tourism (Forsyth and Dwyer, 2009; Kim and Lee, 2017; Rosselló-Nadal and He, 2020; Rosselló-Nadal and Santana-Gallego, 2022). Travelers will be more willing to spend when they believe the pricing at the destination is fair, and vice versa (Divisekera, 2010; Meyer, 2013; Kim and Lee, 2017). Particularly, the sensitivity of tourism spending is greater towards income levels than to pricing (Chasapopoulos et al., 2014; Peng et al., 2015). Increasing inflation escalates the costs of services and tour prices, adversely impacting the demand for tourism from markets experiencing a decline in foreign tourism demand (Chasapopoulos et al., 2014; Peng et al., 2015). In contrast, price elastic demand can be positive due to the income effect (Crouch, 1995; Peng et al., 2015) for either inferior goods or luxury goods depending on the income effect on demand (Dogru et al., 2021). Research on tourism demand frequently incorporates variables of comparative and competitive prices, rather than solely relying on the CPI of the destination country.

The concept of tourism infrastructure encompasses all physical components intentionally designed and constructed to cater to the needs and requirements of tourists (Koutoulas, 2015). Tourism infrastructure exhibits the potential to increase competitiveness and advance the tourism industry through the provisioning of services that meet the multifaceted demands of tourists. Tourism offerings encompass both tangible and intangible aspects like accommodation, transportation, and leisure activities, which are interdependent and collectively shape the desired tourist experience (Koutoulas, 2015). The hotel and restaurant industry holds notable importance in tourism infrastructure, as highlighted by studies conducted by Wu et al. (2017), Ghaderi et al. (2018) and Nguyen (2021). Notably, Nguyen (2021) confirmed the prominence of the impact coefficient attributed to investments in hotels and restaurants on the volume of international tourists choosing to stay in Vietnam. Nevertheless, in the analysis presented by Song and Li (2008) and Rosselló-Nadal and Santana-Gallego (2022) on the tourism demand, the variable pertaining to investment in tourism infrastructure has not garnered considerable emphasis.

The incorporation of the political/risk/event variable within the structure of the tourism demand model or the destination attraction index is imperative owing to its substantial impact on tourists' behavior and decision-making, as evidenced consistently across a range of scholarly investigations, encompassing works by Song and Li (2008), Butler and Suntikul (2012), Peng et al. (2015), Xu et al. (2019), Ulucak et al. (2020), Rosselló Nadal and Santana-Gallego (2022), Song et al. (2023) and Cehan and Iațu (2024). Potential risks and crisis incidents, such as natural catastrophes, political instability, or epidemic outbreaks, can instigate apprehensions among travelers pertaining to their safety and well-being. Xu et al. (2019) revealed that China's international tourism growth remained quite consistent from 1995 to 2014, albeit punctuated by the adverse impact of the 2003 SARS pandemic on the tourism sector. Consequently, the analysis adopts dummy variables to address these disruptions. Furthermore, this study employs the World Governance Indicator as a means to quantify the political risk variable. Conversely, Ulucak et al. (2020) utilize data from the Global Terrorism Database to incorporate a variable representing the frequency of terrorist incidents. Rosselló-Nadal and Santana-Gallego (2022) synthesized data and found that, in 85% and 76.4% of the cases, respectively, security risks and political instability had unfavorable effects on foreign visitor arrivals. So, understanding political/risk variables facilitates the identification of vulnerable groups and pinpointing specific risks that have an impact on demand, allowing policymakers to implement targeted countermeasures to protect the tourism industry in emergencies.

Variables impacting tourist demand in origin country (M_j)

A greater GNP per capita is indicative of increased disposable income and greater purchasing power, resulting in heightened demand for international tourism due to the enhanced capacity to finance travel, as confirmed by various research studies (Kim and Lee, 2017; Shafiullah et al., 2019; Yerdelen-Tatoglu and Gul, 2020; Rosselló-Nadal and Santana-Gallego, 2022). Specifically, among the 32 studies examined, 30 of them identified a positive and statistically significant impact, and none of the studies demonstrated a negative effect (Rosselló-Nadal and Santana-Gallego, 2022).

Although Rosselló-Nadal and Santana-Gallego (2022) found consistent results, the literature review reveals that the income elasticity of demand varies based on factors such as the destination, period, and the specific model employed, among others. For tourists originating from the United States, Japan, the United Kingdom, and New Zealand, the coefficient measuring the income elasticity of demand surpasses the value of 1 when they travel to Australia, indicating that such travel is viewed as a luxury good (Kulendran, 1996).

Alternatively, in studies conducted in Malaysia (Hanafiah and Harun, 2010), a coefficient between 0 and 1 signifies that tourism demand is inelastic, thus identifying it as an essential good. A negative income elasticity of demand coefficient suggests that tourism products in Greece are perceived as inferior goods by European tourists, prompting a shift towards other markets (Dritsakis and Gialetaki, 2004). The income elasticity of demand differs among various tourism types. Business and luxury travel demand demonstrates inelasticity (Kulendran, 1996), signifying that the trips' perceived value surpasses their travel expenses. Compared to leisure tourism, demand for visits from friends and family is less elastic (McCann et al., 2010), suggesting that these trips are more required, much like work travel.

The population serves as a representative measure indicative of the potential tourism demand, consequently providing the foundation for forecasting tourist flows. A larger population within the origin country indicates a higher number of potential tourists. Rosselló-Nadal and Santana-Gallego (2022) observe that approximately 60% of investigations concerning tourism demand incorporate population variables. In contrast, Leitão (2010) concludes that the prevalence of multicollinearity issues often precludes the inclusion of the population variable in numerous studies, many studies omit the population variable since it is closely linked to income. Recognizing a positive correlation between the population of the origin country and the dynamics of tourism flows, this relationship encompasses 87.7% of collective outcomes as delineated by Rosselló-Nadal and Santana-Gallego (2022).

For a more comprehensive understanding of tourist preferences and behaviors, it is essential to incorporate variables like GNP, GNP per capita, and spending levels alongside population size, which alone cannot sufficiently represent their heterogeneity. The internet has played a significant role in flattening the world, enhancing accessibility to information, and shaping tourists' choices of destinations. Both the internet infrastructure of a destination country and tourists' proficiency in using the internet heavily influence these decisions. On the other hand, social media platforms provide travel service providers with cost-effective and easily accessible avenues to connect with tourists (Katsikari et al., 2020). Rosselló-Nadal and Santana-Gallego (2022) synthesized sociocultural and internet-related variables, attributing 80% of the occurrence to their frequency. Additionally, Vu and Ngo (2019) discovered that 27.37% of international visitors to Phu Quoc Island in Vietnam rely on the Internet as their second most important source of information, after recommendations from friends, colleagues, or relatives. Furthermore, Adeola and Evans (2019) established a bidirectional causal relationship between internet usage and tourism.

Variables with connections

The study substitutes bilateral trade turnover with FDI from the sending country to the destination country as a basis for analyzing the flow relationship regarding tourist arrivals. Thus, concerning bilateral factors, including price/exchange rate disparities, FDI, and geographical distance between countries, the study highlighted their significant influence on the number of international tourists visiting the destination country. The influence of price on international tourism demand encompasses not only destination prices but also the relative price comparison between destination and sending countries. Relative prices are computed by dividing CPI of the destination country by that of the tourist's country. In addition to the relative price index, certain research utilizes the concept of purchasing power parity (PPP). The Price Competitive Index (PCI), calculated as the ratio between the destination country and the home country, adjusted by the bilateral exchange rate, is referred to as the real exchange rate (Equation 3). In contexts of imperfect market information, tourists exhibit prompt reactions to fluctuations in exchange rates, while their response to relative inflation rates is more gradual (Forsyth and Dwyer, 2009). Consequently, the exchange rate has a more immediate effect on tourism demand than the competitive price index.

$$Price\ Competitive\ Index = \frac{Purchasing\ Power\ Parity}{Exchange\ Rate} \times 100 \qquad (3)$$

According to Rosselló-Nadal and Santana-Gallego (2022), the variables CPI/relative price/PPP and exchange rate integrated into the model represent 46% and 29% of the aggregate number of articles, respectively. Inconsistency exists in the directional effect of price/CPI/PPP/exchange rate across studies, with 85% of research outcomes demonstrating a negative correlation, while the remainder indicates a positive correlation (Rosselló-Nadal and He, 2020). Studies typically examine either CPI/relative prices/PPP (Kusni et al., 2013; Chasapopoulos et al., 2014; Dogru et al., 2021) or exchange rate/real exchange rate/PCI (Dritsakis, 2004; Xu et al., 2019), or a combination thereof (Hanafiah and Harun, 2010; Velasquez and Oh, 2013; Kim and Lee, 2017; Shafiullah et al., 2019; Ulucak et al., 2020; Mavrommati et al., 2021). However, the studies fail to elucidate the rationale behind their inclusion of price variables while excluding exchange rate variables or a combination of both. The relationship between the dynamics of international tourism and FDI has been the subject of numerous academic studies. However, the results show non-uniformity in the relationship's direction and intensity, which can be attributed to various contextual elements, study settings, sets of influencing variables, etc. Le et al. (2022) specifically noted this non-uniformity within the same research site.

Should a cohesive causal relationship between FDI and FTA be demonstrated, it shows that shifts in FDI inflows can directly impact the number of foreign tourists, and vice versa (Tang et al., 2007). Increased FDI levels in the tourism industry, particularly in infrastructure, services, and hospitality facilities, have the potential to draw in a bigger number of foreign visitors (UNCTAD, 2007). Overall, investment in all sectors attracts current or potential investors, enhancing the nation’s appeal (Kulendran and Wilson, 2000; UNCTAD, 2007).

On the contrary, the reciprocal interplay between FDI and FTA exhibits a dynamic evolution across different periods (Craigwell and Moore, 2008; Andergassen and Candela, 2013; Tomohara, 2016). Furthermore, given the temporal nature of FDI and FTA dynamics, some studies utilize methodologies like VAR, ARDL, GARCH, etc. to scrutinize temporal lags and elucidate the interrelationships within short-term and long-term contexts. Tourism demand models integrate common statistical independent variables while excluding the FDI variable (Song and Li, 2008; Peng et al., 2015; Song et al., 2019; Rosselló-Nadal and Santana-Gallego, 2022; Song et al., 2023).

Geographical proximity stands as a fundamental component in the gravitational model that interlinks two economies, playing a crucial role in shaping the tourism demand framework. Decreased geographical distances between nations foster advantageous circumstances by lowering travel expenses and time, particularly for time-sensitive trips, thereby bolstering tourist flows. Rosselló-Nadal and Santana-Gallego (2022) observed that a substantial majority, amounting to 93% of studies, demonstrate an inverse relationship between geographical distance and the influx of international tourists. These findings offer evidence that challenges the concept of globalization and diminishes the significance of distance on both trade and tourism.

Table 1. Variables and data sources

Variables	**Definition**	**Data source**
FTA_{it}	Number of FTA from country i to Vietnam at time t	GSO of Vietnam
	Variables impacting the host country’s supply	
$VNCPI_t$	Vietnam consumer price index at time t	GSO of Vietnam
$OEXRUS_{it}$	Official exchange rate of Vietnam to the United States at time t	World Bank’s WDI
CHR_t	Capital invested in hotel and restaurant	GSO of Vietnam
CRISIS	0: 2005-2008; 1: 2009-2014; 2: 2015-2019: 3: 2020	
	Variables impacting tourist demand	
GNI_{it}	GNI per capita PPP of originating country i at time t	World Bank’s WDI
POP_{it}	Population of a sending country i at time t	World Bank’s WDI
CPI_{it}	Consumer price index of originating country i at time t	GSO of Vietnam
INT_{it}	Internet of sending country i at time t	World Bank’s WDI
	Variables with connections	
PPP_{it}	Purchasing Power Parity between Vietnam and the originating country i at the time t	World Bank’s WDI
$OEXR_{it}$	Official exchange rate of Vietnam to originating country i at time t, representing the value of local currency units against the US dollar.	World Bank’s WDI
PCI_{it}	Price competitive index of originating country i at time t	Equation 3
FDI_{it}	FDI from sending country i at time t (million USD)	GSO of Vietnam
DIS_i	Distance between Vietnam’s capital to tourist-sending country i	CEPII

DATA AND METHODOLOGIES

Data and variable definitions

The study utilizes panel data analysis to estimate a tourism demand model, aiming to identify factors influencing the influx of foreign tourists visiting Vietnam. Specifically, the aggregated dataset from 11 countries visiting Vietnam, which constitutes 85% of the total FTA, serves as the basis for quantifying international tourism demand in Vietnam. The 11 countries examined in the research comprise China (CHN), Macao-China (MAC), Korea (KOR), Japan (JPN), Thailand (THAI), Malaysia (MYS), Russia (RUS), UK (GBR), France (FRA), Australia (AUS), and the USA (USA). The research gathered yearly data covering the period from 2005 to 2020, sourced from credible institutions such as the General Statistics Office of Vietnam, CEPII and the World Bank.

The process of model selection via statistical tests

The research employs a stepwise regression technique by sequentially adding variables to the model, prioritizing criteria like minimum p-value, maximum absolute t-value, and maximum R-squared value. Panel data can theoretically have group effects, time effects, or both. These effects can be fixed or random. The analysis of panel data pertaining to non-cointegration series involves the consideration of three distinct methodological approaches: OLS, REM, and FEM. The study also employs the Feasible Generalized Squares (FGLS) technique, incorporating its attributes to address autocorrelation and variance heterogeneity. As reported in the study conducted by Rosselló-Nadal and Santana-Gallego (2022), the adoption of the FGLS model is a seldom-encountered practice, constituting a mere 3% of the overall study cohort.

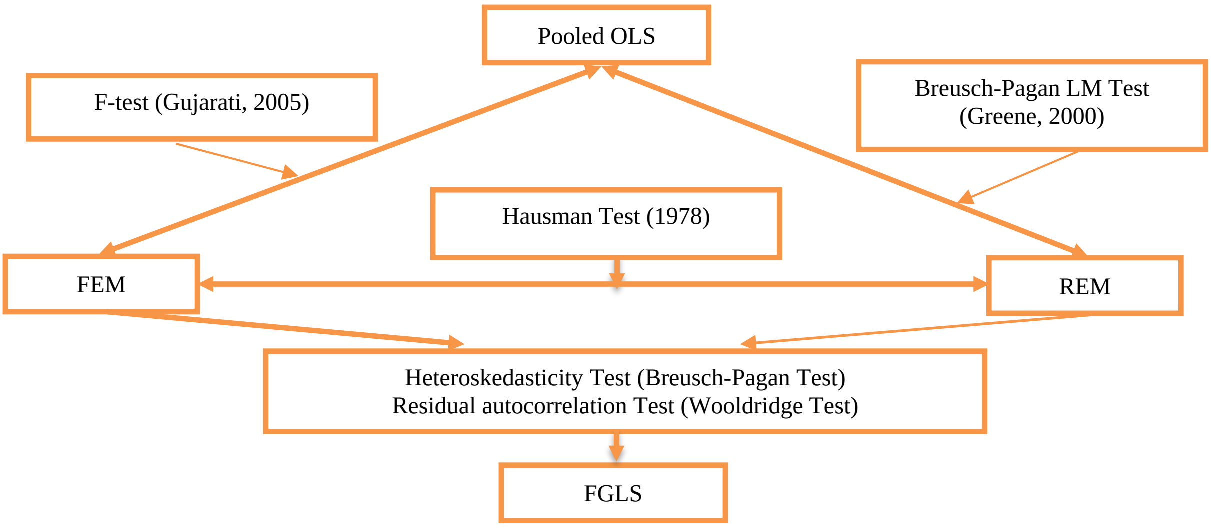


Figure 1. Optimal model selection sequence through testing

Figure 1 shows the flow of the process of choosing the best model through testing techniques. The F-test is utilized to assist in assessing the appropriate model in two Ordinary Least Squares (OLS) and Fixed Effects Model (FEM) analyses. This test is conducted to examine the presence of heteroskedasticity in the model, with the hypotheses: H_0: There is no difference between Pooled and FEM, H_1: The FEM model is more appropriate than Pooled OLS. The Breusch-Pagan LM Test is conducted to assess the presence of cross-sectional correlation and to evaluate the compatibility between the OLS and REM models. The hypotheses are formulated as follows: H_0: The appropriate model is OLS; H_1: The preferred model is REM. The Hausman test is conducted to select between REM and FEM models, with the hypotheses: H_0: no systematic difference in coefficients between REM and FEM models or preference for REM model; H_1: preference for FEM model.

Through the testing procedure to select the optimal model among the three models OLS, REM, or FEM, it is still not enough to determine which is the best model. Therefore, the next step needs to check the defects of the REM/FEM model through heteroskedasticity testing (Breusch-Pagan test) and residual autocorrelation test (Wooldridge test). In instances, the model encounters multicollinearity, residual autocorrelation, or a simultaneous occurrence of both phenomena, the FGLS is recommended. Wooldridge (2002) recommends employing FGLS estimation to address heteroskedasticity or residual autocorrelation in panel data models. The FGLS model's estimation does not shed light on how each country is affected by the influence of the individual variables.

RESULTS AND DISCUSSION

Variable selection for the international tourism demand in Vietnam

Before conducting the regression analysis, the research assessed the correlation among variables and identified pairs of variables (LnPPP, LnOEXRVN); (LnOEXRVNUS, CRISIS); (LnCHR, CRISIS); (LnOEXRVNUS, LnCHR) that exhibit high correlation, necessitating their elimination (Table 2). Besides assessing correlation levels, the study conducted stepwise regression to choose suitable variables for the model. In line with the research goal of investigating the impact of tourism infrastructure on tourism demand, the variable LnCHR will be kept, while LnOEXRVNUS and CRISIS will be excluded from the list of variables. Subsequently, the research executed a stepwise regression procedure comprising six steps, with the outcomes presented in Table 3. The cluster of variables associated with price and exchange rates is organized based on their decreasing impact, listed as follows: LnVNCPI, LnPPP, LnOEXR, LnCPI, and LnPCI. This suggests that foreign tourists prioritize sensitivity to the destination country's price index over the official exchange rate, rather than the real exchange rate. The lack of statistical significance in variables LnDIS and LnINT leads to their removal from the international tourism demand. Thus, the sequence in which six variables are incorporated into the model for international tourism demand in Vietnam across six steps is as follows: LnCHR, LnFDI, LnPOP, LnVNCPI, LnOEXR, and LnGNI.

Table 2. Correlation results, Note:* p<0.1; ** p<0.05; *** p<0.01

	Lnfta	Lngni	Lnpop	Lnppp	Lnvncpi	Lncpi	Lnpci	Lnoe xrvn	Lnoe xrvnus	Lnchr	Lnfdi	crisis	Lndis	Lnint
Lnfta	1.00													
Lngni	0.04	1.00												
Lnpop	0.23*	-0.61*	1.00											
Lnppp	0.34*	-0.09	0.01	1.00										
Lnvncpi	0.07	0.08	0.007	0.006	1.00									
Lncpi	-0.27*	-0.12	-0.005	0.04	0.35*	1.00								
Lnpci	0.007	0.59*	-0.01	-0.11	-0.03	-0.32*	1.00							
Lnoex rvn	0.32*	-0.20*	0.02	0.98*	0.01	0.10	-0.30*	1.00						
Lnoex rvnus	0.42*	0.27*	0.02	0.02	0.12	-0.09	-0.02	0.02	1.00					
Lnchr	0.46*	0.28*	0.02	0.02	0.25*	-0.04	-0.02	0.02	0.97*	1.00				
Lnfdi	0.49*	0.15*	-0.14	0.47*	0.21*	-0.35*	0.004	0.45*	0.06	0.10	1.00			
crisis	0.32*	0.25*	0.02	0.02	0.28*	-0.009	-0.04	0.03	0.91*	0.90*	0.09	1.00		
Lndis	-0.11	0.36*	0.34*	-0.24*	-0.00	0.09	0.73*	-0.37*	-0.00	0.00	-0.38	-0.00	1.00	
Lnint	0.23*	0.71*	-0.19*	0.04	0.1738*	-0.20*	0.59*	-0.07	0.50*	0.51*	0.16*	0.48*	0.41*	1.00

Table 3. Select the appropriate variable for the tourism demand model

X	**LnGNI**	**LnPOP**	**LnCPI**	**LnVNCPI**	**LnPPP**	**LnOEXR**	**LnPCI**	**lnCHR**	**LnFDI**	**LnDIS**	**LnINT**
Step 1											
b	1.734	0.1947	-1.137	0.477	0.360	0.256	0.043	0.737	0.125	-0.105	0.438
t-statistic	10.71	1.55	-2.78	1.30	3.13	2.76	0.14	12.90	2.80	-0.45	3.09
P-value	0.000	0.122	0.005	0.192	0.002	0.006	0.891	0.000	0.005	0.655	0.002
R-squared	0.001	0.054	0.071	0.004	0.115	0.105	0.000	0.215	0.245	0.012	0.052
Step 2: LnFTA=LnCHR +X_2											
b	-0.143	0.109	-1.340	-0.379	0.138	0.126	0.036		0.228	-0.105	-0.020
t-statistic	-1.42	3.40	-3.84	-0.76	5.29	4.98	0.26		7.71	-1.66	-0.13
P-value	0.159	0.001	0.000	0.451	0.000	0.000	0.796		0.000	0.098	0.897
R-squared	0.220	0.260	0.273	0.213	0.321	0.340	0.211		0.412	0.223	0.211
X	LnGNI	LnPOP	LnCPI	LnVNCPI	LnPPP	LnOEXR	LnPCI	lnCHR	LnFDI	LnDIS	LnINT
Step 3: LnFTA= LnCHR+ LnFDI +X_3											
b	-0.233	0.143	-0.576	-1.072	0.065	0.057	0.030			0.069	-0.154
t-statistic	-2.68	5.31	-1.74	-2.46	2.39	2.21	0.25			1.16	-1.17
P-value	0.008	0.000	0.084	0.015	0.018	0.029	0.805			0.249	0.243
R-squared	0.436	0.495	0.423	0.432	0.431	0.429	0.413			0.417	0.417
Step 4: LnFTA= LnCHR+ LnFDI + LnPOP + X_4											
X	LnGNI	LnPOP	LnCPI	LnVNCPI	LnPPP	LnOEXR	LnPCI	lnCHR	LnFDI	LnDIS	LnINT
b	0.069		-0.486	-1.137	0.053	0.046	0.035			-0.027	-0.010
t-statistic	0.66		-1.57	-2.82	2.09	1.91	0.31			-0.47	-0.08
P-value	0.513		0.118	0.005	0.038	0.058	0.757			0.640	0.937
R-squared	0.496		0.502	0.518	0.508	0.506	0.495			0.496	0.495
Step 5: LnFTA= LnCHR+ LnFDI + LnPOP + LnVNCPI + X_5											
X	LnGNI	LnPOP	LnCPI	LnVNCPI	LnPPP	LnOEXR	LnPCI	lnCHR	LnFDI	LnDIS	LnINT
b	0.072		-0.099		0.046	0.040	0.025			-0.015	0.003
t-statistic	0.70		-0.28		1.83	1.68	0.23			-0.26	0.02
P-value	0.487		0.777		0.069	0.095	0.819			0.796	0.983
R-squared	0.519		0.518		0.527	0.525	0.518			0.518	0.518
Step 6: LnFTA= LnCHR+ LnFDI + LnPOP + LnVNCPI + LnOEXR + X_6											
X	LnGNI	LnPOP	LnCPI	LnVNCPI	LnPPP	LnOEXR	LnPCI	lnCHR	LnFDI	LnDIS	LnINT
b	0.143									0.012	0.037
t-statistic	1.31									0.21	0.29
P-value	0.191									0.837	0.769
R-squared	0.530									0.526	0.526
Final Model: LnFTA= LnCHR+ LnFDI + LnPOP + LnVNCPI + LnOEXR + LnGNI											

Investigate determinants impacting the demand for international tourism in Vietnam

The F-test results for selecting the OLS and FEM models show a p-value <0.000 (Table 5), leading to the rejection of H_0 and the acceptance of H_1. This implies endorsing the FEM while dismissing OLS model. Concurrently, the Breusch-Pagan LM Test's p-value (Table 5) supports the rejection of H_0 and the acceptance of H_1, thus validating the adoption of the REM. The subsequent step, employing the Hausman test to choose between FEM and REM, has indicated that rejecting the REM model entails selecting the FEM model.

Table 4. A comparison between Pooled OLS, FEM, REM & FGLS estimates
Note: T: statistics in parentheses; * p<0.05, ** p<0.01, *** p<0.001

Ind. Var	Pooled OLS	FEM	REM	FGLS
LnCHR	0.528 ***; [7.01]	0.423***; [4.07]	0.370***; [4.52]	0.581***; [4.91]
LnFDI	0.231 ***; [7.30]	0.037; [1.04]	0.040; [1.13]	-0.0059; [-0.18]
LnPOP	0.169 ***; [4.97]	-3.435***; [-3.59]	0.248*; [2.24]	-4.742***; [-4.17]
LnVNCPI	-1.061 **; [-2.64]	-0.592*; [-2.20]	-0.588*; [-2.09]	-0.414*; [-1.71]
LnOEXR	0.050*; [2.02]	0.721***; [3.31]	0.226**; [2.97]	0.377; [1.50]
LnGNI	0.143; [1.31]	1.26***; [4.15]	0.829***; [3.23]	0.972**; [2.94]
CONS	-0.243; [-1.45]	51.224; [3.05]	-8.747*; [-2.46]	71.64***; [3.80]
N	176	176	176	176
R2	0.543	0.611	0.547	
Model significance	F(6,169)=35.15 Prob>F = 0.000	F(6, 159)=102.71 Pro>F = 0.000	Wald chi2(6) = 296.93 Prob > chi2 = 0.000	Wald chi2(16) = 490.42 Prob > chi2 = 0.000

To test the deficiencies of the FEM model, conduct tests for heteroscedasticity (Breusch-Pagan test), and residual autocorrelation (Wooldridge test). The results from Table 5 reveal that the FEM model solely exhibits first-order autocorrelation. To ensure an unbiased and effective model selection, the study employs FGLS estimation to mitigate the first-order autocorrelation observed in the FEM model. The regression outcomes from the FGLS models, as depicted in Table 4. A notable decrease in the standard errors and significance of the regression coefficients compared to those obtained through OLS, REM, FEM, and FGLS models, suggests that the FGLS method yields more precise estimations of the regression coefficients. Investment in tourism infrastructure, particularly within Vietnam's hotel and restaurant sector, demonstrates a positive and statistically significant impact, playing a pivotal role in attracting international tourists. This finding aligns with the outcomes of prior studies conducted by Nguyen (2021). High-quality hotels and restaurants offer tourists a comfortable and convenient environment for relaxation and the enjoyment of local cuisine. As the demand for quality tourism services rises, it's imperative for hotels and restaurants to offer professional and distinctive experiences, crucial for fostering long-term travel intentions or future returns to Vietnam. The results from the four models presented in Table 4 indicate the necessity of incorporating a variable representing the tourism industry's supply capacity, particularly focusing on tourism infrastructure, to evaluate tourism demand.

Table 5. Model selection via statistical tests

No	Objective	Test results	Conclusion
Select the optimal model OLS, REM, FEM			
1	OLS&FEM	F-test: F(10,159)=28.98; Pro>F=0.000;	FEM
2	OLS & REM	Breusch-Pagan LM Test: Chibar2(01)= 251.79; Prob> chibar2=0.000.	REM
3	FEM & REM	Hausman Test: Chi2(6)= 27.46 Prob>Chi2=0.000.	FEM
Test FEM model			
1	Heteroskedasticity	Modified Wald test: chi2 (11) = 7.54; Prob>chi2 = 0.7542	No heteroskedasticity
2	First-order autocorrelation	Wooldridge test: F(1, 10)= 22.291; Prob > F = 0.0008 <5%	First-order autocorrelation

Research by Le et al. (2022), and Suntikul et al. (2010) examine the correlation between FDI and various facets of tourism in Vietnam, yielding heterogeneous findings. This study also determined that the influence of FDI capital on FTA is limited and lacks statistical significance. Therefore, this connection lacks a stable basis for establishment, requiring time to construct and nurture. Over the long term, most source markets exhibit positive growth in both FDI and FTA, except for the Russian market, which experiences a decline in FDI over time. FDI experiences significant fluctuations in response to economic and political crises. Vietnam stands out as an appealing investment destination within the region amid the COVID-19 pandemic due to its effective pandemic control measures. This is particularly evident given the redirection of capital flows from China, notably from countries such as Japan, South Korea, and Taiwan, aiming to mitigate the repercussions of the US-China trade tensions stemming from signed free trade agreements. Conversely, FTA exhibits lower volatility attributed to political and economic crises, yet conversely, it is profoundly impacted by the COVID-19 pandemic. Thus, in 2020, the connection between FDI and FTA is anticipated to show divergent patterns.

The population scale of the researched countries is statistically significant and impacts the volume of international visitors to Vietnam. Nevertheless, the observed correlation deviates from expectations, as it suggests that the rise in population not only fails to stimulate international tourist arrivals but also diminishes them in Vietnam. The sign of this relationship is opposite to the combined results of Rosselló-Nadal and Santana-Gallego (2022). That is, the increase in the population of the origin country may increase domestic tourism or choose other destination markets instead of choosing the

Vietnamese market. The significant gap between population and international tourist numbers is predominantly observed in four countries: China, Russia, the United Kingdom, and France. Unlike RUS, GBR, and FRA, although CHN has a common border with Vietnam and a high annual population growth rate, the increase in international visitors from CHN is not compatible with population growth. Therefore, the Chinese market is considered a potential market for the future development of tourism. Conversely, Macao-China (MAC) has a low population but attracts a high number of international tourists, resulting in the smallest disparity between population and FTA among source markets. Notably, MAC is among the top five countries with the highest amount of FDI in Vietnam.

Upon comparing the signs and statistical significance of variables LnVNCPI and LnOEXR (Table 4), it becomes apparent that foreign tourists arriving in Vietnam exhibit a greater degree of sensitivity to fluctuations in the CPI compared to the exchange rate. The inverse correlation between Vietnam's CPI and tourism demand mirrors findings from approximately 85% of previous studies, as documented by Rosselló-Nadal and Santana-Gallego (2022). Vietnam's CPI experienced sudden fluctuations with a notable decline, especially during the period from 2007 to 2009. However, since 2010, Vietnam's CPI has steadily risen at a rate of 4% per year up to 2020. Vietnam's escalating CPI contributes to heightened costs across goods, services, and transportation, rendering international tourism more costly and dampening the demand for it within Vietnam. Contrary to the fluctuations in the CPI, the exchange rate between the Vietnamese Dong (VND) and the US Dollar remains under state control, exhibiting modest variability, typically experiencing an annual rate of 2.5%. Government intervention in regulating the exchange rate distorts its reflection of market prices, thereby preventing the establishment of a statistically meaningful relationship.

The GNP per capita in all three models, namely FEM, REM, and FGLS, exhibits a statistically significant positive influence on the influx of international visitors to Vietnam. This finding aligns with the outcomes of research conducted by Shafiullah et al. (2019), Kim and Lee (2017), Yerdelen-Tatoglu and Gul (2020), and Rosselló-Nadal and Santana-Gallego (2022). The income elasticity of demand for Vietnamese tourism products stands at 0.972, nearing 1, indicating that these products are essential. As a result, consumers exhibit limited changes in their demand for tourism services regardless of fluctuations in their income levels. This may indicate the necessity or the stability of demand for tourism products in some instances, where consumers view travel as an indispensable fundamental need.

Table 6. The country-specific fixed-effect coefficients derived from the FGLS model

	CHN	MAC	KOR	JPN	THAI	MYS	RUS	GBR	FRA	AUS	USA
α	0	21.81*** [4.61]	4.928*** [4.10]	4.692*** [4.01]	7.268** [3.02]	2.584 [1.25]	-18.38*** [-4.45]	1.431** [2.80]	7.549** [3.18]	4.894** [3.00]	12.82*** [4.29]

The FGLS model, derived from the FEM framework, elucidates the fixed impact coefficients for each examined country, as displayed in Table 6. The fixed effects coefficients for MAC, USA, FRA, THAI, KOR, AUS, JPN, MYS, GBR, CHN, and RUS are listed in descending order. Hence, in the absence of influencing factors in the model, the influx of tourists from MAC and the USA will still reach a predetermined level of attraction.

Conclusion and some limitations

The study investigates the correlation between pairs of variables and conducts stepwise regression to determine the order of importance of the variables needed to be included in the tourism demand model. The cluster of variables associated with price and exchange rates is ranked in descending order of impact as LnVNCPI, LnPPP, LnOEXR, LnCPI, and LnPCI. This suggests that foreign tourists prioritize sensitivity to the Vietnam's CPI over the official exchange rate, rather than the real exchange rate. The two variables LnDIS and LnINT did not exhibit statistical significance in the study, leading to their exclusion from the research model. The model incorporated variables in the following order: LnCHR, LnFDI, LnPOP, LnVNCPI, LnOEXR, and LnGNI. Through testing procedures, the study selected the FGLS model to examine the factors impacting tourism demand in Vietnam. The variables LnCHR, LnPOP, LnVNCPI, and LnGNI exhibit a statistically significant influence on tourism demand, whereas the variables LnFDI and LnOEXR do not demonstrate a statistically significant impact on tourism demand. Consistent with the outcomes of stepwise regression, international tourists exhibit responsiveness to fluctuations in the CPI. Government control over the exchange rate renders the response of tourists statistically insignificant.

This study makes two significant contributions. Firstly, from a theoretical standpoint, it broadens the scope by incorporating the research variables LnFDI and LnCHR, which have been infrequently addressed in previous tourism demand models. Simultaneously, Vietnam's tourism demand model corroborates the hypothesis of globalization. Secondly, from a methodological standpoint, the study has elucidated the techniques for selecting variables via correlation and stepwise regression, as well as the selection of research models through the use of diagrams. Consequently, for every country under study, the FGLS model, which was based on the FEM model, displayed a fixed impact on Vietnam's tourism demand.

This study holds significance in advancing the formulation of tourism demand models and methodologies for variable selection. Nevertheless, it acknowledges its limitations and proposes new avenues for research, along with recommendations for policymakers. Due to data scarcity, the study was unable to gather data spanning a longer time series. Particularly owing to the influence of Covid-19, there was a sudden decline in tourism demand, leading to certain variables' relationships inadequately representing the long-term landscape. Furthermore, by collecting data from 11 source markets, which represent 85% of the total number of foreign tourists visiting Vietnam, the study also opens up opportunities for deeper research into certain fundamental characteristics with greater development potential, such as

CHN, KOR, JAP, and MAC. Although FDI does not demonstrate statistical significance in Vietnam's tourism demand model, further examination of its influence on tourism demand is warranted in nations where links between tourism and FDI are established. Enhancing tourism development necessitates steadfast commitment across all levels and sectors, guided by cohesive directives. Collaboration and alignment among sectors, management tiers, regions, enterprises, and communities are essential for maximizing tourism benefits and fostering its growth.

Author Contributions: Author Contributions: Conceptualization, P.N.M.L.; methodology, P.N.M.L.; software, P.N.M.L.; validation, P.N.M.L.; formal analysis, P.N.M.L.; investigation, P.N.M.L.; data curation, P.N.M.L.; writing - original draft preparation, P.N.M.L.; writing - review and editing, P.N.M.L.; visualization, P.N.M.L.; supervision, P.N.M.L.; project administration, P.N.M.L. The author have read and agreed to the published version of the manuscript.

Funding: This study was financially supported by research group NNC.DHKT.2023.07 from the University of Economics, Hue University.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The author appreciates the University of Economics, Hue University for enabling this research.

Conflicts of Interest: The author declare no conflict of interest.

REFERENCES

Adeola, O., & Evans, O. (2019). Digital tourism: mobile phones, internet and tourism in Africa. *Tourism Recreation Research*, 44(2), 190-202. https://doi.org/10.1080/02508281.2018.1562662

Andergassen, R., & Candela, G. (2013). Less developed countries, tourism investments and local economic development. *Review of Development Economics*, 17(1), 16-33. https://doi.org/10.1111/rode.12012

Butler, R., & Suntikul, W. (Eds.). (2010). *Tourism and political change*. Goodfellow Publishers Ltd. London, England.

Cehan, A., & Iațu, C. (2024). A geographical perspective on the impact of Covid-19 on tourism demand in Romania. *GeoJournal of Tourism and Geosites*, *52*(1), 165-175. https://doi.org/10.30892/gtg.52115-1192

Chasapopoulos, P., Den Butter, F.A., & Mihaylov, E. (2014). Demand for tourism in Greece: a panel data analysis using the gravity model. *International Journal of Tourism Policy*, 5(3), 173-191. https://doi.org/10.1504/IJTP.2014.063105

Crouch, G.I. (1995). A meta-analysis of tourism demand. *Annals of tourism research*, 22(1), 103-118. https://doi.org/10.1016/0160-7383(94)00054-V

Craigwell, R., & Moore, W. (2008). Foreign direct investment and tourism in SIDS: Evidence from panel causality tests. *Tourism analysis*, 13(4), 427-432. https://mpra.ub.uni-muenchen.de/33438/

Divisekera, S. (2010). Economics of tourist's consumption behaviour: Some evidence from Australia. *Tourism management*, *31*(5), 629-636. https://doi.org/10.1016/j.tourman.2009.07.001

Dogru, T., Suess, C., & Sirakaya-Turk, E. (2021). Why do some countries prosper more in tourism than others? Global competitiveness of tourism development. *Journal of Hospitality & Tourism Research*, 45(1), 215-256. https://doi.org/10.1177/1096348020911706

Dritsakis, N. (2004). Tourism as a long-run economic growth factor: an empirical investigation for Greece using causality analysis. *Tourism economics*, 10(3), 305-316. https://doi.org/10.5367/0000000041895094

Dritsakis, N., & Gialetaki, K. (2004). Seasonal tourism demand models from USA to Greece. *Tourism Recreation Research*, 29(3), 7-13. https://doi.org/10.1080/02508281.2004.11081452

Forsyth, P., & Dwyer, L. (2009). Tourism price competitiveness. In The Travel and Tourism Competitiveness Report, *Managing in a Time of Turbulence*, World Economic Forum, Geneva, 77-90.

Ghaderi, Z., Hatamifar, P., & Khalilzadeh, J. (2018). Analysis of tourist satisfaction in tourism supply chain management. *Anatolia*, 29(3), 433-444. https://doi.org/10.1080/13032917.2018.1439074

Hanafiah, M.H.M., & Harun, M.F.M. (2010). Tourism demand in Malaysia: A cross-sectional pool time-series analysis. *International Journal of trade, economics and Finance*, 1(1), 80-83. https://doi.org/10.7763/ijtef.2010.v1.15

Katsikari, C., Hatzithomas, L., Fotiadis, T., & Folinas, D. (2020). Push and pull travel motivation: segmentation of the Greek market for social media marketing in tourism. *Sustainability*, 12(11), 1-18. https://doi.org/10.3390/su12114770

Kim, J., & Lee, C.K. (2017). Role of tourism price in attracting international tourists: The case of Japanese inbound tourism from South Korea. *Journal of Destination Marketing & Management*, 6(1), 76-83. https://doi.org/10.1016/j.jdmm.2016.03.002

Koutoulas, D. (2015). Product, tourism. In *Encyclopedia of Tourism*, 1-4, SpringerNature, Switzerland. https://doi.org/10.13140/RG.2.1.2250.4806

Kulendran, N. (1996). "Modelling Quarterly Tourist Flows to Australia Using Cointegration Analysis." *Tourism Economics*, 2(2): 203–22. https://doi.org/10.1177/135481669600200301

Kulendran, N., & Wilson, K. (2000). Is there a relationship between international trade and international travel? *Applied economics*, *32*(8), 1001-1009. https://doi.org/10.1080/000368400322057

Kusni, A., Kadir, N., & Nayan, S. (2013). International tourism demand in Malaysia by tourists from OECD countries: A panel data econometric analysis. *Procedia Economics and Finance*, 7, 28-34. https://doi.org/10.1016/S2212-5671(13)00214-1

Le, P.N.M., Nguyen, H.T.T., & Tran, T.D.T. (2022). The triangular causal relationship between economic growth, tourism, and foreign direct investment: A case study in central Vietnam. *Asian Economic and Financial Review*, 12(7), 565-581. https://doi.org/10.55493/5002.v12i7.4555

Leitão, N.C. (2010). Does trade help to explain tourism demand? The case of Portugal. *Theoretical and Applied Economics*, XVII(3), 63-74.

Mavrommati, A., Pendaraki, K., Kontogeorgos, A., & Chatzitheodoridis, F. (2021). A panel data model of international tourism demand for Greece. *The Central European Journal of Regional Development and Tourism*, 13(3), 142–157. https://doi.org/10.32725/det.2021.024

McCann, P., Poot, J., & Sanderson, L. (2010). Migration, relationship capital and international travel: theory and evidence. *Journal of Economic Geography*, 10(3), 361-387. https://doi.org/10.1093/jeg/lbp044

Meyer, D. (2013). Exploring the duality of structure and agency – The changing dependency para- digms of tourism development on the Swahili coast on Kenya and Zanzibar. *Current Issues In Tourism*, 16(7–8), 773–791. https://doi.org/10.1080/13683500.2013.785487

Nguyen, Q.H. (2021). Impact of Investment in Tourism Infrastructure Development on Attracting International Visitors: A Nonlinear Panel ARDL Approach Using Vietnam's Data. *Economies*, 9(131), 1-19. https://doi.org/10.3390/ economies9030131

Nguyen, Q.H. (2022). Tourism demand elasticities by income and prices of international market regions: Evidence using Vietnam's data, Economies, 10(1), 1–18. https://doi.org/10.3390/economies10010001

Nunkoo, R., & Seetanah, B. (2018). Foreign direct investment and tourism development: a theoretical and empirical review. *Sage Handbook Tourism Manag*, *9*, 556-566.

Peng, B., Song, H., Crouch, G.I., & Witt, S.F. (2015). A meta-analysis of international tourism demand elasticities. *Journal of Travel Research*, *54*(5), 611-633. https://doi.org/10.1177/0047287514528283

Rosselló-Nadal, J., & He, J. (2020). Tourist arrivals versus tourist expenditures in modelling tourism demand. *Tourism Economics*, 26(8), 1311-1326. https://doi.org/10.1177/1354816619867810

Rossello-Nadal, J., & Santana-Gallego, M. (2022). Gravity models for tourism demand modeling: Empirical review and outlook. *Journal of Economic Surveys*, 36(5), 1358-1409. https://doi.org/10.1111/joes.12502

Seifi, A., Motaghi, S., Soltani Ahmadi, M., & Pletnev, D. (2020). Modeling Tourism Demand of Iran and Selected Countries (Application of ARDL Method). *Bulletin of NOSU*, 1, 167-175, (In Russ.). https://doi.org/10.29025/1994- 7720-2020-1-167-175

Shafiullah, M., Okafor, L.E., & Khalid, U. (2019). Determinants of international tourism demand: Evidence from Australian states and territories. *Tourism Economics*, 25(2), 274-296. https://doi.org/10.1177/1354816618800642

Sheldon, P. (1993). Forecasting tourism: expenditures versus arrivals. *Journal ofTravel Research,* 32(1), 13–20. https://doi.org/10.1177/004728759303200103

Song, H., & Li, G. (2008). Tourism demand modelling and forecasting - A review of recent research. *Tourism management*, 29(2), 203-220. https://doi.org/10.1016/j.tourman.2007.07.016

Song, H., Qiu, R.T., & Park, J. (2019). A review of research on tourism demand forecasting: Launching the Annals of Tourism Research Curated Collection on tourism demand forecasting. *Annals of Tourism Research*, 75, 338-362. https://doi.org/10.1016/j.annals.2018.12.001

Song, H., Qiu, R.T., & Park, J. (2023). Progress in tourism demand research: Theory and empirics. *Tourism Management*, 94, 104655, 1-46. https://doi.org/10.1016/j.tourman.2022.104655

Suntikul, W., Butler, R., & Airey, D. (2010). The influence of foreign direct investment on accommodation patterns in Vietnam as a result of the open-door policy. *Current Issues in Tourism*, 13(3), 261-277. https://doi.org/10.1080/13683500902937628

Tang, S., Selvanathan, E.A., & Selvanathan, S. (2007). The relationship between foreign direct investment and tourism: empirical evidence from China. *Tourism economics*, 13(1), 25-39. https://doi.org/10.5367/000000007779784498

Tomohara, A. (2016). Japan's tourism-led foreign direct investment inflows: An empirical study. *Economic Modelling*, 52, 435-441. https://doi.org/10.1016/j.econmod.2015.09.024

Ulucak, R., Yücel, A.G., & İlkay, S.Ç. (2020). Dynamics of tourism demand in Turkey: Panel data analysis using gravity model. *Tourism Economics*, 26(8), 1394-1414. https://doi.org/10.1177/1354816620901956.

UNCTAD (2007). *FDI in Tourism: The Development Dimension*. UNCTAD current studies on FDI and development. New York ; Geneva : UN

Velasquez, M.E.B., & Oh, J. (2013). What determines international tourist arrivals to Peru? A gravity approach. *International Area Studies Review*, 16(4), 357-369. https://doi.org/10.1177/2233865913505103.

Vietnam's Ministry of Culture, Sports and Tourism - Vietnam's MCST (2014) *Du lịch Việt Nam thực trạng và giải pháp phát triển [The present state of tourism in Vietnam and proposed strategies for development]*. Labor Publishing House, Ha Noi.

Vu, H.M., & Ngo, V.M. (2019). Strategy development from triangulated viewpoints for a fast growing destination toward sustainable tourism development–a case of Phu Quoc Islands in Vietnam. *Journal of Tourism and Services*, 10(18), 117-140. https://doi.org/10.29036/jots.v10i18.86

Wu, D.C., Song, H., & Shen, S. (2017). New developments in tourism and hotel demand modeling and forecasting, *International Journal of Contemporary Hospitality Management*, 29(1), 507–529. https://doi.org/ 10.1108/IJCHM-05-2015-0249

Wooldridge, J. (2002). 'Econometric analysis of crosssection and panel data, MIT press.

Xu, L., Wang, S., Li, J., Tang, L., & Shao, Y. (2019). Modelling international tourism flows to China: A panel data analysis with the gravity model. *Tourism Economics*, 25(7), 1047-1069. https://doi.org/10.1177/1354816618816167

Yerdelen-Tatoglu, F., & Gul, H. (2020). Analysis of tourism demand using a multi-dimensional panel gravity model. *Tourism Review*, 75(2), 433-447. https://doi.org/10.1108/TR-05-2019-0147

Article history: Received: 24.02.2024 Revised: 15.05.2024 Accepted: 10.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.794-801
DOI 10.30892/gtg.542spl03-1254

WOMEN AS THOUGHTFUL AND RESPONSIBLE CONSUMERS OF TOURISM: GENDER DIFFERENCES IN TOURISM CONSUMPTION PATTERNS AND ATTITUDES TOWARDS TOURISM

Tibor GONDA*
University of Pécs, Faculty of Business and Economics, Institute of Marketing and Tourism,
Pécs, Hungary, e-mail: gonda.tibor@ktk.pte.hu

Citation: Gonda, T. (2024). WOMEN AS THOUGHTFUL AND RESPONSIBLE CONSUMERS OF TOURISM: GENDER DIFFERENCES IN TOURISM CONSUMPTION PATTERNS AND ATTITUDES TOWARDS TOURISM. *Geojournal of Tourism and Geosites*, 54(2spl), 794–801. https://doi.org/10.30892/gtg.542spl03-1254

Abstract: A particularly important area of research in tourism management is the study of consumer habits and attitudes towards tourism. With this in mind, an online survey was conducted in 2018 to investigate the attitudes and consumption habits of the Hungarian population towards tourism. The survey is representative of the Hungarian population aged 15–74 by gender, age groups (10-year intervals), and region of residence. Five variables were included in the analysis: gender, generations, type of municipality of residence, level of education, and subjective perception of income status. This study focuses on gender differences in. The aim of the study was to call attention to the disparate tourism consumption patterns and attitudes of females and males. Based on the statistical analysis of a representative sample of 1,085 respondents, our hypotheses about statistically verifiable differences between female and male tourism consumption behaviours were confirmed. It was found that women are more open than men to adopting environmentally responsible consumer behaviours when travelling.

Keywords: tourism, happiness, security, responsibility, gender

* * * * * *

INTRODUCTION

Tourism is one of today's fastest-growing economic sectors and a social phenomenon affecting a wide spectrum of the population, so it is no coincidence that, as tourism becomes more and more integrated, tourism and marketing researchers are also trying to gain a more comprehensive understanding of all the factors of the system, with particular attention to the study of consumer behaviour (Törőcsik and Szűcs, 2021). One prerequisite of effective tourism management is the need for there to be no conflict between the supply and consumer sides of tourism (Mondok et al., 2023): that is, that these two sides be in harmony. For the vast majority of people living in developed countries, tourism has become almost a basic necessity, one that should be considered a major form of leisure. Quality of life is a key issue facing us today, and there can be little doubt that the study of consumer behaviour within tourism is also increasingly important as it is clear that tourism has a significant impact on the quality of life, satisfaction, and subjective happiness of the population. One of the most important public policy goals in all developed countries is to provide a better quality of life for the population. In the framework of a representative survey on consumer habits presented in this article, we had the opportunity to assess the characteristics of tourism consumption of the Hungarian population as well as their perceptions of various aspects of tourism. The results of the research have been thoroughly analysed, and the detailed and in-depth examination continues to provide the members of the research team with ongoing work. In line with the majority of international studies (Chamboko-Mpotaringa and Tichaawa, 2023), it was primarily the different behaviour patterns across generations that were investigated. However, certain researchers already pointed out that in addition to age, a significant effect on tourism consumption is also exerted by gender (Mura and Khoo-Lattimore, 2012). The post-analysis of the data has revealed to us statistically verifiable and significant differences in the tourism habits of women as opposed to men. By scrutinizing the international literature on the issue, we were able to identify a dearth of research as far as gender-related consumption behaviours were concerned. Thus, the main aim of the present study is to highlight the differences in tourism consumption patterns between men and women.

Our study extends the results of previous research (Nunkoo and Ramkissoon, 2010; Rasoolimanesh et al., 2021) and includes in its scope the analysis of gender-based differences in how different emotional dispositions may influence divergent motivations in tourism habits (Perez Gálvez et al., 2023). In light of all these considerations as well as on the basis of the results of our previous research, the following hypotheses were put forward:

- H1: There are significant differences in the tourism consumption habits of men and women.
- H2: Women make more responsible decisions than men about tourism consumption.
- H3: Tourism plays a more important role in the life of women.

LITERATURE REVIEW

The effect of tourism on quality of life and happiness

As tourism is becoming an overarching social phenomenon, research into its various aspects is also becoming

* Corresponding author

increasingly multifaceted and comprehensive. The study of consumption patterns within tourism can be of great professional help in defining future development directions and in establishing effective tourism management and marketing practices. The Hungarian national representative research of 2018 provided a detailed investigation of the consumption habits of those who participate in tourism and those who do not (Csapó et al., 2019). The research also confirmed that the issue of security had become more important for travellers in recent years (Csapó and Törőcsik, 2020; Bátor and Raffay-Danyi, 2022). Confirming well-known trends in tourism (Törőcsik and Csapó, 2018) the study corroborated the claim that tourism activity is no longer merely about sweet idleness, because physical activity and dynamic consumer behaviour are typical of a significant proportion of tourists. Tourism is a key determinant of quality of life today. According to Csikszentmihalyi (1991), we must make our experiences better to make our lives better. There seems little doubt that tourism, as a source of experiences, can contribute to a subjective weighing up of positive factors since more pleasant experiences can make us more satisfied and upbeat, a view shared by Veenhoven (2003), who professes that the experience of travelling leads to a sense of happiness. In that view, subjective quality of life can be measured by an individual's happiness factor, so one would need to ask how satisfied a person is with her or his life. Happiness, then, is nothing more than a general contentment with life, and in Veenhoven's view it is also synonymous with well-being.

Quality of life surveys had started as early as in the 1960s and 70s, but the role and importance of tourism had not yet been considered (Michalkó, 2010). When looking at the relationship between tourism and quality of life and happiness, the starting point needs to be a definition of what we mean by these notions. Of the many approaches and definitions, Veenhoven's (1996) is a proper basis for our topic. According to it, the concept of quality of life has two meanings: on the one hand, the existence of the conditions we consider necessary for a good life, and on the other, the good life as an experience. In terms of content, this model is similar to Michalkó's theory of quality of life, in which quality of life is divided into objective and subjective pillars (Michalkó, 2010). The former is made up of three factors of welfare: standard of living, lifestyle, and living conditions, whereas the latter is constituted by three key factors of well-being: satisfaction, happiness, and contentment. There have also been several internationally known studies on happiness (Csikszentmihalyi, 1991; Veenhoven, 2003), and several definitions of happiness have been posited. Work on the relationship between tourism and subjective quality of life began to appear in the international literature in the 1990s (Jeffres and Dobos, 1993; Richards, 1999).

In Hungarian tourism research, however, apart from one or two cases and research programmes, the relationship between tourism and quality of life received little attention initially. As far as we are aware, the first time that gender differences in this question have been investigated is heralded by the current study. The positive impact of environmental change on regeneration and the satisfaction of various human needs has been studied before, and tourism science has explored it in sufficient depth (Puczkó and Rátz, 1998; Michalkó, 2007). After the turn of the millennium, tourism research in Hungary has focused on tourism and happiness (Michalkó et al., 2009; Kovács, 2007; Kovács et al., 2006). This line of inquiry has attracted international attention, too, including interest from prestigious publishers (Puckó and Smith, 2011; Rátz and Michalkó, 2013). Research in recent years has extended the study to people with disabilities, where the impact of tourism on happiness has been repeatedly verified (Raffay-Danyi and Ernszt, 2021; Farkas et al., 2022). Professionals in the field today recognise the close link between experience and tourism, since the currently held definition of tourism states that it is a change of environment combined with a growth in experiences (Michalkó, 2007). This thought leads us to the direct link between tourism and happiness. In Csikszentmihalyi's work, happy moments are described as an experience of flow, with one of its illustrations being a touristic experience, skiing (Csikszentmihalyi, 1991).

Undoubtedly, all experienced travellers can provide some good examples from their own experiences of happiness, and so it is important to study the extent to which active participation in travel activities, "being a tourist", increases the happiness of the participant: whether it has an impact on their quality of life, and whether there exist any gender differences in this respect. This should not be a matter of indifference for policy makers either, as the continuous improvement of the quality of life of the population is one of the priorities of modern governance (Bianchi, 2007). In international tourism and quality of life studies, the focus is no longer restricted to the traveller – local residents and tourism service providers are also taken into account (Andereck et al., 2007). The work of Mei Pung et al. (2020) revealed that the transformational effect of tourism differs across genders: tourism exerts a stronger effect on women. With impulses from social media and many other consumer drivers, tourism is expected to continue to grow dynamically in the coming years (Krátki et al., 2022). We must therefore be aware of the impact of tourism on our lives. Be that as it may, in recent years the topic has been left out of the mainstream of tourism research in Hungary, even though, as Michalkó states (2010: 108), a society of happy people is more open to the world, more sensitive to environmental issues. This is one of the reasons that the publication of the results of our 2018 research holds potential in revealing the relationship between tourism and quality of life, tourism and happiness, in the context of an attitudinal analysis, and in highlighting significant gender differences.

Environmenal impact of tourism; Responsible tourism

Over-tourism is one of today's most topical tourism issues, the study of which is timely because many destinations are already struggling with its negative effects (Herntrei, 2019; Kagermeier and Erdmenger, 2019). Furthermore, Goodwin's view is seen as valid, according to which in the case of over-tourism, hosts and guests, locals and tourists, feel that there are too many visitors and that the quality of life or experience in the host area has deteriorated to an unacceptable degree, which runs afoul of the principles of responsible tourism (Goodwin, 2017). The solution to this situation (or at least a chance to avoid further worsening of the problems) lies in strengthening responsible tourism. In line with aspects of sustainable development, it has been examined whether it is important for domestic consumers that natural assets be adequately protected and that the economic benefits of tourism provide benefit to local residents as well. It is true for all forms of tourism that uncontrolled development may cause more harm than good and that only in an appropriate framework and with appropriate regulation can its benefits be reaped, and the harmful consequences mitigated or eliminated (Inskeep, 2000). A change is necessary to ensure the popularity and further development of tourism, a change which ought to take place in terms of supply and consumer demand alike. This paper investigates the extent to which the Hungarian population is open to environmentally conscious and responsible consumer behaviour while travelling. Observations attest to significant differences between men and women as regards their perception of this issue. Recent views on sustainable tourism are convergence-based: it is believed that sustainable tourism is achievable for all types of tourism and is independent of the mass nature of tourism (Clarke, 1997; Inskeep, 2000). The definition of and research on sustainable tourism has been addressed by several leading scholars at the international level (Sharpley, 2012; Spinelli, 2021).

The aim of responsible travel is to maximise the potential social, economic, and environmental benefits of tourism on destinations while minimising its negative side effects. Its participants are therefore conscious consumers who, overcoming individual selfishness and avoiding hedonistic behaviours, seek not only to maximise their own experience of tourism, but also to optimise the positive impact of their travel. The special beauty and value of the tourism system is that it is often this behaviour that results in an optimal and long-lasting tourist experience (Gonda, 2017). According to the definition of the founding father of responsible tourism, Professor Harold Goodwin, founder of the Leeds-based International Centre for Responsible Tourism, responsible tourism minimises the negative impact of tourism on the natural, social, and cultural environment (Ashley et al., 2001). In addition, it promotes the conservation of natural and cultural heritage and the overall diversity of the world. Through a deeper engagement with local residents, it has the power to provide a genuine experience, to buttress a better understanding of the cultural and environmental issues related to tourism, and to contribute to the development of mutual respect between tourists and hosts. As the impact of tourism on the environment is tightly linked to sustainability, many organisations have turned their attention to the new research direction of sustainable tourism development. Add to all of this the fact that as tourism has become an increasingly important sector of the economy, contributing to economic growth and employment, the last three decades have seen an increase in research on the impact of tourism (Fodness, 2016). The European Union’s tourism policy has become increasingly green, with a focus on the need to move towards carbon-neutral tourism (Conefrey and Hanrahan, 2022).

METHODS

The present study is based on the results of an online survey involving 1,085 respondents, conducted in April and May 2018, which investigated the attitudes of the Hungarian population towards tourism from a generational perspective. Before finalizing questionnaire items, we tested the questions three times with focus groups of 10–12 people, followed by data collection by a professional enterprise specialized in the field. The survey is representative of the Hungarian population aged 15–74 by gender, age groups (10-year intervals), and residential region. The data were processed in two stages. The demographic data of respondents appear in Table 1.

Table 1. Demographic characteristics of respondents (%) (N=1,085) (Source: Own editing)

Gender	
Male	48.7
Female	51.3
Highest completed education	
Primary school	3.2
Vocational training	12.9
Vocational school diploma	20.4
High school diploma	16.1
Higher technical school	10.9
Bachelor	18.5
Master	17.1
No response	1.0
Age	
Young (15–34 years old)	24.2
Middle-aged (35–65)	51.1
Senior (65+)	24.7
Financial status	
Do well and can save up	6.8
Do well but can save little	37.9
Just above making ends meet, no saving up	37.1
Occasionally cannot make ends meet	8.0
Have regular financial woes	3.4
No response	6.7
Economic status	
Active, blue-collar	22.1
Active, white-collar	28.5
Student	3.9
Retired	29.2
Inactive	13.5
No response	2.8

In the first, primary (frequency) analyses were carried out, whereas, in the second, a demographic background analysis was conducted, statistically investigating with the SPSS package whether there was statistically verifiable variation in the responses of different demographic groups to survey items. Five variables were included in the analysis: gender, generations, type of municipality of residence, level of education, and subjective perception of income status. The present study documents results where a clear significant relationship was revealed between gender and responses to each of the questions examined. Special emphasis is therefore placed on highlighting gender differences in tourism consumption patterns and attitudes, analyzing results that show that in many cases, women's attitudes to travel (e.g., to its safety) are markedly different from those of men. It is also striking that the impact of tourism on women's well-being and sense of happiness is stronger than it is for men. The survey invited respondents to read several statements and to decide to what extent they agreed with each, quantifying this on a 5-point Likert scale, where 1 meant strong, whereas 2 had slight disagreement; 4 indicated slight, whereas 5 had strong agreement. Posing some issues of interpretation of attitudes was the case of respondents choosing 3 on the scale as this showed neither rejection nor acceptance.

RESULTS

1. Women make responsible and prudent decisions

With the use of IBM SPSS statistical software, it is possible to test whether respondents' answers are related to their gender significantly. The first striking difference between women and men is already evident in the choice of their travel destinations, with women clearly shown to choose destinations with caution, seeking safety: there is a 30–50% gender difference in attitudes towards safety (Table 2).

Table 2. Breakdown of responses to items on safety in the target area by gender (%) (Source: Own editing)

Statement \ Scale		Don't know/ prefer not to say	1: strong dis-agreement	2: slight dis-agreement	3: neither rejection nor acceptance	4: slight agreement	5: strong agreement
Safety is the most important factor in my travel decision	Women	4.7	7.5	8.4	22.8	22.1	34.5
	Men	4.4	8.3	12.1	28.8	19.7	26.6
My travel decision depends on how safe the country is	Women	4.5	5.2	5.7	17.2	26.0	41.4
	Men	4.2	6.1	6.6	24.3	27.9	30.9
I am afraid of places where there has been recent violence, war	Women	5.0	8.8	7.7	17.2	16.8	44.4
	Men	4.9	7.8	11.3	25.1	21.6	29.3

In order to be able to make a decision with certainty and weigh up all the important factors influencing the decision, they need to find out about the place in question beforehand. There is a significant high level of favour of women's answer to this question, which confirms that they tend to be more careful in their decisions (Figure 1). Making responsible choices also involves making decisions that are within the realistic financial means of the family budget, for example, by not giving in to temptation and choosing an expensive destination. Men are less consistent in this respect (Figure 2).

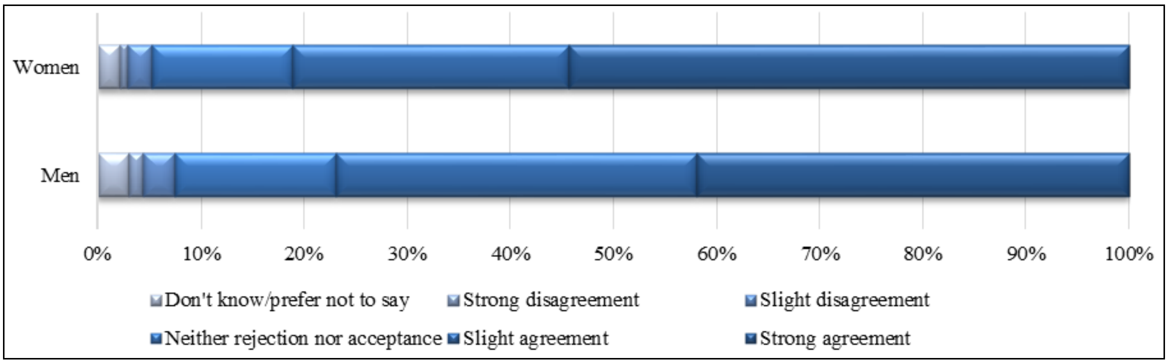


Figure 1. Breakdown of responses to the item about the prior information on the location by gender (Source: Own editing)

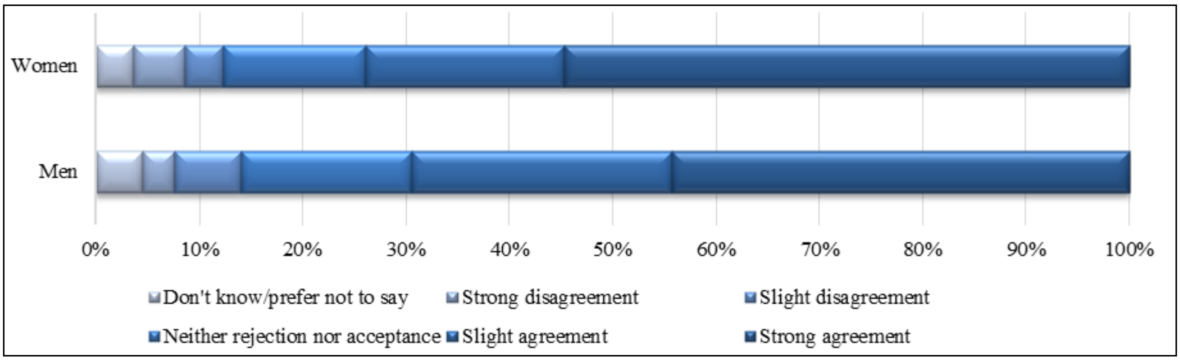


Figure 2. Breakdown of responses to the item "I will not choose a country as a destination that is expensive for me" by gender (Source: Own editing)

Considering the foregoing results, hypothesis H2, stating that women make more responsible decisions about tourism consumption than men, has been confirmed, so it is verified.

2. Tourism is more important for women

In examining this set of questions, an interesting and unexpected result surfaced. There were clear differences between male and female respondents in terms of the impact of tourism on quality of life. We can claim that tourism plays a greater role in women's lives and thus it has a greater impact for them: the need to break out of the treadmill and have a significantly different experience is more pronounced in their case (Figure 3). This is likely also due to the fact that women generally have a heavier burden of housework and child-rearing than do men (Steinmetz et al., 2022). A distinct difference was documented across the genders in the perception that tourism makes life more fulfilling, with 57.7% of women respondents strongly agreeing with this statement, compared with 43.8% of men (Figure 4).

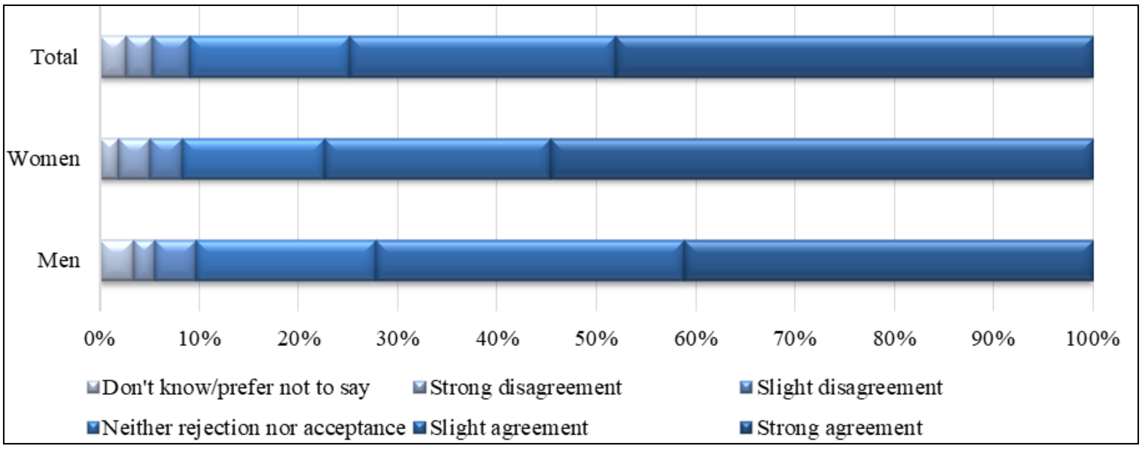


Figure 3. Breakdown of responses to the item "I want a completely different experience from everyday life when travelling" by gender (Source: Own editing)

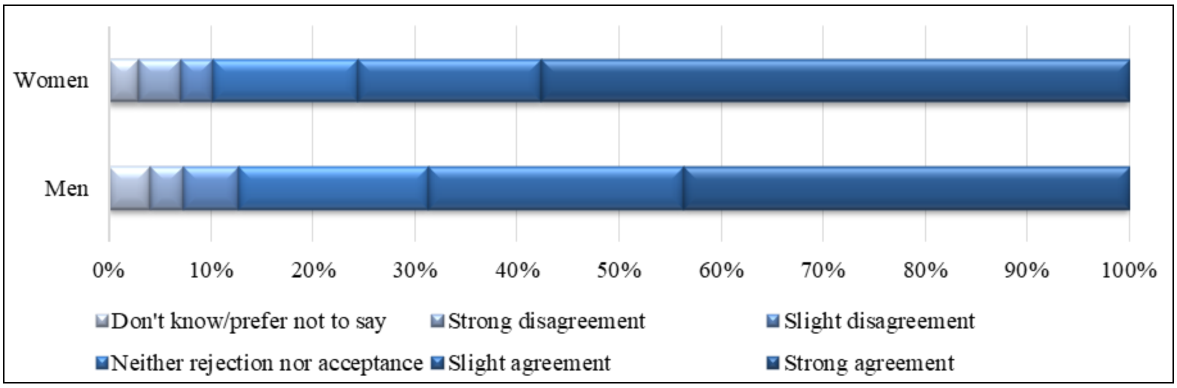


Figure 4. Breakdown of responses to the item "Travels/holidays make my life more fulfilling" by gender (Source: Own editing)

If it makes life more fulfilling, it is reasonable to assume that people will also be happier through travel. The question received a high rate of responses of agreement, with only a limited number of participants indicating disagreement. Still, it is striking that women in particular fully agreed with the statement, of whom 63.7% indicated total agreement, whereas only 47% of men did (Figure 5). This result is in line with that reported by Puny et al. (2020), according to which tourism experiences exert a stronger effect on women.

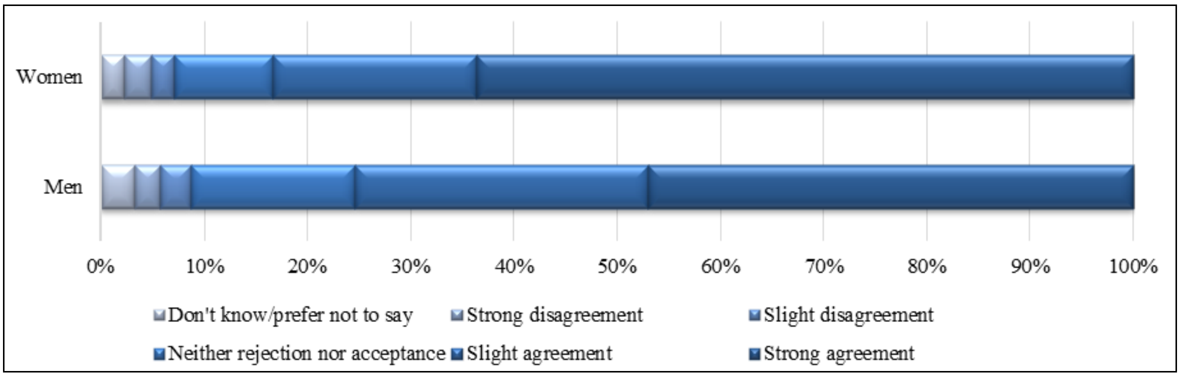


Figure 5. Breakdown of responses to the item "The experience of travelling/holidays makes me happier" by gender (Source: Own editing)

Almost half of women respondents agreed that travel is part of their lives (42.8%). When the rate of respondents who chose 4 on the scale (15%) is added, we find that almost 60% of female respondents agreed with the statement. No significant difference between men and women was revealed in this respect. The difference is rather in the strength of the acceptance of the claim: compared to women, far fewer men chose 5 (total agreement), while more men chose 4 (slight agreement) (Figure 6). The results above provide proof for the claim that women place a premium on leaving behind the everyday treadmill of life – they are eager to collect new experiences that make them happy. Tourism provides superior opportunities for that goal. When contrasting results for men and women, we can state that the statistical test confirms the claim that tourism plays a more important role in women's lives, and thus hypothesis H3 is verified.

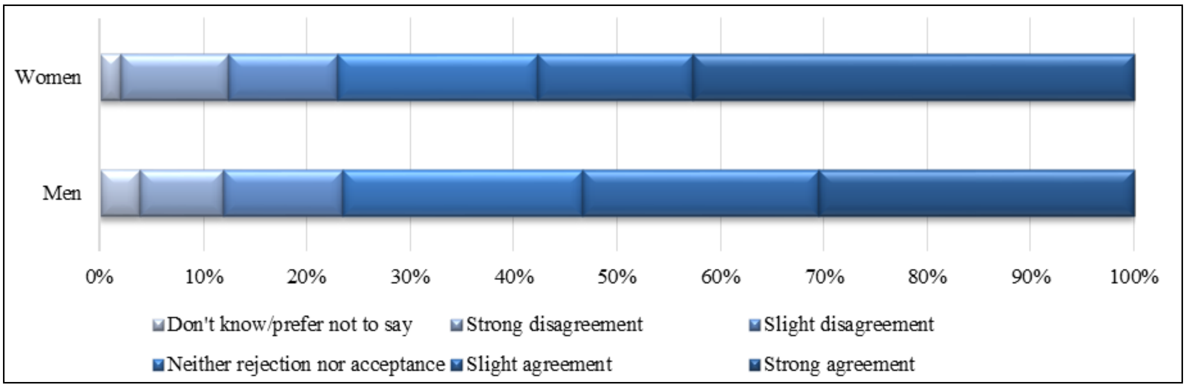


Figure 6. Breakdown of responses to the item "Travel/holidays are part of my life" by gender (Source: Own editing)

3. Gender differences in leisure travel consumption patterns

The survey asked several questions related to the Hungarian population's activities in travel preparation, use of marketing tools, and activities during travel. Without wishing to be exhaustive, we highlighted a few questions where there was a strong statistical relationship between gender and the individual survey items. One of these is the influence of movies on the choice of destination. The growing popularity of film tourism is a widely studied and well-known issue, and the current investigation also shows that the real target group for film tourism is women.

When asked whether there are places that attract them because they saw a good film about them, almost twice as many women as men chose the strong agreement response (25.3% versus 13.4%). It was also revealed that while on holiday, women are less likely to choose sweet idleness and are more interested in visiting natural and cultural attractions, the difference especially marked in terms of cultural involvement (Tables 3 and 4).

Another major difference was found in how much participants were eager to get to know the holiday location: women reported this to be much more important than men. This is borne out by the fact that the number of women choosing the highest value is over 50% higher than the number of men, a very significant variation.

Table 3. Breakdown of responses to items on motivation of visit in the target area by gender (%) (Source: Own editing)

Statement / Scale		Don't know/ prefer not to say	1: strong dis-agreement	2: slight dis-agreement	3: neither rejection nor acceptance	4: slight agreement	5: strong agreement
Some places attract me because I have seen a good film about them	Women	3.1	9.2	8.3	25.5	28.7	25.3
	Men	3.4	10.2	10.8	30.7	31.4	13.4
When travelling I aim to get to know the places I visit	Women	5.0	8.8	7.7	17.2	16.8	44.4
	Men	4.9	7.8	11.3	25.1	21.6	29.3

Table 4. Breakdown of responses to items on preference of visit in the target area by gender (%) (Source: Own editing)

Statement / Scale		Very frequently	Frequently	Seldom	Never
Visiting nature sights	Women	32.1	44.3	19.0	4.5
	Men	24.7	47.5	22.1	5.7
Visiting cultural attractions	Women	39.6	44.6	11.5	4.3
	Men	28.2	48.7	18.4	4.7

CONCLUSION

Tourism research has highlighted the importance of considering different aspects of safety when making consumer choices, with the current research also showing evidence that this is due to the different consumer attitudes of women compared to men. Women choose destinations with caution, seeking safety, with a 30–50% gender difference found in attitudes towards safety. To be able to decide on the safety of a destination, taking into account all the important factors influencing the decision, people should be informed about the place in advance, choosing a destination that is in line with the family's financial means. The beneficial impact of tourism on the quality of life and subjective happiness is clear, as has been highlighted by several previous studies, with women and men alike reporting agreement.

However, our research shows that women are more eager to get away from the routine of everyday life and to benefit from travel/vacation experiences. In addition, there were clear differences between male and female respondents on the impact of tourism on quality of life. We can conclude that tourism plays a greater role in women's lives and has a greater impact on them: they have a stronger desire to gain experiences that are completely different from the everyday and more of them believe that travels/holidays make their lives more fulfilling. In this context, a high number agree with the statement that travel/holidays make them happy. It should be borne in mind, however, that everyone is entitled, as far as possible, to the enjoyment of the positive experiences of tourism. This is not merely an economic issue, but also a social one. The need for this is underlined by the fact that only 57.8% of women and 53.4% of men agreed with the statement "Travel is part of my life", indicating that there is room for improvement in this area.

Looking at tourism today, a note should also be made of the emergence and intensification of socially and environmentally undesirable side effects of tourism. Changes are needed to maintain and further develop the popularity of tourism, including changes in supply as well as in consumer demand. This study has brought to light that women are more open than men to adopt environmentally responsible consumer behaviours when travelling.

Limitations and suggestions for future studies

This study has built on the results of a project focusing on the differences in consumer behaviour across generations. The fact that there were additional statistically verifiable differences according to gender was revealed only in the post-analysis phase, which is the reason that the initial research questions did not include this particular phenomenon. However, there is no doubt at all that the study of this issue is justified as effective tourism marketing, product development, and tourism management need to be based on a fuller understanding of the consumption habits on the demand side. We therefore recommend that future research include surveys that directly tap into gender differences in consumer behaviour and attitudes.

Author Contributions: Conceptualization, T.G.; methodology, T.G.; software, T.G.; validation, T.G.; formal analysis, T.G.; investigation, T.G.; data curation, T.G.; writing - original draft preparation, T.G.; writing - review and editing, T.G.; visualization, T.G.; supervision, T.G.; project administration, T.G. The author has read and agreed to the published version of the manuscript.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Andereck, K.L., Karinm, M., Valentine Christine, A., Vogt, & Richard, C., Knopf. (2007). A Cross-cultural Analysis of Tourism and Quality of Life Perceptions. *Journal of Sustainable Tourism* 15(5), 482–502. https://doi.org/10.2167/jost612.0

Ashley, C, D. Roe, & H. Goodwin. (2001). *Pro-Poor Tourism Strategies: Making Tourism Work For The Poor: A review of experience*. Pro-Poor Tourism Report No. 1. Overseas Development Institute. https://cdn.odi.org/media/documents/3246.pdf

Bátor, F., & Á. Raffay-Danyi. (2022). Hungarian travelers' risk perceptions and their impact on travel intentions in a mid-pandemic setting. *Turisztikai és Vidékfejlesztési Tanulmányok* 7(4), 94–109. https://doi.org/10.15170/TVT.2022.07.04.07

Bianchi, M. (2007). If happiness is so important, why do we know so little about it? In *Handbook on the economics of happiness*, edited by Luigino Bruni and Pier Luigi Porta, 127–150. Cheltenham: Edward Elgar Publishing.

Chamboko-Mpotaringa, M., & T.M. Tichaawa, (2023). Moderating effect of age on the adoption of digital marketing tools and platforms in domestic leisure travel. *GeoJournal of Tourism and Geosites*, 51(4spl), 1636–1644. https://doi.org/10.30892/gtg.514spl05-1160

Clarke, J. (1997). A framework of approaches to sustainable tourism. *Journal of Sustainable Tourism* 5(3), 224–233. https://doi.org/10.1080/09669589708667287

Conefrey, A, & J. Hanrahan. (2022). Comparative analysis of national tourism decarbonisation plans. *European Journal of Tourism Research* 31(3105), 1–33. https://doi.org/10.54055/ejtr.v31i.1979

Csapó, J. & M. Törőcsik. (2020). The evaluation of the role and importance of safety and risks in the travel attitudes of the Hungarian tourists. *Turisztikai és Vidékfejlesztési Tanulmányok* 5(1): 71–81. https://doi.org/10.15170/TVT.2020.05.01.06

Csapó, J., M. Törőcsik, & Á. Nagy. (2019). Nemturizmus és életstílus összefüggése [Nontourism and lifestyle]. *Turisztikai és Vidékfejlesztési Tanulmányok* 4(2), 5–18. https://doi.org/10.15170/TVT.2019.04.02.01

Csikszentmihalyi, M. (1991). *Flow: The psychology of optimal experience*. New York: HarperPerennial.

Farkas, J. Z. Raffay, & Cs. Petykó. (2022). A new approach to accessibility, disability and sustainability in tourism – multidisciplinary and philosophical dimensions. *Geojournal of Tourism and Geosites* 40(1), 319–326. https://doi.org/10.30892/gtg.40138-834

Fodness, D. (2016). The problematic nature of sustainable tourism: Some implications for planners and managers. *Current Issues in Tourism* 20(16), 1–13. https://doi.org/10.1080/13683500.2016.1209162

Gonda, T. (2017). *A tájzabálótól a tudatos turistáig* [From sight gobbler to conscious tourist]. Szekszárd: PTE KPVK.

Goodwin, H. (2017). *The Challenge of Overtourism*. Responsible Tourism Partnership Working Paper 4. https://haroldgood win.info/wp-content/uploads/2020/08/rtpwp4overtourism012017.pdf

Herntrei, M. (2019). Tourist go home! Beobachtungen zu Overtourism und einer sinkenden Tourismusakzeptanz in Europa. Welche Folgen ergeben sich für Wissenschaft und Praxis? In *Destination und Lebensraum*, edited by Harald Pechlaner, 107–123. Wiesbaden: SpinglerGabler. https://doi.org/10.1007/978-3-658-28110-6_9

Inskeep, E. (2000). *A fenntartható turizmus fejlesztése: Irányelvek a turizmus tervezőinek és szervezőinek* [Developing sustainable tourism. Principles for designer and organisers]. Budapest: Geomédia Kiadó.

Jeffres, W., Leo, & J. Dobos. (1993). Perceptions of leisure opportunities and the quality of life in a metropolitan area. *Journal of Leisure Research* 25(2), 203–217. https://doi.org/10.1080/00222216.1993.11969918

Kagermeier, A., & E. Erdmenger. (2019). Overtourismus: Ein Beitrag für eine sozialwissenschaftlich basierte Fundierung und Differenzierung der Diskussion. *Zeitschrift für Tourismuswissenschaft* 11(1), 65–98. https://doi.org/10.1515/tw-2019-0005

Kovács, B., N. Horkay, & G. Michalkó. (2006). A turizmussal összefüggő életminőség-index kidolgozásának alapjai [The foundation of developing a living standard index related to toursim]. *Turizmus Bulletin* 10(2), 19–26.

Kovács, B. (2007). Életminőség – boldogság – stratégiai tervezés [Standard of living, happiness, strategic planning]. *Polgári Szemle* 3(2), 14–29.

Krátki, D., T. Berki, Z. Karancsi, E. Szabó, & F. Győri. (2022). The Impact of Social Media on Attitudes towards Tourism. *Turisztikai és Vidékfejlesztési Tanulmányok* 7(3), 90–109. https://doi.org/10.15170/TVT.2022.07.03.07

Nunkoo, R. & H. Ramkissoon (2010). Gendered theory of planned behaviour and residents' support for tourism. *Current Issues in Tourism*, 13(6), 525-540

Michalkó, G. (2007). *A turizmuselmélet alapjai* [The foundations of tourism theory]. Székesfehérvár: Kodolányi János Főiskola.

Michalkó, G. (2010). *Boldogító utazás: a turizmus és az életminőség kapcsolatának magyarországi vonatkozásai* [Happy travel: the relationship between tourism and quality of life in Hungary]. Budapest: MTA Földrajztudományi Kutató Intézet. https://www.mtafki.hu/konyvtar/kiadv/Boldogito.pdf

Michalkó, G., T. Rácz, & A. Irimiás. (2009). Health tourism and quality of life in Hungary: some aspects of a complex relationship. In *Salute e lavoro: Nono Seminario Internazionale di Geografia Medica*, edited by Giovanni De Santis, 79–90. Perugia: RUX Editrice.

Mondok, A., Kóródi, M., Kárpáti, J., Pallás, I.E., Gogo, F.C.A., & Dávid, L.D. (2023). The contradictious expectations of the actors of the tourism organizational and consumer market in sustainable destinations development. *GeoJournal of Tourism and Geosites*, 46(1), 200–207. https://doi.org/10.30892/gtg.46122-1016

Mura, P. & Khoo-Lattimore, C. (2012). Young tourists, gender and fear on holiday. *Current Issues in Tourism*, 15(8).

Mei Pung, J., R. Yung, C. Khoo-Lattimore & G. Del Chiappa, (2020). Transformative travel experiences and gender: a double duoethnography approach. *Current Issues in Tourism*, 23(5),1-21 http://doi.org/ 10.1080/13683500.2019.1635091

Perez Gálvez, J.C., Fuentes Jiménez, P.A., Rodríguez Gutiérrez, P., & Medina Viruel, M.J. (2023). Emotional perception and cultural motivation on loyalty to a world heritage sites destination. *GeoJournal of Tourism and Geosites*, 49(3), 1165–1175. https://doi.org/10.30892/gtg.49331-1115

Puczkó, L. & T. Rácz. (1998). *A turizmus hatásai* [The effects of tourism]. Budapest: Aula, Kodolányi János Főiskola.

Puczkó, L. & M. Smith. 2011. Tourism-Specific Quality-of-Life Index: The Budapest Model. In *Quality-of-Life Community Indicators for Parks, Recreation and Tourism Management*, edited by Megha Budruk, and Rhonda Phillips, 163–183. Social Indicators Research Series 43, Dordrecht: Springer.

Raffay-Danyi, Á, & I. Ernszt. (2021). Esélyegyenlőség a Veszprém-Balaton 2023 Európa Kulturális Fővárosa projekt rendezvényein [Equal opportunities at the events of the Veszprém-Balaton 2023 European Capital of Culture project]. *Turisztikai és Vidékfejlesztési Tanulmányok* 6(1): 5–19. https://doi.org/10.15170/TVT.2021.06.01.01

Rasoolimanesh, S., Mostafa Khoo-Lattimore, C., Md Noor, Shuhaida, Jaafar, Mastura & Konar, Rupam (2021). Tourist engagement and loyalty: Gender matters? *Current Issues in Tourism*, 24(6),871-885. https://doi.org/10.1080/13683500.2020.1765321

Rátz, T. & G. Michalkó. (2013). *Travel as a Factor of Happiness in Hungary*. In *Tourist Experience and Fulfilment: Insights from Positive Psychology*, edited by Sebastian Filep, and Philip Pearce, 54–71. Oxon: Routledge.

Richards, G. (1999). Vacations and the quality of life. *Journal of Business Research* 44(3): 189–198. https://doi.org/10.1016/S0148-2963(97)00200-2

Sharpley, R. (2012). Tourism and sustainable development: Reconsidering a concept of vague policies. *Journal of Policy Research in Tourism, Leisure and Events* 4(3): 380–382. https://doi.org/10.1080/19407963.2011.613229

Spinelli, R. (2021). Communicating and promoting sustainability in tourism: an analysis of the official websites of the Italian regions. *European Journal of Tourism Research* 29(2916): 1–9. https://doi.org/10.54055/ejtr.v29i.2183

Steinmetz, S., L. Vandecasteele, F. Lebert, M. Voorpostel, & O. Lipps. (2022). The gendered consequences of the COVID-19 lockdown on unpaid work in Swiss dual earner couples with children. *Gender Work and Organ*ization 29(6): 2034–2051. https://doi.org/10.1111/gwao.12875

Törőcsik, M., & J. Csapó. (2018). Fogyasztói trendek hatása a turizmusra [Impact of consumer trends on tourism]. In *Generációk a turizmusban: I. Nemzetközi Turizmusmarketing Konferencia. Tanulmánykötet*, edited by János Csapó, Viktória Gerdesics, and Mária Törőcsik, 8–22. Pécs: PTE KTK.

Törőcsik, M., & K. Szűcs. (2021). *Fogyasztói magatartás: Mintázatok, trendek, alkalmazkodás* [Consumer behaviour: patterns, trends, adaptation]. Budapest: Akadémiai Kiadó.

Veenhoven, R. (1996). The study of life statisfaction. In *A comparative study of satisfaction with life in Europe*, edited by Willem E. Saris et al., 11–48. Budapest: Eötvös University Press.

Veenhoven, R. (2003). Hedonism and Happiness. *Journal of Happiness Studies* 4(4): 437 –457. https://doi.org/10.1023/B: JOHS.0000005719.56211.fd

Article history: Received: 16.02.2024 Revised: 16.05.2024 Accepted: 11.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.802-810
DOI 10.30892/gtg.542spl04-1255

EXPLORING THE IMPACT OF ARTIFICIAL INTELLIGENCE INTEGRATION ON GUEST EXPERIENCE IN THE HOTEL INDUSTRY

Pritilata ACHARYA*

Siksha 'O' Anusandhan University, Research Scholar, Odisha, India, e-mail: priti.acharya@yahoo.co.in

Smita S. MAHAPATRA

Shiksha 'O' Anusandhan University, Faculty of Hospitality and Tourism Management, Odisha, India, e-mail: smitamahapatra77@gmail.com

Citation: Acharya, P., & Mahapatra, S.S. (2024). EXPLORING THE IMPACT OF ARTIFICIAL INTELLIGENCE INTEGRATION ON GUEST EXPERIENCE IN THE HOTEL INDUSTRY. *Geojournal of Tourism and Geosites*, 54(2spl), 802–810. https://doi.org/10.30892/gtg.542spl04-1255

Abstract: This study examines AI's role in enhancing guest satisfaction and efficiency in the hotel industry. Employing a mixed-methods approach, it analyzes guest feedback and interviews staff at AI-integrated hotels. The findings aim to identify key AI applications that boost satisfaction and efficiency, and outline challenges and best practices for AI implementation. This research offers a holistic view of AI's influence on hospitality, enriching understanding and guiding industry practices. As the hotel industry continues to evolve, the integration of artificial intelligence (AI) technologies has become increasingly prevalent, aiming to enhance guest experience. This research investigates the impact of AI integration on guest experience enhancement within the hotel industry. The purpose of this study is to comprehensively explore how AI technologies influence various aspects of guest satisfaction in hotels. A mixed-methods approach is employed, combining quantitative analysis of guest feedback data with qualitative methods by interviewing the guests staying in the hotel. Data is collected from a diverse range of hotels that have implemented AI technologies, allowing for a nuanced understanding of the impacts across their establishments. This research is expected to provide valuable insights into the multifaceted effects of AI integration in the hotel industry. Specifically, it aims to identify the specific AI applications that most significantly contribute to guest satisfaction levels. Additionally, the study seeks to uncover potential challenges and limitations associated with AI implementation, as well as best practices for successful integration. This topic lies in its comprehensive examination of AI's impact on both guest experience within the hotel industry. While previous research has explored AI's role in hospitality, few studies have undertaken such a holistic analysis, considering its implications for guests. By addressing this gap, this research contributes to a deeper understanding of the transformative effects of AI in the hotel sector, providing practical insights for industry practitioners and stakeholders.

Keywords: Artificial intelligence, Guest experience, Hospitality technology, Hotel industry

* * * * * *

INTRODUCTION

In recent years, the hotel industry has witnessed a rapid proliferation of artificial intelligence (AI) technologies aimed at enhancing guest experiences. From chatbots and virtual assistants to predictive analytics and smart room controls (Gupta et al., 2023), AI innovations offer unprecedented opportunities for hotels to deliver personalized services and streamline operations (Daniel, 2022). This research aims to explore the impact of AI integration on guest experience enhancement within the hotel industry (Kong et al., 2023; Sankar and David, 2023).

While there has been considerable research on the integration of artificial intelligence (AI) in the hotel industry, there exists a notable research gap in understanding the specific nuances of its impact on guest experience enhancement. While there is acknowledgment of AI's potential to improve various aspects of hotel operations, there is a lack of specificity regarding the types of AI applications that have the most significant impact on guest experience. While AI implementation aims to enhance guest experience, there is limited research on how guests perceive and respond to AI-driven initiatives within hotels. Understanding guest attitudes, preferences, and concerns regarding AI technologies is essential for effective implementation and customization. Despite the potential benefits of AI integration for enhancing guest experience, there is a lack of research on the challenges and limitations encountered during implementation.

The following are the research objective for the study:

- To Investigate the Impact of AI Integration on Guest Experience Enhancement.
- To Identify Key AI Applications Driving Guest Experience.
- To Understand Guest Perceptions and Attitudes Towards AI Integration.
- To Provide Practical Recommendations for AI Implementation in the Hotel Industry

LITERATURE REVIEW

Artificial intelligence (AI) is revolutionizing various industries, including hospitality, by offering innovative solutions to enhance guest experiences (Makar, 2023; Bulchand-Gidumal, 2022). As hotels seek to provide personalized services and

* Corresponding author

streamline operations, the integration of AI technologies has become increasingly prevalent (Al-Hyari et al., 2023; Bronzin et al., 2021). Studies by Kumar et al. (2023) and Jamaluddin and Rahmat (2022) highlight how AI-powered chatbots and virtual concierges can enhance guest satisfaction by providing real-time assistance and personalized recommendations (Nannelli et al., 2023; Rajan et al., 2022; Singh et al., 2022). Moreover, research by Doborjeh et al. (2022) and Bulchand-Gidumal et al. (2023) emphasizes the role of AI in optimizing revenue management, resource allocation, and predictive maintenance, leading to improved operational efficiency and cost savings (Lestari et al., 2022; Park et al., 2024) ultimately leading to increase in customer satisfaction. Artificial intelligence (AI) is revolutionizing various industries, including hospitality, by offering innovative solutions to enhance guest experiences (Daniel, 2022; Cheong and Law, 2023).

As hotels seek to provide personalized services and streamline operations, the integration of AI technologies has become increasingly prevalent (Jamaluddin and Rahmat, 2023; Sharma et al., 2023). One of the most significant ways AI enhances guest experiences is through personalized interactions (Gupta et al., 2022; Cao et al., 2024). AI-powered chatbots (Camilleri and Troise, 2023) and virtual assistants enable hotels to engage with guests in real-time, addressing inquiries, providing recommendations, and facilitating bookings efficiently (Rosman et al., 2023; Daniel, 2022; Gonçalves et al., 2024). These conversational interfaces offer a seamless communication channel, allowing guests to access information and services conveniently, enhancing overall satisfaction (Brylska et al., 2022; Rauf et al., 2022).

Moreover, AI enables hotels to deliver personalized recommendations and experiences tailored to individual preferences Erik, 2023. By analyzing guest data and behaviour patterns, AI algorithms can anticipate guest needs and preferences, offering customized suggestions for dining, entertainment, and activities (Dangwal et al., 2023). This level of personalization creates a sense of exclusivity and fosters emotional connections with guests, leading to enhanced loyalty and positive word-of-mouth (Praharaj et al., 2023; Gursoy and Cai, 2024). AI-driven technologies also contribute to improved efficiency, indirectly impacting guest experiences (Hassan et al., 2022; Koranne and Sandhu, 2021; Bhuiyan et al., 2024). Automated processes, such as check-in/check-out procedures and room allocation, streamline operations, reducing wait times and minimizing errors (Bulchand-Gidumal, 2023; Dangwal et al., 2023; Praharaj et al., 2023). Predictive analytics and demand forecasting algorithms optimize inventory management and pricing strategies, ensuring availability of desired amenities and services while maximizing revenue (Al-Hyari et al., 2023; Ersoy and Ehtiyar, 2023; Han et al., 2023). However, despite its numerous benefits, AI integration in guest experiences poses certain challenges and considerations (Zhu et al., 2023; Nam et al., 2021). Privacy concerns and data security issues are paramount, as hotels must safeguard guest information (Rawal et al., 2022) and ensure compliance with regulations such as GDPR (Dogru et al., 2023; Dwivedi et al., 2024; Mingotto et al., 2021). Additionally, there may be resistance to AI adoption from guests who prefer human interactions or perceive AI as impersonal (Nguyen et al., 2023; Goel et al., 2022). Therefore, striking a balance between AI-driven automation and personalized human touch is essential to maintain guest satisfaction (Rajan et al., 2022; Nguyen et al., 2022). The hypothesis for the above study is as follows:

H0: The integration of artificial intelligence (AI) in the hotel industry positively impacts guest experiences, leading to enhanced satisfaction levels.

METHODOLOGY

1. Population and Sample of the Study

The study is cross sectional. The study was conducted in Kolkata region of India. Kolkata is the capital city of the Indian state of West Bengal. Renowned for its rich history, cultural heritage, and vibrant arts scene, is often referred to as the "cultural capital of India". Every year Kolkata experiences a high volume of domestic as well as international tourism. As per the data released by ministry of Tourism, India West Bengal has received 27.7 million tourists in the year 2021 (India Tourism Statistics, 2022). The minimum sample size of the study was determined as 385 with a confidence level of 95%, 5% as the marginal error and 50% of the population proportion (Narayan et al., 2023). A total of 400 questionnaires were send but only 390 completely filled valid questionnaires were received. Snowball sampling is used to send the questionnaire to the various guests who have stayed in different star category hotel and have used AI features.

2. Data Collection Tools

In order to understand and measure the impact of artificial intelligence integration on guest experience in the hotel industry, a well structured questionnaire has been designed. The questionnaire is divided into four parts. The first part of the questionnaire is used to understand the demographic profile of the respondents like gender, age, occupation, education level, etc. The second part of the questionnaire is used to list the factors on which the satisfaction level of the guests depends. Likert scale of 1 to 5 was used for rating, with 1 being not very important and 5 being extremely important. The third part of the questionnaire is used to understand the impact of AI integration in increasing the satisfaction level of the guests. Questions were asked to the respondents to rate their satisfaction level in a scale with a range of very Dissatisfied to very Satisfied. The fourth part of the questionnaire is an unstructured questionnaire which is used to understand the opinion of the guests using AI during their stay in the hotel.

3. Data Collection

The form was prepared in 3 languages - English, Hindi and Bengali. The questionnaire was translated in different languages by the help of 2 language experts. The validity of the questionnaire was checked using the pilot survey. The questionnaire was prepared online by using Google forms and the link was forwarded in various community groups of eastern India on different social media platforms and mails. Specification regarding the 3 star and above category hotels were mentioned in the questionnaire. Respondents included guests who stayed in hotels like ITC SonarBangla, Taj Bengal, Hyatt Regency, Marriott International etc. The data was collected online from 07 January 2024 till 10 March 2024.

4. Data Analysis

A mixed method approach (Figure 1) is used to analyze the impact of AI integration on guest experience and operational efficiency in hotel Industry. Quantitative analysis (data was subjected to percentage and frequency analysis, correlation, Anova and multiple regression analysis) is used to analyse the data in order to draw the conclusion for understanding the guests adaptation of AI during their stay in the hotel. Also qualitative method is used to understand the intention of the customers regarding the utility of AI by the hotel by thematic analysis. SPSS 26.00 (Statistical package for social sciences) was used in order to analyze the data.

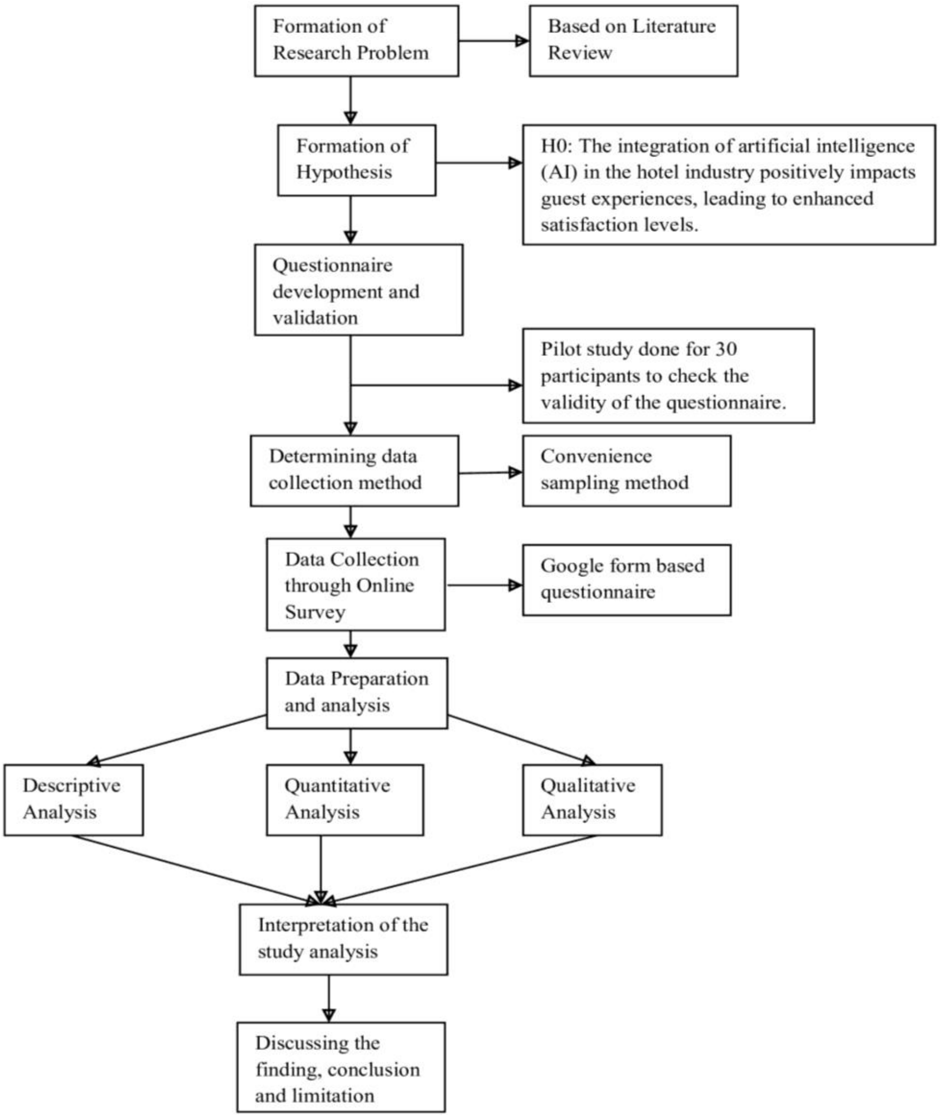


Figure 1. Flow Chart of methodology steps

RESULTS

The survey sample in Table No 1 is heavily skewed towards younger adults, with 91.9% of respondents being under the age of 41. This indicates that the majority of respondents to this survey are young adults, which could reflect either the general population distribution, the targeting strategy of the survey, or perhaps the demographics of those more likely to stay in hotels or participate in surveys. There is a significant gender imbalance in the sample, with 73.4% males compared to 26.6% females. This could suggest that more men are engaging with hotels or that there was an unequal opportunity or willingness to respond to the survey based on gender. The majority of respondents are having occupation in the hotel industry (54.8%), which could suggest that most of the guests visiting the hotel are industry professionals.

Government and private sectors are less represented, and this distribution should be taken into account when generalizing the findings to the entire hotel guest population. A large portion of the respondents (55.6%) hold a Bachelor's degree, followed by those with a high school education or below, and Master's degrees both at 19.4%. This suggests that the respondents are relatively well-educated, which could influence their expectations and experiences with hotel stays.The most common frequency of hotel stays is 'Once or twice a year' (41.9%), followed by 'Other'

(35.5%), which could include various different frequencies and requires further specification. A smaller segment of the sample stays every few months (15.3%) or monthly (7.3%). This suggests that the majority of respondents are not regular hotel users, which could impact their exposure to and perception of AI integration in the hotel industry.

Table 1. Descriptive Analysis

		Frequency	Percent
Age	Less than 20 years	151	38.7
	21 - 40 years	207	53.2
	41 - 50 years	29	7.3
	Above 60 years	3	0.8
Gender	Female	104	26.6
	Male	286	73.4
Occupation	Government Sector	44	11.3
	Hotel Industry	214	54.8
	Private Sector	60	15.3
	Other	72	18.6
Level of Education	Bachelors Degree	216	55.6
	Doctorate or professional Degree	22	5.6
	High School or below	76	19.4
	Masters Degree	76	19.4
Frequency of stay in hotel	Every few month	60	15.3
	Monthly	29	7.3
	Once or twice a year	163	41.9
	Other	138	35.5

Table 2. Descriptive Statistics

	Mean	Std. Deviation
GE1	3.82	1.397
GE2	3.63	1.291
GE3	3.77	1.274
GE4	3.72	1.291
GE5	3.61	1.267
GE6	3.54	1.278
GE7	3.74	1.306
AI2	3.22	1.213
AI3	3.27	1.271
AI5	3.41	1.249

In Table 2, GE represents guest experience and AI represents Artificial Intelligence integration. GE1 represents cleanliness, GE2 represents staff friendliness, GE3 represents Room comfort, GE4 represents location, GE5 represents amenities, GE6 represents personalization of service and GE7 represents Ease of booking process. GE1 has the highest mean (3.82) and std deviation (1.397), which suggests that guests rated this aspect of their experience relatively high, with the highest mean of all the guest experience factors. However, the standard deviation is also relatively high, indicating there's considerable variability in guests' perceptions or experiences related to this factor. The mean of the guest experience from GE2 to GE7 ranges between 3.54 to 3.74 and the standard deviation ranges from 1.267 to 1.306.

These variables represent different facets of the guest, suggesting positive experiences. The standard deviations are quite similar across these measures, indicating a consistent level of variance in guest responses. AI2, AI3, AI5 have a mean ranging from 3.22 to 3.41, which suggests that guests have a positive perception of their experience at the hotel and the integration of AI and the standard deviation from 1.213 to 1.249, which suggests that there is a fair amount of variability in the responses. This would mean that even if the guests had positive experience still there is room for improvement.

Table 3. Correlations

	GE1	**GE2**	**GE3**	**GE4**	**GE5**	**GE6**	**GE7**	**AI2**	**AI3**	**AI5**
GE1	1	.851**	.914**	.860**	.806**	.810**	.902**	0.138	.243**	0.173
GE2	.851**	1	.838**	.756**	.777**	.793**	.854**	.239**	.330**	.211*
GE3	.914**	.838**	1	.801**	.812**	.815**	.864**	0.137	.234**	0.176
GE4	.860**	.756**	.801**	1	.777**	.793**	.834**	0.102	.236**	0.168
GE5	.806**	.777**	.812**	.777**	1	.854**	.834**	0.103	.233**	0.158
GE6	.810**	.793**	.815**	.793**	.854**	1	.815**	0.159	.309**	.216*
GE7	.902**	.854**	.864**	.834**	.834**	.815**	1	0.149	.293**	.215*
AI2	0.138	.239**	0.137	0.102	0.103	0.159	0.149	1	.710**	.595**
AI3	.243**	.330**	.234**	.236**	.233**	.309**	.293**	.710**	1	.666**
AI5	0.173	.211*	0.176	0.168	0.158	.216*	.215*	.595**	.666**	1

*. Correlation is significant at the 0.05 level (2-tailed); *. Correlation is significant at the 0.01 level (2-tailed)

The high correlations (Hukkelberg et al., 2019) within GE variables (0.7 - 0.9 range) in Table 3 suggest that guest experiences in one area tend to be associated with experiences in other areas. This could mean that a hotel's performance in one aspect of service could affect its performance in others, or it might reflect a guest's overall satisfaction influencing their ratings across the board. The AI correlations (0.5 - 0.7 range) suggests that there might be underlying factors that influence the perception of AI. The low correlations between GE and AI variables (below 0.3) suggest that guests' ratings of their overall experience do not strongly relate to their perceptions of AI integration.

This might indicate that AI integration is not a primary factor in their overall guest experience or that AI's role in guest experience is not yet fully realized or understood by the guests. The significance of correlations, especially the highly significant ones, provides a strong indication that these relationships are consistent and reliable. Overall, while AI integration seems to be perceived positively, its impact on the overall guest experience is not strongly correlated, suggesting that other factors might play a more central role in shaping guest experiences in hotels.

Table 4. ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
GE1	Between Groups	227.940	24	9.497	77.341	0.000
	Within Groups	12.157	99	0.123		
GE2	Between Groups	175.982	24	7.333	25.072	0.000
	Within Groups	28.954	99	0.292		
GE3	Between Groups	178.793	24	7.450	35.314	0.000
	Within Groups	20.885	99	0.211		
GE4	Between Groups	175.434	24	7.310	24.377	0.000
	Within Groups	29.687	99	0.300		
GE5	Between Groups	171.668	24	7.153	27.499	0.000
	Within Groups	25.751	99	0.260		
GE6	Between Groups	174.619	24	7.276	27.514	0.000
	Within Groups	26.180	99	0.264		
GE7	Between Groups	192.543	24	8.023	46.180	0.000
	Within Groups	17.199	99	0.174		

Table 4 presents the results of ANOVA (Analysis of Variance) tests (Corners, 2020) conducted on different guest experience variables labelled GE1 through GE7. GE are considered as dependent variables and AI is considered as independent variable. The purpose of ANOVA is to compare the means of these variables across multiple groups to determine if there are any statistically significant differences between them. The table includes the sum of squares, degrees of freedom (df), mean square, F-statistic (F), and the significance value (Sig.). For all guest experience variables, the significance value is 0.000, indicating that there are statistically significant differences between groups. The F-statistics are all quite high, ranging from 24.377 to 77.341, which further confirms that the differences between groups are statistically significant. The table indicates that for all seven guest experience variables, there are significant differences in the means between the different groups analyzed. This suggests that the factor (Different levels of AI integration) the groups are based on have a statistically significant effect on guests' experiences.

Table 5. Multiple regression Model results of AI1, AI2, AI3 on Guest experience and operational efficiency

Variables	Regression Coefficient	t test	Significance
AI1	-0.729	-0.828	0.409
AI2	2.229	2.462	0.015
AI3	0.282	0.35	0.727
F Count	3.943		
R^2	0.09		

Table 5 presents the results from a multiple regression analysis (Neale et al., 1994) that investigated the impact of three different AI variables (AI1, AI2, AI3) on guest experience and operational efficiency. AI1 shows a negative association with the dependent variables, and the relationship is not statistically significant ($p = 0.409$). AI2 shows a positive and significant association with the dependent variables ($p = 0.015$). This implies that improvements or increases in AI2 are related to significant increases in guest experience and operational efficiency. AI3 has a positive, but not significant, association with the dependent variables ($p = 0.727$). The F statistic from the regression (3.943) suggests that the model is better than a model with no predictors, but the lack of a corresponding p-value makes it difficult to judge the overall model significance.R-squared is 0.09, which means that approximately 9% of the variability in the dependent variable (guest experience and operational efficiency) is explained by the AI variables in the model.

This is generally considered a low value, indicating that the model does not explain much of the variation in the dependent variables. The regression model suggests that overall the guests are satisfied in using the Artificial intelligence features in the hotel which has a statistically significant positive impact on guest experience and operational efficiency. AI1 and AI3 do not significantly impact the outcomes studied which means that the suggestions given by AI like dinning suggestion, local attraction etc and choosing a hotel to stay (which highlights its AI features) by advertisementis not a criteria for increasing the satisfaction level of the customers. With a R-squared value of 0.09, the model explains only a small fraction of the variance in guest experience and operational efficiency, indicating that other factors also play a substantial role. In summary, while certain AI integrations can positively affect guest experience, a significant portion of the variation in these outcomes is explained by factors other than the AI variables measured.

A qualitative analysis was also conducted to analyze the feedback from the guests staying in hotels. The question asked to the guest is as follows:

Question: What are your views regarding the integration of artificial intelligence in the hotel industry?

Answer: A questionnaire was designed with open ended question for the customers of the hotel. Only 11 respondents gave genuine feedback regarding the use of AI in hotels, most of them did not want to reply and some of the replies were not valid. The replies of the guests of the hotel are as follows.

Respondent 1: "I think AI can improve on recommendation basis of dining and stays based on the features provided by each of the hotels listed on a certain website comparing its price tags, menu and service style"

Respondent 2: "Use the technology very careful"

Respondent 3: "AI should more upgrade in Hotel industry"

Respondent 4: "Hospitality means the warmth extended, AI cannot fill in....I would still prefer to talk to a staff rather depend on AI"

Respondent 5: "I think that AI in this hotel industry AI is not very comfortable to thye guest in some cases whether ai also dangerous for security threat etc."

Respondent 6: "Hotel industry is all about interaction so I suggest AI should be integrated but not all the places in the hotel"

Respondent 7: "AI harmful for the humans"

Respondent 8: "AI should be more advanced and user Friendly"

Respondent 9: "AI is a machine integrated interface. It can't understand human mind, feelings. So, I think for understanding a human mind AI has not reached that level that it can replace human being"

Respondent 10: "AI integration is with complete system is important. However human touch is always necessary as hospitality is dependent on human interaction. However we can automate much of the things like order taking process in IRD, which can help us by minimising the human errors and delayed execution. Same goes for the express check in bots present in hotel website which works on algorithms of common terms used by guests for check in experience such as smoking rooms, rooms on high floor, rooms with view etc. We can also keep an interactive kiosk in hotel for travel information or city exploration. AI is growing at a great pace in day to day life but it’s important to keep on check with guests as we as person can make their stay or dining experience memorable which can create repetition of guest."

Respondent 11: "No matter how much integration of AI Hotel industry incorporates it can never remove the Human Touch which is the very need of Hotel industry"

Table 8. Thematic Analysis of Customer Feedback

Sl No	Validated Broad Themes	Validated Sub -Theme
1	Efficiency and personalization through AI	Technological Advancement
2	Necessity of Human Touch	AI Limitations in Emotional Intelligence
3	Caution and balanced integration	Concerns over privacy and security
4	Resistance and skepticism emerged towards AI	No Sub-Theme emerged
5	AI's role in non interpersonal aspects of service	No Sub-Theme emerged
Note: Themes mentioned in italics have emerged from the customer interview data		

The thematic (Majumdar, 2022) analysis of customer feedback reveals a complex attitude towards AI in the hotel industry. There's an acknowledgment of AI's potential to improve personalization service, but this is tempered by a strong belief in the necessity of human interaction and the irreplaceable nature of the human touch in hospitality. There are also significant concerns about the emotional limitations of AI, its potential security threats, and its impact on employment. The insights suggest that the hotel industry could benefit from a hybrid model that leverages AI for efficiency and personalization in certain areas, while ensuring that human interaction remains at the forefront of guest services. Moreover, the industry should address privacy and security concerns to mitigate customer scepticism. It's clear from the responses that any technological advances should not come at the cost of the personal, human-centric approach that defines the hospitality industry.

DISCUSSION

First of all the study reveals that AI integration partially impacts the guest experience, but its effectiveness is contingent upon maintaining a balanced approach that preserves the essential human touch in guest services. The findings advocate for a hybrid model where AI enhances service capabilities without overshadowing the invaluable human interactions that defines the hospitality industry.

Secondly the previous studies have generally found that while guests appreciate the efficiency and novelty brought by AI (e.g., automated check-ins, AI-driven personal assistants), there is still a strong preference for human interaction, particularly in service-oriented scenarios where empathy and personal touch are valued (Prentice et al., 2020; Al-Hyari et al., 2023). This Aligns with previous findings as it shows positive reception towards AI in operational aspects but indicates a preference for human interaction in personal service areas. The low correlation between guest experience metrics and AI integration metrics suggests that AI is not yet seen as a central component of the overall guest experience, a sentiment echoed in past research.

Thirdly previous studies have often concluded that the hospitality industry should pursue a hybrid model of service delivery, where AI enhances but does not replace human interactions (Seyitoğlu and Ivanov, 2020). They stress continuous adaptation and responsive changes based on guest feedback. However, the current Study supports these implications by demonstrating the importance of a balanced AI integration that respects the primacy of human touch in hospitality. It also underscores the need for addressing privacy and security concerns, which is crucial for gaining guest trust.

Fourthly, the current study contributes to the ongoing discourse on AI in hospitality by providing updated empirical data on guest perceptions and by highlighting specific AI applications that could enhance guest experiences. It also reinforces the call from previous studies for the industry to engage in a cautious yet innovative approach to technology integration.

Relating the current study to past research shows both consistency in findings and an evolution of understanding regarding AI's role in hospitality. The industry is advised to remain agile, continuously integrating guest feedback and technological advances to create a service environment that leverages the best of both AI capabilities and human warmth (Hayat, 2023; Tripathi et al., 2022). This approach will not only enhance operational efficiency but also ensure guest satisfaction and loyalty in a rapidly changing technological landscape.

CONCLUSION

Guests place significant importance on traditional hospitality factors such as cleanliness, staff friendliness, and room comfort, which continue to shape overall satisfaction levels.

However, the integration of AI technologies introduces new dimensions to guest experiences, offering personalized recommendations and streamlining operational processes. AI-powered recommendations were perceived as valuable additions to guest experiences, albeit with moderate effectiveness ratings. While there is room for improvement, the potential of AI to enhance guest satisfaction through personalized services is evident.

The improvement of operational efficiency through AI integration was evident, with guests recognizing the benefits of streamlined processes and optimized services. This underscores the importance of operational excellence in driving guest satisfaction and loyalty. Moreover, guests' expressed likelihood to choose AI-integrated hotels for future stays indicates a growing acceptance and preference for AI-driven services in the hospitality sector. As guests become more accustomed to AI technologies, their expectations for personalized and efficient experiences are likely to increase.

Overall, the findings of this study contribute to our understanding of the implications of AI adoption for the hotel industry, highlighting the potential for enhanced guest experiences and operational efficiency. As AI continues to evolve, hoteliers must remain attentive to guest preferences and concerns, ensuring transparent communication and ethical use of AI technologies to maximize their benefits for both guests and the industry as a whole.

Limitation of the study

This demographic distribution may not accurately represent the broader population of hotel guests. Since the study employs a cross-sectional design, it captures data at a single point in time. This approach does not allow for observations of changes over time or the evolution of attitudes towards AI in hospitality. Consequently, it cannot establish causality between AI integration and changes in guest satisfaction or operational efficiency. The study may have focused on a limited set of AI applications in the hospitality industry. There are many potential uses of AI that were not covered, which means the study does not provide a complete picture of how various AI technologies could impact the hotel experience. The field of AI is rapidly evolving, and the technologies discussed or evaluated in the study may quickly become outdated. This rapid pace of change can make it difficult to draw long-term conclusions from the findings.

Author Contributions:

Conceptualization, P.A and S.S.M.; methodology, P.A. and S.S.M; software, P.A.; validation, P.A. and S.S.M.; formal analysis, P.A. and S.S.M; investigation, P.A. and S.S.M.; data curation, P.A. and S.S.M.; writing - original draft preparation, P.A. and S.S.M.; writing - review and editing, P.A. and S.S.M.; visualization, P.A. and S.S.M.; supervision, S.S.M.; project administration, P.A. and S.S.M.. All authors have read and agreed to the published version of the manuscript.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Al-Hyari, H. S. A., Al-Smadi, H. M., & Weshah, S. R. (2023). The impact of artificial intelligence (AI) on guest satisfaction in hotel management: An empirical study of luxury hotels. *Geojournal of Tourism and Geosites*, *48*, 810-819. https://doi.org/10.30892/gtg.482spl15-1081

Bhuiyan, K.H., Ahmed, S., & Jahan, I. (2024). Consumer attitude toward using artificial intelligence (AI) devices in hospitality services. *Journal of Hospitality and Tourism Insights*. https://doi.org/10.1108/JHTI-08-2023-0551

Bronzin, T., Prole, B., Stipić, A., & Pap, K. (2021). *Artificial Intelligence (AI) brings enhanced personalized user experience.* In 2021 44th International Convention on Information, Communication and Electronic Technology (MIPRO), 1070-1075, IEEE. https://doi.org/10.23919/MIPRO52101.2021.9596938

Brylska, P., Cobanoglu, C., & Dogan, S. (2022). *Users versus non-users: The impact of experience on hotel guests' attitudes towards service robots in hotels.* In Information and Communication Technologies in Tourism 2022: Proceedings of the ENTER 2022 eTourism Conference, January 11–14, 2022, 55-66, Springer International Publishing. https://doi.org/10.1007/978-3-030-94751-4_5

Bulchand-Gidumal, J. (2022). Impact of artificial intelligence in travel, tourism, and hospitality. In *Handbook of e-Tourism*, 1943-1962, Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-48652-5_110

Bulchand-Gidumal, J., William Secin, E., O'Connor, P., & Buhalis, D. (2023). Artificial intelligence's impact on hospitality and tourism marketing: exploring key themes and addressing challenges. *Current Issues in Tourism*, 1-18. https://doi.org/10.1080/13683500.2023.2229480

Camilleri, M.A., & Troise, C. (2023). *Chatbot recommender systems in tourism: A systematic review and a benefit-cost analysis.* In Proceedings of the 2023 8th International Conference on Machine Learning Technologies, 151-156. https://doi.org/10.1145/3589883.3589906

Cao, L., Sarkar, S., Ramesh, B., Mohan, K., & Park, E.H. (2024). Shift of ambidexterity modes: An empirical investigation of the impact of artificial intelligence in customer service. *International Journal of Information Management*, *76*, 102773. https://doi.org/ 10.1016/j.ijinfomgt.2024.102773

Cheong, F., & Law, R. (2023). Human employees versus robotic employees: Customers and hotel managers' perceived experience at unmanned smart hotels. *Cogent Social Sciences*, *9*(1), 2202937. https://doi.org/10.1080/23311886.2023.2202937

Chi, N.T.K., & Nam, V.H. (2022). The impact of AI chatbot on long-term relationships between customers and hotels. *VNU University of Economics and Business*, *2*(6). https://doi.org/10.57110/vnujeb.v2i6.145

Corners, M.F. (2020). Innovation: a sociological perspective. *BEEF. Spanish Journal of Sociology*, *29* (3), 5-37. https://doi.org/ 10.22325/FES/RES.2020.55

Dangwal, A., Kukreti, M., Angurala, M., Sarangal, R., Mehta, M., & Chauhan, P. (2023). A Review on the Role of Artificial Intelligence in Tourism. In *2023 10th International Conference on Computing for Sustainable Global Development (INDIACom)*, 164-168, IEEE.

Daniel, Schuster. (2022). A Review on Service Delivery in Tourism and Hospitality Industry Through Artificial Intelligence. https://doi.org/10.1007/978-981-19-1142-2_34

Doborjeh, Z., Hemmington, N., Doborjeh, M., & Kasabov, N. (2022). Artificial intelligence: a systematic review of methods and applications in hospitality and tourism. *International Journal of Contemporary Hospitality Management*, *34*(3), 1154-1176. doi.org/10.1108/IJCHM-06-2021-0767

Dogru, T., Line, N., Mody, M., Hanks, L., Abbott, J.A., Acikgoz, F., & Zhang, T. (2023). Generative artificial intelligence in the hospitality and tourism industry: Developing a framework for future research. *Journal of Hospitality & Tourism Research*. https://doi.org/10.1177/10963480231188663

Dwivedi, Y.K., Pandey, N., Currie, W., & Micu, A. (2024). Leveraging ChatGPT and other generative artificial intelligence (AI)-based applications in the hospitality and tourism industry: practices, challenges and research agenda. *International Journal of Contemporary Hospitality Management*, *36*(1), 1-12. https://doi.org/10.1108/ijchm-05-2023-0686

ERSOY, A., & EHTİYAR, R. (2023). The Impact of Artificial Intelligence on Hospitality Employees' Work Outcomes. *Advances in Hospitality and Tourism Research (AHTR)*, *11*(4), 505-526. https://doi.org/10.30519/ahtr.1264966

Goel, R., Singh, T., Sahdev, S.L., Baral, S.K., & Choudhury, A. (2022). Impact of AI & IOT in sustainable & green practices adopted in hotel industry and measuring hotel guests' satisfaction. In *2022 10th International Conference on Reliability, Infocom Technologies and Optimization (Trends and Future Directions)(ICRITO)*, 1-5, IEEE. https://doi.org/10.1109/ICRITO56286.2022.9965152

Gonçalves, A.R., Costa Pinto, D., Shuqair, S., Mattila, A., & Imanbay, A. (2024). The paradox of immersive artificial intelligence (AI) in luxury hospitality: how immersive AI shapes consumer differentiation and luxury value. *International Journal of Contemporary Hospitality Management*. https://doi.org/10.1108/IJCHM-11-2023-1689

Gupta, S., Modgil, S., Lee, C. K., Cho, M., & Park, Y. (2022). Artificial intelligence enabled robots for stay experience in the hospitality industry in a smart city. *Industrial Management & Data Systems*, *122*(10), 2331-2350. https://doi.org/10.1108/imds-10-2021-0621

Gursoy, D., & Cai, R. (2024). Artificial intelligence: an overview of research trends and future directions. *International Journal of Contemporary Hospitality Management*. doi.org/10.1108/IJCHM-03-2024-0322

Han, Y., Chen, J., Dou, M., Wang, J., & Feng, K. (2023). The Impact of Artificial Intelligence on the Financial Services Industry. *Academic Journal of Management and Social Sciences*, *2*(3), 83-85. https://doi.org/10.54097/ajmss.v2i3.8741

Hassan, W.W., Mahmoud, A., & Hussien, H.M. (2022). The impact of smart services on the efficiency and effectiveness of employees performance in hotels. *Minia Journal of Tourism and Hospitality Research MJTHR*, *14*(1), 145-164. https://doi.org/10.21608/mjthr.2022.145144.1042

Hayat, K. (2023). 19 Leveraging Artificial Intelligence in Hospitality and Tourism for Success. *Teaching Cases in Tourism, Hospitality and Events*, 214. https://doi.org/10.1079/9781800621022.0019

Hukkelberg, S., Keles, S., Ogden, T., & Hammerstrøm, K. (2019). The relation between behavioral problems and social competence: A correlational Meta-analysis. *BMC psychiatry*, *19*, 1-14. https://doi.org/10.1186/s12888-019-2343-9

India Tourism Statistics, 2022. https://tourism.gov.in/sites/default/files/2022-09/India%20Tourism%20Statistics%202022%20(English).pdf

Jamaluddin, Z., & Rahmat, A.K. (2022). Artificial intelligence technology in travel, tourism and hospitality: current and future developments. In *Technology Application in Aviation, Tourism and Hospitality: Recent Developments and Emerging Issues*, 169-177, Singapore: Springer Nature Singapore. https://doi.org/10.1007/978-981-19-6619-4_12

Kong, H., Wang, K., Qiu, X., Cheung, C., & Bu, N. (2023). 30 years of artificial intelligence (AI) research relating to the hospitality and tourism industry. *International Journal of Contemporary Hospitality Management*, *35*(6), 2157-2177. https://doi.org/10.1108/IJCHM-03-2022-0354

Koranne, S., & Sandhu, S. (2021). Embedding artificial intelligence in hospitality & tourism. *Psychology and Education Journal*, *58*(2), 5384-5389. https://doi.org/10.17762/PAE.V58I2.2950

Kumar, S., Kumar, V., & Attri, K. (2023). Integration of Robotics Technology and Artificial Intelligence in the Transformation of the Tourism Industry: A Critical Viewpoint. In *Technology and Social Transformations in Hospitality, Tourism and Gastronomy: South Asia Perspectives*,39-53, GB: CABI. https://doi.org/10.1079/9781800621244.0004

Lestari, N.S., Rosman, D., Chan, S., Nawangsari, L.C., Natalina, H.D., & Triono, F. (2022). Impact of Robots, Artificial Intelligence, Service Automation (RAISA) Acceptance, Self-efficacy, and Relationship Quality on Job Performance. In *2022 4th International Conference on Cybernetics and Intelligent System (ICORIS)*, 1-6, IEEE. https://doi.org/10.1109/ICORIS56080.2022.10031336

Majumdar, A. (2022). Thematic analysis in qualitative research. In *Research anthology on innovative research methodologies and utilization across multiple disciplines*, 604-622, IGI Global. https://doi.org/10.4018/978-1-5225-5366-3.CH009

Makar, K.Š. (2023). Driven by Artificial Intelligence (AI)–Improving Operational Efficiency and Competitiveness in Business. In *2023 46th MIPRO ICT and Electronics Convention (MIPRO)*, 1142-1147, IEEE. https://doi.org/10.23919/mipro57284.2023.10159757

Mingotto, E., Montaguti, F., & Tamma, M. (2021). Challenges in re-designing operations and jobs to embody AI and robotics in services. Findings from a case in the hospitality industry. *Electronic Markets*, *31*(3), 493-510. https://doi.org/10.1007/S12525-020-00439-Y

Nam, K., Dutt, C.S., Chathoth, P., Daghfous, A., & Khan, M.S. (2021). The adoption of artificial intelligence and robotics in the hotel industry: prospects and challenges. *Electronic Markets*, *31*, 553-574. https://doi.org/10.1007/S12525-020-00442-3

Nannelli, M., Capone, F., & Lazzeretti, L. (2023). Artificial intelligence in hospitality and tourism. State of the art and future research avenues. *European Planning Studies*, *31*(7), 1325-1344. https://doi.org/10.1080/09654313.2023.2180321

Narayan, K.G., Sinha, D.K., & Singh, D.K. (2023). *Sampling Techniques.* In Veterinary Public Health & Epidemiology: Veterinary Public Health-Epidemiology-Zoonosis-One Health, 111-123, Singapore: Springer Nature Singapore. https://doi.org/10.1007/978-981-19-7800-5_12

Neale, M.C., Eaves, L.J., Kendler, K.S., Heath, A.C., & Kessler, R.C. (1994). Multiple regression with data collected from relatives: testing assumptions of the model. *Multivariate behavioral research*, *29*(1), 33-61. https://doi.org/10.1207/S15327906MBR2901_2

Nguyen, V. T., Phong, L. T., & Chi, N. T. K. (2023). The impact of AI chatbots on customer trust: an empirical investigation in the hotel industry. *Consumer Behavior in Tourism and Hospitality*, *18*(3), 293-305.

Nguyen, V.T., Phong, L.T., & Chi, N.T.K. (2023). The impact of AI chatbots on customer trust: an empirical investigation in the hotel industry. *Consumer Behavior in Tourism and Hospitality*, *18*(3), 293-305. https://doi.org/10.1108/cbth-06-2022-0131

Park, H., Jiang, S., Lee, O.K.D., & Chang, Y. (2024). Exploring the attractiveness of service robots in the hospitality industry: analysis of online reviews. *Information Systems Frontiers*, *26*(1), 41-61. https://doi.org/10.1007/s10796-021-10207-8

Praharaj, S., Mishra, B.B., Mishra, U.S., Panigrahi, R.R., & Mishra, P.C. (2023). Role of service automation on guest experience of hotel industry. *Tourism and hospitality management*, *29*(2), 265-278. https://doi.org/10.20867/thm.29.2.11

Prentice, C., Dominique Lopes, S., & Wang, X. (2020). The impact of artificial intelligence and employee service quality on customer satisfaction and loyalty. *Journal of Hospitality Marketing & Management*, *29*(7), 739-756. https://doi.org/org/10. 1080/19368623 .2020.1722304

Rajan, P.S., Babu, D.S., & Sameena, M.H. (2022). Chatbots: Their Uses and Impact in the Hospitality Sector. In *Machine Learning for Business Analytics*, 45-55, Productivity Press. https://doi.org/10.4324/9781003206316-4

Rauf, A., Zurcher, M., Pantelidis, I., & Winbladh, J. (2022). Millennials' perceptions of artificial intelligence in hotel service encounters. *Consumer Behavior in Tourism and Hospitality*, *17*(1), 3-16.

Rawal, Y.S., Soni, H., Dani, R., & Bagchi, P. (2022). A review on service delivery in tourism and hospitality industry through artificial intelligence. In *Proceedings of Third International Conference on Computing, Communications, and Cyber-Security: IC4S 2021*, 427-436, Singapore: Springer Nature Singapore. https://doi.org/10.1007/978-981-19-1142-2_34

Rosman, D., Wahyuningtias, D., Levyta, F., Putra, E.D., & Maulana, R. (2023). The Deployment of Service Robots Powered by Artificial Intelligence in Five-Star Hotels: Does it Influence the Customer's Booking Intention? In *2023 8th International Conference on Business and Industrial Research (ICBIR)*, 1254-1258, IEEE. https://doi.org/10.1109/icbir57571.2023.10147705

Roy, P., Ramaprasad, B.S., Chakraborty, M., Prabhu, N., & Rao, S. (2020). Customer acceptance of use of artificial intelligence in hospitality services: an Indian hospitality sector perspective. *Global Business Review*. https://doi.org/10.1177/0972150920939753

Sankar, J.G., & David, A. (2023). Measuring the Service Quality of Artificial Intelligence in the Tourism and Hospitality Industry. In *Handbook of Research on Innovation, Differentiation, and New Technologies in Tourism, Hotels, and Food Service*, 133-155, IGI Global. https://doi.org/10.4018/978-1-6684-6985-9.ch007

Seyitoğlu, F., & Ivanov, S. (2020). A conceptual framework of the service delivery system design for hospitality firms in the (post-) viral world: The role of service robots. *International Journal of Hospitality Management*, *91*, 102661. https://doi.org/ 10.1016/j.ijhm.2020.102661

Sharma, S., Rawal, Y.S., Soni, H., & Batabyal, D. (2023). Technological impacts of AI on hospitality and tourism industry. In *Proceedings of International Conference on Data Science and Applications: ICDSA 2022*, 1, 71-78, Singapore: Springer Nature Singapore. https://doi.org/10.1007/978-981-19-6631-6_6

Singh, A.K., Tyagi, P.K., Singh, A.K., Tyagi, P., Kapure, S., & Singh, E.R. (2022). Robotics and artificial intelligence in the hotel industry: A systematic literature review. In *2022 8th International Conference on Advanced Computing and Communication Systems (ICACCS)*, 1, 1788-1792, IEEE. https://doi.org/10.1109/ICACCS54159.2022.9785257

Tripathi, P., Kumar, S., & Rawat, P. (2022). Paradigm shift in the functioning of the tourism and hotel industry using NLP, digital assistant, and AI models. In *Artificial Intelligence for Societal Development and Global Well-Being*, 196-210, IGI Global. https://doi.org/10.4018/978-1-6684-2443-8.ch012

Zhu, J.J., Liu, Z., Huang, T., & Guo, X.S. (2023). Roboethics of tourism and hospitality industry: A systematic review. *Plos one, 18*(6), e0287439. https://doi.org/10.1371/journal.pone.0287439

Article history: Received: 03.03.2024 Revised: 17.05.2024 Accepted: 12.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.811-820
DOI 10.30892/gtg.542spl05-1256

ANALYSIS OF MOVEMENT DATA FROM GPS-MONITORED LIVESTOCK GUARDIAN DOGS (LGDS) AT TWO SHEEPFOLDS IN THE NORTH-WESTERN MARAMURES LAND, ROMANIA USING THE KERNEL DENSITY ESTIMATION METHOD. IMPLICATIONS FOR OUTDOOR TOURISM

Silviu Vasile BUMBAK*
Affiliation - Babeş-Bolyai University, Faculty of Geography, Sighetu Marmației Extention,
Sighetu Marmației, Romania, e-mail: silviu.bumbak@ubbcluj.ro

Marin ILIEŞ
Affiliation - Babeş-Bolyai University, Faculty of Geography, Sighetu Marmației Extention,
Sighetu Marmației, Romania, e-mail: marin.ilies@ubbcluj.ro

Mihai HOTEA
Affiliation - Babeş-Bolyai University, Faculty of Geography, Sighetu Marmației Extention,
Sighetu Marmației, Romania, e-mail: mihai.hotea@ubbcluj.ro

Thowayeb H. HASSAN
Affiliation Social Studies Department, College of Arts, King Faisal University, Al Ahsa, Saudi Arabia, e-mail: thassan@kfu.edu.sa

Citation: Bumbak, S.V., Ilieş, M., Hotea, M., & Hassan, T.H. (2024). ANALYSIS OF MOVEMENT DATA FROM GPS-MONITORED LIVESTOCK GUARDIAN DOGS (LGDS) AT TWO SHEEPFOLDS IN THE NORTH-WESTERN MARAMURES LAND, ROMANIA USING THE KERNEL DENSITY ESTIMATION METHOD. IMPLICATIONS FOR OUTDOOR TOURISM. *Geojournal of Tourism and Geosites*, 54(2spl), 811–820. https://doi.org/10.30892/gtg.542spl05-1256

Abstract: The Carpathians and other mountainous regions around the world are renowned for their specific landscapes shaped by pastoralism, a millennia-old traditional and sustainable economic system. In Romania, this traditional occupation has an established place within the Romanian culture. In an environment where large predators are present, the livestock owners and shepherds have traditionally relied, and still do, on livestock guardian dogs (LGDs) to protect the flock against carnivores or theft, therefore, the dogs are perceived as an integral component of the traditional pastoral system. However, from late April until the end of September, many outdoor recreational activities like hiking, mountain trail running, or biking overlap with the pastoral calendar, creating a potential for conflict between two, very different categories of landscape users, with recurring incidents happening over the years. In this study, a winter GPS monitoring campaign was proposed, between November 2023 and January 2024 that used GPS professional collars to track the movements of two livestock guardian dogs stationed at two sheepfolds located at their winter bases in the hills at the foot of Ignis Mountains (part of the Romanian northern Carpathians) from north-western Maramureş Land, Romania. The campaign generated point-based spatiotemporal data processed and analyzed in M. Excel and QGIS using Kernel density estimation as the main method to generate metrics and identify potential clusters of LGD activity in their usual environment. The results highlight high observational clusters near the winter folds but also lower observational clusters in areas situated hundreds of meters distance around the main compound, in certain locations. Although temporally limited, the results have the potential to help the understanding of the animal's preferred zone of habitation and substantiate future win-win cohabitation solutions that minimize conflictual encounters between the shepherds and their guardian dogs on one side, as primary land users, and outdoor recreationists as other landscape users.

Keywords: livestock guardian dogs (LGDs), GPS data, sheepfolds, outdoor tourism, landscape users, potential conflicts, cohabitation solutions

* * * * * *

INTRODUCTION

Due to the high degree of natural conservation, rich biodiversity, and diverse landscapes, the Carpathian Mountains are a popular outdoor tourist destination in every season. Due to the high degree of natural conservation, a large part of their surface is under special protection, a status that increases their attractiveness for tourism. The Carpathian cultural landscapes are renowned for pastoralism, a millennia-old traditional and sustainable economic system, best represented by sheepherding. With over 2.5 million hectares of traditionally managed grasslands (Ministry of Agriculture and Rural Development, 2023) of higher quality (Dragoş et al., 2018) in the mountain and alpine areas there is no wonder that even now, pastoralism in general and shepherding in particular continue to represent an important part of the Romanian agricultural and cultural system. The mountain landscapes were shaped over the centuries by this ancient occupation, reflected in documents since the 13th century (Liechti and Biber, 2016), and characterized by the practice of transhumance which involves the movement of the flock from the lowlands to the highlands, according to the season. While doing so, in an environment where large predators are present, the shepherds have traditionally relied, and still do,

* Corresponding author

on livestock guardian dogs (LGDs) to protect the flock against large carnivores or theft (Kinka and Young, 2019). The presence of numerous animals for breeds of large size around sheepfolds raises many challenges for other landscape users such as tourists engaged in popular and eco-friendly activities in the mountains of Romania.

Especially during the warmer months of the year, from early May until early October, outdoor recreational activities such as mountain biking, hiking, trekking, or trail running overlap with the traditional pastoral calendar, as most trails intersect the summer grazing domains or zones with permanent sheepfolds used in summer at higher altitudes, or in winter, at lower altitudes. From these challenges, conflict-based situations can arise between a traditional category of landscape users – the shepherd and their large dogs and another, more modern category – the tourists practicing outdoor activities, and require responsible behavior on the part of the tourists to avoid potentially dangerous situations. Most of the time, the encounters end with no harm done, partly because the tourists approach the situation with common sense and appropriate behavior, partly due to the timely intervention of the shepherds.

However, on hiking and biking trails in the mountains and hills with traditional areas used as grazing domains, incidents have happened when tourists were harmed when the livestock guardian dogs, protective of their flock, attacked them (Ivașcu and Biro, 2020). These types of incidents happened on frequented trails from popular mountain ranges such as Făgăraș, Retezat, Bucegi, Apuseni, or Rodnei Mountains, but have occurred also on trails from other, less popular areas in the Carpathians. Various reasons can be invoked to explain these incidents which can be separated into two main categories – behavioral and logistical. Behavioral reasons such as the lack of, or poor training of the dogs, exacerbated by unawareness or the indifference of the shepherds that do not intervene, various veterinary issues on the part of the animals that can contribute to aggressive behavior, previous bad experiences with humans or inappropriate behavior on the part of the tourists. On the logistical side, the lack of touristic warning systems, proper signaling, information, and assistance systems, in print or digital also contribute to the perpetuation of situations where conflict can arise.

We believe that rather than attributing blame or supporting drastic legislative, restrictive, or punitive measures that could compromise this age-old and threatened traditional activity or recreational activities, appropriate win-win solutions can be found that favor the coexistence between shepherds and their large guardian dogs as ancestral landscape users and tourist as modern landscape users. The lack of incentives so far to find a proper solution to the identified problem – the potential for conflict between two categories of landscape users that understand to use the space differently but do not understand each other represents the main motivation behind the present study.

The paper focuses on analyzing the spatial movement of two large guardian dogs from two sheepfolds situated at their winter bases, at the foot of the Igniș Mountains to test the viability of mapping point-based spatial and temporal data. The data were generated from professional GPS devices fitted as collars to dogs and highlighted clusters of movement reflecting preferred areas by the animals. This type of spatial analysis results can be used in the future to substantiate various solutions aimed at minimizing the potential for conflict between these two categories of landscape users.

LITERATURE REVIEW

The pastoral system in the mountains of Romania

The pastoral system in the Romanian Carpathians, like in other parts of the world with a strong pastoral tradition, is generally characterized by mobility and dynamism. Shepherding best represents this system, and relies on local traditional knowledge that has accumulated over centuries of practice. The mobile and dynamic character of shepherding is represented by transhumance, a practice that involves moving the flock according to the seasons between summer and winter grazing domains. There are two transhumance models - the long-distance transhumance, and short-distance transhumance, also known as pendulation. The long-distance transhumance is still practiced in some areas of the country, like Mărginimea Sibiului, but in recent years, is practiced with a lesser intensity and on smaller areas (Velcea et al., 2016; David et al., 2021; Săgeată et al., 2023). One of the reasons for this situation is that the practice has become harder and costlier due to land fragmentation for instance (Huband et al., 2010; O'Brien and Crețan, 2019). The pendulant transhumance is the predominant model all over the country, especially the mountainous areas, as it is a necessity for small households to continue to produce and support themselves (Huband et al., 2010). This model is similar to the one practiced in the alpine regions (Luick, 2008). Usually, short-distance transhumance means that the shepherds move the animals between homes and their mountain pastures with the avoidance of main roads and building areas (Juler, 2014). It is considered that such pastoral systems based on pendulation are conserving large areas of semi-natural grassland in the Carpathian mountains (Young et al., 2019).

The livestock guardian dogs (LGDs) as a component of the pastoral system

The livestock guardian dogs can be viewed as cultural icons in areas with strong pastoral traditions as they have been an integral component of the traditional system (Linnell and Lescureux, 2015), and have been used for centuries to protect livestock, especially sheep (Young et al., 2019). The dogs proved to be an effective method of protection of livestock and predator impact reduction for centuries not only in Romania, but also in Europe (Allen et al., 2016) and other parts of the world. In countries with advanced agriculture or a different approach to animal husbandry, the use of livestock guardian dogs has been contested as they do not aggregate with modern practices or territorial characteristics (Allen et al., 2016), or are deemed a threat to biodiversity. This claim has been challenged by studies that showed that the dogs focus on protection and tend to avoid confrontations with predator animals (Yilmaz et al., 2015) by staying close to the flocks.

In Romania, usually, a large flock can comprise up to 700 sheep. In these conditions, it is almost impossible for shepherds to work without the help of guardian dogs to protect the sheep and alert the shepherds of the dangers. As the

Carpathians shelter the highest number of large carnivores like brown bears, wolves, and lynxes in Europe (Popescu et al., 2016; Rozylowicz et al., 2017), this means that it is common practice for a single flock to be protected by 4-7 or more dogs. There are instances when more than 15 dogs can be found at a single sheepfold alone, as is the case at one of the two sheepfolds involved in this study. In Romania, there are at least four typical breeds of livestock guardian dogs of large size, that can weigh between 50 and 80 kilograms. Three of the breeds are internationally recognized (the Romanian Mioritic Shepherd, the Romanian Bucovina Shepherd, and the Carpathian Shepherd) and are present at almost all sheepfolds across the country due to their excellent protection capabilities. In recent years, Asian breeds have been introduced at many sheepfolds, including at the ones from mountainous areas of Maramureș Land. These breeds include the notoriously aggressive and territorial Kangal and the Caucasian Shepherd, which can pose serious challenges in tourist areas (Ivașcu and Biro, 2020).

The livestock guardian dogs (LGDs) and tourists

From late April until the end of September, the mountain outdoor activities season is in full and overlaps with the pastoral calendar, hence the potential for conflict between the dogs protecting the sheep on their grazing domains and the tourists or outdoor sports enthusiasts that frequent the same areas. The pack effect generated by a large number of dogs around a single flock that instinctively behave to protect it can become problematic for other landscape users. In situations like this, the dogs can become an issue (Gehring et al., 2010) as they enter into conflicts with the people that use the spaces they roam for recreative purposes, attacking and sometimes bitting hikers, joggers, and mountain bikers (Mosley et al., 2020). Usually, when people become aware of the presence of the sheep and the dogs, tend to avoid the area by choosing to move away on different paths. However, this approach does not represent a solution that works all the time, and when encounters of this type end with injuries, unfortunately, the incidents are not reported specifically as such to medical authorities, and therefore, no reliable statistical database is available to glimpse the scale of the problem.

METHODOLOGICAL FRAMEWORK

Description of the study area and the sheepfolds involved

The study area is situated in the western part of Maramureș Land, in an area with complex relief characteristics such as Igniș and Gutâi Mountains, that have been studied about other geographic phenomenologies (Ilieș et al., 2022). Maramureș Land is a well-defined land type region situated in northern Romania, with low population density, a rich diversity of landscapes and habitats, strong identitarian features, and a high reliance on local and traditional knowledge that has accumulated over the ages. In medieval documents concerning the area of Maramureș, animal husbandry in general and shepherding in particular are more frequently mentioned than agriculture (Ilieș, 2007), as was the case in the area of Maramureș Mountains from the north-eastern side (Hotea, 2019), thus highlighting the importance of the occupation since those times.

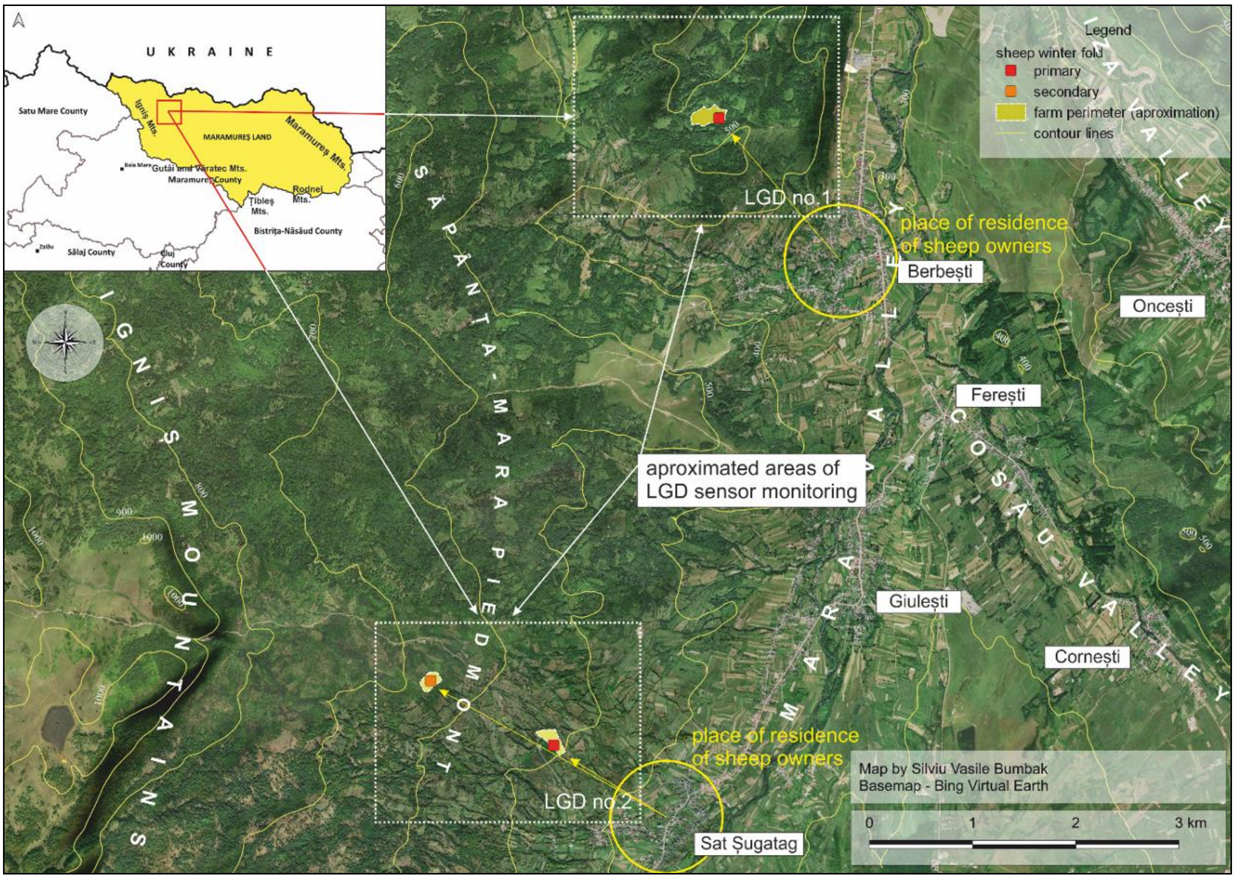


Figure 1. The area of interest and the locations of the two winter folds that participated in the study

The study was conducted at the winter folds of two sheep owners – the Codrea family from the village of Berbești and the Vraja family from the village of Sat Șugatag respectively. The families rely on shepherding as their main source of income. The winter folds are situated near the places of residence (1-2 kilometers distance), in the piedmont hills of Mara-Săpânța, at the foot of Igniș Mountains, a plateau-like volcanic range with altitudes between 1000 and 1300 meters. Both sheepfolds have their summer grazing domains up on the volcanic plateau. In winter, they establish themselves lower (see Figure 1), as it is the custom of short-distance pendulant shepherding, on family-owned land. The Vraja family from Sat-Șugatag uses two locations as winter fold, one situated at around 500 meters altitude and another, smaller, situated higher, at around 650 meters.

The livestock guardian dogs involved in the study, selection criteria

Both families own over 150 sheep and keep around 10 dogs with them. The dogs are livestock guardian dogs of the consecrated breeds. A recently bought pup (at the time of the first phases of the study) from the Kagal breed was spotted among the dogs of the Codrea family, while the Vraja family owes only dogs from the Romanian breeds. As there were only two GPS collars used for this study, one dog from each fold was selected in agreement with the representatives, based on certain criteria – the dogs should be males, between 2 and 6 years of age, with a strong bond and a known history of keeping closer to the sheep over time, especially during the movement of the flock on grazing domains.

The first criterion was established after the family representative stated that the mobility of the dogs increases in the mating season with the females more prone to farther away from the fold. The male dogs could follow and the chances that the dogs to go farther away from the fold are high in this period, a situation that can become dangerous, as the large carnivores tend to get closer to the fold if they do not get the scent of the dogs nearby. The age and bonding criteria were established as the dogs are in their prime and already fully bonded with the flock at this age. The last criterion was based on observations from the shepherds. Finally, two livestock guardian dogs were selected – a two-year-old white male Carpathian shepherd among the Codrea family dogs (referred to as LGD no. 1) and a three-year-old black, neutered Bucovina shepherd male, among the Vraja family dogs (referred to as LGD no. 2).

Instruments and workflow

The methodology of the study comprises several working stages that span several months, and are described below (see Figure 2). After the preparation of the research design, selection of GPS devices, and participants for the study, in the second half of November, dogs from the two sheepfolds were fitted with collared GPS trackers. For this study, two professional GPS trackers from the Spanish-based Digitanimal project entity, that works with various research centers and experimental precision livestock farming entities (Navarro et al., 2021). The GPS devices are designed for livestock but are suited also for livestock guardian dogs. The connectivity is assured either through the Sigfox (IoT) technology or through the mobile GSM technology. During the consultation process with the company's representative, it was established that considering the locations of the two winter sheepfolds in question, the GSM option is more suitable. The under 300 grams GPS trackers have sensors for movement and temperature, and sensors for activities and alerts. The sensors gather data every 30 minutes. For the location sensor, the radius CEP (circular error probable) is under 2.5 meters, which was technically acceptable from the author's perspective. After the arrival of the devices, access to a dedicated platform was granted in order to monitor in real-time the device's sensors and to download the location data in the desired formats – in this case in CSV format. Access to the platform was necessary because the data sent by the sensors was stored on the company's servers. The other functionalities, although valuable, were not used in this study.

The trackers were fitted on the selected dogs accordingly and using the dedicated accessories. The first collar was fitted on the Carpathian Shepherd from the Codrea farm on 15 November 2023, while the second tracker was fitted on the Bucovina Shepherd from Vraja farm seven days apart, on 22 November 2023. Both trackers were removed on 10 of January 2024, as per agreement with the representatives of the two farms, totaling 57 days of monitoring.

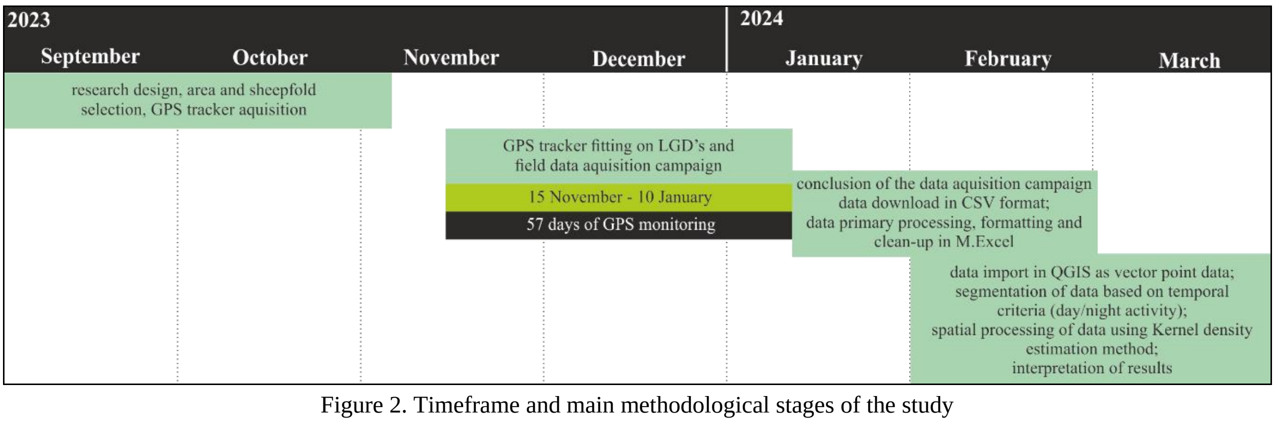


Figure 2. Timeframe and main methodological stages of the study

Procedures and methods

At the end of the field monitoring campaign, once the devices were removed, the targeted data for the time frame 15 November 2023 – 10 January 2024 was downloaded in CSV format (two CSV tables, one for each LGD) as the primary data processing was made in M.Excel. This format for data downloading was chosen as it is compatible with QGIS for creating point-based vector data representing the locations of the animals every 30 minutes.

The data was filtered to eliminate the time intervals at both ends that involved the GPS tracker fitting and removal procedures and the intervals in which the trackers were not on site. Also, in this stage, a formatting procedure was necessary to ensure that one of the most important columns in the table containing the date and time intervals of each location was in the date-time format requested for use in QGIS.

Another filtering procedure involved the labeling of the data in daytime and nighttime data based on established hourly intervals. This step was considered necessary, as the recreational activities done in outdoors usually occur during daytime hours. The labeling was done by creating a new attribute column using the If function in M. Excel and specific time intervals as criteria (daytime from 06:00 AM to 09:59 PM / nighttime from 10:00 PM to 05:59 AM).

The next stage assumed the import of the M. Excel data spreadsheets into QGIS for further processing and analysis over a satellite image (Blaga et al., 2023) as a base map from the Bing web mapping service. The import process assumed the conversion of the Excel spreadsheet into a discrete data set by creating a vector point layer representing the locations every 30 minutes of the LGD's using the decimal coordinates. As the project needed a CRS (coordinate reference system) that recognized the metric system, to determine parameters for obtaining proper Kernel estimates, the WGS 84 pseudo-Mercator projection was selected, as it is a global system easy to aggregate with other third-party spatial data. Therefore, the obtained vector point layers were reprojected in the desired CRS. The two vector point layers were segmented using the calculator function in the attribute tables of the layers to separate the day-time observations from the night-time observations. The procedure ended with four new vector point layers created (two for each LGD), for the day-time and night-time respectively. As the main objective of the study was to analyze and identify potential zones as clusters from LGD movement data, several spatial algorithms were used. First, a home range analysis was performed for both the daytime and nighttime observations using the minimum bounding geometry algorithm. The algorithm shows the maximum extent of the areas the two LGDs have used in the timeframe of the study, during the day and the night. This first approach was useful to estimate and compare the spatial areas in which the two dogs have been observed in both instances. However, this algorithm does not show the areas in which the animals have spent more time. Therefore, a kernel density analysis was performed to obtain a type of result indicating potential clusters of preferred areas used by the dogs.

For the Kernel density estimation, the density analysis tool was used, among other QGIS algorithms that work similarly. For the analysis, only the vector point data representing the day-time observations were taken into account as these were considered the most important concerning potential recreational activities in the area. The Kernel density estimation method is a non-parametric model that creates an intensity distribution from a data sample with no model assumption in mind. For geographical studies, the method will generate a spatially distributed model in the form of a density raster layer from point vector data by calculating the number of points in certain locations and thus being useful in identifying hotspots and clusters (Lloyd, 2010). The algorithm requires a vector layer as input and the specification of several important parameters – the pixel cell size (established at 50 meters) and the radius, used for defining areas to calculate local densities around points. To establish a proper radius for kernel calculations, the equation proposed by Fortheringham was used (Fortheringham et al., 2000). The simplified version of the equation is described below:

(1) R= ((2/(3N))1/4)*SD where R – radius; N – total number of received observations (vector points); SD – standard distance. The SD was computed using the standard distance tool in QGIS for each layer representing the daytime LGD activity.

Following the parameter input the Kernel density estimations two raster layers were generated for the two vector point layers representing the day-time activity of the LGDs.

RESULTS AND DISCUSSION

After the fitting of the GPS collars in 15 November (LGD 1) and 22 November (LGD 2) respectively, the trackers were followed via the dedicated Digitanimal web application. After the first day of observations, it was noted that the second collar, fitted to the LGD no.2 from the Vraja farm, received messages with a much lower frequency than the first collar. After 19 days of monitoring, on 10 December 2023, the signal from the second tracker was lost entirely. The team chose not to intervene and assess the situation after the monitoring campaign concluded on 10th January. The signal from this device was not recovered and after the collars were removed at the end of the monitoring campaign, upon inspecting the devices, no physical damages were observed. One hypothesis follows the quality of the signal from the mobile operators available in the area influenced by the topography of the terrain, land cover, and other terrain or technical-related elements. The device fitted on the LGD no. 1 from Codrea farm performed well on the entire duration of the monitoring campaign and the data received from this device were used as a baseline standard for symbolizing the raster values obtained through the kernel density estimation method for both cases.

Data distribution and derived parameters

Once the terrain stage was concluded, the data were processed firstly in M.Excel. The data were cleaned to eliminate the time intervals at both ends of the field monitoring campaign, from the day in which the trackers were fitted on the dogs (15 November 2024 for LGD 1 and 22 November 2024 for LGD 2) and the devices were found at other locations, and the last day of the campaign (10 January 2024), when the devices were removed. For 15 and 22 November respectively, the observations received before noon were removed. For 10 January, all observations after 04:00 PM were removed. The primary analysis of the data that followed after the CSV data files were imported into QGIS and segmented into day and night vector layers, assuming the use of the minimum bounding geometry tool for a first estimation of home range for both day and night data sets. Even though the kernel density estimation method by itself calculates the home range, it was considered appropriate to compute separately the maximum extent of the areas the two LGDs have used in the timeframe of the study (Figures 3 and 4). The home range results indicate differences in area coverage between the two dogs, especially during the day. Firstly, LGD no.1 covered an area twice the size of LGD no.2 (Figures 3 and 4), with over 6 sqkm compared to just over 3sqkm.

Table 1. Overview of GPS devices performance and key parameters used for spatial analysis captions (photo – BSV)

GPS trackers + accessories	**tracker fitted on LGD 1**	**tracker fitted on LGD 2**
		
length of sensor monitoring	57 days	19 days
GPS tracker temporization	every 30 minutes	every 30 minutes
N	1410 obs.	289 obs.
N_{day} *	**1016 obs.**	**223 obs.**
N_{night}	394 obs.	66 obs.
Homerange (day)	6,61 sqkm	3,18 sqkm
Home range (night)	0,12 sqkm	0,08 sqkm
SD_{day} *	**970 m**	**930 m**
R_{day} (Fortheringham's formula) *****	**155,25 m**	**365,75 m**
*data used for kernel density estimations		

There is also a clear difference between daytime and nighttime behavior. For the time of the year covered by the study, the dogs demonstrated considerable levels of mobility during the day, but is can be inferred that the level of mobility and the area covered were influenced by the decisions the shepherd made while selecting the appropriate areas for grazing.

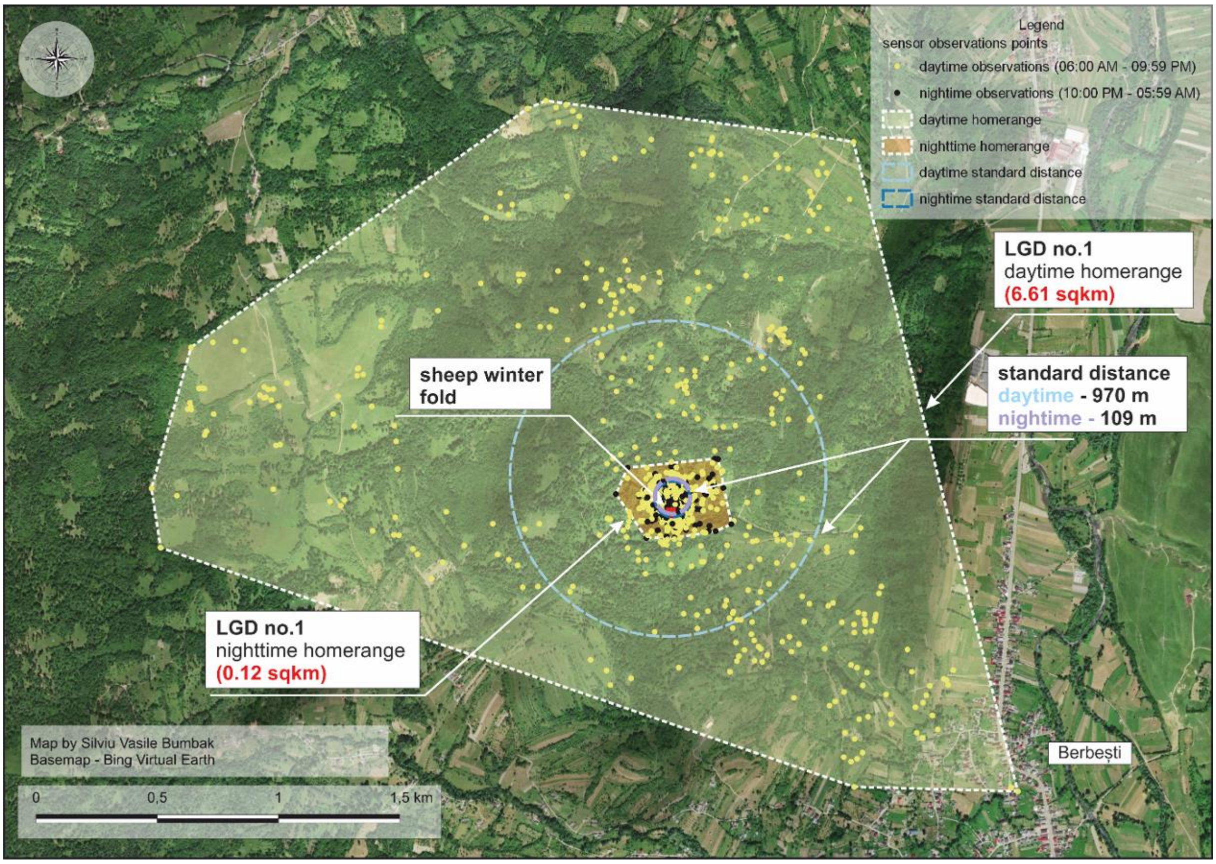


Figure 3. Point-based location of the sensor observations for LGD no. 1 and derived parameters

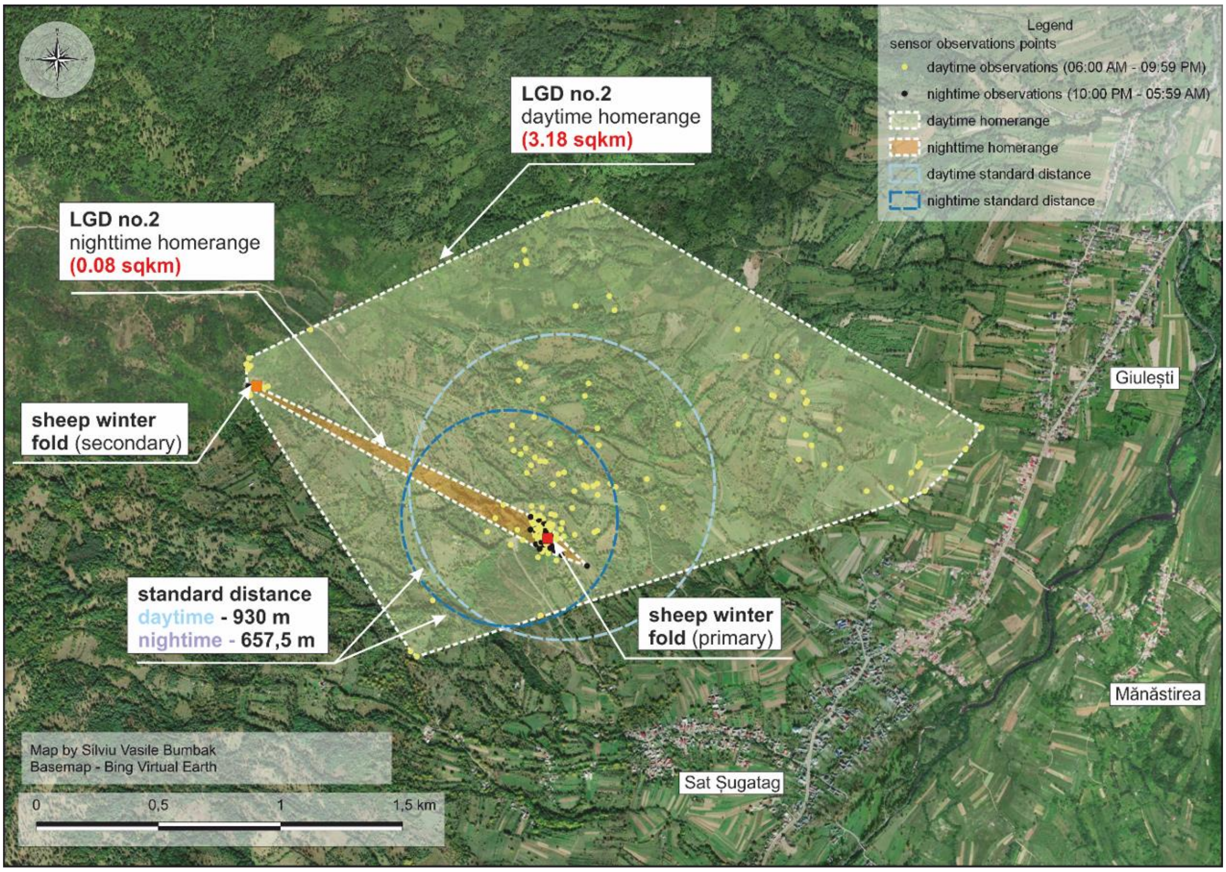


Figure 4. Point-based location of the sensor observations for LGD no. 2 and derived parameters

During the night the values are similar, and highlight the fact that both dogs spent the nights at or near the sheepfolds. Even if the number of observations received through the sensors was lower in the case of LGD no. 2, the absence of "stray" location points during the night indicated the fact that the dogs indeed spent the nights closer to the fold. In the case of LGD no. 2, the data shows time spent at the other winter fold location (secondary winter sheepfold in Figure 4), meaning that in the time interval for which data are available, the flock moved between the folds at least once and spent at least one night at the second location. It can be assumed that the other dogs at each sheepfold follow a similar behavior and that the point-based locations indicate the presence of the majority of the dogs. Also, since one of the criteria used for selection involved choosing an LGD that follows the flock as it moves around during the day with the shepherds, it can be assumed that the locations are an indication of sheep presence. These two aspects are hard to verify in the absence of data from collars attached to other dogs from the packs but also to sheep.

The standard distance, computed through a dedicated algorithm available in the QGIS Plugin repository, by itself can offer valuable information regarding the behavior of the dogs during the day and night. The standard distance measures the compactness of a distribution of points (Mitchell and Scott Griffin, 2005) around a center. In this case, the centers are represented by the locations of the sheepfolds, which can also help understand the spatial behavior of the animals. In the case of LGD no. 2, the nighttime standard distance value (over 600 meters) presents a more dispersed pattern. The pattern was influenced by the recordings of time spent at the second winter fold which is situated at approximately 1.5 kilometers distance from the main winter fold, therefore, it is considered that the computations should have taken into account a supplementary segmentation of the data based on the locations around the two winters folds. In the case of LGD no. 1, the standard distance value is reduced (just over 100 meters) suggesting a compact distribution that highlights that during the night, at least for the time interval of the study, the dog did not wander far from the sheepfold.

Daytime kernel density estimations

Considering the compact behavioral patterns of the dogs during the night, that remained close to their winter bases, it was firstly debated and then decided as appropriate to focus the kernel density estimations only on the daytime data as daytime hours coincide with recreational activities done outdoors. The method was applied using only the vector point layer encompassing the daytime data, even though a weighted value approach to the original vector layers could have been employed (Pathmanandakumar et al., 2023). The kernel density estimations were computed using a 50 by 50-meter cell size and the calculated radius and standard distance values obtained previously.

Each raster cell represents the number of daytime observations recorded at that location. For comparison purposes, the results for the daytime activity of LGD no. 2 (maximum of 120 observations/raster cell), were symbolized using the scale of values for the daytime activity of LGD no.1 (maximum of 280 observations/raster cell).

After the initial computations and analysis, the data showed disparities between the high clusters of observations recorded in the proximity of the winter bases and the nearby areas. This result was to be expected, considering the previous results obtained using the standard distance tool, which indicated a clustered pattern centered around the winter folds at both sites. A threshold with a minimum of 5 observations per raster cell was established to identify potential clusters outside the areas near the winter folds, where the values are much lower. The minimum of 5 observations represents an indicator of a preferred area highlighting either occasional overlappings of data in different days, multiple returns in the same area, or simply a higher amount of time spent at a certain location. This aspect is again hard to determine in the absence of a higher amount of data comprising a much larger interval. However, this spatial information is useful for identifying areas farther away from the winter folds that are still frequented by the sheep and dogs and could be perceived as problematic for outdoor activities. The threshold was used again in generating contour lines that highlight more evidently the areas with at least 5 observations. These areas are considered lower observational clusters and are situated hundreds of meters distance from the main compounds (Figures 5 and 6).

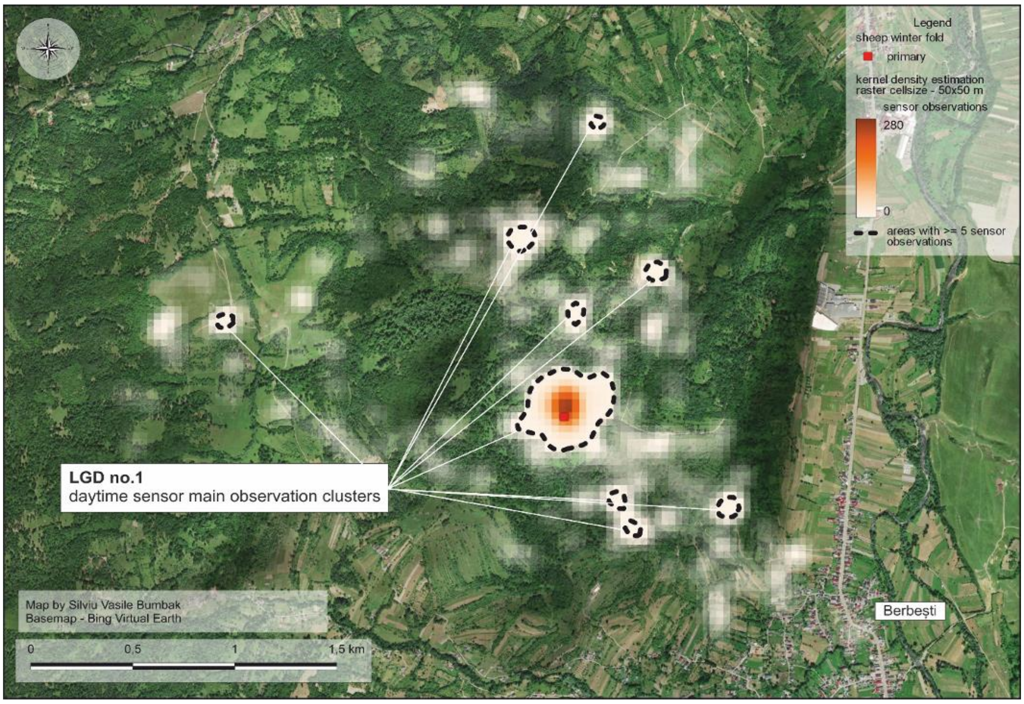


Figure 5. Clusters of daytime activity based on sensor observation for LGD no. 1

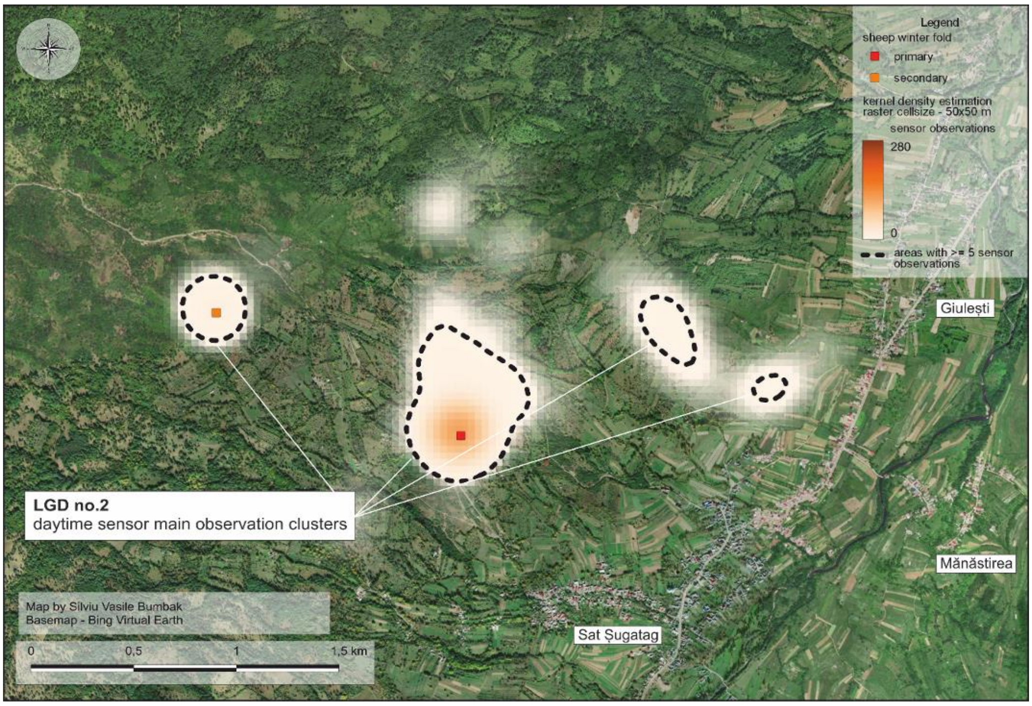


Figure 6. Clusters of daytime activity based on sensor observation for LGD no. 2

In the case of LGD no. 1 (Figure 5), outside of the main cluster centered around the winterfold, eight secondary clusters of at least 5 observations were identified. The clusters cover small areas of up to 1.5 hectares. Their dispersed distribution and small size suggest that the flock and dogs moved constantly from pasture to pasture, indicating a faster movement pattern, with shorter amounts of time spent on each grazing spot. In the case of LGD no. 2 (Figure 6), three zones of this type were identified outside the main cluster, with one being centered around the second winter fold.

These clusters cover large areas, between 2 and 6 hectares, and indicate a different movement pattern that suggests a different approach on the part of the shepherds concerning the choice of pasture and the amount of time spent grazing it. In the case of LGD no 2, the entire flock spent more time on those three areas, which were, except the cluster identified around the secondary winter fold, probably strategically selected.

Considering the time of the year in which the field monitoring was conducted, with shorter days, and wintry conditions the high observational clusters identified in both situations near the winter bases indicate that the sheep and the dogs spent just a couple of hours per day outside their main premises and could be found occasionally in other locations.

CONCLUSION

Even though the study was undertaken outside the main pastoral season and encompassed a limited time interval, it was possible to identify clustered patterns of movement in both situations. For the analyzed time interval (15th November – 10th January), two main clusters were identified around the winter folds, suggesting that the dogs tend to stay at or closer to their bases even during the day, where they spent the majority of the time.

For the two LGDs involved in the study, important differences between their movement patterns were found. The differences concern especially the daily pattern of movement of the two livestock guardian dogs, where differences have been observed even though both originate from two sheepfolds found in proximity of one another, that use spaces with similar characteristics for their sheep. The many factors that could be taken into account to explain these findings represent another fertile research field and highlight the potential for expansion of the present study. Again, in order to achieve such goals, future studies should cover more sheepfolds and, preferably, from areas with different characteristics, even if selected from the same region. These findings have the potential to be used in the design of tools that could inform a decision-making process on behalf of the tourists or recreationists who have the desire to visit the area but are afraid or unaware of the dangers the dogs could pose to them. Instead of choosing not to visit the area altogether, why not decide how best to move around while avoiding the zones with the highest probability of finding sheep and dogs and reducing the chances of problematic encounters? To achieve such an objective, further research comprising a larger time frame and preferably the summer pastoral calendar is needed in this direction.

This study represents a preliminary phase from a much larger, future research that would span several years and encompass a higher number of sheepfolds from Maramureş Land. However, the future research will have to adapt the research design in order to monitor both sheep and, preferably, more than one dog from each sheepfold. In this way, positive or negative correlations and key parameters about the movement of the flock and dogs could be assessed.

The study had several limitations that will have to be addressed by the future research, before the next field campaign. Firstly, the issue of device integrity and level of resistance to elements and other miscellaneous factors. From two devices, one performed well for the entire duration of the field stage, while the other lost its transmission capacity after 19 days. A causal explanation for this event will be formulated after the device in question is inspected and discussed with the company representatives. Secondly, the issue of signal acquisition through the GSM technology (the one used in this study) in the selected areas from the Mara-Săpânța Piedmont. The team did not use an antenna and relied solely on the GSM networks. Even though the GSM operators offer signal coverage in the area in question, in both cases, the total number of observations (N) could have been higher. The number of observations could be the result of possible influences of the topography, land cover, and other terrain-related elements, and require a distinct assessment to understand the landscape influences.

Author Contributions: Conceptualization, S.V.B, M.I, and M.H; methodology, S.V.B, M.I, M.H, and T.H.H; software, S.V.B; validation, S.V.B, and M.I; formal analysis, S.V.B, M.I, M.H, and T.H.H; investigation, S.V.B, M.I, and M.H; data curation, S.V.B, M.I, and M.H,; writing - original draft preparation, S.V.B, M.I, M.H, and T.H.H; writing - review and editing, S.V.B, M.I, M.H, and T.H.H.; visualization, S.V.B, and M.I; supervision, S.V.B, M.I, M.H, and T.H.H; project administration, S.V.B. All authors have read and agreed to the published version of the manuscript.

Funding: The publication of this article was supported by the 2023 Development Fund of the UBB.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The authors express their gratitude to the two families for consenting to the monitorisation of their animals for research purposes and also to express thanks to Maria Codrea, a 2nd-year master's student at the Faculty of Geography, Sighetu Marmației Extension at the time of writing for her insights regarding livestock guardian dogs behavior at her family's farm. This work was supported by the Deanship of Scientific Research, Vice Presidency for Graduate Studies and Scientific Research, King Faisal University, Saudi Arabia [Grant No. 033]

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Allen, L.R., Steward-Moore, N., Byrne, D., & Allen, B.L. (2016). Guardian dogs protect sheep by guarding sheep, not by establishing territories and excluding predators. *Animal Production Science, 57*(6), 1118-1127. https://doi.org/https://doi.org/10.1071/AN16030

Blaga, L., Ilieș, D.C., Wendt, J.A., Rus, I., Zhu, K., & David, L.D. (2023). Monitoring forest cover dynamics using orthophotos and satellite imagery. *Remote Sensing, 15*(12), 3168. https://doi.org/https://doi.org/10.3390/rs15123168

David, L., Semuc, I., Vlad, I., Șerban, C., Săvulescu, I., Vrăjitoriu, A., Săvescu, I., & Munteanu, C. (2021). *Transhumanța carpatică a oilor țurcane. Continuitatea elementelor arhaice pastorale în mileniul al III-lea [The Carpathian transhumance of turcana sheep – The continuity of archaic pastoral elements through the 3rd millenia]*. Bucharest, Romania: Ethnological Publishing House.

Dragoș, M., Dragomir, N., Horablaga, M., & Rechițean, D. (2018). Production dimension and potential of permanent grasslands of Romania in relation to animals growth. *Scientific Papers - Agronomy series (Lucrări Științifice - seria Agronomie), 61*(2), 105-108. Retrieved from https://www.uaiasi.ro/revagrois/PDF/2018-2/paper/20.pdf

Fortheringham, S.A., Brunsdon, C., & Charlton, M. (2000). *Quantitative Geography: Perspectives on Spatial Data Analysis.* London, UK: Sage.

Gehring, T.M., VerCauteren, K.C., & Landry, J.M. (2010). Livestock Protection Dogs in the 21st Century: Is an Ancient Tool Relevant to Modern Conservation Challenges? *Bioscience, 60*(4), 299-308. https://doi.org/https://doi.org/10.1525/bio.2010.60.4.8

Hotea, M. (2019). *Munții Maramureșului - Studiu de geografie umană (The Maramureș Mountains - study of human geography).* Cluj-Napoca, Romania: Cluj University Press.

Huband, S., McCraken, D., & Mertens, A. (2010). Long and Short Distance Transhumant Pastoralism in Romania: Past and Present. *Pastoralism: Research, Policy and Practice, 1*(1), 55-71.

Ilieș, G. (2007). *Țara Maramureșului - Studiu de geografie regională [Land of Maramureș - Study of regional geography]*. Cluj-Napoca, Romania: Cluj University Press.

Ilieș, G., Ilieș, M., Hotea, M., Bumbak, S., Hodor, N., Ilieș, D.C., Caciora, T., Safarov, B., Morar, C., Valjarević, A., Berdenov, Lukić, T., Mihajlović, M., Liudmyla, N., & Vasic, P. (2022). Integrating forest windthrow assessment data in the process of windscape reconstruction: Case of the extratropical storms downscaled for the Gutai Mountains (Romania). *Frontiers in Environmental Science, 10*. https://doi.org/https://doi.org/10.3389/fenvs.2022.926430

Ivașcu, C.M., & Biro, A. (2020). Coexistence through the Ages: The role of native livestock guardian dogs and traditional ecological knowledge as key resources in conflict mitigation between pastoralists and large carnivores in the Romanian Carpathians. *Journal of Ethnobiology, 40*(4), 465-482. https://doi.org/https://doi.org/10.2993/0278-0771-40.4.465

Juler, C. (2014). După Coada Oilor: Long-distance transhumance and its survival in Romania. *Pastoralism: Research, Policy and Practice, 4*(4), 1-17. https://doi.org/https://doi.org/10.1186/2041-7136-4-4

Kinka, D., & Young, J.K. (2019). Evaluating domestic sheep survival with different breeds of livestock guardian dogs. *Rangeland Ecology & Management, 72*(6), 923-932. https://doi.org/https://doi.org/10.1016/j.rama.2019.07.002

Liechti, K., & Biber, J. (2016). Pastoralism in Europe: characteristics and challenges of highland-lowland transhumance. *Rev Sci Tech, 35*(2), 561-575. https://doi.org/https://doi.org/10.20506/rst.35.2.2541

Linnell, J.D., & Lescureux, N. (2015). *Livestock guardian dogs: Cultural heritage icons with a new relevance for mitigating conflicts.* Norwegian Institute for Nature Research. European Commision. https://lciepub.nina.no/pdf/636097452011012523_Linnell%20NINA%20livestock%20guarding%20dogs_web.pdf

Lloyd, C. (2010). *Spatial data Analysis: An Introduction to GIS Users.* Oxford, UK: Oxford Press.

Luick, R. (2008). Transhumance in Germany. *European Forum on Nature Conservation and Pastoralism*, 1-16. Retrieved from https://www.efncp.org/download/Swabian_Alb_F_F_Download.pdf

Ministry of Agriculture and Rural Development. (2023). *Romania's Mountain Natural Resources: Technical Assessment Report.* Retrieved from https://www.madr.ro/docs/poca/2024/5.-ENG-Mountain-Area-Natural-Resource-Assesment-Report-A4.3.pdf

Mitchell, A., & Scott Griffin, L. (2005). *The ESRI Guide to GIS Analysis, Volume 2: Spatial measurements and statistics.* Redlands, USA: ESRI Press.

Mosley, J.C., Roeder, B.L., Frost, R.A., Wells, S.L., McNew, L.B., & Clark, P.E. (2020). Mitigating Human Conflicts with Livestock Guardian Dogs in Extensive Sheep Grazing Systems. *Rangeland Ecology & Management, 73*(5), 724-732. https://doi.org/https://doi.org/10.1016/j.rama.2020.04.009

Navarro, J., Martín de Diego, I., Carballo Pérez, P., & Ortega, F. (2021). Outlier detection in animal multivariate trajectories. *Computers and Electronics in Agriculture, 190*. https://doi.org/https://doi.org/10.1016/j.compag.2021.106401

O'Brien, T., & Crețan, R. (2019). The role of identity in the 2015 Romanian shepherd protests. *Identities: Global Studies in Culture and Power, 26*(4), 470-488. https://doi.org/https://doi.org/10.1080/1070289X.2017.1400322

Pathmanandakumar, V., Goh, H., & Chenoli, S. (2023). Identifying potential zones for ecotourism development in Batticaloa District of Sri Lanka using the GIS-based AHP spatial analysis. *GeoJournal of Tourism and Geosites, 46*(1), 252-261. https://doi.org/https://doi.org/10.30892/gtg.46128-1022

Popescu, V.D., Artelle, K.A., Pop, M.I., Manolache, S., & Rozylowicz, L. (2016). Assessing biological realism of wildlife population estimates in data-poor systems. *53*(4), 1248-1259. https://doi.org/https://doi.org/10.1111/1365-2664.12660

Rozylowicz, L., Nita, A., Manolache, S., Ciocanea, C.M., & Popescu, V.D. (2017). Recipe for success: A network prespective of partnership in nature conservation. *Journal of Nature Conservation, 38*, 21-29. https://doi.org/https://doi.org/10.1016/j.jnc.2017.05.005

Săgeată, R., Persu, M., Mitrică, B., Damian, N., & Mocanu, I. (2023). Shepherding at Mărginimea Sibiului (Romania); Past, Present and Future. *European Review, 31*(1), 65-89. https://doi.org/https://doi.org/10.1017/S1062798722000230

Velcea, I., Toderaș, T., Crăcea, T., & Negoescu, A. (2016). Pastoral transhumance in Mărginimea Sibiului. *Revue Roumanie de Geographie / Romanian Journal of Geography,* 60(1), 85-97. http://www.rjgeo.ro/issues/revue%20roumaine%2060_1/velcea%20et%20al.pdf

Yilmaz, O., Erturk, Y.E., Co Kun, F., & Ertugrul, M. (2015). Using livestock guardian dogs in Balkans. *Agriculture & Forestry, 61*(1), 161-173. https://doi.org/https://doi.org/10.17707/AgricultForest.61.1.21

Young, J., Draper, J.P., & Kinka, D. (2019). Spatial associations of livestock guardian dogs and domestic sheep. *Human-Wildlife Interactions, 13*(1). https://doi.org/https://doi.org/10.26076/frv4-jx12

Article history: Received: 03.03.2024 Revised: 20.05.2024 Accepted: 12.06.2024 Available online: 28.06.2024

Year XVII, vol. 54, no. 2spl, 2024, p.821-830
DOI 10.30892/gtg.542spl06-1257

ASSESSMENT OF THE POSSIBILITIES OF USING SACRED SITES AND THE NATURAL AND RECREATIONAL POTENTIAL OF THE NORTH KAZAKHSTAN REGION FOR THE FORMATION OF TOURIST ROUTES

Pavel S. DMITRIYEV
North Kazakhstan Kozybayev University, Faculty of Geography and Ecology, Petropavlovsk, Kazakhstan, e-mail: dmitriev_pavel@mail.ru

Ivan A. FOMIN*
North Kazakhstan Kozybayev University, Faculty of Geography and Ecology, Petropavlovsk, Kazakhstan, e-mail: iafomin@mail.ru

Yelena V. SABIEVA
North Kazakhstan Kozybayev University, Institute of Language and Literature, Petropavlovsk, Kazakhstan, e-mail: Sabieva1969@mail.ru

Maira E. KAKIMOVA
North Kazakhstan Kozybayev University, Institute of Language and Literature, Petropavlovsk, Kazakhstan, e-mail: mkakimova2009@mail.ru

Marina V. SANNIKOVA
North Kazakhstan Kozybayev University, Faculty of Engineering and Digital Technology,
Petropavlovsk, Kazakhstan, e-mail: sannikova_marina@mail.ru

Citation: Dmitriyev, P.S., Fomin, I.A., Sabieva, Y.V., Kakimova, M.E., & Sannikova, M.V. (2024). ASSESSMENT OF THE POSSIBILITIES OF USING SACRED SITES AND THE NATURAL AND RECREATIONAL POTENTIAL OF THE NORTH KAZAKHSTAN REGION FOR THE FORMATION OF TOURIST ROUTES. *Geojournal of Tourism and Geosites*, 54(2spl), 821–830. https://doi.org/10.30892/gtg.542spl06-1257

Abstract: To analyze the potential of sacred places as well as natural and recreational objects within the borders of the North Kazakhstan region of the Republic of Kazakhstan in the development of complex tourist routes. We examined archival data and documents and assessed the results of a sociological survey using statistical and mathematical processing, with tourist routes mapped out. The material under analysis and the results of the sociological survey enabled us to evaluate the touristic appeal and relevance of sacred places, as well as that of natural and recreational objects, in the North Kazakhstan region. A number of complex routes characterized by cultural, historical, pilgrimage, archeological, and environmental diversity were proposed. The cartographic material at hand enabled us to display a spatial plan of routes and accurately reflect the development potential of the region's tourism sector. The land of North Kazakhstan has the potential to expand the tourism industry. The demonstrated sacred places and diverse natural sites enable the creation of complex routes. We assessed the sacred places' properties and determined the degree of attractiveness exhibited by complex routes, thus confirming the tourist opportunities offered by the region. These routes were designed to promote various directives such as historical, patriotic, and cultural education, natural world exploration, pilgrimage, spiritual awakening, and archaeology. Their use will contribute to the preservation of cultural and historical values, the expansion of international and domestic relations, and the development of the economy and sustainability in the region. Skillful management in planning complex tourist routes in the North Kazakhstan region will facilitate the strengthening of ties between different communities and cultures, which is of great relevance for the multinational and multicultural country that is Kazakhstan.

Keywords: recreational and natural sites, sacred places, complex tourist routes, North Kazakhstan region, tourism, tourism industry, local history, sociological survey

* * * * * *

INTRODUCTION

The development of tourism in the North Kazakhstan region has many significant aspects that can positively affect the local population, economy, and public welfare. Tourism contributes to the creation of new jobs and the development of entrepreneurship, and it can also facilitate the diversification of the economy. It encourages the creation and improvement of infrastructure such as roads, airports, public transport, cultural and sports facilities. The development of tourism can foster the conservation of natural resources and cultural heritage, as it often becomes a point of interest for tourists and results in economic growth (Kantarci, 2007a; Syzdykbayeva et al., 2015; Kuralbayev et al., 2016; Kuralbayev et al., 2019; Saparov et al., 2017). Kazakhstan offers a multitude of unique sights and attractions for tourists. Each region of Kazakhstan has a tourist potential represented by natural, historical, archaeological, cultural, and other places and objects (Smykova, 2015; Abubakirova et al., 2016; Aliaskarov et al., 2017; Aliyeva et al., 2019; Tiberghien, 2019; Wendt, 2020). It is essential to explore this potential, enabling its use in the expansion of the tourism business in the republic's multiple areas.

* Corresponding author

The North Kazakhstan region is also uniquely distinct in terms of its tourism industry. The study of the tourism potential of the region in question is on the list of the region's development priorities. Studying the region's domain allows one to preserve and transfer knowledge about its history, traditions, culture, and customs. This serves to strengthen the community's identity, preserve the national, cultural, and historical heritage, as well as conserve the uniqueness of nature sites (Zhidkoblinova, 2013; Chlachula, 2019; Dmitriyev et al., 2021a). Learning about one's own region inspires people to assume an active role in its development, support local projects, and embrace shared values. Awareness of local history, culture, and ecology can attract travelers and help the region's tourism industry flourish. In combination with unique cultural and historical sites, the use of cartographic material and data on natural and recreational resources enables us to outline the region's tourist potential (Ziyadin and Takhtaeva, 2014; Zhakupov et al., 2015; Wendt, 2016; Dunets et al., 2019).

The North Kazakhstan region's geographical location has a considerable bearing on the region's tourism potential. One of the features that can enhance the area's touristic appeal at hand is its border-adjacent location, auspicious for tourism exchange and the development of cross-border tourism. The region boasts a diverse nature, including steppes, forests, rivers, and lakes. This natural land scape provides unique opportunities for eco-tourism, hunting, fishing, hiking, and cycling. The combination of various ethnic groups forms a unique cultural atmosphere. Local traditions, customs and cuisine can attract tourists who want to immerse themselves in the local culture (Matviichuk et al., 2023).

This richness of distinctive characteristics exhibited by the territory under study is of great touristic importance when creating complex or combined routes. This makes it possible to consider the needs of a wider range of tourists, combining all types of tourism and emphasizing the historical, cultural and natural attractiveness of the region (Bancerova and Kasimova, 2018; Ismagulova et al., 2020; Usmonova et al., 2022). The North Kazakhstan region is distinguished by its natural beauty as well as its rich and eventful history full of architectural sights, archaeological discoveries, and cultural land marks. A plethora of sites and objects within the region carry sacred significance and are recognized on the national level. At the same time, this list is not exhaustive. A number of sites and objects of sacred importance and relevance for developing the tourism industry can also be identified at the regional level. Thus, it is necessary to study the sacred places of the studied region in order to assess the possibility of using them to create tourist routes.

MATERIALS AND METHODS

The following methods were used in this paper: analysis of archival data and documents, a sociological survey, methods of statistical processing and mathematical analysis, with mapping used for visualization. At the first stage of the study, the list of sacred places of the North Kazakhstan region was studied, and a classification was carried out.

At the second stage, a subjective assessment of the attractiveness of sacred places was obtained during a sociological survey. After analyzing the results of the survey, a list of the main criteria was compiled, and the weighting coefficient of these criteria was obtained to assess the tourist attractiveness of sacred sites. The level of sacred sites and objects' attractiveness was assessed using a comprehensive quality indicator. This indicator was calculated using the weighted mean.

$k = \sum k_i \sum a_i$, (1) Fomin et al., 2020

where *ki* is an indicator of the *i*-th property of the object, points; ai is the weight coefficient of the *k* Indicators, a unit fraction ($\sum ai=l$). This formula is universal. This technique, the available scientific materials, and the results of the survey made it possible to calculate the weight coefficients and thus assess the properties of a sacred object with a view to calculating its potential. After that, complex routes were identified, which is based on the transport logistics of the North Kazakhstan region. Upon mapping the routes, we were able to visualize their spatial position within the borders of the region at hand (Semochkina, 2012; Baryshnikov et al., 2019; Dmitriyev et al., 2021b).

RESULTS AND DISCUSSION

Today, each country has uniquely significant sites or objects (Kantarci, 2007b; Chernova and Sukhova, 2017; Juraturgunov et al., 2023). Kazakhstan is no exception. One of the strategies employed by the Republic of Kazakhstan is the development of sacred geography, a branch of local history that studies the country's each individual region, locality, etc., a cause important for the population of each respective territory. Sites that carry special spiritual or sacred significance for a particular religious, cultural, or spiritual tradition are called sacred places. Moreover, there are a number of nuances depending on the particular term used when discussing objects or places in sacred geography. In light of the direction in which the tourism industry is developing within the borders of the North Kazakhstan region, we encourage using the term sacred place.

Sacred places or objects can be either natural landscapes such as mountains, rivers, forests, and others, or they can be created by man (temples, churches, mosques, etc.). People may consider these places special, worship them, perform rituals or prayers in them in the hope of receiving spiritual inspiration, protection, or healing (Rybina and Lee, 2021). Visiting sacred places is of interest to tourists, notably for education purposes. Cognitive tourism is a form of travel focused on educational and cognitive goals, cultural enrichment, and the acquisition of new knowledge. The key idea is not only to relax, but also to learn something new, and immerse yourself in local culture, history, art, and traditions (Đurkin et al., 2017; Monyók et al., 2020; Bógdał-Brzezińska et al., 2023; Mukatova et al., 2024).

The sociological survey we conducted included 822 respondents and revealed their keen interest in visiting and studying the sacred places of North Kazakhstan, and enabled us to flag the criteria of their attractiveness. The questionnaire list includes questions characterizing the cultural and historical significance of sacred sites, the level of development of logistics, infrastructure, natural and environmental attractiveness, etc. A sociological survey helps to identify research data that needs to be analyzed (Ignatov, 2011). The analysis of the questionnaire resulted in drawing several key conclusions. First of all, the region's territory offers a unique potential of sacred and natural places and objects. Second, the study of the native land contributes to enlightenment and education and promotes patriotism. Third, the possibility of creating integrated routes will attract more potential tourists by combining their needs. Last but not least, we used the results of the survey to determine the scores showing the appeal of sacred places and objects. Naturally, every object or place included in the tourist route must be attractive to tourists. Determining the tourist attractiveness of unique sites consists of various factors, including cultural, natural, historical, and recreational aspects. Based on the sociological survey, we compiled a list of the main criteria and calculated their weighting coefficients, which, in turn, can be used to assess the tourist attractiveness of a sacred site:

I. The development of the transport network, Logistics.

II. Tourism potential: The facility's ability to attract a wide range of tourists and create a positive experience for different categories of visitors.

III. Tourist infrastructure: Availability of convenient transit, good accommodation, restaurants, and tourist services.

IV. Natural beauty: Attractiveness of a natural object, such as land scapes, mountains, waterfalls, beaches, which can inspire and enchant tourists.

V. Cultural heritage: The site's cultural and historical significance, including monuments, architecture, museums, and traditions.

VI. Environmental sustainability: Maintaining the site's ecological integrity and taking measures for sustainable tourism.

VII. Safety and convenience: Level of security for tourists and the facility's accessibility, including easy access and accommodation facilities.

VIII. Entertainment options: Availability of a variety of entertainment activities such as theme parks, festivals, events, and excursions.

IX. Ethno-gastronomic diversity: Unique culinary opportunities and traditions that attract food aficionados.

X. Innovation and technology: Using innovative technologies to enrich the travel experience, for example, virtual tours, interactive exhibitions, etc.

Table 1. Assessment of sacred places and objects' properties (Source: the authors' own calculations)

Properties of sacred objects	Quantitative assessment of the parameter regarding the object (*ki*), points					The weighting factor of the indicator (*ai*)
	1	2	3	4	5	
I	Lack of well-paved roads	Insufficient development of the transport network	Access to roads of regional importance	The presence of national importance roads	Good development of the transport network	0.15
II	Insignificant combination of sacred place types	Presence of a variety of sacred place types	A significant variety of sacred place types	Presence of sacred places of national importance	The presence of many sacred places of national importance	0.1
III	Minor land scaping	Land scaping of recreation areas (access to comfortable WCs, benches with sun and rain protection, etc.)	Availability of food outlets	Availability of overnight accommodation	Major facilities	0.05
IV	Absence of old-growth attractions	Ordinary old-growth natural objects	More significant natural monuments	Unique old-growth natural monuments	Old-growth objects protected by law	0.15
V	Lack of attractions	Minor attractions	More significant attractions	Sights of historical and artistic value	Attractions protected by law	0.1
VI	Presence of visible contamination	Odor composition	Compliance with the regulations	Compliance with the stand ards for drinking water	Uniquely clean reservoirs with springs	0.08
VII	Availability of industrial facilities	Presence of a rural settlements network, land fills	Large area of agricultural land	Predominance of protected natural areas	Many unique protected areas	0.05
VIII	Lack of recreational activities	Monotonous events and excursions	Availability of entertainment activities such as theme parks	No significant variety of recreational activities such as theme parks, festivals, events and excursions	Wide variety of recreational activities such as theme parks, festivals, events and excursions	0.1
IX	Lack of culinary opportunities and traditions	Monotonous gastronomic flavor	Presence of ethno-gastronomic traditions	No significant variety of culinary opportunities and traditions	Wide variety of unique culinary opportunities and traditions	0.12
X	Lack of innovative technologies	Insufficient development of innovative technologies	Availability of innovative technologies to enrich the	The development of innovative technologies to enrich the tourist experience: virtual tours, interactive exhibitions and maps	Good development of virtual tours, interactive exhibitions, interactive maps, etc.	0.1

Successful tourist sites often combine several of these criteria, providing diversity and sparking visitors' interest. To assess the potential of each sacred object, a complex quality indicator was used, with the weighted mean at its core (1). An assessment of each sacred object's potential is given, based on a modified complex quality indicator obtained via weighted mean calculation, with10 criteria under a 5-point system. The properties of sacred objects were determined based on a number of criteria, enabling us to organize the material under analysis as a table (Table 1).

The analysis of the table's contents made it possible to identify the most significant criteria when assessing the potential of each sacred place and object. According to the respondents, the most important indicators are those pertaining to the development of the transport network and the presence of unique natural and recreational facilities. These indicators have a maximum coefficient of 0.15. A lower value was obtained for criteria characterizing the development of tourist infrastructure: 0.05; environmental sustainability: 0.08; the level of safety and convenience for tourists: 0.05.

The average values between 0.1 and 0.12 belong to the remaining half of the criteria. These include the tourism potential, entertainment opportunities, the attractiveness of a cultural heritage site, ethno-gastronomic diversity, innovations and technologies aimed at using virtual opportunities for tourists. The scores of these parameters describe the features of the thematic orientation of tourist routes, such as cultural and historical, archaeological, pilgrimage, natural and recreational. These are routes that notably combine enlightenment and education and offer an opportunity to touch cultural values by enabling visitors to explore the unique natural sites of the North Kazakhstan region. The subdivision of sacred sites can vary depending on various aspects such as religious beliefs, cultural traditions, and historical contexts. There exists a list of sacred places and objects of national significance within the borders of the North Kazakhstan region**.

Below is an overview of the suggested sacred site types in the region, with each selected sacred place about a certain type. We must mention, however, that we find the proposed typology rather crude. Cult sacred objects. These include buildings built for religious rites, prayers, and worship, as well as other religious buildings. Archistratigo-Mikhailovsky Convent. Located in the Zhambyl district, Presnoredut village, North Kazakhstan region. Despite its derelict condition, it is a place of pilgrimage. Kyzylzhar Central Mosque. Located in the city of Petropavlovsk.

Even though the mosque was built in the early 2000s, it is a crucial hub of spiritual and cultural life for the region's population. The Din Muhammad Mosque. Located in the city of Petropavlovsk. One of the oldest religious sites in the region, the mosque was built in 1854. The Church of All Saints. The Orthodox church is located in the city of Petropavlovsk; the consecration took place in 1894. Cathedral of the Holy Apostles Peter and Paul.

The Orthodox church is an architectural monument located in the city of Petropavlovsk. One of the oldest preserved buildings in the city, the cathedral was founded in 1803. The Catholic Church of the Sacred Heart of Jesus. The temple is the oldest functioning Catholic parish in the Republic of Kazakhstan, located in the city of Petropavlovsk. This church was built at the beginning of the 20th century thanks to exiled Poles and Germans.

The Star of Kazakhstan Altar. This altar was donated to the Kazakh people by Polish Catholics and consecrated in 2012 by Pope Benedict XVI. It is in the Tayynshinsky district, Ozernoye settlement, North Kazakhstan region.

Objects associated with the names of famous cultural, public, and political figures of Kazakhstan.

Memorable objects associated with the name of Magzhan Zhumabaev. A renowned cultural and political figure of Kazakhstan. The memorable places associated with his name are located in the territory of the eponymous district. These include: a memorial stone, the Sasykkul tract, and a museum located in the Magzhan Zhumabayev district, Sarytomar village, North Kazakhstan region. Sabit Mukanov House Museum. Sabit Mukanov was a pillar of Kazakh literature, poet, public figure, and academician. The museum is located in the Zhambyl district, Sabitvillage, North Kazakhstan region.

Memorable objects associated with the name of Gabit Musrepov. Gabit Musrepovwas a famous Kazakhstani writer, translator, and public figure, who was awarded the Hero of Socialist Labor title. The sites commemorating him are combined into a complex and include the Kyzkaragai pine grove, the Ulpan burial place site, the Musrepov museum. The objects are located in the Zhambyl district, Zhanazhol village, North Kazakhstan region.

Ivan Petrovich Shukhov House Museum. Ivan Shukhov was a famous Kazakhstani writer, editor, local historian, public figure. The house Museum is located in the Zhambyl district, Presnovka village, North Kazakhstan region.

Archaeological sacred sites of the North Kazakhstan region. The settlement of Ak-Iriy. Translated from Iranian, it means "White Paradise". An outpost on the edge of the Saka world. The settlement belongs to the Saka era (V century BC), it was an outpost between the inhabitants who inhabited the steppe and the forest.

The settlement was discovered by scientists in 1968, and excavations are still underway. The settlement is in the Kyzylzhar district near the village of Dolmatova, North Kazakhstan region. The temple complex of Baykara. The temple complex was discovered in 1956 by the expedition of archaeologist Kamil Akishev. In the period 1997-1999, the burial ground was excavated by an international German-Kazakh archaeological expedition led by G. Parzinger and V.F. Seibert. The complex is located in the Shal Akyn district, north of the city of Sergeevka, North Kazakhstan region. Botai settlement. Botai settlement is an archaeological monument of the Eneolithic era (4-3 thousand BC). The main archaeological interest is related to the fact that the first evidence of domestic domestication of horses was found here. The researchers believe that the Botai cultural complex could play an important role in the process of domestication of horses, which was important for the development of steppe nomadic cultures in the future.

Research in the Botai Settlement provides a unique perspective on the life and economic activities of the Mesolithic and Neolithic peoples in the central part of Eurasia. Excavations began here at the end of the 20th century, and since then they have continued, expand ing our knowledge of ancient times and the formation of human civilization. The settlement is in the Ayyrtau district south-east of the village of Nikolskoye, North Kazakhstan region.

Historical places

Abylai Khan's residence. The building is a monument of urban planning and architecture, it is one of the first stone buildings of the city of Petropavlovsk. The building is associated with the activities of Abylai Khan, known for initiating the unification of the Kazakh land s. It is located in the city of Petropavlovsk, North Kazakhstan region.

Syrymbet Manor. Syrymbet Manor, the Valikhanov family estate, is a monument of wooden architecture of the 19th century. The Valikhanov family are direct descendants of the Kazakh Abylai Khan. The manor was built by decree of Emperor Alexand er I in 1824. It is located in Ayyrtau district, near the village of Syrymbet, North Kazakhstan region.

"Akkusak meeting" Alash. It is a historical venue for the multi-thousand th national Assembly of Northern Kazakhstan. It is included in the list of sacred sites of national importance in Kazakhstan.

Memorial complexes

Karasai and Agyntaibatyrov. The memorial complex is installed at the burial site on the site of the batyrs and is a symbol of unity, friendship, unity of the peoples of Kazakhstan. It is located southeast of the village of Karasai, Ayyrtau district, North Kazakhstan region.

The burial place of Kulsarybatyr. Kulsarybatyr is a statesman and public figure, an associate of Abylai Khan. The place is in Yesilsky district, Bulak village, North Kazakhstan region.

The burial place of Kozhabergenzhyrau. Kozhabergenzhyrau is a famous Kazakh akin, musician, command er-in-chief of the troops of Tauke Khan. The place is located in Zhambyl district, Blagoveshchenka village, North Kazakhstan region.

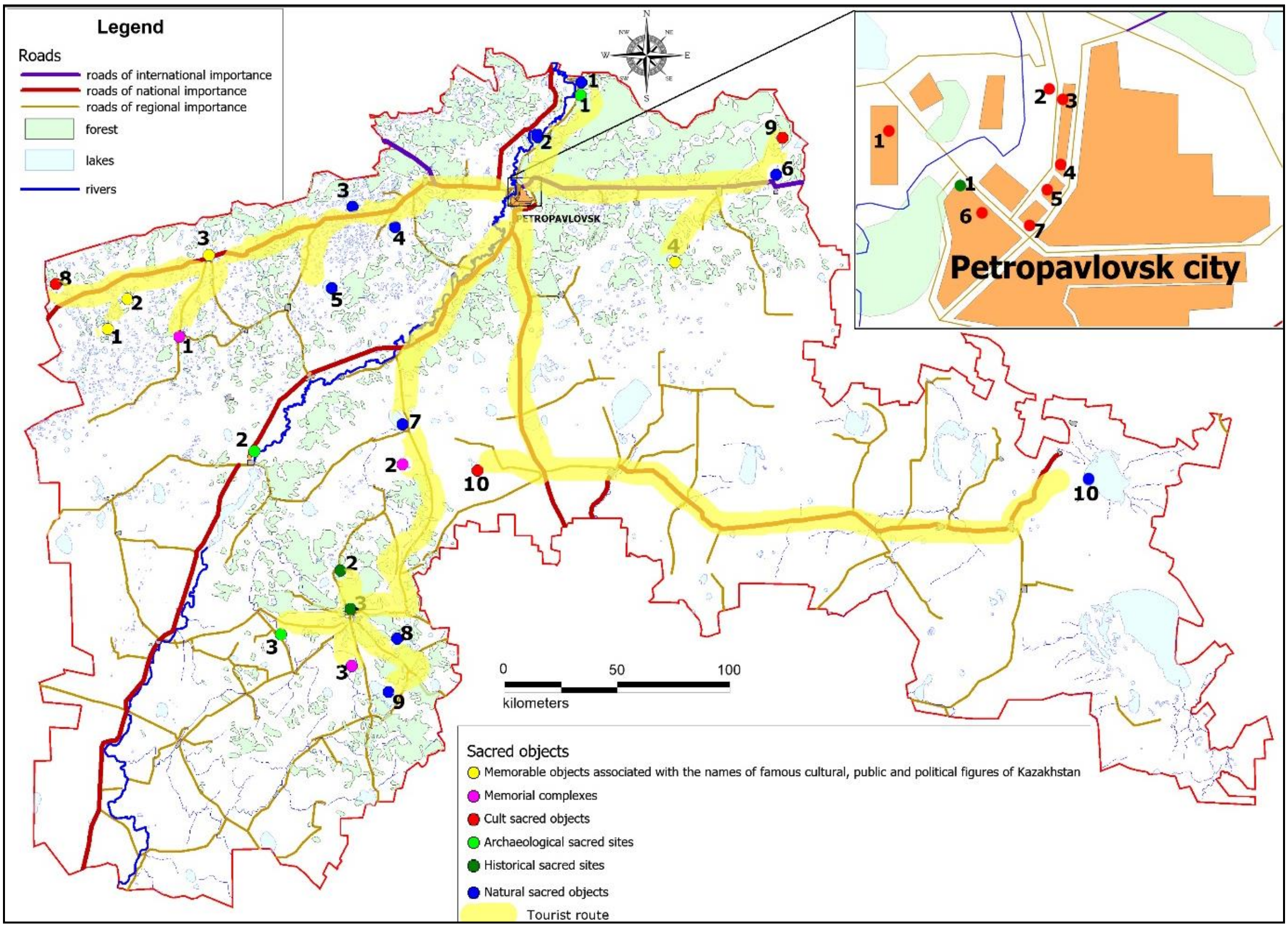
The physical, geographical and territorial features of the studied region contribute to the formation of the tourism industry. The region has an area of 97.99 thousand km2, includes 13 administrative districts, is located in the northern part of the country and borders Russia in the north. The terrain of the territory is flat, forests and forest–steppes predominate in the north of the region, and steppes in the south. The Ishim River and numerous lakes are characteristic elements of the land scape, the area is rich in natural resources ***.

High-quality roads are one of the necessary conditions for the development of domestic and foreign tourism, which becomes a source of new income for residents of adjacent territories, contributing to the economic growth of the regions and the country as a whole (Cerić and Więckowski, 2020). To further increase the tourist flow, it is necessary to provide a modern and safe transport infrastructure. There are several requirements for the transport and operational performance of public roads to ensure road safety. The main indicators of operational condition include roadway coverage, curbs, dividing lanes, technical means of traffic management, artificial lighting, visibility, etc. A well-developed transport network, including highways, which are represented by roads of republican, regional, and district significance. The total length is 8,996 km. Highways of republican significance have a length of 1,970 km, a regional – 1,983 km, and a district - 5,043 km, providing communication between the region and other regions of Kazakhstan and Russia****.

There are many sacred places and other distinctive sights within each district of the North Kazakhstan region, and many of them can be reached via highways of national importance. Each route can be used to build its unique tourist route, which includes its own set of sacred places and natural and recreational facilities (Teslenok et al., 2021). Using the marked sacred sites, several routes were proposed. These routes included the places and objects proposed by us that have natural, recreational and other attractiveness, which are of no less importance for our region.

According to the logistics of the highways of the North Kazakhstan region, five directions were identified, along which tourist routes were drawn up. These routes include sacred sites that combine religious, archaeological, historical sacred sites and memorial complexes, as well as natural and recreational facilities. As already noted, the starting and ending point of the routes will be the city of Petropavlovsk. Routes including sacred sites of republican significance in the North Kazakhstan region are shown in Figure 1.

1. The route of the western direction from the city of Petropavlovsk. Visits to historical and educational sites are complemented by natural and recreational facilities. Petropavlovsk, Lake Stanovoe, Afonkin ryam, Lake Mengiser, Archistratigo-Mikhailovsky Convent, Sabit Mukanov House Museum, Kozhabergenzhyrau burial place, Ivan Petrovich Shukhov House Museum, memorable objects associated with the name of Gabit Musrepov.
2. The route of the northern direction from the city of Petropavlovsk. Visiting archaeological and natural recreation sites. Petropavlovsk, Abylai Khan's residence, Kyzylzhar City Mosque, Serebryany Bor, Ak-Iriy settlement. The Ishim River, Dolmat Lake with its unique nature, will harmoniously complement the proposed route.
3. The route of the eastern direction from the city of Petropavlovsk. Visiting Muslim sites: Kyzylzhar City Mosque, Din Muhammad Mosque, Central Kyzylzhar Mosque. Visiting Orthodox sites: Petropavlovsk, the Church of All Saints, the Cathedral of the Holy Apostles Peter and Paul, the Archangel Michael Convent. The route can be supplemented by the temples of Matrona Moskovskaya, Lebyazhensky (M. Zhumabaev district). The Salty Lake will be a great addition for balneological recreation.
4. The route of the south-eastern direction from the city of Petropavlovsk. Visiting Catholic and natural and recreational facilities. Petropavlovsk, Catholic Church of the Sacred Heart of Jesus, Altar "Star of Kazakhstan", Lake Teke. This route will include the unique steppe land scapes along the route.
5. The route of the south-western direction from the city of Petropavlovsk. Visiting historical, archaeological, and natural recreation sites. Petropavlovsk, Abylai Khan's residence, the Baykar Temple complex, Tarangul Lake, the burial place of Kulsarybatyr. Sergeyevsky reservoir, Botai settlement, Sarymbet manor, Karasai and Agyntai Batyrov memorial complex, Lake Shalkar, Lake Imantau.



Legend

(A list and designations of sacred places and natural sites included in the proposed routes)

Memorable objects associated with the names of famous cultural, public and political figures of Kazakhstan

1. Memorable objects associated with the name of Gabit Musrepov; 2. Sabit Mukanov House Museum;
3. Ivan Petrovich Shukhov House Museum; 4 .Memorable objects associated with the name of Magzhan Zhumabayev.

Memorial complexes

1. The burial place of Kozhabergenzhyrau; 2. The burial place of Kulsarybatyr; 3. Karasai and Agyntaibatyrov.

Cult sacred objects

1. Cathedral of the Holy Apostles Peter and Paul; 2. Kyzylzhar City Mosque; 3.Church of the Ascension of the Lord; 4. The Catholic Church of the Sacred Heart of Jesus; 5. The Church of All Saints; 6. Din Muhammad Mosque; 7. Kyzylzhar Central Mosque; 8. Archistratigo-Mikhailovsky Convent; 9. The Church of Matrona of Moscow; 10.The altar of the "Star of Kazakhstan".

Archaeological sacred sites

1. The settlement of Ak-Iriy; 2. The temple complex of Baykara; 3. Botai settlement.

Historical sacred sites

1. Abylai Khan's residence; 2. Syrymbet Manor; 3. "Akkusak meeting" Alash.

Natural sacred sites

1. Dolmat Lake; 2. Silver boron; 3. Afonkinryam; 4. Lake Stanovoe; 5. Lake Mengiser; 6. Salty Lake
7. Tarangul Lake; 8. Lake Shalkar; 9. Lake Imantau; 10. Lake Teke

Figure.1 Map of routes, including sacred places of republican significance in the North Kazakhstan region (Source: own elaboration)

To identify the attractiveness of the proposed complex tourist routes, including sacred sites of the territory of the North Kazakhstan region, a comprehensive assessment of the recreational potential was carried out according to 10 criteria, on a 5-point scale. The result is presented as (k), taking into account the weighting factor of the indicator (ai). The results of the evaluation calculations are shown in Table 2.

Table 2 includes the results of the calculation of the criteria used in Table 1. The maximum score is 5 points. The ranking of the criteria is presented by the sum of the points. Based on this, 4-5 points are high, 3-4 points are average, 2-3 points are insignificant, and less than 1 point is a low level of attractiveness. After analyzing the results obtained, it was revealed that most of the proposed routes have a high final attractiveness score.

The first and fifth routes shown in the table have the highest possible score of 5. This can be explained by the variety of places and objects of interest to tourists, as well as the uniqueness of the natural and recreational potential. These routes are very rich, include a large number of sacred places and are combined with natural objects. The second and third routes have a score slightly lower, 4.7–4.8, respectively. The fifth route in the southeastern direction received a relatively low score of 3.78, which corresponds to the average attractiveness score. This can be explained by the limited number of sacred sites and natural and recreational facilities included on this route. Nevertheless, the assessment of the attractiveness level of a significant majority of the routes presented has a high score.

Table 2. Comprehensive point assessment of the attractiveness of the proposed integrated routes of the North Kazakhstan region (Source: the authors' own calculations)

Criteria / Routes	I	II	III	IV	V	VI	VII	VIII	IX	X	Result
											k, including (a_i)
1. The route of the western direction from the city of Petropavlovsk	5	5	5	5	5	5	5	5	5	5	5
2. The route of the northern direction from the city of Petropavlovsk	4	5	4	5	5	5	5	5	5	5	4.8
3. The route of the eastern direction from the city of Petropavlovsk	5	5	5	5	5	5	5	4	5	3	4.7
4. The route of the south-eastern direction from the city of Petropavlovsk	4	4	4	3	4	5	5	3	4	3	3.78
5. The route of the south-western direction from the city of Petropavlovsk	5	5	5	5	5	5	5	5	5	5	5

The proposed tourist routes with categories of sacred places and natural objects of the North Kazakhstan region are not exhaustive, this is only the view of the authors of the article. Many sacred places can have many functions and serve various religious, cultural and educational purposes. Sacred sites can also attract pilgrims and tourists seeking to feel connected to a spiritual or historical heritage. These places often become the center of religious and cultural events, as well as a place of worship and reflection. In any case, these places are of interest not only from the local population, but will also be in demand for tourists coming to this region (Foo and Krishnapillai, 2019; Qiu et al., 2020; Polukhina et al., 2024). In addition, well-designed logistics and the availability of appropriate infrastructure will allow you to combine, among other things, various forms of recreation. For those who like active recreation, it is possible to include in the route, for example, hiking, rafting, etc. For tourists who prefer a calm, measured rest, it is possible to visit swimming pools, relax on the beach. The natural resources of the North Kazakhstan region have the potential for all types of tourist recreation, including balneological (Dmitriyev et al., 2023).

The starting point of the routes is the city of Petropavlovsk. It is an administrative, cultural and historical center, including a large number of sacred sites, with tourist potential. Cities are very often used for tourism (Wang et al., 2022; Taipakova, 2023; Vîlcea et al., 2023). Therefore, for the organization of tourist activities in the studied region, it is important to rationally build a tourist route, make it diverse, that is, combined. Combined tourist routes are routes that include a variety of activities and various points of interest. Such routes may include hiking, cycling, horseback riding, water excursions, visits to historical monuments, cultural events, etc. They provide tourists with a diverse and rich experience. The developed combined tourist routes have a number of advantages, first of all, they can take into account different interests of tourists, providing historical, natural, adventure and cultural aspects. Tourists can enjoy a variety of activities, including outdoor enthusiasts, cultural excursions, nature trips, etc. A variety of activities can lead to increased sales of travel services, the creation of new jobs and the development of the local economy. The competent involvement of local communities in tourism initiatives helps them to benefit from tourism (Akbar et al., 2020). This can be through the creation of tourism services, craft projects, the sale of local products, etc. Effective tourist routes help promote the region by attracting the attention of potential visitors. This contributes to a positive image of the region and can attract investments (El Archi et al., 2023; Savanchiyeva et al., 2023; Teklebrhan et al., 2023; Waiyausuri et al., 2023).

CONCLUSION

Consequently, the proposed option for developing the tourism industry in the North Kazakhstan region could have a variety of meanings. First and foremost, it promotes regional economic development (Aktymbayeva et al., 2020; Batyrova et al., 2018; Chlachula, 2020). Tourism contributes to the creation of new jobs, the development of local businesses and infrastructure such as hotels, restaurants, shops, transportation services, etc. Secondly, the development of infrastructure. A well-developed infrastructure is needed to attract tourists. Investments in roads, airports, museums and other tourist facilities can positively affect the quality of life of local residents and the overall infrastructure of the region. Thirdly, it will contribute to the preservation and popularization of cultural heritage (Vîlcea, 2023). Tourism can contribute to the preservation and promotion of the cultural heritage of the region. Drawing attention to traditions, history, crafts and local customs can help preserve cultural uniqueness. Fourth, raising the level of education and awareness. The development of tourism can contribute to improving the education of local residents, as new jobs are created in the service sector, hospitality and tourism services. In addition, education will determine an increase in the level of knowledge, and contribute to expand ing the horizons of tourists visiting the region (Wendt, 2020; Wendt and Bógdał-Brzezińska, 2024; Issakov et al., 2023; Iakovaki et al., 2023). Fifth, stimulating local entrepreneurship. The development of tourism can be an incentive for local entrepreneurs, creating opportunities for the development of small and medium-sized businesses in the field of tourism. Sixth, the preservation of the natural environment, sustainable development of the region.

With sound management, tourism can contribute to the conservation of the natural environment and biodiversity. Sustainable tourism usually includes measures for nature conservation and environmental protection (Berdenov et al., 2021;

Cavalcante et al., 2021; Aktymbayeva et al., 2023; Ivancsóné Horváth, 2023; Kang, 2023). And of course, intercultural interaction. Tourism promotes intercultural exchange and mutual understand ing (Aldybayev et al., 2021).

This can contribute to strengthening ties between different communities and cultures, which is relevant for multinational, multicultural Kazakhstan (Aimagambetov et al., 2017; Bujdosó et al., 2015; Sergeyeva et al., 2022).

However, it is also important to consider that tourism development should be accompanied by skillful management to minimize possible negative impacts such as environmental damage, cultural urbanization, etc. (Alieva et al., 2021). Competent planning of tourist routes in the North Kazakhstan region ensures the sustainable development of the region, the preservation of nature and cultural heritage, and contributes to the well-being of residents.

The research was funded by the Committee on Science of the Ministry of Science and Higher Education of the Republic of Kazakhstan within the framework of a scientific project (Grant No. AP19676219) on the topic "Integral study of the toponymic land scape of the border regions of Northern Kazakhstan and the Russian Federation", and on the basis of a contract for the implementation of scientific, scientific and technical projects under grant financing No.243/23-25 from 03.08.2023.

Author Contributions: Conceptualization, P.S.D., I.A.F.; formal analysis, P.S.D., I.A.F. and M.V.S.; writing-original draft preparation, P.S.D., I.A.F., Ye.V.S. and M.E.K.; collected data, P.S.D., I.A.F. and M.E.K.; data validation, P.S.D., I.A.F.; writing-review and editing, P.S.D., I.A.F. and Ye.V.S.; supervision, P.S.D.; writing-conceptualization, P.S.D., I.A.F.; methodology, P.S.D., I.A.F., M.V.S. and M.E.K.; performed the first data analysis, P.S.D., I.A.F., Ye.V.S. and M.E.K.; project administration, P.S.D.; funding acquisition, P.S.D.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Abubakirova, A., Syzdykova, A., Kelesbayev, D., Dand ayeva, B., & Ermankulova, R. (2016). Place of Tourism in the Economy of Kazakhstan Republic. *Procedia Economics and Finance,* 39, 3-6. https://doi.org/10.1016/S2212-5671(16)30232-5

Aimagambetov, E., Bugubaeva, R., Bespayeva, R., & Tashbaev, N. (2017). Model of sustainable development of tourism industry in Kazakhstan (regional perspective). *Public Policy and Administration*, 16(2), 179-197. https://doi.org/10.13165/VPA-17-16-2-02

Akbar, I., Yang, Z., Mazbayev, O., Seken, A., & Udahogora, M. (2020). Local residents participation in tourism at a world heritage site and limitations: Aksu-Jabagly state nature reserve, western Tian-Shan, Kazakhstan. *GeoJournal of Tourism and Geosites*, 28(1), 35–51. https://doi.org/10.30892/gtg.28103-450

Aktymbayeva, A., Assipova, Z., Moldagaliyeva, A., Nuruly, Y., & Koshim, A. (2020). Impact of small and medium-sized tourism firms on employment in Kazakhstan. *GeoJournal of Tourism and Geosites*, 32, 1238–1243. https://doi.org/10.30892/gtg.32407-563

Aktymbayeva, A., Nuruly, Y., Artemyev, A., Kaliyeva, A., Sapiyeva, A., Assipova, Z. (2023). Balancing Nature and Visitors for Sustainable Development: Assessing the Tourism Carrying Capacities of Katon-Karagay National Park, Kazakhstan. *Sustainability*, 15(22), 15989. https://doi.org/10.3390/su152215989

Aldybayev, B., Gubarenko, A., Imangulova, T., Ussubaliyeva, S., & Abdikarimova, M. (2021). Popularization of objects of the cultural and historical heritage of the Republic of Kazakhstan as a factor for the development of ethnocultural tourism of the country. *GeoJournal of Tourism and Geosites*, 39(4), 1450–1460. https://doi.org/10.30892/gtg.394spl16-789

Aliaskarov, D.T., Beisenova, A.S., Irkitbaev, S.N., Atasoy, E., & Wiskulski, T. (2017). Modern changes in Zhezkazgan city: Positive and negative factors of tourism development (Kazakhstan). *Geojournal of Tourism and Geosites*, 20(2), 243-253.

Alieva, D., & Usmonova, G. (2021). Sustainability perceptions of Community Based tourism by stakeholders in Central Asia. *Local Dev. Soc*., 2, 244–254. https://doi.org/10.1080/26883597.2021.1953944

Aliyeva, S., Chen, X., Yang, D., Samarkhanov, K., Mazbayev, O., Sekenuly, A., Issanova, G., & Kozhokulov, S. (2019). The Socioeconomic Impact of Tourism in East Kazakhstan Region: Assessment Approach. *Sustainability*, 11(17), 4805. http://dx.doi.org/10.3390/su11174805

Bancerova, O.L., & Kasimova, A.R. (2018). Formation of ethnocultural tourism clusters in Russia-Kazakhstan borderline territory. *Journal of Environmental Management and Tourism*, 9(4), 771-776. https://doi.org.10.14505/jemt.v9.4(28).10

Baryshnikov, G., Fomin, I., & Nasarova, T. (2019). Using mathematical modeling in predicting the economic efficiency of lake-commercial fish farming in cross-border areas of northern Kazakhstan. *IOP Conference Series: Earth and Environmental Science*, 395(1), 88-93. 012017. https://doi.org.10.1088/1755-1315/395/1/012017

Batyrova, N., Yermankulova, R., Mombekova, G., & Jaxilikov, A. (2018). Economic problems of Kazakhstan's competitiveness in the international tourist business. *Journal of Advanced Research in Law and Economics*, 9(2), 396-408.

Berdenov, Z., Mendybayev, E., Beketova, A., Satkarova, N., & Gozner, M. (2021). Assessment of the Southern Urals recreational potential for the development of the Aktobe tourism industry. *GeoJournal of Tourism and Geosites*, 38(4), 1274–1279. https://doi.org/10.30892/gtg.38435-769

Bógdał-Brzezińska, A., Wendt, J.A., Khan, A.A., Agybetova, R., Cantürk, E., Narynbek, K., & Toktorova, R.A. (2023). Perception of Poland 's tourism brand in the opinion of students in selected countries. *GeoJournal of Tourism and Geosites*, 50(4), 1286–1292. https://doi.org/10.30892/gtg.50409-1127

Bujdosó, Z., Dávid, L., Varga, D., Pénzes, J., Gyurkó, Á., & Altynbek, Z. (2015). Tourism development and cross-border cooperation in the Hungarian-Romanian border region. *Geojournal of Tourism and Geosites*, 16(2), 153-163. http://gtg.webhost.uoradea.ro/ PDF/GTG-2-2015/GTG-2-2015.pdf

Cavalcante, W.Q.D.F., Coelho, A., & Bairrada, C.M. (2021). Sustainability and Tourism Marketing: A Bibliometric Analysis of Publications between 1997 and 2020 Using VOSviewer Software. *Sustainability*, 13, 4987. https://doi.org/10.3390/su13094987

Cerić, D., & Więckowski, M. (2020). Establishing transboundary tourist space in the Baltic Sea region. Baltic *Journal of Health and Physical Activity*, 12(1), 149-157. http://doi.org/10.29359/BJHPA.12.Spec.Iss1.16

Chernova, E.O., & Sukhova, M.G. (2017). Recreational-commercial zoning of Altai Mountains. *Sustainable Development of Mountain Territories*, 9(4), 362-368. https://doi.org.10.21177/1998-4502-2017-9-4-362-368

Chlachula, J. (2019). Geo-tourism perspectives in east Kazakhstan. Geography, Environment, *Sustainability*, 12(2), 29-43. https://doi.org.10.24057/2071-9388-2018-78

Chlachula, J. (2020). Geoheritage of East Kazakhstan. Geoheritage, 12(91). https://doi.org/10.1007/s12371-020-00514-y

Dmitriyev, P.S., Wendt, J.A., Fomin I.A., & Nazarova, T.V. (2021b). Transport accessibility of the lake ecosystems in the North Kazakhstan region as a factor of tourism development. *GeoJournal of Tourism and Geosites*, 35(2), 289-296. https://doi.org/ 10.30892/gtg.35204-650

Dmitriyev, P.S., Wendt, J.A., & Fomin, I.A. (2021a). Assessment and zoning of recreational facilities north Kazakhstan region for the development of the tourism industry. *GeoJournal of Tourism and Geosites,* 38(4), 1069-1075. https://doi.org/10.30892/gtg.38411-745

Dmitriyev, P.S., Fomin, I.A., Dmitriyeva, I.M., Berdenov, Z.G., Ismagulova, S.M., Smagulov, N.K., & Abdrakhmanov, Y.A. (2023). Assessment of the resource potential of the bitter – salty sulfide lakes of the North Kazakhstan Region for the development of ecological and balneological tourism. *GeoJournal of Tourism and Geosites*, 49(3), 866–874. https://doi.org/10.30892/gtg.49303-1087

Dunets, A.N., Zhogova, I.G., & Sycheva, I.N. (2019). Common characteristics in the organization of tourist space within mountainous regions: Altai Sayan region (Russia). *GeoJournal of Tourism and Geosites*, 24(1), 161–174. https://doi.org/10.30892/gtg.24113-350

Đurkin, J., Perić, M., & Šebrek, J.K. (2017). Addressing organisation al challanges of cultural tourism in rural areas through community-based tourism model. Conference: *Tourism in Southern and Eastern Europe*, 4, 145–157.https://doi.org10.20867/tosee.04.29

El Archi, Y., Benbba, B., Kai, Z., El Andaloussi, Z., László, P., & Dávid, L.D. (2023). Mapping the Nexus between Sustainability and Digitalization in Tourist Destinations: A Bibliometric Analysis. *Sustainability*, 15(12), 9717. https://doi.org/10.3390/su15129717

Fomin, I., Nazarova, T., & Baryshnikov, G. (2020). *Оценка уровня рекреационного потенциала озерных геосистем равнинных территорий Северного Казахстана* [Assessment of the level of recreational potential of the North Kazakhstan]. Проблемы региональной экологии, (1) (in Russian), (Accessed 27.01.2024). https://www.elibrary.ru/item.asp?id=42978290. https://doi.org. 10.24411/1728-323X-2020-11088

Foo, R., & Krishnapillai, G. (2019). Preserving the intangible living heritage in the George TownWorld Heritage Site, Malaysia. *Journal of Heritage Tourism*, 14(4), 358-370. https://doi.org/10.1080/1743873X.2018.1549054

Iakovaki, E., Konstantakis, M., Teneketzis, A., & Konstantakis, G. (2023). Analyzing Cultural Routes and Their Role in Advancing Cultural Heritage Management within Tourism: A Systematic Review with a Focus on the Integration of Digital Technologies. *Encyclopedia*, 3(4), 1509-1522. https://doi.org/10.3390/encyclopedia3040108

Ignatov, S.B. (2011). *Социологический анализ экологической культуры студентов* [Sociological analysis of students' ecological culture]. Известия вузов. Социология. Экономика. Политика, 1, 85-88, (in Russian). https://www.elibrary.ru/item.asp?id=16504992

Ismagulova, S.M., Dunets A.N., Dmitriyev, P.S., & Janaleyeva, K.M. (2020). Tourist relation Kazakhstan with the countries of the commonwealth of independent states at the modern stage. *GeoJournal of Tourism and Geosites*, 31(3), 1146-1152. https://doi.org/10.30892/gtg.31328-551

Issakov, Y., Aktymbayeva, B., Artemyev, A., Kubessova, G., Abdreyeva, S., Surina, A., Tuyebekova, Z., El Archi, Y., Benbba, B., & Dávid, L.D. (2023). Digital transformation reshaping tourism education: investigating the influence of moocs on teaching tourism fundamentals and local lore. *GeoJournal of Tourism and Geosites*, 49(3), 1015–1026. https://doi.org/10.30892/gtg.49317-1101

Ivancsóné Horváth, Z., Kupi, M., & Happ, E. (2023). The role of tourism management for sustainable tourism development in nature reserves in Hungary. *GeoJournal of Tourism and Geosites*, 49(3), 893–900. https://doi.org/10.30892/gtg.49306-1090

Juraturgunov, H, Raimkulov, M, Ahn, Y.J., & Kang, E.M. (2023). World Heritage Site Tourism and Destination Loyalty along the Silk Road: A Study of U.S. Travelers in Uzbekistan. *Sustainability*, 15(13):10337. https://doi.org/10.3390/su151310337

Kang, N., Xie, G., & Liu, C. (2023). Assessment of Society's Perceptions on Cultural Ecosystem Services in a Cultural Land scape in Nanchang, China. *Sustainability*, 15(13), 10308. https://doi.org/10.3390/su151310308

Kantarci, K. (2007a). The image of Central Asia countries: Kyrgyzstan, Kazakhstan, Uzbekistan and Turkmenistan. *Tourism Analysis*, 12(4), 307-318. https://doi.org/10.3727/108354207782212468

Kantarci, K. (2007b). Perceptions of Central Asia travel conditions: Kyrgyzstan, Kazakhstan, Uzbekistan and Turkmenistan. *Journal of Hospitality and Leisure Marketing*, 15(2), 55-71. https://doi.org/10.1300/J150v15n02_04

Kuralbayev, A., Myrzaliev, B., & Sevim, B. (2016). Organizational and economic problems in the management of the spiritual - historical development of tourism in south Kazakhstan region. *International Review of Management and Marketing*, 6(2), 219-226.

Kuralbayev, A., Kenzhaliyev, A., Kulbayeva, M., & Shinet, G. (2019). Features of regional tourism and the development of its spiritual and historical aspects. *African Journal of Hospitality, Tourism and Leisure,* 8(4), 1-19.

Matviichuk, L., Lepkyi, M., Dashchuk, Y., Sydoruk, S., & Mezentseva, I. (2023). Approach to formation of enogastronomic tourism based on the geographical indication system. *Journal of Geology, Geography and Geoecology*, 31(4), 689-701. https://doi.org/ 10.15421/112265

Monyók, B., Kecskés, T., & Kozma, G. (2020). The relationship between heritage products and tourism in the development documents of towns in Hajdú-Bihar county. *GeoJournal of Tourism and Geosites*, 28(1), 257–267. https://doi.org/10.30892/gtg.28120-467

Mukatova, R., Kulcsár, N., & Tleubayeva, A. (2024). Residents attitude towards ethno-tourism in Ulytau, Kazakhstan. *GeoJournal of Tourism and Geosites*, 52(1), 77–84. https://doi.org/10.30892/gtg.52107-1184

Polukhina, A., Sheresheva, M., Napolskikh, D., & Lezhnin, V. (2024). Regional Tourism Ecosystem as a Tool for Sustainable Development during the Economic Crisis. *Sustainability*, 16(2), 884. https://doi.org/10.3390/su16020884

Qiu, Q., Zheng, T., Xiang, Z., & Zhang, M. (2020). Visiting Intangible Cultural Heritage Tourism Sites: From Value Cognition to Attitude and Intention. *Sustainability*, 12(1), 132. https://doi.org/10.3390/su12010132

Rybina, L., & Lee, T.J. (2021). Traveler Motivation and Destination Loyalty: Visiting Sacred Places in Central Asia. *Tourism and Hospitality*, 2(1), 1-14. https://doi.org/10.3390/tourhosp2010001

Saparov, K.T., Yeginbayeva, A.Y., Nurgalieva, G.Z., Kulzhanova, S.M., Atasoy, E., & Wendt, J.A. (2017). The question of Kazakh national and geographical toponymic as a potential factor of tourism development. *Geojournal of Tourism and Geosites*, 19(1), 115-125.

Savanchiyeva, A., Atasoy, E., Berdenov, Z., Mambetaliyev, K., Muzdybayeva, K., & Khamitova, D. (2023). Tourist resources and tourist potential of mindoro island in the Philippines. *GeoJournal of Tourism and Geosites*, 48(2), 672–684. https://doi.org/10.30892/gtg.482spl01-1067

Semochkina, S.S. (2012). *Оценка ландшафтного и рекреационного потенциала равнинной территории левобережья Оби по биологическим показателям* [Assessment of land scape and recreational potential of the flat territory of the left bank of the Ob by biological indicators]. Известия АлтГУ, 3/1 (75), 138-141, (in Russian) (Accessed 25.01.2024). http://izvestia.asu.ru/2012/3-1/index.ru.html

Sergeyeva, A., Abdullina, A., Nazarov, M., Turdimambetov, I., Maxmudov, M., & Yanchuk, S. (2022). Development of Cross-Border Tourism in Accordance with the Principles of Sustainable Development on the Kazakhstan-Uzbekistan Border. *Sustainability*, 14, 12734. https://doi.org/10.3390/su141912734

Smykova, M. (2015). The development of a tourist brand in Kazakhstan. *Journal of Eastern European and Central Asian Research*, 2(2). https://doi.org.10.15549/jeecar.v2i2.74

Syzdykbayeva, B., Raimbekov, Z., Khydyrbekuly, D., Temirbulatova, M., & Bayandinova, A. (2015). Research note: Evaluation and projection of economic indicators of tourism development in Kazakhstan. *Tourism Economics*, 21(6), 1315-1322. https://doi.org/10.5367/te.2014.0406

Taipakova, B. (2023). Analysis of the interaction of Mice tourism development factors (the case of Astana city in Kazakhstan). *GeoJournal of Tourism and Geosites*, 51(4), 1600–1609. https://doi.org/10.30892/gtg.514spl01-1156

Teklebrhan, L.G., Zelealem, H., & Daniel, A.G. (2023). Geotourism of Axum and Yeha monuments, Northern Ethiopia. *GeoJournal of Tourism and Geosites*, 48(2), 685–695. https://doi.org/10.30892/gtg.482spl02-1068

Teslenok, K.S., Teslenok, S.A., Dmitriyev, P.S., Tereshkin, I.P. (2021). Possibilities of using google (my maps) for cartographic visualization of tourist routes. *InterCarto, InterGIS*, 27, 379–393. https://doi.org/10.35595/2414-9179-2021-2-27-379-393

Tiberghien, G. (2019). Managing the planning and development of authentic eco-cultural tourism in Kazakhstan. *Tourism Planning and Development*, 16(5), 494-513. https://doi.org/10.1080/21568316.2018.1501733

Usmonova, G., Alieva, D., & León, C.J. (2022). Yurt Invited: Combining Tourists and Stakeholders Perceptions of Sustainable Community-Based Tourism in Central Asia. *Sustainability*, 14(13), 7540. https://doi.org/10.3390/su14137540

Vîlcea, C., Popescu, L., & Niță, A. (2023). Historical Buildings and Monuments as Cultural Heritage In Situ-Perspectives from a Medium-Sized City. *Heritage*, 6(6), 4514-4526. https://doi.org/10.3390/heritage6060239

Waiyausuri, K., Kulpanich, N., Worachairungreung, M., Sae-Ngow, P., Ngansakul, P., & Suwanmajo, D. (2023). Cartography for sustainable tourism of cultural tourism attractions around Sawaswareesrimaram temple, Dusit district, Bangkok. *GeoJournal of Tourism and Geosites*, 47(2), 468–475. https://doi.org/10.30892/gtg.47213-1045

Wang, L., Ding, J., Chen, M., Sun, Y., Tang, X., & Ge, M. (2022). Exploring Tourists' Multilevel Spatial Cognition of Historical Town Based on Multi-Source Data-A Case Study of Feng Jing Ancient Town in Shanghai. *Buildings*, 12(11), 1833. https://doi.org/ 10.3390/buildings12111833

Wendt, J.A. (2016). Tourism development challenges on the Dead Sea shore. *Limnological Review*, 2, 105-112. https://doi.org/10.1515/ limre-2016-0011

Wendt, J.A. (2020). Directions and area of tourism research in Kazakhstan. *GeoJournal of Tourism and Geosites*, 32(4), 1418–1424. https://doi.org/10.30892/gtg.32433-589

Wendt, J.A., & Bógdał-Brzezińska, A. (2024). Security and Securitization as Topics in Sustainability and Tourism Research. *Sustainability*, 16(2), 905. https://doi.org/10.3390/su16020905

Zhakupov, A.A., Saparov, K.T., Mazbaev, O.B., Dzhanaleeva, G.M., Musabaeva, M.N., Eginbaeva, A., & Atasoy, E. (2015). Fundamentals of recreation-geographic assessment for tourism development. *Oxidation Communications*, 38(3), 1539-1544. (Accessed 30.01.2024).

Zhidkoblinova, O. (2013). State policy of tourism industry development in the republic of Kazakhstan. *World Applied Sciences Journal*, 23(8), 1079-1084. https://doi.org.10.5829/idosi.wasj.2013.23.08.13128

Ziyadin, S., & Takhtaeva, R. (2014). Trends and problems in tourism development on the territory of eastern Kazakhstan region. *Actual Problems of Economics*, 159(9), 232-236.

*** Official website of the National Bureau of Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan. https://stat.gov.kz/en/

****Справочник по истории административно-территориального деления Северо-Казахстанской области (29 июля 1936 г. – 1 января 2007 г.)* [Hand book on the history of the administrative-territorial division of the North Kazakhstan region (July 29, 1936 - January 1, 2007)], (2007), Petropavlovsk, Kazakhstan, (in Kazakh), (Accessed 30.01.2024), Electronic resource: https://elib.skolib.kz/catalog/item386.html

*** Kazakhstan: Roads quality, (2021). (Accessed 15.12.2023). https://www.theglobaleconomy.com/Kazakhstan/roads_quality/

Article history: Received: 04.03.2024 Revised: 21.05.2024 Accepted: 14.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.831-841
DOI 10.30892/gtg.542spl07-1258

TOURISM VALUE CHAIN, QUALITY TOURISM EXPERIENCE AND COMPETITIVE ADVANTAGE: EVIDENCE FROM STAR-RATED HOTELS IN ETHIOPIA

Lake Abebe AYELE*
Department of Tourism and Hotel Management, Bahir Dar University, Bahir Dar, Ethiopia;
PhD Scholar, School of Management Studies, Punjabi University, Patiala, India, e-mail: lakeabebe6@gmail.com

Apar SINGH
School of Management Studies, Punjabi University, Patiala, India, e-mail: aparsingh@gmail.com

Citation: Ayele, L.A., & Singh, A. (2024). TOURISM VALUE CHAIN, QUALITY TOURISM EXPERIENCE AND COMPETITIVE ADVANTAGE: EVIDENCE FROM STAR-RATED HOTELS IN ETHIOPIA. *Geojournal of Tourism and Geosites*, 54(2spl), 831–841. https://doi.org/10.30892/gtg.542spl07-1258

Abstract: The tourism value chain has been identified as a basic analytical tool in the tourism industry. The study aims to explore the relationship between quality tourism experience, tourism value chain, and competitive advantage in star-rated hotels. Three hundred twenty-eight (328) general managers and marketing managers of hotels in Addis Ababa, Ethiopia, filled out questionnaires as part of a quantitative procedure, and Smart PLS was applied. The findings reveal a robust relationship between the tourism value chain and quality tourism experience, with the mediating role of quality tourism experience on competitive advantages. The developed model demonstrated high predictive relevance, estimates the relationships between quality tourism experience and competitive advantage, and makes accurate predictions.

Keywords: value chain, tourism value chain, quality tourism experience, competitive advantage, star-rated hotels, Ethiopia

* * * * * *

INTRODUCTION

Traveling and engaging with diverse cultures, faiths, and customs allow people to broaden their perspectives, experience new things, and develop an appreciation for the natural world and humanity (Buhalis, 2022). The tourism value chain connects travelers to a wide range of goods and services at the destination, including transportation from their home location to the destination (Porter, 1985). Thus, it encompasses local and international firms (Khan and Banerjee, 2020). Travelers are not monolithic; they seek diverse experiences unique to their cultural, religious, educational, and lifestyle backgrounds (Novotny et al., 2024). Industry sector boundaries are irrelevant when managing the value chain and maximizing the consumer's value by interacting with its many components. Tourism experts and practitioners state that the conventional need for sightseeing has given way to cultural learning experiences as the primary reason for travel. Each stage-specific expertise adds up to an overall quality tourism experience, and the stages along the tourism value chain influence quality experiences (Adiyia et al., 2015). Tourism providers aim to offer travelers products and services that enhance their travel experience, understanding the value chain and its relationship to quality tourism experience (Potjanajaruwit, 2023). The emphasis is changing from a service-based to an experience-based economy due to today's smart and demanding clients, modern technology, and other f actors (Jennings et al., 2009; Zhang et al., 2021). Although tourism studies have accepted the value chain approach, a more thorough analysis of the research and practice showed that the idea is applied in two ways that are: 1. destination logic, which sees destinations as a group of services that tourists can use while on vacation. Tourists are more likely to spend more money in locations that offer a wide variety of openly and quickly connected items that meet all of their needs than in areas where product consistency is lacking (Liu et al., 2023). The researcher examines this reasoning by following a service or product through production (Suparman et al., 2023). 2. Supply chain logic: This line of reasoning is based on Porter's paradigm. The researcher tracks the development of a service or product while analyzing this logic. The supply logic explains the steps used to produce, sell, and deliver the service or product (Gómez et al., 2023).

Yothicar et al.'s (2023) study on Nakhon Nayok's tourism value chain in Thailand found that activities enhanced tourism products. Tourism-related activities include accommodations, activities, facilities, and access to tourist sites. The main activities that brought value to Nakhon Nayok's tourism sector were determined to include the provision of visitor experiences, money generation from tourism, and physical tourism products (Yothicar et al., 2023). Despite the study contributing to the existing literature on the tourism value chain especially in Thailand, the study didn't explore the impact on destination competitiveness and quality tourism experience. The role and importance of intermediaries in the MICE value chain were examined by Rojas-Bueno et al. (2023) using the value chain idea. The study concluded that outbound agents provide value through trust, while incoming agents do so through convenience and competitive pricing (Rojas-Bueno et al., 2023). Since the study employed a multidisciplinary approach to determine the factors contributing to intermediaries

* Corresponding author

creating value, it adds to the literature gap regarding the tourism value chain. Due to the large number of participants in the tourism value chain, the primary suppliers, such as hotels, were not considered for integration roles in the study.

The impact of electronic service (e-service) quality on the competitive advantages of Thailand's tourism and hotel industries was investigated by Potjanajaruwit (2023). The findings demonstrate that competitive advantages are correlated with and influenced by the efficiency and dependability of e-services. This study closes knowledge gaps about the significance of online service websites' dependability from the perspective of service providers in Thailand. The study did not look at the tourism experience throughout the consumption phase because of the inherent nature of the hotel industry. Research on visitors' experiences with opulent hospitality during the COVID-19 pandemic in Maldives recommends that travel-related goods and services connected to upscale resorts be reviewed (Kaushal and Yadav, 2024). The study adds knowledge regarding the satisfaction level of tourists in Maldives accommodation establishments, though this study does not consider the suppliers' point of view. A survey by Abdullah et al. (2019) showed how the activities of the value chain and the balanced scorecard are connected and integrated. The study fills the knowledge gap in the literature about assessing an organization's strategic performance while considering tourism enterprises, but it may not be similar in all tourism businesses. According to Berne-Manero et al. (2018), utilitarian and hedonistic factors must be considered to quantify a website's perceived quality and gain a competitive edge in attracting and retaining users. This study fills gaps in the marketing domain related to travelers' pre-tour experiences (Berne-Manero et al., 2018). Its depiction of the tourism value chain is incomplete, as the destination tour experience is not investigated. Based on a literature survey, Varvaressos (2018) examined the methods of the tourism system, the tourism value chain, and the notion of the tourism experience. The study closes knowledge gaps regarding tourism as a system and suggests a value model that can be used in the industry. This study did not imply the performance of the tourism value chain and the tourism experience.

Suleiman (2023) examined how the tourism supply chain affected sustainable performance in an African setting and offered a framework for the literature on tourism supply value. The study neglects the influence of the tourism value chain and beyond the supply chain on sustainable performance. Scholars have conducted extensive investigations into the destination logic from tourists' perspectives, focusing on how it applies to travel destinations. However, studies on value chain practices used by tourism businesses based on supply chain logic are scanty. Though studies on tourists' experiences regarding a memorable experience, cocreation, and involvement are being studied from tourists' perspectives fragmentedly, comprehensive studies focusing on tourism value chain, quality tourism experience, and competitive advantage are rare in the world and none in Ethiopia. Ethiopia has a wealth of breathtakingly diverse attractions, encompassing everything from wildlife and landscapes to cultural monuments, anthropological sites, archaeology, and history (Teklebrhan et al., 2023).

If properly managed, these resources might provide the nation an edge over other African countries in the marketplace (Bogale and Wondirad, 2019). Regarding Ethiopian tourism, there are currently relatively few studies that have been conducted among which Evidence-based policy in Ethiopia (Mitchell and Font, 2017),organizational culture in response to tourism seasonality (Senbeto and Hon, 2021), the handicraft sector and sustainable tourism development (Bogale and Tiruneh, 2022), The role of social media marketing in Ethiopian tourism and hospitality organizations (Berhanu and Raj, 2024), Community Knowledge and Support of ecotourism (Abuhay et al., 2023), Ethiopian tourism practitioners level of awareness on the tourism development policy (Geremew, 2019), political violence and hotels: economic consequences and response strategies (Chiriko, 2021), determinants of women-owned micro- and small tourism enterprise (Tegegne et al., 2024), discovery behavior and creation behavior of Ethiopian entrepreneurs (Eyana et al., 2020), the state, political trigger events and path creation in tourism destination (Belay and Adu-Ampong, 2023), potentials, opportunities and challenges of ecotourism development and (Mekonnen and Mekonen, 2023) can be named. In addition, existing studies focus on destination development, ignoring the tourism value chain, which is the basic analytical tool in the tourism industry. This study aims to fill a major gap in the present literature by demonstrating, in contrast to earlier studies, the dynamic changes in the quality tourism experience along the tourism value chain and sources of competitive advantages in the Ethiopian hotel sector. This study pioneers examining the relationships between the tourism value chain and quality tourism experiences, the tourism value chain and competitive advantage, and the mediating role of quality tourism experiences in Ethiopia.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

1. Tourism Value Chain

Value chain analysis is a method for strategic study that aids in comprehending more about the company's competitive edge, how customer value adds value and lowers costs, and how it engages with suppliers, customers, and other industry participants (Zaman et al., 2022). A business needs to offer value to draw in and keep clients. Any feature, quality, or performance characteristic of the goods or services that a client is ready to pay for both the goods and the price they receive—typically in the form of money—is considered valuable (Simões et al., 2023).

To create jobs and revenue locally, one must always consider the value chain and what the market will bear (Jain et al., 2022). The value chain of the tourism industry is the collection of interconnected activities carried out at that destination that enhance the tourist experience (Sutomo et al., 2023). A value chain encompasses all essential value-relevant activities, including product delivery to customers, several production phases, including numerous transformations and service inputs, early conception, and final disposals following consumption (Kaplinsky and Morris, 2000). The tourism value chain is a series of primary and supporting activities strategically crucial to the tourism industry's success (Zeng et al., 2023).. The tourism industry is represented by a separate cluster of firms in the value The tourism value chain comprises a set of interrelated activities that take place in the same destination and add value to the tourist experience, even though it may not be as immediately tangible as one related to products (Morales-Zamorano et al., 2020). According to Jonker (2004), the tourism industry's value chain is divided into smaller groups of primary and support activities that cover the whole visitor experience at the destination. This results in a plan where value is added at each stage, including internal logistics, destination services, product (or service) creation, promotion, and post-sale services (Jonker, 2004).

Primary activities are tasks directly related to developing or delivering a product or service. They are the actions that now include packaging, promoting, and providing the tourism experience to the consumer when applied to a place (Hjalager et al., 2016). Support activities: assisting in enhancing the efficacy and efficiency of primary activities. It is difficult to provide these support services since they are provided by several governmental and private organizations that are not tourism-focused but whose effectiveness is essential to any destination's ability to draw tourists (González-Rodríguez et al., 2023). The support activities were divided into four categories: human resource development, destination planning and infrastructure, and development of products, technologies, and systems (Suleiman, 2023).

2. Tourism Value Chain and Competitive Advantage

A company's capacity to improve product quality, lower product costs, or increase market share or profit is a competitive advantage. By analyzing the characteristics that value chain analysis-stained resources must possess to be sources of long-term competitive advantage (Wang et al., 2020). The company's resource-based view supports this value chain logic. Only when company resources are helpful can they serve as a source of competitive advantage or long-term competitive advantage (Hadjielias et al., 2022). The set of actions and procedures that go into providing a tourism product or service, from its inception to the traveler's consumption, include the special qualities and skills that enable a company to outperform its competitors (Iloranta and Komppula, 2022). In the context of tourism, competitive advantage can be achieved through differentiation, cost leadership, or a combination of both (Wang et al., 2020). Developing a distinct competitive edge or creating value to increase profit is essential for company success (Wibowo et al., 2024). The tourism value chain uncovers multiple sources of advantage over competitors acquired from the ability to properly manage all tourism sector participants, supported by the ability of local administration to ensure the area's appeal and uniqueness from rivals (Widagdo and Roz, 2023).To provide satisfied tourists with goods and services, all participants in the tourism sector must collaborate to produce value along the value chain. Value chain management aims to help businesses gain a competitive edge by analyzing the value improvement in specific business links (Howieson et al., 2016).

Tourism companies operate in highly competitive and dynamic environments, forcing them to think strategically, act creatively, and track and assess their performance simultaneously to be effective and efficient (John and Supramaniam, 2024). Establishments and destinations looking to gain and maintain a competitive edge in the fast-paced, intensely competitive tourism business must comprehend and manage the tourist value chain. Gaining a competitive edge requires innovation in value chain steering, product creation, and marketing following management performance trends (Alonso et al., 2024). The first stage in implementing the plan is constructing a strategic concept (Rojas-Bueno et al., 2023). Value chain analysis provides additional value to these activities by highlighting the significance of quality in the implemented processes (Alsubaihi et al., 2023). Fostering a company's success requires understanding the effects of certain operational operations, such as product design, production, research and development, marketing, transportation, and other unrelated sectors in long-term competitive advantages (Steck et al., 2010). Providing quality tourism products and services can also generate a competitive advantage since it boosts customer satisfaction and raises the possibility that those interrelated processes will be reviewed in the future (Iloranta and Komppula, 2022). Customer retention strategies, by definition, can only provide a company with a sustained competitive advantage if they are distinctive in a way that appeals to its clientele (Potjanajaruwit et al., 2024). Companies' competitive advantages stem from the performance attained there (Tasnim et al., 2023). Specifically, these pertain to the destination's ability to use resources efficiently to achieve maximum performance and income from international tourism (Hsu et al., 2016). Drawing from the previously studied, the present study put forth the following hypothesis:

H1. The tourism value chain positively impacts competitive advantage.

3. Tourism Value Chain and Quality Tourism Experience

Experience economy emphasizes how the world economy shifts from a service economy to an experience economy. This message inadvertently brought consumer experience to people's notice and marked the beginning of the study of the tourist experience (Joseph and Gilmore, 1999). Scholars examine the nature and categorization of travel experiences from various disciplinary backgrounds, including consumer behavior, phenomenology, anthropology, psychology, and sociology (Iloranta and Komppula, 2022; Prentice et al., 1998). In the marketing domain, notions around the tourist experience are in flux. Experiences were deemed suitable and high quality early on, but more recently, remarkable and unforgettable encounters have emerged (Hang et al., 2023). While they are related to one another, memorable travel experiences and tourist experiences have distinct meanings and scopes (Al-Shammari, 2022).

Travelers may view pre-trip and en-route activities as a means of improving their perception of the caliber of their in-person encounter, depending on their reasons for traveling (Hung et al., 2016). Delivering remarkable customer experiences creates excellent value and competitive advantage in today's ever-sophisticated consumer environment (Alqahtani, 2023). The tourism experience comprises several discrete experience points offered by various organizations or service providers, such as lodging facilities, rental companies, airlines, tour companies, travel agencies, and cultural and entertainment services (Hosany et al., 2022). A company may become less competitive if a guest is dissatisfied at any point throughout their experience (Varvaressos, 2018). Put another way, providing excellent tourist experiences is challenging and complex, requiring coordination and cooperation between various interrelated and public sectors. Providing top-notch travel experiences is crucial to tourism. Experiences are the reason for travel-related goods and services. Creating tourism experiences is the ultimate purpose of making these goods and services, including concerts, lodging, and car rentals (Tahar et al., 2018). The stages along the tourism value chain impact the quality of the tourism experience; each stage-specific experience adds up to an overall quality tourism experience (John and Supramaniam, 2024). Understanding the value chain is crucial for tourism service providers who want to offer travelers goods and services that enhance travel. In tourism and hospitality, memorable travel experiences are becoming increasingly significant since they set new standards and can forecast future behavior (Kim, 2014; Morales et al., 2020). The chronological and temporal approach looks at the travel experience, from preparation to post-trip contemplation in the tourism value chain (Wang et al., 2020). Most studies define the value chain of the tourism industry as the collection of interconnected activities carried out at that destination that enhance the tourist experience. Thus, looking into the activities that make up the tourism value chain will be helpful, too. Based on the works of literature above, the researchers posed the following hypothesis:

H2. Tourism value chain and quality tourism experience have a mutually beneficial relationship.

4. Quality Tourism Experiences and Competitive Advantage

The value chain approach makes it possible to thoroughly evaluate every tourism-related business to identify opportunities and leakages (Lara-Morales and Clarke, 2022). High-quality tourism products and services can also generate a competitive advantage (Jennings et al., 2009) since they boost customer satisfaction and raise the possibility that those interrelated processes will be revisited, which again generates a competitive advantage (Kerdpitak, 2022). It is anticipated to produce a reasonable degree of profitability as a competitive advantage, as happier and more devoted visitors earn better sales profits from repeat business (Romero et al., 2024). Researchers assure that services should also be approached via subjective perceptions, which depend on how the client interprets the experience, procedures, and concrete cues in their position (Foris et al., 2018; Smith, 2016; Sutomo et al., 2023). From the standpoint of service providers, quality tourism experiences concentrate on giving clients unique and significant experiences (George, 2023). Any tourism destination or organization's primary goal is to provide visitors with unforgettable experiences that will increase their enjoyment, give them a competitive edge, and yield better value. Value chain management aims to increase profits for all parties involved (Hadjielias et al., 2022). From the works of literature reviewed, the study proposed the following hypothesis:

H3. Quality tourism experience mediates the relationship between tourism value chain practices and competitive advantage

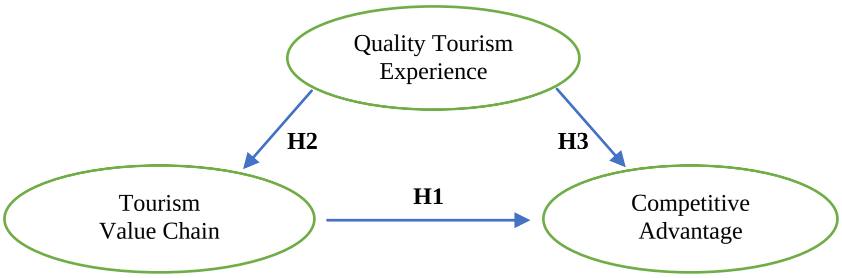


Figure 1. Conceptual model (Source: researchers own development (2024))

METHODOLOGY

1. Research design

The study used an exploratory approach to examine how the tourist value chain and hotel competitive advantages are related and how quality tourism experiences mediate in this relationship. This study used a quantitative methodology to collect its data. An organized survey instrument was employed in the study to collect information on how the quality of the experience mediates the impact of the tourism value chain on competitive advantage. Five university lecturers participated in a pre-test to assess the questionnaire's validity and comprehensibility before data collection. The pilot test was conducted using the revised questionnaire, and 32 hotel managers responded. According to the findings, every variable had sufficient reliability, as evidenced by a Cronbach alpha value greater than 0.7. The participants completed the survey by choosing the appropriate responses from a five-point Likert scale ranging from strongly disagree (1 point) to strongly agree (5 points), depending on their experiences. The survey participants were 328 general managers and marketing managers of Addis Ababa's star-rated hotels. Their rich experience and decision-making ability about the issue made them to be part of the census survey. Due to 4.26 percent of missing data, straight-lining, or no rating differentiation, 14 of 342 completed surveys were discarded.

2. Instrumentation

Every item in the study was adapted from measures that had already been validated and were scored on a Likert scale of five where 1 = "strongly disagree," 2 = "disagree," 3 = "neutral," 4 = "agree," and 5 = "strongly agree. The dimensions of the tourism value chain: product creation, promotion, internal logistics, destination services, post-sale services, product development, human resource development, destination planning and infrastructure, and technology and systems development are modified constructs from Jonker (2004) and (UNWTO, 2019). Learning, activities and events, quality service, and place attachment are modified versions of the quality tourism experience aspects from Joseph and Gilmore (1999), Kim (2014), Khuong and Ha (2014) and Wang et al.(2020), dimensions of competitive advantage are also adapted from Molina-Azorín et al.(2015).

3. Statistical Analysis

For this inquiry, a higher-order model—also referred to as a hierarchical component model with reflective constructs-was created. The repeated PLS-SEM indicator technique was employed to assess the model. In the structural model, second-order constructs, which are constructs of first-order factors, are used. Nineteen first-order reflective constructs were evaluated for reliability, convergent validity, and discriminate validity using the methods recommended by (Sun et al., 2018). The Heterotrait- Monotrait (HTMT) ratios swiftly approached the less than 0.85 threshold, as indicated in Table 1. In addition, the Fornell-Larcker criterion is met since the square of each variable, AVE, is bigger than the intercorrelations. All of the constructs used in this investigation met this criterion. Retain the reflective indicator when outer loading is > 0.40 but < 0.70 when deletion of the indicator does not improve AVE and composite reliability (Ketchen, 2013). All other indicator loadings were above 0.7, except for the seven indicators whose outer loadings were between 0.5 and 0.7. Table 2 displays the composite reliability range, greater than 0.5 threshold values, from 0.724 to 95, and the AVE range, greater than 0.5 threshold values, from 0.504 to 0.853. Every construct in this investigation complied with this requirement.

Table 1. Discriminant Validity (Source: Smart PLS output based on the researchers' survey data)

HTMT ration <0.85	AC	CA	DS	Dp	HR	IL	Lr	P A	ps	Prc	Pd	Pro	Qs	Tec
Activities	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Competitive Advantage	0.60	-	-	-	-	-	-	-	-	-	-	-	-	-
Destination Service	0.76	0.60	-	-	-	-	-	-	-	-	-	-	-	-
Destination planning	0.55	0.48	0.86	-	-	-	-	-	-	-	-	-	-	-
Human Resource	0.50	0.60	0.73	0.53	-	-	-	-	-		-	-	-	-
Internal Logistics	0.75	0.69	0.77	0.82	0.84	-	-	-	-		-	-	-	-
Learning	0.80	0.84	0.79	0.71	0.69	0.82	-	-	-	-	-	-	-	-
Place attachment	0.76	0.75	0.66	0.62	0.52	0.76	0.73	-	-	-	-	-	-	-
Post Sale Service	0.76	0.69	0.84	0.48	0.77	0.82	0.77	0.54	-	-	-	-	-	-
Product Creation	0.71	0.77	0.84	0.49	0.71	0.75	0.74	0.61	0.80	-	-	-	-	-
Product Development	0.57	0.71	0.79	0.76	0.81	0.83	0.84	0.59	0.79	0.67	-	-	-	-
Promotion	0.54	0.50	0.73	0.59	0.84	0.84	0.46	0.43	0.55	0.73	0.67	-	-	-
Quality Service	0.33	0.83	0.48	0.56	0.66	1.03	0.78	0.60	0.53	0.58	0.76	0.71	-	-
Technology	0.48	0.81	0.72	0.68	0.79	0.81	0.78	0.61	0.85	0.74	0.85	0.75	0.79	-

Table 2. Measurement Model Evaluation (Source: Smart PLS output based on the researchers' survey data)

Tourism Value Chain Dimensions Items	Loadings	Composite Reliability (CR)	Average variance extracted (AVE)
Product creation	0.828	0.862	0.61
Our company prepares unique hotel products	0.794		
our company designs diversified hotel products	0.823		
Our company prepares commentaries for hotel products	0.757		
Making meals, lodging, seasonal events, and activities reservations is easy.	0.748		
Promotion	0.748	0.893	0.807
Online and offline, comprehensive product information (hotels, restaurants, retail stores, seasonal events, and activities) is easily accessible.	0.893		
Our company ensures integrated promotion strategies (advertising, exhibitions, internet, workshops)	0.904		
Internal Logistics	0.887	0.794	0.564
All travel-related arrangements are handled by our company, including taking visa applications and offering comprehensive destination information.	0.71		
Our company addresses the safety and security issues of customers	0.83		
Our company warmly receives guests from the airport	0.706		
Destination Service	0.734	0.724	0.599
At the main destination, tourist products are safe and easy to access.	0.687		
Local transportation is efficient and accessible to tourist sites.	0.552		
There is a tourist information counter available for tourists who seek information.	0.691		
Our company assigns knowledgeable personnel to serve tourists	0.585	0.896	0.812
Post-Sale Service	0.783		
Our company maintains detailed information about customers	0.886		
Our company collects feedback	0.916		
Human resource development	0.848	0.941	0.889
Our company recruits, trains, and develops staff effectively.	0.95		
Our company Provides appropriate career paths	0.936		
Product Development	0.863	0.951	0.926
Our company develops new hotel products and services	0.96		
Our company strives to enhance new experiences	0.964		
Destination planning and infrastructure	0.68	0.846	0.648
There is responsible destination planning and resource usage.	0.888		
Roads, airports, rail ports, and suitable public transport systems are all available.	0.769		
There is the provision of appropriate infrastructure like water, electricity	0.751		
Technology and Information system	0.817	0.751	0.617
Our company uses integrated systems of information technology	0.958		
Our company uses a computerized reservation system	0.563		

Quality Tourism Experience Dimensions Items	Loadings	Composite Reliability (CR)	Average variance extracted (AVE)
Learning Experience	0.917	0.808	0.59
Emphasize "learning opportunities" for our customers as a theme of the business	0.601		
Some guides and brochures help tourists to learn and understand the topics.	0.802		
Create products that catch customers' curiosity to learn something new	0.875		
Activities and Special Events	0.7540	0.831	0.622
The Hotel offers a variety of sports, games, and leisure pursuits.	0.787		
The Hotel offers unique and captivating events unavailable in the tourists' home country.	0.833		
The Hotel arranges different contests where tourists are the participants.	0.743		
Quality of Service	0.768	0.944	0.85
Our service personnel is kind and amiable.	0.851		
We provide incredibly personalized service.	0.942		
Our service team delivers exceptional customer service.	0.968		
Place attachment	0.837	0.852	0.658
We build a hotel with a distinct ethnic identity	0.795		
The Hotel helps visitors form cultural bonds.	0.826		
There are a lot of locations within the Hotel that travelers will find interesting.	0.812		
Competitive Advantage Items	Loadings (item Reliability)	Composite Reliability	Average variance extracted
Competitive Advantage		0.91	0.629
development of a brand that represents the company	0.746		
A great number of supplementary services are offered, adding value for customers	0.861		
Significant advancements are made in the service	0.872		
General costs are minimized	0.753		
An attempt is made to improve productivity	0.737		
Efforts are taken to achieve economies of scale or high occupancy rates	0.778		

The tourism value chain and quality tourism experience were assessed using the second-order reflecting constructs' measuring path coefficients between first-order and second-order dimensions and CR and AVE based on path coefficients. The tourism value chain had an AVE of 0.64, a CR of 0.94, an AVE of 0.67, and a CR of 0.89 for the quality tourism experience. As shown in Table 3, they all seem to confirm the scales' reliability and validity.

Table 3. Second Order Validity Result (Source: Smart PLS output based on the researcher's survey data)

Second order Construct	First order Constructs	Construct loading	CL square	Error	CR	AVE
Tourism Value Chain	Product creation	0.828	0.686	0.314		
	Promotion	0.748	0.560	0.440		
	Internal Logistics	0.887	0.787	0.213		
	Destination Service	0.734	0.539	0.461		
	Post-Sale Service	0.783	0.613	0.387		
	Human resource development	0.848	0.719	0.281	0.94	0.64
	Product Development	0.863	0.745	0.255		
	Destination planning and infrastructure	0.68	0.462	0.538		
	Technology and Information system	0.817	0.667	0.333		
Sum		7.19	5.78	3.22		
Quality Tourism Experience	Learning Experience	0.917	0.841	0.159		
	Activities and Special Events	0.754	0.569	0.431		
	Quality of Service	0.768	0.590	0.410	0.89	0.6749
	Place attachment	0.837	0.701	0.299		
Sum		3.28	2.70	1.30		

RESULTS

In line with the two-stage PLS-SEM technique, the tourism value chain's quality tourism experience and second-order latent variable scores were obtained utilizing the first stage's repeated indicator approach. The structural model was evaluated using the two primary findings (i.e., the path coefficients and R^2 values; Figure 2). At the 0.001 threshold level, the path coefficient value between the tourism value chain and competitive advantage was 0.269 (P=0.019), suggesting a link between the two. The first hypothesis was confirmed: a firm's significant competitive advantages are more likely to be improved the more tourism value chain activities there are. The tourism value chain directly impacts quality tourism experiences, as indicated by the standardized path coefficient value of 0.780 (P=0.000) between it and quality tourism experiences at the 0.001 confidence level. When a business uses higher-value tourism practices in product development, marketing, internal logistics, destination services, post-sale services, technology, human resources, and internal logistics, the quality of tourism experiences improves. As a result, hypothesis two is confirmed.

The strong relationship between quality tourism experience and a competitive advantage lends credence to hypothesis three. A higher probability of obtaining a competitive advantage is linked to higher quality tourism experiences, as indicated by a standardized path coefficient value of 0.582 (P=0.000).R^2 illustrates how each construct's independent variable accounts for its variance. The tourism value chain explains 60.8% of the variation in quality tourism experiences within the model utilized in this study, according to the quality tourism experience's R^2 value of 0.608. The competitive advantage's R^2 value of 0.655 indicates that the two antecedents, the tourist value chain and quality tourism experience, account for 65.5% of the variance in competitive advantage. The two antecedents are the industry's main sources of competitive advantage: the quality tourism experience and the tourism value chain.

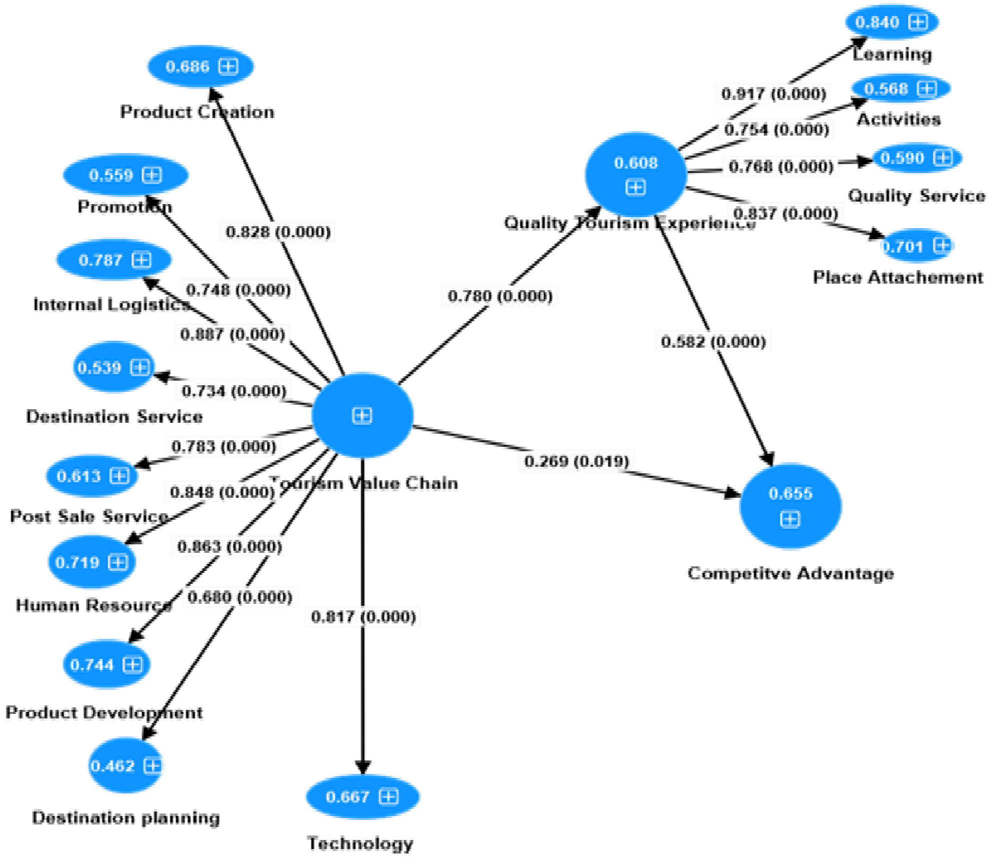


Figure 2. Path Coefficient and P Value (Source: Smart PLS output based on the researchers' survey data)

At the 0.001 level, all R^2 values are significant and exceed the recommended limit. R^2 verified the structural model's explanatory power, whereas Q^2 illustrated its predictive relevance. The quality of the tourism experience gets a Q^2 value of 0.562, while the competitive advantage value is 0.452. The model's ability to predict high-quality significant p-value negative average loss difference is indicated by the Cross-Validated Predictive Ability Test results. These two parameters show that the predictive potential of this model is higher (Liengaard et al., 2020). The direct, indirect, and total effects among the explanatory and explained variables were computed to provide a more comprehensive picture of the relationships between the constructs and the mediating influence of quality tourism experience (Table 4).

Table 4. Hypothesis Testing (Source: Smart PLS output based on the researcher's survey data)

Type of Effect	Path Coeffect	T statistics	P value	Remark
Total Effect, Tourism Value Chain -> Competitive Advantage	0.724	16.595	0.000	Sig total effect
Indirect effect, Tourism Value Chain -> Quality Tourism Experience -> Competitive advantage	0.456	4.346	0.000	Sig indirect effect
Direct Effect, Tourism Value Chain -> Competitive Advantage	0.268	2.355	0.019	Sig direct effect
Strength of Mediation VFA (Variance accounted for) IE/TE	63%			Strong Mediation Effect

The tourism value chain directly impacted 0.269 (P=0.019) on competitive advantage and an indirect effect of 0.456 (P=0.000) through the mediating role of quality tourism experience. Consequently, the tourism value chain's overall impact on competitive advantage is as high as 0.724 (P=0.000), suggesting that it plays a significant role in explaining enterprises' competitive advantage. The variance account, calculated by dividing the indirect effect by the total effect, is 63%. The result shows a strong mediation effect, i.e., quality tourism experience mediates the relationship between the tourism value chain and competitive advantage.

DISCUSSION AND CONCLUSIONS

The study aims to investigate the relations between the tourism value chain, quality tourism experience, and competitive advantage. It has been proven that the tourism value chain is a set of interrelated activities that begins with preparing and creating tourism products and services that could influence potential tourists to think about a vacation and ends with post-sale service provided on home return. Within the tourism system, the service providers in the host country are supposed to perform basic activities like promotion, facilitating transportation, and helping deliver travel documents, all during stay services. The task of service providers also includes their ability to retain and attract knowledgeable and skilled human resources, develop demand-driven products, be proactively involved in destination planning and infrastructure development, and utilize advanced technologies in their operations. These findings align with the United Nations World Tourism Organization's definition of tourism value chain in 2019. A value chain is a tool for tourism that can be used to assess and improve competitive advantage (Ensign, 2001).

Quality tourism experience is also an important concept for service providers to examine critically the changing demands of tourists. It has been confirmed that quality tourism experience dimensions like learning mean service providers should strive to educate their customers, engage tourists in different events and activities, provide quality service, and create place attachments that could create memorable experiences. The main goal of travel is to have an amazing experience, and competitive advantage is determined by each tourism player's ability to support the best travel experience (Varvaressos, 2018). The study assessed service providers' perceptions in creating a quality tourism experience within the tourism system. The current study sheds light on the value chain, quality tourism experience, and competitive advantage from the service providers' perspective. The need for research to better understand the role of quality tourism experience in gaining competitive advantage has been attested. This study has discussed the concepts of tourism value chain dimensions, quality tourism experiences, and competitive advantage. Then, it follows with testing a structural model of the relationships between the tourism value chain, quality tourism experience, and competitive advantage. Besides its explanatory power, the predictive power of the structural model is found to be high.

1. Theoretical Implication

The first hypothesis of the study's results suggested a connection between competitive advantage and the tourism value chain in line with the findings of earlier research. The tourism value chain is a series of primary and supporting activities strategically important to the tourism industry's success (Sutomo et al., 2023). To the researcher's knowledge, this study is a pioneer in applying the concept of quality tourism experience to the tourism value chain from the service provider context. The findings supported the study's second hypothesis, which also endorsed earlier research showing a connection between the tourist value chain and quality tourism experience (Prahalad and Ramaswamy, 2004). The first steps in preparing a vacation trip for a tourist are choosing, organizing, and planning the trip; then, they set up transportation to the vacation spot. There is a tourist experience at every step of the tourism value chain (Suparman et al., 2023). Thus, this study proved that the tourism value chain helps enhance the quality of the tourism experience. The results of the 3rd hypothesis showed that quality tourism expedience helps to gain a competitive advantage while following the tourism value chain approach, and this study discussed quality tourism experience as a mediating variable in achieving competitive advantage. In addition, the structural model developed has strong explanatory power and highly predictive relevance.

2. Managerial Implications

The current study's findings convey implications for each actor involved in the tourism value chain. Understanding the major activities along each chain enables tourism industry actors to attain a common goal in terms of competitiveness in the industry. Policy-making and planning are the purview of the planners or designers of the core tourism offering. Suppliers deliver the products and services directly or indirectly (via intermediaries) to visitors (Kaplinsky and Morris, 2000). The findings suggest that managers of hotels need to be aware of the tourism system, starting from tourists' origin to final destinations and return trips. A skilled manager can provide a quality tourism experience at each stage of the tourism value chain. Consequently, to be effective in an era where tourist demand varies spontaneously, managers need to understand the changing needs of tourists and cater services accordingly to sustain customers' and companies' competitive advantage. In addition, hotel managers need to evaluate their organizational performance considering their engagement in the tourism value chain and quality tourism experience.

3. Limitations and Future Study

Though this study has contributed to the tourism study kinds of literature, its limitations provide an opportunity for further research. The first problem is regarding the target population. Tourism is a multifaceted industry that needs the involvement of many actors. Thus, the findings of hotels might vary in other tourism companies. The second problem is this study was conducted from a supply-side perspective, and the results cannot be extended to the demand-side perspective. Future investigations could examine the replication of the conceptual framework in other tourism enterprises, encompassing the supply and demand aspects of the tourism industry.

Author Contributions: Conceptualization, L.A. and A.S.; methodology, L. A. and A. S.; software, L.A.; validation, L. A. and; formal analysis, L. A; investigation, L.A. and A.S.; data curation, L.A. and A.S; writing - original draft preparation, L.A.; writing - review and editing, A.S.; visualization, L.A. supervision, A.S. All authors have read and agreed to the published version of the manuscript.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Abdullah, H.S., Salman, A.J., & Ahmed, I.A. (2019). Integrating the value chain and balanced scorecard to evaluate the overall performance of a tourism organization. *African Journal of Hospitality, Tourism and Leisure, 8*(5), 1–11. https://doaj.org/toc/2223-814X

Abuhay, T., Teshome, E., & Mulu, G. (2023). Community Knowledge and Support of Ecotourism in the World Heritages Sites of Simien Mountain National Park. *Global Business and Finance Review*, *28*(4), 62–76. https://doi.org/10.17549/gbfr.2023.28.4.62

Adiyia, B., & Vanneste, D. (2018). Local tourism value chain linkages as pro-poor tools for regional development in western Uganda. *Development Southern Africa*, *35*(2), 210–224. https://doi.org/10.1080/0376835X.2018.1428529

Al-Shammari, M.M. (2022). A Service Value Chain Co-Creation Strategy for Citizen-Centric Organizations. *Journal of Logistics, Informatics and Service Science*, *9*(2), 145–160. https://doi.org/10.33168/LISS.2022.0209

Alonso, A.D., Vu, O.T.K., O'Brien, S., Tran, T.D., & Nguyen, T.T. (2024). The nexus between firm-supply-chain relationships and the potential for tourism development: A case study approach. *International Journal of Tourism Research*, *26*(1), 1–14. https://doi.org/10.1002/jtr.2600

Alqahtani, K.M. (2023). Evaluation of Enterprise Management Value Chain: Value Co-Creation in the Era of Artificial Intelligence. *Journal of Logistics, Informatics and Service Science*, *10*(4), 267–280. https://doi.org/10.33168/JLISS.2023.0418

Alsubaihi, I., Rahman, S.B., & Mohamad, D.B. (2023). the Effect of Competitive Advantage on the Relationship Between Environmental Uncertainty and Hotel Performance in Saudi Arabia. *Geojournal of Tourism and Geosites* , *51*(4), 1610–1621. https://doi.org/10.30892/gtg.514spl01-1157

Belay, M.K., & Adu-Ampong, E.A. (2023). The state, political trigger events and path creation in tourism destination in Ethiopia. *Tourism Geographies*, *25*(8), 1856–1873. https://doi.org/10.1080/14616688.2023.2217537

Berhanu, K., & Raj, S. (2024). The role of social media marketing in Ethiopian tourism and hospitality organizations: Applying the unified theory of acceptance and use of technology model. *Cogent Social Sciences*, *10*(1). https://doi.org/10.1080/23311886.2024.2318866

Berne-Manero, C., Gómez-Campillo, M., Marzo-Navarro, M., & Pedraja-Iglesias, M. (2018). Reviewing the online tourism value chain. *Administrative Sciences*, *8*(3). https://doi.org/10.3390/admsci8030048

Bogale, D., & Wondirad, A. (2019). Determinant factors of tourist satisfaction in Arbaminch City and its vicinity, Southern Ethiopia. *International Journal of Tourism Policy*, *9*(4), 320–348. https://doi.org/10.1504/IJTP.2019.105487

Buhalis, D. (2022). Tourism management and marketing in transformation: editor's statement and introduction to the Encyclopedia of Tourism Management and Marketing. *Encyclopedia of Tourism Management and Marketing*, 1–18. https://doi.org/10.4337/9781800377486.tourism.management.marketing

Chiriko, A.Y. (2021). Political violence and hotels: economic consequences and response strategies. *Anatolia*, *32*(3), 419–429. https://doi.org/10.1080/13032917.2021.1883078

Ensign, P.C. (2001). Value Chain Analysis and Competitive Advantage. *Journal of General Management*, *27*(1), 18–42. https://doi.org/10.1177/030630700102700102

Eyana, S.M., Masurel, E., & Paas, L.J. (2020). Discovery behaviour and creation behaviour of Ethiopian entrepreneurs: the implications for the performance of their small tourism firms. *Journal of Small Business and Enterprise Development*, *27*(6), 865–883. https://doi.org/10.1108/JSBED-04-2019-0108

Foris, D., Popescu, M., & Foris, T. (2018). A Comprehensive Review of the Quality Approach in Tourism. *Mobilities, Tourism and Travel Behavior - Contexts and Boundaries*. https://doi.org/10.5772/intechopen.70494

George, A. (2023). A Study on the Assessment of Customer Readiness toward the Adoption of Technological Innovations in Indian Tourism Sector. *Journal of Logistics, Informatics and Service Science*, *10*(1), 237–256. https://doi.org/10.33168/JLISS.2023.0113

Geremew, Y.M. (2019). Ethiopian tourism practitioners level of awareness on the Tourism Development Policy: The missing links of Ethiopian tourism sustainability. *African Journal of Hospitality, Tourism and Leisure, 8*(5), 1–11.

Gómez-Ceballos, G., Menoya-Zayas, S., & Vázquez-Loaiza, J.P. (2023). ICT as a Support for Value Chain Management in Tourism Destinations: The Case of the City of Cuenca, Ecuador. *Sustainability (Switzerland)*, *15*(13). https://doi.org/10.3390/su151310181

González-Rodríguez, M.R., Díaz-Fernández, M.C., & Pulido-Pavón, N. (2023). Tourist destination competitiveness: An international approach through the travel and tourism competitiveness index. *Tourism Management Perspectives*, *47*(December 2022). https://doi.org/10.1016/j.tmp.2023.101127

Hadjielias, E., Christofi, M., Christou, P., & Hadjielia Drotarova, M. (2022). Digitalization, agility, and customer value in tourism. *Technological Forecasting and Social Change*, *175*(November 2021), 121334. https://doi.org/10.1016/j.techfore.2021.121334

Hang, N.P.T., Linh, N.H.K., & Nghi, L.D. (2023). Examining the Effect of Airportscape on Airport Image, Tourist Revisit Intention, Considering Roles of Sense of Place and Destination Image. *Journal of Logistics, Informatics and Service Science*, *10*(2), 164–181. https://doi.org/10.33168/JLISS.2023.0212

Hjalager, A.M., Tervo-Kankare, K., & Tuohino, A. (2016). Tourism value chains revisited and applied to rural well-being tourism. *Tourism Planning and Development*, *13*(4), 379–395. https://doi.org/10.1080/21568316.2015.1133449

Hosany, S., Sthapit, E., & Björk, P. (2022). Memorable tourism experience: A review and research agenda. *Psychology and Marketing*, *39*(8), 1467–1486. https://doi.org/10.1002/mar.21665

Howieson, J., Lawley, M., & Hastings, K. (2016). Value chain analysis: an iterative and relational approach for agri-food chains. *Supply Chain Management*, *21*(3), 352–362. https://doi.org/10.1108/SCM-06-2015-0220

Hsu, A.Y., Chan, King, B., Wang, D., & Buhalis, D. (2016). In-destination tour products and the disrupted tourism industry: progress and prospects. *Information Technology and Tourism*, *16*(4), 413–433. https://doi.org/10.1007/s40558-016-0067-y

Hung, W.L., Lee, Y.J., & Huang, P.H. (2016). Creative experiences, memorability and revisit intention in creative tourism. *Current Issues in Tourism*, *19*(8), 763–770. https://doi.org/10.1080/13683500.2013.877422

Iloranta, R., & Komppula, R. (2022). Service providers' perspective on the luxury tourist experience as a product. *Scandinavian Journal of Hospitality and Tourism*, *22*(1), 39–57. https://doi.org/10.1080/15022250.2021.1946845

Jain, A., Shanker, S., & Barve, A. (2022). Resilience against the COVID-19 pandemic: is the hotel and tourism supply chain on the right path? *Benchmarking*, *29*(10), 3194–3225. https://doi.org/10.1108/BIJ-05-2021-0249

Jennings, G., Lee, Y.S., Ayling, A., Lunny, B., Cater, C., & Ollenburg, C. (2009). Quality tourism experiences: Reviews, reflections, research agendas. *Journal of Hospitality and Leisure Marketing*, *18*(2–3), 294–310. https://doi.org/10.1080/19368620802594169

John, S.P., & Supramaniam, S. (2024). Value co-creation research in tourism and hospitality management: A systematic literature review. *Journal of Hospitality and Tourism Management*, *58*(December 2023), 96–114. https://doi.org/10.1016/j.jhtm.2023.11.008

Jonker, J.A. (2004). the Strategic Identification and Integration of Critical Success Factors To Achieve International Competitiveness for South Africa As a Tourism Destination. *Faculty of Economic and Management Sciences*, *November*, 20. http://www.scielo.org.za/scielo.php?pid=S2222-34362012000300005&script=sci_arttext&tlng=es

Joseph, B., & Gilmore, J.H. (1999). *Work Is Theatre &f Every Business a Stage*. https://dokumen.pub/the-experience-economyupdated-ed-updateded-9781422161975-1422161978.html

Kaplinsky, R., & Morris, M. (2000). A Handbook for Value Chain An Important Health Warning or A Guide for Using this Handbook. *Institute for Development Studies: Brighton, UK*, *September*, 4–7.

Kaushal, V., & Yadav, R. (2024). Exploring luxury hospitality customer experience of Maldives tourists amidst COVID-19 pandemic. *Consumer Behavior in Tourism and Hospitality*, *19*(1), 140–165. https://doi.org/10.1108/CBTH-04-2022-0085

Kerdpitak, C. (2022). The effects of innovative management, digital marketing, service quality and supply chain management on performance in cultural tourism business. *Uncertain Supply Chain Management*, *10*(3), 771–778. https://doi.org/10.5267/j.uscm.2022.4.005

Ketchen, D.J. (2013). A Primer on Partial Least Squares Structural Equation Modeling. In *Long Range Planning*, 46(1–2). https://doi.org/10.1016/j.lrp.2013.01.002

Khan, D., & Banerjee, S. (2020). Value Chain Mapping of Tourism in Birbhum. *International Journal of Tourism and Hospitality Management in the Digital Age*, *4*(2), 23–33. https://doi.org/10.4018/ijthmda.2020070103

Khuong, M.N., & Ha, H.T.T. (2014). The Influences of Push and Pull Factors on the International Leisure Tourists' Return Intention to Ho Chi Minh City, Vietnam — A Mediation Analysis of Destination Satisfaction. *International Journal of Trade, Economics and Finance*, *5*(6), 490–496. https://doi.org/10.7763/ijtef.2014.v5.421

Kim, J.H. (2014). The antecedents of memorable tourism experiences: The development of a scale to measure the destination attributes associated with memorable experiences. *Tourism Management*, *44*, 34–45. https://doi.org/10.1016/j.tourman.2014.02.007

Kim, J.H., Ritchie, J.R.B., & McCormick, B. (2012). Development of a scale to measure memorable tourism experiences. *Journal of Travel Research*, *51*(1), 12–25. https://doi.org/10.1177/0047287510385467

Lara-Morales, O., & Clarke, A. (2022). Sustainable tourism value chain analysis as a tool to evaluate tourism's contribution to the sustainable development goals and local Indigenous communities. *Journal of Ecotourism*, 1–19. https://doi.org/10.1080/14724049.2022.2147189

Liengaard, B.D., Sharma, P. N., Hult, G.T.M., Jensen, M.B., Sarstedt, M., Hair, J.F., & Ringle, C.M. (2020). Prediction: Coveted, Yet Forsaken? Introducing a Cross-Validated Predictive Modeling. *Decision Sciences*, *52*(2), 1–31.

Liu, C.H., Horng, J.S., Chou, S.F., Zhang, S.N., & Lin, J.Y. (2023). Creating competitive advantage through entrepreneurial factors, collaboration and learning. *Management Decision*, *61*(7), 1888–1911. https://doi.org/10.1108/MD-07-2022-0914

Mekonnen, H., & Mekonen, S. (2023). Potentials, opportunities and challenges of ecotourism development in selected historical and sacred sites of North Shewa Zone, Amhara region, Ethiopia. *International Journal of Tourism Cities*. https://doi.org/10.1108/IJTC-12-2021-0242

Mitchell, J., & Font, X. (2017). Evidence-based policy in Ethiopia: A diagnosis of failure. *Development Southern Africa*, *34*(1), 121–136. https://doi.org/10.1080/0376835X.2016.1231056

Molina-Azorín, J.F., Tarí, J.J., Pereira-Moliner, J., López-Gamero, M.D., & Pertusa-Ortega, E.M. (2015). The effects of quality and environmental management on competitive advantage: A mixed methods study in the hotel industry. *Tourism Management*, *50*, 41–54. https://doi.org/10.1016/j.tourman.2015.01.008

Morales-Zamorano, L.A., Camacho-García, A.L., Bustamante-Valenzuela, A.C., Cuevas-Merecías, I., & Suarez-Hernández, Á.M. (2020). Value chain for agritourism products. *Open Agriculture*, *5*(1), 768–777. https://doi.org/10.1515/opag-2020-0069

Novotny, M., Dodds, R., & Walsh, P.R. (2024). The Destination Marketing Organization as an intelligent agent: Evaluating engagement in knowledge management practices. *International Journal of Tourism Research*, *26*(1), 1–9. https://doi.org/10.1002/jtr.2605

Porter, M.E. (1985). [Michael_E._Porter]_Competitiveadvantage creatin(BookFi).pdf. In *Competitive Advantage: Creating and Sustaining Superior Performance*, 33–35.

Potjanajaruwit, P. (2023). the Effect of E-Service Quality on the Competitive Advantages of Tourism and Hotel Businesses in Thailand. *Geojournal of Tourism and Geosites* , *47*(2), 363–369. https://doi.org/10.30892/gtg.47201-1033

Potjanajaruwit, P., Klaysung, S., & Sukavejworakit, K. (2024). Business Partnerships, Personnel Competency, and Marketing Strategies Influencing the Success of Tourism Business Operations in Thailand. *GeoJournal of Tourism and Geosites*, *52*(1), 203–211. https://doi.org/10.30892/gtg.52119-1196

Prahalad, C.K., & Ramaswamy, V. (2004). Co-creating unique value with customers. *Strategy & Leadership*, *32*(3), 4–9. https://doi.org/10.1108/10878570410699249

Prentice, R.C., Witt, S.F., & Hamer, C. (1998). Tourism as experience. *Annals of Tourism Research*, *25*(1), 1–24. https://doi.org/10.1016/s0160-7383(98)00084-x

Rojas-Bueno, A., Alarcón-Urbistondo, P., & González-Robles, E.M. (2023). The role of intermediaries in the MICE tourism value chain: consensus or dissonance? *Journal of Business and Industrial Marketing*, *38*(1), 252–265. https://doi.org/10.1108/JBIM-04-2021-0205

Romero, I., Fernández-Serrano, J., & Cáceres-Carrasco, R. (2024). Technological capabilities and global value chains: insights from Spanish SMEs in the hotel industry. *Journal of Hospitality and Tourism Insights*, *7*(1), 583–601. https://doi.org/10.1108/JHTI-08-2022-0362

Senbeto, D.L., & Hon, A.H.Y. (2021). Shaping organizational culture in response to tourism seasonality: A qualitative approach. *Journal of Vacation Marketing*, *27*(4), 466–478. https://doi.org/10.1177/13567667211006759

Simões, J.T., Soares, J.R.R., & Santos, X.M. (2023). A Conceptual Framework Proposal Regarding the Engagement of Hotels in the Modern Fight against Unsustainable Food Practices. *Sustainability (Switzerland)*, *15*(9), 1–20. https://doi.org/10.3390/su15097167

Smith, M. (2016). *Quality Tourism Experiences : A qualitative study of Australian Gold Coast residents ' perspectives as tourists in a group tour to China in a group tour to China*.

Steck, B., Wood, K., & Bishop, J. (2010). *Value Chain Analysis Summary Report*. 12. http://www.bibalex.org/Search4Dev/files/339294/172759.pdf

Suleiman, M.A. (2023). The impact of tourism supply chain on sustainable performance in sub-Saharan Africa: evidence from Tanzania. *Management of Environmental Quality: An International Journal*, *34*(2), 492–510. https://doi.org/10.1108/MEQ-01-2022-0007

Sun, L., Ji, S., & Ye, J. (2018). Partial Least Squares. In *Multi-Label Dimensionality Reduction*. https://doi.org/10.1201/b16017-6

Suparman, S., Muzakir, M., Wahyuningsih, W., Tope, P., & Ponirin, P. (2023). Promoting tourism governance and supply chain management in the competitiveness of tourism sector. *Uncertain Supply Chain Management*, *11*(3), 1247–1256. https://doi.org/10.5267/j.uscm.2023.3.023

Sutomo, Y.A.W., Sianipar, C.P.M., Basu, M., Onitsuka, K., & Hoshino, S. (2023). Tourism value chain: synthesizing value webs to support tourism development and planning. *Tourism Review*, *78*(3), 726–746. https://doi.org/10.1108/TR-12-2021-0566

Tahar, Y., Ben, Haller, C., Massa, C., & Bédé, S. (2018). Designing and creating tourism experiences: Adding value for tourists. *The Emerald Handbook of Entrepreneurship in Tourism, Travel and Hospitality: Skills for Successful Ventures*, 313–328. https://doi.org/10.1108/978-1-78743-529-220181024

Tasnim, Z., Shareef, M.A., Dwivedi, Y.K., Kumar, U., Kumar, V., Malik, F.T., & Raman, R. (2023). Tourism sustainability during COVID-19: developing value chain resilience. *Operations Management Research*, *16*(1), 391–407. https://doi.org/10.1007/s12063-021-00250-8

Tegegne, Z.G., Astatkie, T., Tebeje, D.D., Aseres, S.A., & Haile, V.T. (2024). Determinants of women-owned micro- and small tourism enterprise growth in Bale Zone, South Ethiopia. *Development in Practice*, *34*(1), 115–128. https://doi.org/10.1080/09614524.2023.2272064

Teklebrhan, L.G., Zelealem, H., & Daniel, A.G. (2023). Geotourism of Axum and Yeha Monuments, Northern Ethiopia. *Geojournal of Tourism and Geosites* , *48*(2spl), 685–695. https://doi.org/10.30892/gtg.482spl02-1068

UNWTO. (2019). United Nations World Tourism Organization Tourism Definitions. In UNWTO Tourism Definitions, https://www.e-unwto.org/doi/book/10.18111/9789284420858

Varvaressos, S. (2018). Framework for tourism industries: Tourism system and tourism value chain. *The Emerald Handbook of Entrepreneurship in Tourism, Travel and Hospitality: Skills for Successful Ventures*, 19–31. https://doi.org/10.1108/978-1-78743-529-220181002

Wang, C., Liu, J., Wei, L., & Zhang, T.C. (2020). Impact of tourist experience on memorability and authenticity : a study of creative tourism. *Journal of Travel & Tourism Marketing*, *37*(1), 48–63. https://doi.org/10.1080/10548408.2020.1711846

Wang, Y., Shen, S., Sotiriadis, M., & Zhang, L. (2020). Suggesting a framework for performance evaluation of tourist attractions: A balance score approach. *Sustainability (Switzerland)*, *12*(15), 1–22. https://doi.org/10.3390/su12156220

Wibowo, V., Gautama, I., Kuncoro, E.A., & Bandur, A. (2024). Improving Sustainability in the Small-Medium Culinary Industry: Analyzing the Role of Open Innovation and Competitive Advantage. *Journal of System and Management Sciences*, *14*(2), 172–187. https://doi.org/10.33168/JSMS.2024.0211

Widagdo, B., & Roz, K. (2023). Information Technology and Competitive Advantage: The Effect of Electronic Data Interchange on Firm Performance in Virtual Hotel Operation in Indonesia. *Journal of System and Management Sciences*, *13*(1), 189–205. https://doi.org/10.33168/JSMS.2023.0111

Yothicar, P., Sompuet, P., Naklungka, K., Thosuwonchinda, V., Sangkhamart, K., Rongthong, N., Ngamsnit, S., & Boonsirichai, M. (2023). An approach for enhancing the tourism value chain: A case of Nakhon Nayok province, Thailand. *Kasetsart Journal of Social Sciences*, *44*(2), 565–572. https://doi.org/10.34044/j.kjss.2023.44.2.27

Zaman, M., Vo-Thanh, T., Hasan, R., Shams, S.M.R., & Vukovic, D.B. (2022). How can hotels create sustainable competitive advantages? A resource-based view. *Journal of Strategic Marketing*, *00*(00), 1–16. https://doi.org/10.1080/0965254X.2022.2066558

Zeng, M., Shen, S., & Gu, J. (2023). How does the integration of cultural and tourism industries impact the value added to tourism value chain: Evidences from Jiangsu Province of China. *PLoS ONE*, *18*(6 June), 1–20. https://doi.org/10.1371/journal.pone.0287610

Zhang, P., Meng, F., & So, K.K.F. (2021). Cocreation Experience in Peer-to-Peer Accommodations: Conceptualization and Scale Development. *Journal of Travel Research*, *60*(6), 1333–1351. https://doi.org/10.1177/0047287520938873

Article history: Received: 05.03.2024 Revised: 22.05.2024 Accepted: 14.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.842-848
DOI 10.30892/gtg.542spl08-1259

THE ECOLOGICAL AND TOURIST FRAMEWORKS OF THE LOW MOUNTAIN ZONE AS THE BASIS FOR THE FORMATION OF THE TERRITORIAL STRUCTURE IN THE SOUTHERN PART OF ALTAI KRAI

Alexander N. DUNETS*
Altai State University, Department of Scientific and Innovative Development, Barnaul, Russia, e-mail: dunets@mail.ru

Anastasia K. VOLKOVA
Altai State University, Department of Economic Geography and Cartography, Institute of Geography, Barnaul, Russia, e-mail: nastasiakonstantinovna@gmail.com

Nurgul Ye. RAMAZANOVA
L.N. Gumilyov Eurasian National University, Department of Physical and Economic Geography, Astana, Kazakhstan, e-mail: nurgulram@gmail.com

Evgeny V. RYGALOV
Altai State University, Department of Economic Geography and Cartography, Institute of Geography, Barnaul, Russia, e-mail: rugalov@mail.ru

Citation: Dunets, A.N., Volkova, A.K., Ramazanova, N.Ye., & Rygalov, E.V. (2024). THE ECOLOGICAL AND TOURIST FRAMEWORKS OF THE LOW MOUNTAIN ZONE AS THE BASIS FOR THE FORMATION OF THE TERRITORIAL STRUCTURE IN THE SOUTHERN PART OF ALTAI KRAI. *Geojournal of Tourism and Geosites*, 54(2spl), 842–848. https://doi.org/10.30892/gtg.542spl08-1259

Abstract: Gain a comprehensive understanding of the environmental and tourism aspects of the formation of the territorial structure of the region. The authors advocate for an ecological framework approach to pinpoint key natural areas crucial for establishing a tourist framework. In the southern low-mountain region of Altai Krai, mountain ranges are integral to the ecological framework, shaping its diverse landscape. This territory harbors specially protected natural areas (SPNA) that comprise natural heritage sites and tourist attractions. Different elements of the ecological framework, including nature reserves and protected zones within natural parks, require varying levels of protection. The study emphasizes that the main river valleys serve as focal points of the tourist framework. Through the development of schematic maps, the research identifies nine distinct tourist destinations in the foothill-low-mountain zone of Altai Krai, each characterized by unique ecological and tourist attributes.

Keywords: Ecological frame, Tourist frame, variety of landscapes, attractiveness of the territory, tourist attractor, attractors, GIS technology, tourist-recreational design

* * * * * *

INTRODUCTION

The versatility and multidimensionality of spatial structures makes them a universal object for the study of many scientific disciplines, including economic geography. The peculiarities of the formation, growth and development of the spatial structures of the economy determine the trajectory of the development of the space as a whole and pose many practical problems for researchers, on the successful solution of which the further development of the districts depends.

The territorial framework significantly influences not only the regional economy but also specific sectors such as tourism. Recognizing tourism development as a pivotal component of spatial development, as underscored in the "Strategy for Development of Altai Krai until 2035," it becomes imperative to explore how the juxtaposition of ecological and tourist frameworks collectively shapes the territorial structure of tourism.The purpose of the study is to analyze the territorial structure of tourist activity in the low-mountain foothill zone of Altai Krai, which is a set of elements of its ecological-tourist framework and, based on their analysis, to identify local tourist destinations.

Currently, there are relevant works related to solving a number of practical problems related to the sustainable development of the territory, which is based on the idea of a supporting frame in the studies of Vedenin, 2019; Molchanov, 2020. This issue is also considered at the macroregional level, including studies not only of the southern foothills of the Altai Territory, but also of the entire Western Siberia (Erokhin and Chernovskaya, 2022). Also important are studies devoted to the updating of theoretical provisions regarding the use of the frame approach in geographical research, including related topics and those mentioned in the works of Fedotov and Tkachenko, 2019; Baklanov, 2020; Patrakova, 2020; Suvorova, 2021; Treivish, 2023. The works of Stepanova, 2019 and Lyulya, 2020 are devoted to the problems of tourism development in the Altai Territory as the basis for the sustainable development of the region. The methodology of territorial planning, essential for spatial development, is deeply rooted in a framework approach. Building on the scientific

* Corresponding author

methodology proposed by Obedkov, 2018; Molchanov, 2020; Treivish, 2023 our study delves into understanding the development patterns of the territory and identifying areas that require management decisions.The disadvantage of previously conducted regional studies on related topics, as well as the works noted above, is that they most often consider only individual elements of the frame, while mainly urban settlements were considered as key elements, but insufficient attention was paid to the role of frame structures in rural areas. An assessment of the current territorial structure of the economy is a necessary condition for understanding spatial development and strategic planning. To identify existing problems and opportunities for economic development in the region, a lot of analytical work is needed.

Drawing on previous research, we have validated a method for evaluating and modeling landscape diversity, crucial for tourism development in promising natural areas. This approach, incorporating a quantitative assessment technique for diversity using GIS-based visualization the basis for comparing key ecological and tourist areas within a GIS environment.

MATERIALS AND METHODS

The study focused on the territorial structure in the region, influenced by interconnected elements crucial for development. The foundational linear-nodal structure, as explored by Polyan and Treivish, 1988 and updated in the studies of Vedenin, 2019; Molchanov, 2020 was considered. The impact of the natural environment on the region's economic structure, as evidenced by Baransky 1980; Mayergoiz, 1986; Saushkin, 1973; Pertsik, 2006; Zyryanov, 2008; Baklanov, 2020; Moskvitina, 2020; Suvorova, 2021 was also considered.

The supporting framework elements were classified according to function (nodes, cores, communication elements), degree of natural preservation, and legal status by Elizarov, 2008. Barriers to development, such as mountain ranges and water bodies, were considered alongside nodal and linear elements. These elements, along with landscape contrasts, as highlighted by Zyryanov, 1995, influenced the formation and functioning of the framework, providing insights for spatial development. Also important are studies devoted to the updating of theoretical provisions regarding the use of the frame approach in geographical research, including related topics and those mentioned in the works of Fedotov and Tkachenko, 2019; Baklanov, 2020; Patrakova 2020; Suvorova, 2021; Treivish, 2023.

At a regional level, the framework approach enabled the recognition of variations across different areas by studying connections between elements, generalizing phenomena, and observing process dynamics (Lappo, 1983). The ecological framework, defined by Vladimirov, 1982; Sokhina and Zarhina, 1991 served as a system of zones with specific environmental management regimes to ensure sustainable development. This included areas with restrictions on use, such as wildlife refuges, national parks, and protective forest belts. This issue is also considered at the macroregional level, including studies not only of the southern foothills of the Altai Territory, but also of the entire Western Siberia (Erokhin and Chernovskaya, 2022). The tourist element of the supporting framework, outlined by Rodoman, 2002, focused on organizing tourist space through attractive points, routes, and infrastructure. The maintenance of ecological balance required a careful balance between urbanized and protected landscapes. The tourist framework, with its nodes and lines, formed a stable but dynamic part of the territorial structure, essential for economic development. The study proposed examining interconnected elements within the tourism framework to understand the unified system of tourist elements, encompassing natural, historical, cultural, and socioeconomic aspects (Alexandrova and Sorokin, 2019; Lazhentsev, 2013; Toan et al., 2023). The works of Stepanova, 2019; Lyulya, 2020 are devoted to the problems of tourism development in the Altai Territory as the basis for the sustainable development of the region. Cartographic resources, information materials, and field research served as the information base for this study. Criteria such as attractiveness, accessibility to transport, concentration of tourist objects, and aesthetic appeal were considered to select elements for the tourist framework.

The cartographic research method, combined with GIS analysis, was instrumental in compiling maps that reflect the natural, ecological and tourist frameworks of the territory. This approach facilitated a comparative analysis of these frameworks, helping to identify and delineation of tourist destinations. The general algorithm of work included four stages: 1) selection and justification of a group of assessment indicators of elements of the tourist territorial structure; 2) identifying the main elements of the eco-tourism framework; 3) carrying out computational operations to evaluate frame elements and ranking them based on the results obtained, 4) constructing integrated models and their analysis (Figure 1).

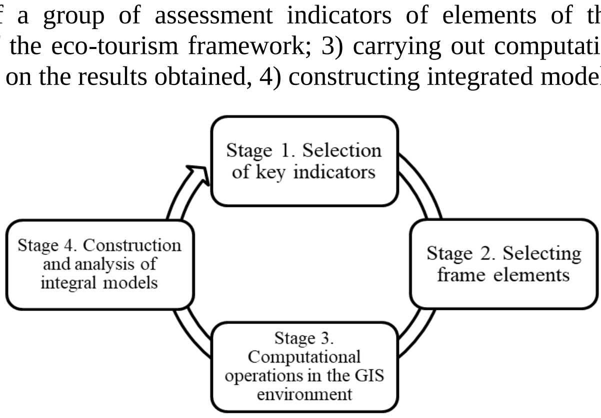


Figure 1. The flow chart of research methodology stages

RESULTS AND DISCUSSION

The mountain ranges have played a crucial role in the economic and tourist development of the Altai region, particularly in defining tourist destinations within river basins. During the past three decades, the region has witnessed the development of tourist infrastructure, the concentration of local tourist attractions, and the development of tourist routes in the low mountain zone. Currently, based on our findings and the mapped data, the territorial structure of tourism can be visualized as a linear-nodal network within the tourist framework. This visualization enables the identification of promising areas for new infrastructure projects and facilitates efforts to create favorable conditions for tourism investments.

Different types of territorial structure have been identified based on the region's physical and geographical characteristics and its economic history, including concentric, polycentric, linear, polycentric central basin, and central structures (Pozachenyuk, 2003). Alexandrova and Sorokin, 2019 highlight common frameworks such as belt, star-radial, radial-ring, and dispersed tourism frameworks. Our study has identified unique spatial combinations of the framework influenced by the presence of mountain ranges and river valleys in the study area (Figure 2).

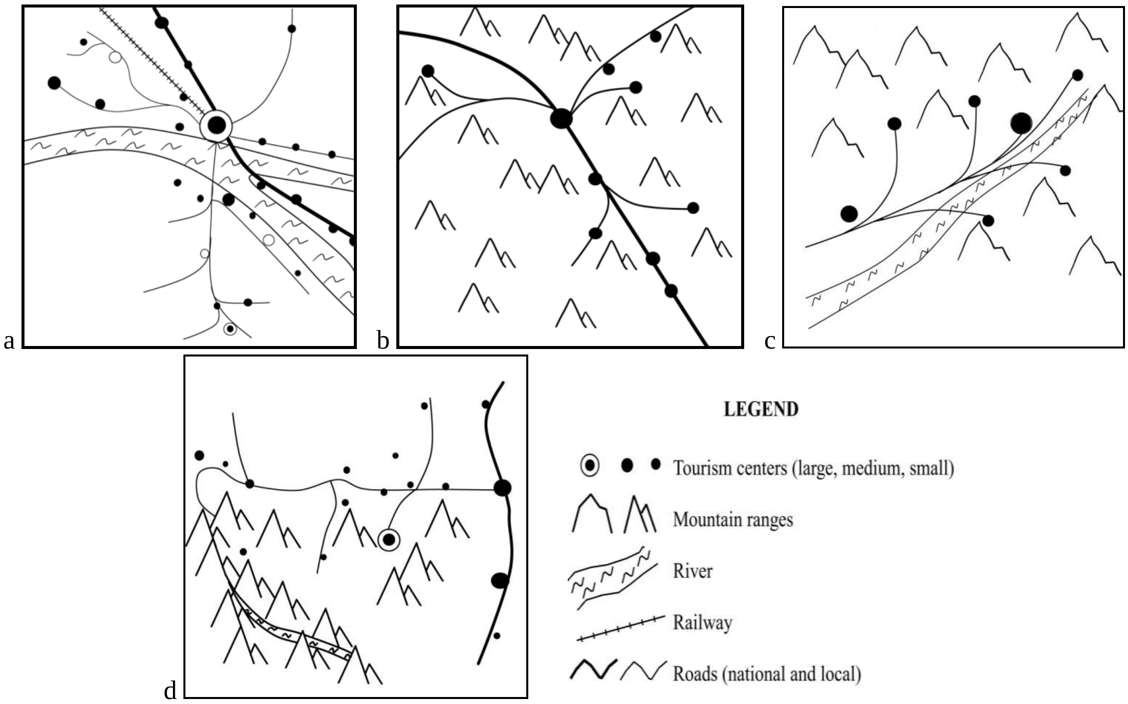


Figure 2. Combination of natural framework elements in the foothill-low mountain zone of Altai Krai

Figure 1 illustrates the combination of natural framework elements in different parts of the low mountain zone of Altai Krai:

a) in the area of the city of Biysk - they are represented by a large urban diversified economic hub, which also performs the functions of an administrative, information and transport center, surrounded by a group of satellite settlements.

b) the valley of an intermountain river of transit significance - a spatial structure represented by large economic centers with complementary specialization and performing the functions of transit nodes of a large transport corridor.

c) closed valley closed intermountain valley - represented by local “dead-end” frame nodes, the development of which is limited by insufficient transport accessibility due to their peripheral location and the complex topography of the underlying surface, performing the functions of stagnant outlying centers.

d) Pre-Altai Plain and Gorny Altai - point structures represented by settlements with enterprises that occupy a deep position in the territory of the region and are located at a distance from the administrative center of their rural municipal district, have transport connections with it, but retain a significant degree of independent development.

In light of the ecological framework concepts, we have created a diagram for the low-mountain region of Altai Krai (Figure 3). The highest sections of mountain ranges (such as Kolyvansky, Tigireksky, Baschelaksky, Anuysky, Cherginsky, Seminsky, Iolgo, and the Salairsky ridge) act as significant barriers to the development of tourism infrastructure, delineating the boundaries of various destinations. These elevated areas can be categorized as linear elements within the ecological framework, resembling stripes. Within the ecological framework, areas with a high level of protection include nature reserves and protected zones within natural parks. It is essential to perform functional zoning of other protected natural areas to identify zones requiring strict protection measures. Key components of the ecological framework include Tigireksky Nature Reserve, Salair National Park, and the natural park "Foothills of Altai," characterized by aspen-fir forests. These forests typically consist of Siberian fir along with aspen, silver birch, Siberian larch and Scots pine. The Tigireksky reserve boasts preglacial plant species, termed tertiary relicts, such as European hoofweed, common wolfberry, broadleaf bell, Brown's grass, and Ural undergrowth. Salair Park is known for its endemic plant species such as Siberian kandyk, blue anemone, Krylov's crosswort, Krylov's forget-me-not, and large-leaved buttercup.

The tourist framework often aligns with river valleys, which serve as prominent linear elements within the ecological framework. These river valleys exhibit diverse landscapes, including forb-grass meadows, fir-aspen-birch shrub forests, high-mountain V-shaped valleys, steeply sloped branched valleys, terraced valleys with birch-pine grass shrub forests, and other variations. The formation of the territorial features is closely tied to the conditions of natural resource conditions.

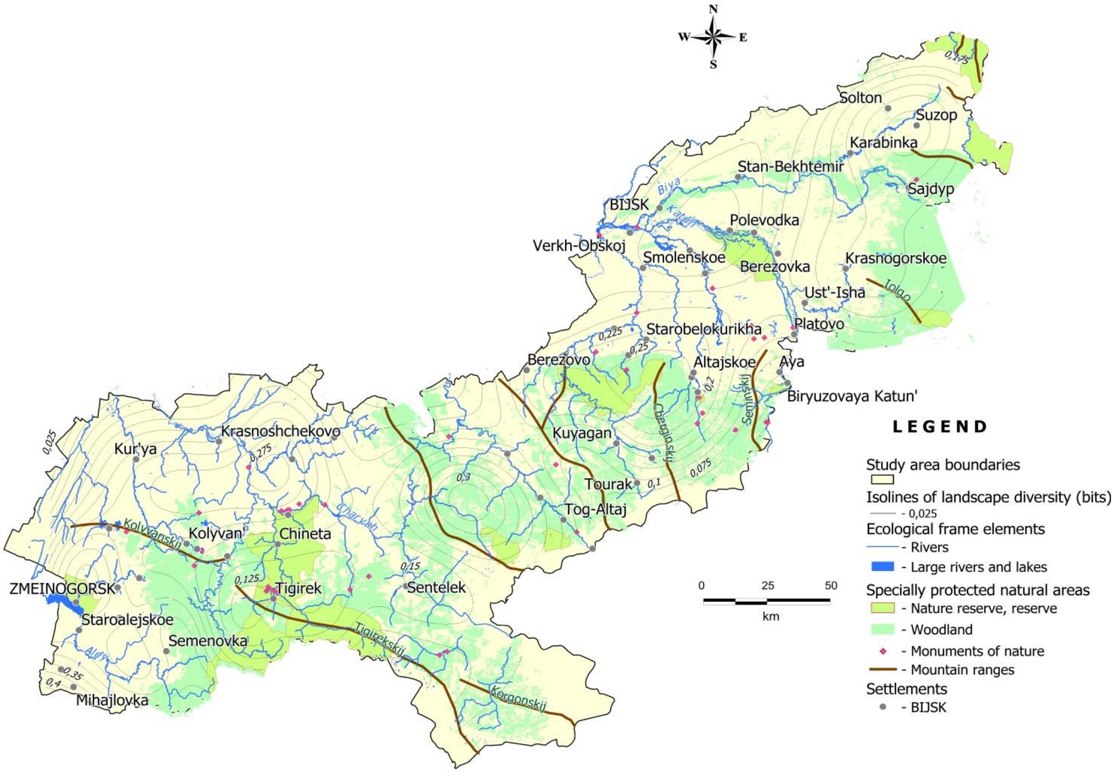


Figure 3. Schematic map illustrating the ecological framework of the low-mountain region in Altai Krai

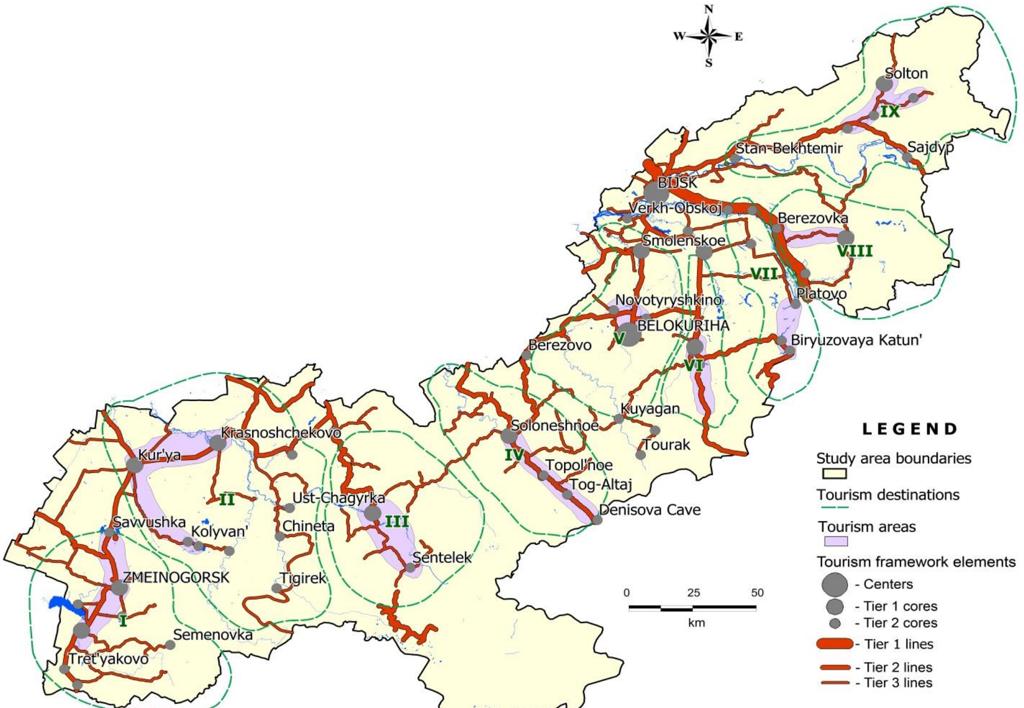


Figure 4. Schematic map showing the tourist framework of the low mountain region in Altai Krai

River valleys play a crucial role in determining the locations of tourist destination centers, as supported by our tourist framework map (Figure 4, Table 1). In the western part of the low mountain zone of Altai Krai, tourism development is linked to exploring the mountain taiga areas of the Kolyvan mountain range and mineral and rock deposits such as Mount Revnyukha, Goltsovskoye, and Semenovskoye. Zmeinogorsk serves as a key tourist center with a rich history of mineral exploration. The Alei River basin and Kolyvan Lake are of ecological and tourist importance. The Kolyvan ridge divides tourist flows, acting as a barrier to auto routes. The eastern part of the Kolyvan ridge features two development directions, extending between the villages of Kurya and Kolyvan and Kurya and Tigirek. The village of Charyshskoe also serves as a destination center, connecting to the mid-mountain region through tourist routes in the Anuy river valley.

Table 1. Structural elements of ecological and tourist frameworks

Destination	Elements of the Ecological Framework	Elements of the tourism framework
I. Aleisko-Zmeinogorskaya	Centers: Tigirek Nature Reserve; Cores: Livlyandsky reserve, Natural monument of the river basin Kolyvanka; Natural lines: axial lines of mountain ranges – Kolyvansky, Tigireksky. Rivers: Alei, Goltsovka, Karbolikha, Kharkovka.	Centers: Zmeinogorsk; Cores: villages – Savvushka, Baranovka, Semenovka, Staroaleiskoe; Tourist lines: vil. Kurya – Zmeinogorsk – vil. Verkh-Aleyka; Alei River.
II. Kolyvano-Tigirekskaya	Centers: Tigirek Nature Reserve; Cores: Natural monuments (Kolyvan Borok, Mount Sinyukha, Lake Beloye); Natural lines: axial lines of mountain ranges – Kolyvansky, Tigireksky. Rivers: Loktevka;	Centers: Kolyvan Cores: vil. Kurya, vil. Krasnoshchekovo, vil. Ust-Chagyrka; Tourist lines: vil. Kurya, vil. Krasnoshchekovo – vil. Tigirek; Vil. Kurya – Kolyvan – vil. Bugryshikha.
III. Charyshskaya	Centers: Tigirek Nature Reserve; Areas: Chinetinsky and Charyshsky reserves; Cores: Yarovskie Rocks, Rock Big and Small Monasteries, Silurian Cut, Log Strashnoy, etc.; Natural lines: center lines of mountain ranges; Rivers: Inya, Belaya, and Charysh.	Centers: Charyshskoe. Cores: Centelec. Tourist lines: vil. Ust-s. Kalmanka – vil. Charyshskoye – vil. Sentelec; vil. Charyshskoye – vil. Small Bashelak.
IV. Anuyskaya	Centers: Baschelaksky reserve; Areas: reserve cascade of waterfalls of the Shinok river); Cores: Mount Budachikha, Troshin Log, steppes near the village of Sibiryachikha, Denisova Cave; Natural lines: axial lines of Bashelaksky and Anuysky; Rivers: Anuy, Karama, Shchepeta.	Center: vil. Soloneshnoye; Cores: vil. Topolnoe, vil. Tog-Altai. Tourist lines: vil. Sibiryachikha – vil. Soloneshnoye – “Denisova Cave”.
V. Bolshaya Belokurikhinskaya	Centers: protection zone of the natural park “Foothills of Altai”; Areas: natural park “Foothills of Altai”; Cores: Lower reaches of the Sychevka river, Four Brothers rocks, Tochilinsky Borok, mineral water deposits; Natural lines, rivers: Peschanaya, Belokurikha, Pomerechnaya.	Center: Belokurikha Resort. Cores: vil. Solonovka, vil. Novotyryshkino, vil. Starobelokurikha, Belokurikha Mountain Kolyvan. Tourist lines: vil. Smolenskoe – Belokurikha; vil. Starobelokurikha – vil. Novotyryshkino – vil. Solonovka.
VI. Kamensko-Sarasinskaya	Centers: Arbanak log; Cores: Mount Berezovaya, Katorzhnaya cave, Kyrkylinsky caves, mineral deposits; Natural lines: spurs of the Cherginsky and Seminsky ridges; Rivers: Sarasa, Kamenka.	Centers: village of Altai; Cores: villages – Makaryevka, Beloye, Nizhnekamenka, Basargino. Tourist lines: vil. Sovetskoe – vil. Altai –vil. Beloe; vil. Kuyagan – vil. Altai.
VII. Nizhnekatunskaya	Centers: Aya Natural Park protection zone; Areas: Caves of the Metlevo plateau, Traces of the catastrophic flood of Platovo, Tigirek caves, Mount Babyrgan; Natural lines: spurs of the Seminsky ridge. River: Katun.	Centers: Lake Aya, the central part of the Turyuzovaya Katun economic zone; Cores: a cluster of accommodation facilities on the left bank of the Katun river; Tourist lines: Aya village – Turquois Katun.
VIII. Katunsko-Ishinskaya	Centers: Mikhailovsky Nature Reserve; Areas: sanctuary “Swans”; Cores: separate forests near the Isha and Katun rivers; Natural lines: spurs of the Iolgo ridge; Rivers: Katun.	Centers: villages – Srostki, Krasnogorskoe. Cores: vil. Novozykovo, Isha Bridge; Tourist lines: Chuisky tract, Biysk – Gorno-Altaisk.
IX. Biye-Neninskaya	Centers: Salair National Park protection zone; Areas: Salair National Park, Neninsky Nature Reserve. Cores: the Skala natural monument, separate areas of forest near the Biya and Nenya rivers.	Center: Stan-Bekhtimir. Cores: Lebyazhye, Solton. Tourist lines: Biysk – Solton – Turochak.

Belokurikha resort exerts influence on its surroundings, particularly in Bolshaya Belokurikha, which includes tourist sites in the Smolensk and Altai municipal districts. Recent years have seen the emergence of tourist infrastructure facilities in the Kamenka and Sarasa River valleys, with the village of Altai as a central hub. The Chuya Highway, situated between the Biya and Katun rivers, serves as a primary route for tourist traffic, although the low-mountain zone attracts relatively few tourists. The right bank of the Biya River and Solton municipal district exhibit an underdeveloped tourist infrastructure. An intriguing case is the development of a destination in the Katun River valley, characterized by its dual role as an ecological corridor and a major tourist infrastructure concentration. This area hosts a multitude of tourist enterprises and specialized infrastructure unique to Altai, housing several local tourist centers like "Lake Aya," "Gorno-Altaisk – Maima," "Lake Manzherok» and "Turquoise Katun." Situated in the low mountains of northern Altai, this region benefits from convenient transport and geographical location, making it easily accessible to Siberia's tourism consumer base. Existing roads and bridges facilitate movement between tourist centers, with pine and birch forests covering mountain range spurs and steppe vegetation occupying flat terrain. The presence of rocky outcrops and karst caves enhances the area's allure, while small rivers and springs contribute to its natural charm.

However, challenges persist concerning the development of tourist infrastructure within the Katun River water protection zone, necessitating vigilant oversight to ensure the river's environmental integrity of the river is maintained. Our analysis has revealed that the environmental and tourist framework centers often differ within the broader study area. There are overlaps in certain areas and cores of these frameworks in destinations like Nizhnekatunskaya and Bolshaya Belokurikha. Thus, based on the ideas about the ecological framework, we have drawn up a diagram for the low mountain territory of Altai Krai (Figure 2). The most elevated parts of the mountain ranges (Kolyvansky, Tigireksky, Baschelaksky, Anuysky, Cherginsky, Seminsky, and Iolgo, as well as the Salairsky ridge) are the main barriers to the development of tourism infrastructure; they determine the boundaries of destinations. At the same time, they can be classified as linear elements (in the form of stripes) of the ecological framework.

Research on the low mountain zone in the southern part of Altai Krai for tourism purposes gained momentum in the 1990s. During this period, the concept of the South Altai ecological-economic region was introduced. Within this region, two recreational planning subdistricts were identified: Biysko-Belokurikhinsky and Gorno-Kolyvansky. The former served as the foundation for the Altai Medical and recreational area project, located in Belokurikha. Notable natural parks like "Aya," "Altai Foothills," and nature reserves such as "Swans" and "Cascade of Waterfalls on the Shinok River" were established in this subdistrict (Pomorov and Morozova, 2009). Tourist development in the southwest of Altai Krai focused on establishing a network of protected natural areas, including Tigireksky, Chinetinsky, Charyshsky, and Baschelaksky nature reserves, with plans for the Gornaya Kolyvan National Park. This development was influenced by the existing transport infrastructure and the impact of mountain ranges on shaping the tourist environment. We found that the territorial structure of tourism in the foothill-low mountain zone of Altai Krai is shaped by natural, historical, socioeconomic, and administrative-territorial factors. Analysis of the tourist framework in this region revealed that its appeal for tourism is closely tied to the quality of its tourist infrastructure, reflecting the level of territorial development. Further research is needed on the impact of the frame on the prospects for the development of tourism in the Altai region.

CONCLUSION

Our study in the low mountain zone of Altai Krai has identified and analyzed key elements of the ecological and tourist frameworks. These findings have allowed us to define the boundaries of local tourist destinations and provide recommendations for their sustainable development. Using a framework scientific approach supported by methods such as cartographic analysis, geoinformation systems, and comparative techniques, we have highlighted the importance of the natural framework in shaping the tourist framework, highlighting varying levels of protection for ecological elements.

By applying the concept of an ecological framework, we created a schematic map for the region, demonstrating how high-altitude mountain areas act as barriers to the development of tourism infrastructure and define destination boundaries. These areas also serve as linear components of the ecological framework. Our analysis of the tourist framework revealed several local destinations with key attractions crucial for economic growth, particularly linked to the Chuysky Trakt federal highway, fostering interregional cooperation. Through unique methods, we developed a numerical model and an entropy measure map that showcases landscape diversity, correlating the cores of the primary tourist destinations with areas of heightened numerical entropy. This model helped to define destination boundaries and establish functional zoning. Effective planning of tourist infrastructure requires a deep understanding of the ecological framework, influencing tourism accessibility, community participation, and destination competitiveness in domestic and international markets. The structure of the tourism framework is pivotal for achieving harmonious and sustainable development.

Author Contributions: Conceptualization, N.Ye.R. and A.N.D.; methodology, A.N.D.; software, E.V.R. and A.K.V.; validation, A.N.D. and E.V.R.; formal analysis, A.K.V. and A.N.D.; investigation, A.N.D. and N.Ye.R.; data curation A.K.V. and A.N.D. and N.Ye.R.; writing - original draft preparation, A.K.V.; writing - review and editing, A.N.D. and N.Ye.R. and A.K.V.; visualization, E.V.R. and A.N.D. and A.K.V.; supervision, A.N.D. and N.Ye.R. and E.V.R.; project administration, A.N.D. All authors have read and agreed to the published version of the manuscript.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Alexandrova, A.Yu., & Sorokin, D.P. (2019). Zarozhdenie i razvitie turistskogo opornogo karkasa Ryazanskoj oblasti [The origin and development of the tourist supporting framework of the Ryazan region]. *Vestnik Moskovskogo oblastnogo universiteta [Bulletin of the Moscow Regional University]*, 2, 115–131. https://doi.org/10.18384/2310-7189-2019-2-115-131

Baklanov, P.Ya. (2020). *Geosistemnyj podhod v geograficheskih issledovaniyah [Geosystem approach in geographical research]. Tihookeanskaya geografiya [Pacific Geography]*, 1 (1), 7-12. https://doi.org/10.35735/7102875.2020.1.1.001

Baransky, N.N. (1980). *Nauchnye principy geografii: izbrannye Trudy [Scientific principles of geography: selected works]*. Mysl', Moscow, RF, 238 p.

Dunets, A.N. (2009). *Territorial'naya organizaciya gornyh turistsko-rekreacionnyh sistem (na primere Altae-Sayanskogo regiona) [Territorial organization of mountain tourism and recreational systems (the case of the Altai-Sayan region)]*, AltGTU Publishing House, Barnaul, RF, 168 p.

Dunets, A.N. (2011). *Turistsko-rekreacionnye kompleksy gornogo regiona [Tourist and recreational complexes of the mountain region]*, AltGTU Publishing House, Barnaul, RF, 201 p.

Elizarov, A.V. (2008). Ekologicheskij karkas – strategiya stepnogo prirodopol'zovaniya XXI veka [Ecological framework – strategy for steppe environmental management of the 21st century]. *Samarskaya Luka [Samara onion]*, 26, 2 (24), 289-317.

Erokhin, G.P., & Chernovskaya, L.I. (2022). *Perspektivy razvitiya yuzhnogo urbanizirovannogo rajona Zapadnoj Sibiri [Prospects for the development of the southern urbanized region of Western Siberia]*. In Problemy sovremennoj urbanizacii: preemstvennost' i novacii: sbornik statej Mezhdunarodnoj konferencii [Problems of modern urbanization: continuity and innovation. Collection of articles of the International Conference] (pp. 52-61). Moscow State University, Moscow, RF.

Fedotov, M.A., & Tkachenko, A.A. (2019). *Opornyj karkas territorii rajonov Tverskoj oblasti: ocenka stepeni razvitosti [Supporting frame of the territory of the districts of the Tver region: assessment of the degree of development]*. In Geografiya, ekologiya, turizm: nauchnyj poisk studentov i aspirantov. Materialy VII Vserossijskoj nauchno-prakticheskoj konferencii [Geography, ecology, tourism: scientific search for students and graduate students. Materials of the VII All-Russian scientific and practical conference], 160-163. Tver State University, Tver, RF.

Lappo, G.M. (1983). Koncepciya opornogo karkasa territorial'noj struktury narodnogo hozyajstva: razvitie, teoreticheskoe i prakticheskoe znachenie [The concept of the supporting framework of the territorial structure of the national economy: development, theoretical and practical significance]. *Izvestiya AN SSSR, Seriya Geograficheskaya [News of the USSR Academy of Sciences, Series Geographical]*, 5, 16-28.

Lazhentsev, V.N. (2013). Territorial'noe razvitie kak ekonomiko-geograficheskaya deyatel'nost' (teoriya, metodologiya, praktika) [Territorial development as economic and geographical activity (theory, methodology, and practice)]. *Ekonomika regiona [Economics of the region]*, 1, 10-20. https://doi.org/10.17059/2013-1-1

Lyulya, N.V. (2020). *Rekreacionnyj potencial sel'skogo turizma v Altajskom krae kak uslovie ustojchivogo razvitiya sel'skih territorij [Recreational potential of rural tourism in the Altai Territory as a condition for sustainable development of rural areas]. In Materialy LX Rossijskoj arheologo-etnograficheskoj konferencii studentov i molodyh uchenyh s mezhdunarodnym uchastiem [Materials of the LX Russian Archaeological and Ethnographic Conference of Students and Young Scientists with International Participation*]. 266-267, Irkutsk State University, Irkutsk, RF.

Mayergoiz, I.M. (1986). *Territorial'naya struktura hozyajstva [Territorial structure of the economy]*, Nauka, Moscow, RF, 304 p.

Molchanov, I.N. (2020). *Prostranstvennoe razvitie: nauchnaya retrospektiva [Spatial development: scientific retrospectiv*e]. In Transformaciya ekonomiki: analiz problem i poisk putej reshenij. Materialy Vserossijskoj (s mezhdunarodnym uchastiem) nauchno-prakticheskoj konferencii, posvyashchennoj 60-letiyu BTI AltGTU [Transformation of the economy: analysis of problems and search for solutions. Materials of the All-Russian (with international participation) scientific and practical conference dedicated to the 60th anniversary of BTI AltSTU] (T. 1, pp. 31-35). Altai State Technological University, Barnaul, RF.

Moskvitina, M.A. (2020). Teoreticheskie podhody k klassifikacii faktorov razvitiya regiona i sposobam ih analiza [Theoretical approaches to the classification of regional development factors and methods of their analysis]. *Nauka Krasnoyar'ya [Science of Krasnoyarsk]*, 9, 4, 296-312. https://doi.org/10.12731/2070-7568-2020-4-296-312

Obedkov, A.P. (2018). Formirovanie opornogo karkasa severnyh territorij kak faktor modernizacii i ukrepleniya Rossijskogo prostranstva [Formation of the supporting frame of the northern territories as a factor in the modernization and strengthening of the Russian space]. *Rossiya: tendencii i perspektivy razvitiya [Russia: trends and development prospects]*, 13, 4, 1029-1038.

Patrakova, S.S. (2020). Sel'skaya mestnost' kak element opornogo karkasa territorii [Rural area as an element of the supporting framework of the territory]. *Voprosy territorial'nogo razvitiya [Issues of territorial development*], 8, 1, 1-17. https://doi.org/10.15838/tdi.2020.1.51.1

Pertsik, E.N. (2006). *Rajonnaya planirovka (territorial'noe planirovanie) [Regional planning (territorial planning)]*, Mysl', Moscow, RF, 398 p.

Polyan, P.M., & Treivish A.I. (1988). Territorial'nye struktury v nauke i praktike [Territorial structures in science and practice]. *Novoe v zhizni, nauke, tekhnike. Seriya Nauki o zemle [New things in life, science, technology. Geoscience Series]*, 12, 48.

Pomorov, S.B., & Morozova, N.V. (2009). *Arhitekturno-sociologicheskie predposylki formirovaniya rekreacionnyh kompleksov v gornom i predgornom Altae [Architectural and sociological prerequisites for the formation of recreational complexes in mountainous and foothill Altai]*, AltGTU Publishing House, Barnaul, RF, 107 p.

Pozachenyuk, E.A. (2003). *Territorial'noe planirovanie [Territorial planning]*, Dolya, Simferopol, Ukraine, 183 p.

Rodoman, B.B. (2002). *Polyarizovannaya biosfera [Polarized biosphere]*, Ojkumena, Smolensk, RF, 336 p.

Saushkin, Yu.G. (1973). *Ekonomicheskaya geografiya: istoriya, teoriya, metody, praktika [Economic geography: history, theory, methods, and practice]*, Mysl', Moscow, RF, 559 p.

Sokhina, E.N., & Zarhina, E.S. (1991). Ekologicheskij karkas territorii kak osnova sistemnogo normirovaniya prirodopol'zovaniya [Ecological framework of the territory as the basis for systemic regulation of environmental management]. *Problemy formirovaniya strategii prirodopol'zovaniya [Problems of forming a strategy for environmental management]*, 194-200.

Stepanova, A.N. (2019). *Znachenie vnutrennego turizma dlya razvitiya ekonomiki Altajskogo kraya [The importance of domestic tourism for the development of the economy of the Altai Territory]*. In Sbornik materialov II Mezhdunarodnoj nauchno-prakticheskoj konferencii Turizm kak faktor ustojchivogo razvitiya regiona [Tourism as a Factor in the Sustainable Development of the Region. Collection of materials from the II International Scientific and Practical Conference] (pp. 30-33). Gorno-Altaisk State University, Gorno-Altaisk, RF.

Suvorova, A.V. (2021). Prakticheskie aspekty ocenki ekonomicheskogo prostranstva [Practical aspects of assessing economic space]. *Teoreticheskaya i prikladnaya ekonomika [Theoretical and Applied Economics]*, 1, 86-98. https://doi.org/10.25136/2409-8647.2021.1.35545

Toan, T.B., Thang Qu, N., & Phuoc, T.B. (2023). Sustainable Ecotourism Development in the Context of ASEAN Economic Community Integration: The Study of Phu Yen Province, Vietnam. *Journal of System and Management Sciences*, 13, 4, 312-330. https://doi.org /10.33168/JSMS.2023.0419

Treivish, A.I. (2023). Territorial'naya struktura hozyajstva [Territorial structure of the economy]. *Nauchno-obrazovatel'nyj portal Bol'shaya Rossijskaya Enciklopediya [Big Russian Encyclopedia. Scientific and educational portal]*, 1 (58).

Vedenin, Yu.A. (2019). Predstavlenie o sushchnosti i strukture opornogo karkasa kul'turnogo prostranstva Rossii [An idea of the essence and structure of the supporting frame of the cultural space of Russia]. *Nasledie i sovremennost' [Heritage and modernity*], 2 (3), 7-23.

Vladimirov, V.V. (1982). *Rasselenie i okruzhayushchaya sreda [Settlement and environment]*, Stroyizdat, Moscow, RF, 226 p.

Zyryanov, A.I. (1995). *Landshaftnye rubezhi kontrastnosti i territorial'nye social'no-ekonomicheskie sistemy [Landscape boundaries of contrast and territorial socio-economic systems]*, Perm Publishing House, Perm, RF, 144 p.

Zyryanov, A.I. (2008). Organizaciya turizma v Permskom krae [Organization of tourism in Perm region], *Geografiya i prirodnye resursy [Geography and natural resources]*, 2, 129-136.

Article history: Received: 16.03.2024 Revised: 23.05.2024 Accepted: 17.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.849-859
DOI 10.30892/gtg.542spl09-1260

CONFRONTING UNCERTAINTY AND AMBIGUITY: THE POWER OF ORGANIZATIONAL IMMUNE SYSTEMS (AN EMPIRICAL STUDY ON MIDDLE EAST TOURISM COMPANIES)

Fatimah HAASAN*

Faculty of Business, King Khalid University, Abha, Saudi Arabia; Faculty of Commerce, Suez University, Suez, Egypt, e-mail: fmhassan@kku.edu.sa

Essa HADDADI

Faculty of Business, King Khalid University, Abha, Saudi Arabia, e-mail: essahaddadi@hotmail.com

Citation: Haasan, F., & Haddadi, E. (2024). CONFRONTING UNCERTAINTY AND AMBIGUITY: THE POWER OF ORGANIZATIONAL IMMUNE SYSTEMS (AN EMPIRICAL STUDY ON MIDDLE EAST TOURISM COMPANIES). *Geojournal of Tourism and Geosites*, 54(2spl), 849–859. https://doi.org/10.30892/gtg.542spl09-1260

Abstract: The contemporary tourism work environment faces several persistent challenges that limit its growth and competitiveness. This study examines the influence of organizational immune systems by focusing on three dimensions (organizational learning, organizational memory, and organizational DNA) on the ability of tourism companies in the Middle East to confront uncertainty and ambiguity in the tourism work environment. This study used a questionnaire and structural equation modeling (PLS-SEM) to analyze data from 438 employees in 68 tourism companies across nine countries. A comprehensive analysis of several important reports from international tourism organizations and related organizations was conducted for the sector from 2019 to the first quarter of 2024 to identify opportunities and threats. The discussions clarified the importance and impact of the dimensions of organizational immunity and their impact on enhancing the ability of tourism companies to face uncertainty, the challenges and rapid changes they face. The study also provides insights into potential opportunities and threats for companies to capitalize on. By submitting a proposal, a practical strategic development model is developed as a major contribution to this study.

Keywords: Organizational Immune System – OIS, Organizational Learning – OL, Organizational Memory – OM, Organizational DNA – ODNA, Uncertainty, Ambiguity, Middle East – ME, Tourism Companies' Ability to Confront Uncertainty and Ambiguity - TCACUA

* * * * * *

INTRODUCTION

The COVID-19 pandemic, originating in Wuhan, China in December 2019, prompted governments worldwide to implement extensive lockdown measures by February 2020 (Wu and McGoogan, 2020; Wut et al., 2022) to curb the spread of the virus (Rahman et al., 2021) and significantly impact various aspects of human life and business operations, including tourism management (Alcal´a-Ord´on˜ez and C´ardenas-Garc´ıa, 2023). These measures have resulted in unprecedented movement restrictions that have had detrimental effects on the global tourism sector (Liutikas et al., 2024; Wen et al., Yang 2021), particularly in the Middle East (ME). According to a recent survey conducted by an expert team of the UNWTO, the primary obstacle to the revival of the tourism sector is challenging economic conditions, which include elevated inflation and interest rates, rising food and oil prices, and the apprehension of a potential worldwide economic downturn (UNWTO, 2023b). Consequently, tourists adopt a more cautious approach by reducing their expenses and opting for shorter trips to destinations closer to their residences (Korinth, 2022). Furthermore, geopolitical tensions and economic fluctuations will occur (UNWTO, 2024a). Consequently, the magnitude of the difficulties tourism companies encounter in resuming growth and development has become evident (Hassan et al., 2022).

Achieving this goal is neither effortless nor complex. This will necessitate shared decision-making and the execution of novel strategies throughout the business environment to ensure that both employees and employers can adapt effectively and strategically to capitalize on global shifts. This can only occur when there is an organizational immune system (OIS) that enables companies to effectively address challenges (Liutikas et al., 2024). OIS are of great significance in the current business environment. However, despite its origin in the mid-1990s, there is a lack of research specifically focusing on the administrative aspects of this topic. This calls for further investigation to uncover all pertinent aspects. Upon comparing the present study with several prior studies, a study conducted by (Nematpour et al., 2024) examined the correlation between competitive organizational identity and developmental factors in the post-pandemic changing environment in Iran. However, this study was confined to investigating only one aspect, namely organizational identity or footprint.

The study conducted by Walsh (2023) focused exclusively on establishing a connection between organizational identity and its significance in navigating through periods of tourism crises. Similarly (Ishie and Eke, 2023) specifically investigated the correlation between corporate identity management and organizational performance. Flanagan and Phi (2023) focused on organizational learning (OL) and its function in mitigating disruptions in the tourism industry. On the

* Corresponding author

other hand, Li et al. (2023) study, on the other hand, focused solely on utilizing deep learning models to enhance the prediction accuracy of tourism demand. Jaaron et al. (2023) also provides a summary of the research on adaptive learning systems that respond effectively to threats. Similarly (Schweizer and Lagerstr¨om, 2020) study focused on connecting organizational memory (OM) and OL theories with sustainability. Finally, Farmaki (2021) specifically analyzed how OM may enhance tourist crisis management tactics.

In conclusion, it is evident that there is a need for further research on the administrative aspects of OIS. The studies conducted thus far have focused on various aspects, including organizational identity, corporate identity management, OL, and crisis management. As Mentioned earlier, the objective of this research endeavor is to strengthen the existing research gap by investigating how OL, OM, and organizational DNA (ODNA) as dimensions of OIS might improve tourism companies’ ability to confront uncertaintyand ambiguity (TCACUA). The research questions that are immediately relevant to the present investigation pertain to the study’s problem and can be articulated as follows:

RQ1: How do OIS dimensions influence TCACUA?

RQ2: How can tourist companies capitalize on the future prospects that arise from the efforts of ME countries to reinvigorate their tourism industry, potentially surpassing pre-2019 levels, while effectively managing and mitigating threats?

RQ3: How can tourist enterprises in the ME bolster their organizational resilience to confront the significant challenges posed by economic, geopolitical, and health crises? The authors aimed to develop a practical strategic development model for incorporatingOIS components into tourism companies to enhance the TCACUA.

THEORETICAL FRAMEWORK

Initially, several academics attributed the genesis of the OIS concept to two factors. The first theory pertains to organizational adaptation in response to internal and external risks that impact the organizational structure. Companies rely on adapting to and efficiently managing various dangers (Mahmood and Adel–Al-Jader, 2021). Second, the failure and insolvency of certain companies, along with the rise of significant competitors, has sparked a heightened focus on internal processes and corporate governance. This has resulted in the development of new systems that require organizations to adaptand place greater emphasis on the duties and skills of top management. Their role is to oversee various viral threats, diseases, and risks and select suitable strategies to addressthem (Simmons, 2013). Some argue that an OIS is a product of the theory of social self-production, suggesting that the system has internal mechanisms and processes that aid self-production and reproduction (Al-Badayneh, 2021). Nevertheless, the study conducted by De Geus in 1997 is widely regarded as the true starting point for discussions on the concept of OIS (Zhou et al., 2021), which refers to an organization’s efforts to adapt to its internal and external environments and protect its internal culture from external influences (Hameed et al., 2021). Although this concept is relatively new, only a small number of scholars have provided definitions for it, and even fewer have made efforts to recognize its use inside companies.

Similar to the human immune system, which comprises cells and organs that defend against external threats, such as diseases, infections, and viruses, the immune system (Xue et al., 2020) identifies and eliminates threats, making it easier to respond to them more effectively and efficiently (Huang, 2013). OIS are intricate networks of tasks and employees that protect the organization from changes. Employees, policies, procedures, processes, and culture all contribute to the formation of this barrier, which serves as a defense against external threats and changes (Al-Badayneh, 2021;Gilles, 2022).

Dimensions of Organizational Immune Systems

Various researchers have proposed different dimensions of OIS. In a study by Simmons (2013), competitive position, ODNA, natural organizational immunity, acquired organizational immunity, bench-marking, and OM were identified as the key dimensions of OIS. A study conducted by Huang (2013) identified OL, OM, and organizational knowledge as dimensions of organizational immunity. Al-Saidi (2020) noted that the dimensions of OIS can be limited to the central, specialized, and peripheral immune systems. However, several researchers have converged on a common perspective when defining the dimensions of OIS, as evidenced by various studies (Al-Tahan and Al-Hindawy, 2021; Assayah, 2020; Huang, 2013; Mahmood and Adel–Al-Jader, 2021; Xue et al., 2020; Yang et al., 2021; Zhou et al., 2021), This perspective encompasses OL, OM, and organizational ODNA. As a result, this study focuses on the dimensions most commonly accepted by researchers and most relevant to current research, namely OL, OM, and ODNA. These dimensions are examined in the following sections.

Organizational learning (OL): OL refers to an increased awareness of challenges and the discovery of solutions (Kordab et al., 2020).Van den Brink (2020) defined it as a method of managing changes and enhancing the quality of structures, cultures,and processes. Assayah (2020) defines it as encompassing individual learning, group learning, learning from others, and self-learning. OL is crucial for establishing an internal environment that supports successful forecasting and achieving organizational goals (Schönherr et al., 2023), organizational effectiveness (Meher et al., 2024), and competitive advantage through a balance between exploitation and exploration (Zhang et al., 2023), as well as responding to market challenges. Kordab et al. (2020) established that OL plays an essential role in facilitating the exchange of knowledge and influencing the enhancement of individuals’ competencies, ultimately resulting in the creation of added value for organizations and the enhancement of sustainable organizational performance (Binh, 2023). Despite the benefits of OL’s, it is crucial for organizations to consider a specific set of considerations (Rass et al., 2023). The first pertains to the indispensability of a supportive administrative team, the second pertains to the utilization and exploration of knowledge in conjunction with the organization’s endeavors, and the third pertains to managing risks and conducting experiments. The fourth aspect is associated with effective engagement with the surrounding environment, while the final aspect is concerned with the dynamics of work teams in making organizational decisions (Escandon-Barbosa and Salas-P´aramo, 2023).

Organizational Memory (OM): OM refers to the collection of past experiences and events within an organization that are utilized to achieve future benefits (Simmons, 2013). It is important to note that OM can act as both an input and an output of intellectual capital, as it serves as the foundation for cognitive development (Mahmood and Adel–Al-Jader, 2021). It is worth noting that individual memories within organizations comprise declarative and procedural memories (Miller et al., 2012). Declarative memory refers to the retention of knowledge, including factual information, organizational facts, and past experiences. Procedural memory pertains to the retention of knowledge in the form of skills and routines that can be automatically retrieved. Procedural memory is advantageous for improvising certain tasks owing to its rapid nature, whereas declarative memory is more beneficial for enabling more complex and sophisticated answers because it slows down decision-making (Miller et al., 2012).

OM refers to the collective information stored within a group of individuals. This knowledge is transient, meaning that it is temporary and subject to change. Transient memory enhances the speed of information retrieval, improves decision-making and task coordination, and fosters confidence and effective communication (Argote et al., 2021). In terms of OM at the organizational level, over time, effective activities are consistently replicated and amplified, resulting in the accumulation of a repository of exceptional experiences. Knowledge is intentionally preserved, leading to enhanced OM and reduced reliance on research (Miller et al., 2012). To maintain up-to-date memory, it is essential to regularly update knowledge, incorporate new and valuable information, and consistently maintain up-to-date memory (Aydug and Esmahan, 2023). On the other hand, memory and forgetting are interconnected concepts, although they have opposing meanings (De Jesus Ginja Antunes and Pinheiro, 2020). Organizations may experience forgetting if they fail to effectively acquire and store new knowledge in their memory or if they selectively retain certain knowledge (Van den Brink, 2020). OM plays a vital role in establishing a sustainable competitive advantage, going beyond simply storing experience, data, and information. This necessitates the seamless integration of structures, decisions, and processes within an organization’s environment (Cegarra-Navarro and Martelo-Landroguez, 2020).

OIS functions similarly to immune cells in the human body when an organ or body part experiences a specific viral impact, enabling it to recover and develop immunity against this threat. In this context, OM, which refers to the knowledge gained from prior treatments and stored solutions, functions as an organizational vaccine (Liu et al., 2020). Information gathering is used to acquire knowledge and data that aids in addressing and managing dangers and risks, as well as identifying effective alternatives that have been successful in dealing with such situations (Assayah, 2020).

Organizational Genes or Organizations DNA (ODNA): ODNA simulates human genes, embodying the distinct characteristics of each organization, setting it apart from others, and empowering it to effectively adjust to competition (Govers et al., 2024). ODNA refers to a collection of values, beliefs, cultures, and fundamental personality traits that define an organization’s identity. It is difficult for other organizations to imitate or replicate this unique combination (Abraheem, 2023). According to Lee et al. (2017), ODNA is reflected in organization’s performance and activities, resulting in a more positive outcome. Building on this definition (Elsanhawy and Badway, 2023) argue that strategic flexibility is not solely dependent on an analytical strategy focused solely on creative individuals or a particular organizational structure. Instead, it encompasses a range of administrative practices, skills, processes, and cultures that empower management to enhance and optimize organizational performance.

Furthermore, ODNA significantly influences the definition of organizations and their leadership and management responsibilities, including decision-making, organizational structure, teamwork, communication, and organizational definition (Abunaser et al., 2023). When organizations encounter difficulties in implementing strategies, they can find solutions by examining their organizational structure and decision-making authority (Guloglu et al., 2021), as well as their motives and communication channels for information flow (Lee et al., 2017).

Various factors determine an organism’s identity and personality traits. These factors, referred to as chromosomes, comprise decision-making rights, information, motives, and structures. These elements play a crucial role in determining an organization’s genes (Aamina et al., 2021; Govers et al., 2024; Hadjer and Amina, 2023).

However, the significance of ODNA is evident in assessing the present state of the organization, uncovering its strengths and weaknesses, and constructing unique organizational elements that contribute to the development of an innovative organizational culture transmitted to subsequent generations (Lee et al., 2017).

AN ANALYTICAL STUDY (ANALYSIS OF TOURISM REPORTS)

During this phase, key global reports from companies such as the World Tourism Organization (UNWTO), International Monetary Fund (IMF), World Travel & Tourism Council (WTTC), Tourism Economics (TE), World Bank (WB), and WTM were examined, spanning from 2019 to the first quarter of 2024. The objective was to address the second question: How can tourism companies leverage future opportunities arising from ME countries’ endeavors to revive their tourism sector and potentially surpass pre-2019 levels by mitigating threats and managing them efficiently?

In 2020, foreign travel decreased by 72%, making this the worst year for tourism. This led to a decline of 1.1 billion international tourists (overnight visitors), returning the number of travelers to levels seen 30 years ago (UNWTO, 2020). International tourism is expected to increase by 5% by 2021, with 22 million international tourists. However, the number of international arrivals was 71% less than that in 2019. Pre-pandemic (UNWTO, 2023b).

International tourism has started to recover physically in the latter part of 2021 owing to growing passenger trust, accelerated immunization efforts, and the relaxation of entry requirements in many locations (UNWTO, 2023b) (Figure 1).

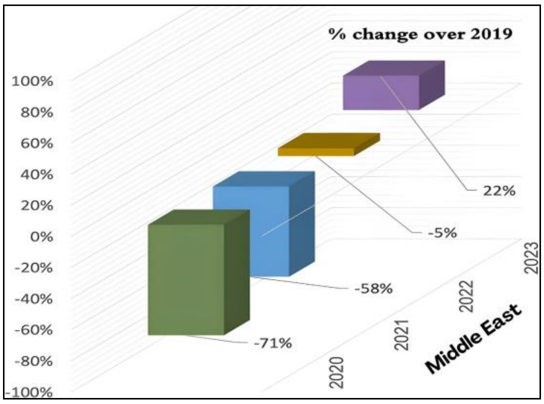


Figure 1. Global international visitors in 2021–2023 compared to 2023 (Source: this figure based on UNWTO, 2019-2024, reports)

Opportunities and strengths

Through a comprehensive analysis of various reports, it is feasible to identify several prospects that can contribute to the success of the tourism industry, provided that they are effectively utilized by tourism enterprises. These prospects encompass the following:

- The ME emerged as the leader in the rebound of the tourism industry, surpassing other regions as the only ones to reach pre-pandemic levels. According to UN tourism data from 2024, the number of arrivals in ME surpassed that in 2019 by 22%. This significant accomplishment is indicative of the region's appeal and successful tactics for revitalizing the tourism sector (TE, 2023). In 2024, the outlook for the Middle East's tourism industry is optimistic, with anticipated sustainable expansion. According to projections, the region's foreign visitor population will grow significantly in the future, solidifying its status as a prominent destination for travelers (TE, 2023). Figure 2 depicts the number of tourists by geographical region for 2021, 2022, and 2023 compared with 2019. These statistics illustrate the ME region's level of progress and dominance in attracting tourists, leaving competitors behind.

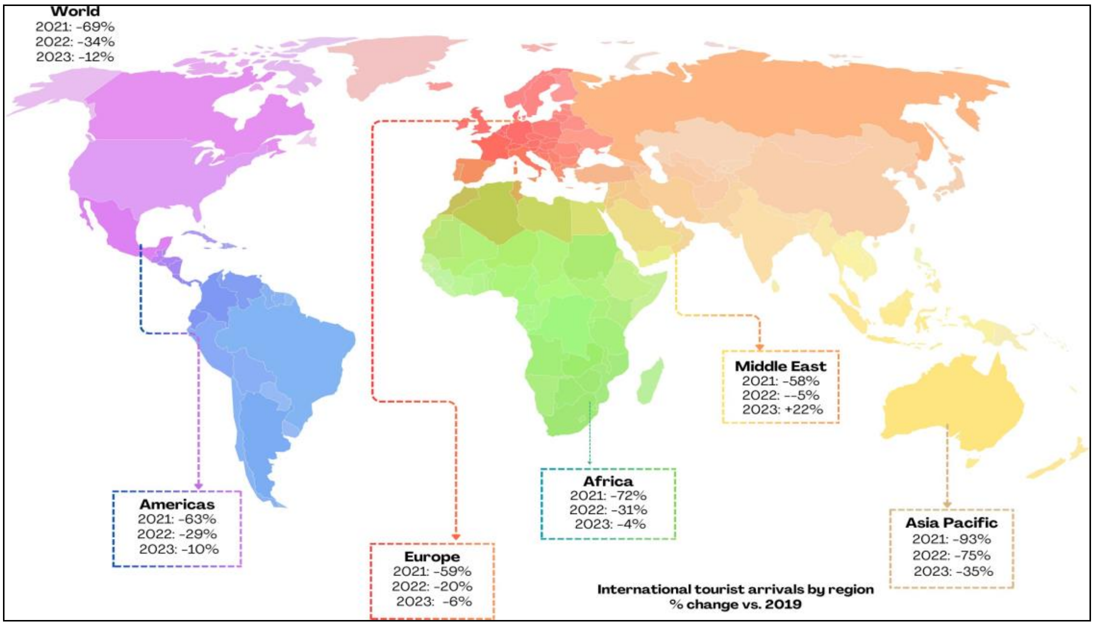


Figure 2. Regional international tourist arrivals percentage change vs. 2019 (Source: UNWTO Panel of Experts Survey, 2024)

- According to the latest UNWTO confidence indicator, there will be a higher level of optimism in 2023 than in the previous year. Specialists in Middle Eastern tourism predict that this positive outlook will continue until 2024, given the anticipated advancements and growth in the industry. This indicates the region's ability to attract and accommodate the needs of global travelers (UNWTO, 2024b) (Figure 3).
- According to the Economist Intelligence Unit (EIU, 2023b), tourism in the ME accounts for approximately 9% of the region's GDP. By 2032, the tourism sector is expected to increase at an annual average rate of 7.7%, which is significantly higher than the overall economic growth rate of 2.5%. Therefore, tourism growth is expected to provide positive economic benefits. The 2023 World Economic Forum report (WEF, 2023a) highlights the potential of the tourism industry to support regional development and job creation.

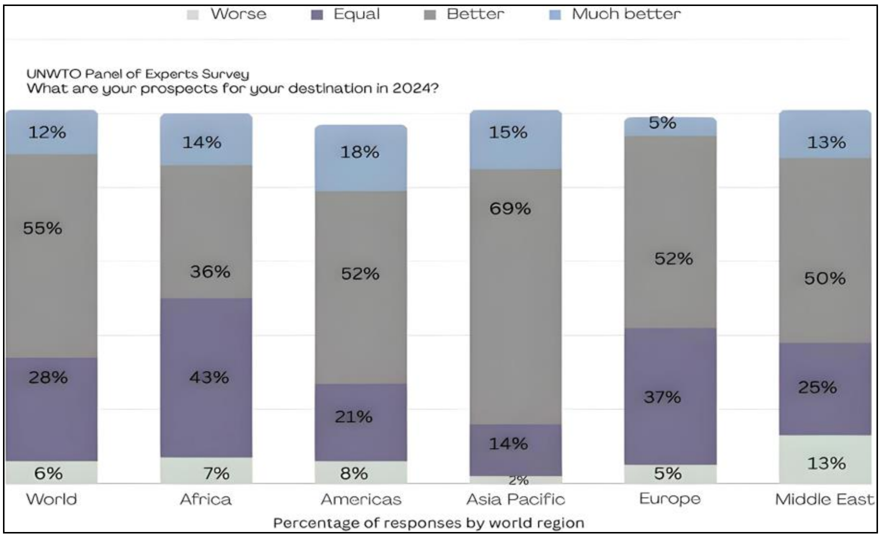


Figure 3. Regional international tourist arrivals percentage change vs. 2019 2019 (Source: UNWTO Panel of Experts Survey, 2024

- In the final quarter of 2023 and early 2024, two significant events are expected to boost tourism in the region. Qatar will host the FIFA World Cup in November and December 2022, whereas the Asian Football Cup will be scheduled for 2023. Additionally, the Kingdom of Saudi Arabia is focusing on increasing its tourism figures, including allowing international tourists to participate in annual Hajj pilgrimages (WTTC, 2023).
- To expand its presence in popular tourist destinations, the company is investingin the United Arab Emirates and the Sultanate of Oman. Furthermore, it uses effective marketing strategies to promote tourism offerings in European and Asianexport markets. The company is also prioritizing stringent health and security procedures to ensure the safety of its customers and staff in line with industrybest practices (EIU, 2023b).
- ME is seeing a growing emphasis on sustainable tourism, with governments and businesses in countries such as KSA, the UAE, Bahrain, Oman, and Jordan focusing on preserving and valuing their natural and cultural heritage (WEF, 2023b). This is reflected in the growing interest in ecotourism, health, agriculture, and adventure, which serve as sustainable tourism models in the region. These models prioritize providing unique experiences that draw inspiration from the local environment and foster mutual respect between visitors and host communities. Despite not being a new concept, sustainable tourism continues to gain attention and attract an increasing number of travelers seeking meaningful and environmentally friendly adventure activities (Colliers, 2023).
- Figure 4 shows the most notable recovery in leisure travel arrivals in 2023 compared to 2019 was observed in Saudi Arabia and the United Arab Emirates, which are two of the top destinations for entertainment spending. These countries are making significant investments in tourism infrastructure, with tourism development being a key strategic priority (TE, 2023).

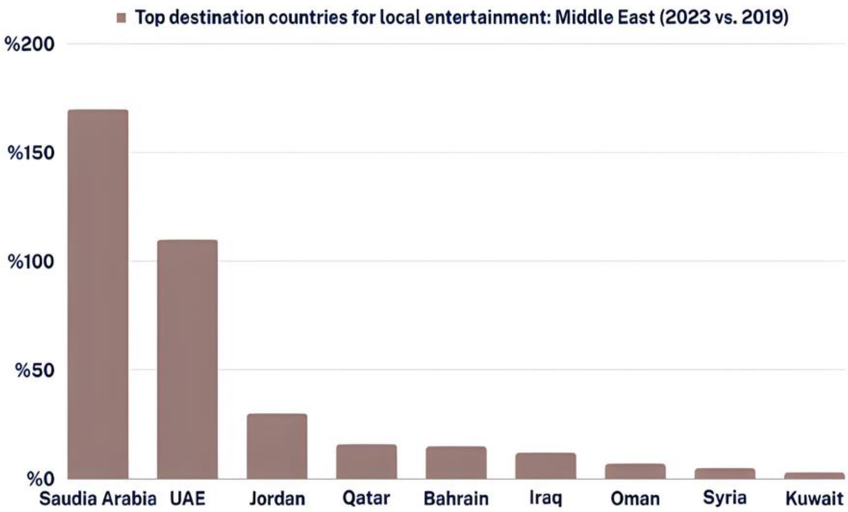


Figure 4. Countries with the best local entertainment ME (2023 vs. 2019) (Source: Tourism Economic, 2023)

Similar to its predecessor, the 2023 World Tourism Market report revealed the top entertainment destinations in ME by 2033 (TE, 2023). This information is representedin the form of bubbles, which indicate the primary countries in each region that receive the highest expenditure from leisure visitors. Bubble size corresponds to the overall market size of the leading destination in each region. Additionally, high-growth markets are represented by a constant bubble size. These rapidly expanding markets could potentially emerge as top choices for regional travel (Figure 5).

Figure 5. Top leisure destinations by region, 2033 (Source: WTM Global Travel, 2023)

Risks and obstacles

Although the tourism industry in ME is experiencing significant recovery and growth, indicating the potential of the region and its dedication to becoming a top global tourist destination (UNWTO, 2023c), it is important to acknowledge the challenges and threats that hinder the pace of tourism development. They can be identified based on the following criteria:

- In 2023 and the first quarter of 2024, there will be increased pressure on challenging economic conditions, as well as a significant decline in public financesand the balance of external payments (ILO, 2022a). This situation was even more severe than before the crisis, causing countries in the ME region to face the possibility of the prolonged impact of this crisis, potentially surpassing the effectsof the global financial crisis (WEF, 2023a).
- Based on economic projections from the World Bank for 2023 (WB, 2023), it is estimated that the gross domestic product (GDP) of the countries in the area might decrease by 12% in the next five years compared to pre-crisis trends. Thisis higher than the 9% decrease expected in emerging markets and developing economies. Furthermore, it could take over ten years to revert to the tendenciesthat existed before the crisis. This affects consumers' trust and beliefs in the market, leading to increased uncertainty and hesitation to invest.
- According to OECD (2023) estimates (WEF, 2023a), worldwide growth in 2024 isexpected to be less than that in 2023 due to increased monetary policy clarity. Given the increased monetary policy clarity, global growth in 2024 is likely to be lower than that in 2023. Nonetheless, fundamental inflation persisted.
- These risks persistently favor the negative side, and inflation may maintain a higher level of stability than initially anticipated while still acknowledging the ongoing potential for more disturbances in the energy and food markets. However, UNWTO reports (UNWTO, 2023a) indicate that the recent surge in oil prices and significant inflation has increased the costs of accommodation and transport services. This places additional strain on companies, reduces consumers' purchasing power, and hampers savings, as shown in Figure 6.

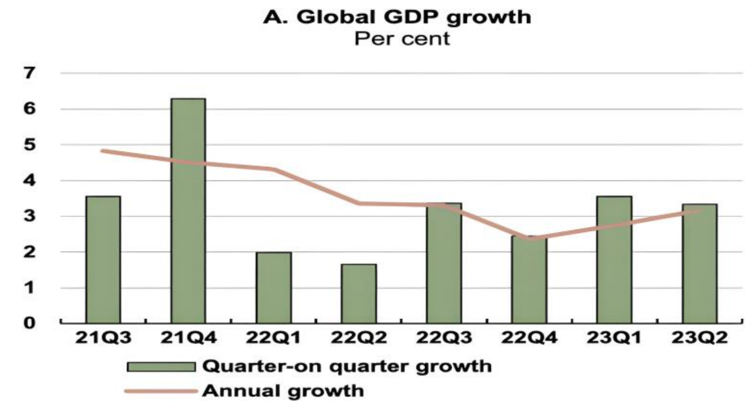


Figure 6. Global GDP growth: Source: OECD Economic Outlook, Interim Report February 2024

By 2023, GCC countries and Iraq enjoyed significant advantages over other nations, owing to changes in the global energy market. The GCC region experienced an increase in earnings from oil and gas exports, which led to growthin non-energy sectors and improved business activities (WB, 2023). The utilization of energy resources and the promotion of domestic and international tourism have contributed to economic prosperity and the development of various business ventures. However, in Lebanon, Syria, Yemen, Turkey, Iran, and Egypt, where hyperinflation or inflation rates exceeding 10% are prevalent, these nations arenot only grappling with the economic challenges posed by high prices but also face significant obstacles to economic growth and stability. Consequently, these circumstances are expected to lead to economic hardships and have a noticeable impact on the tourism sector (EIU, 2023a) (Figure 7).

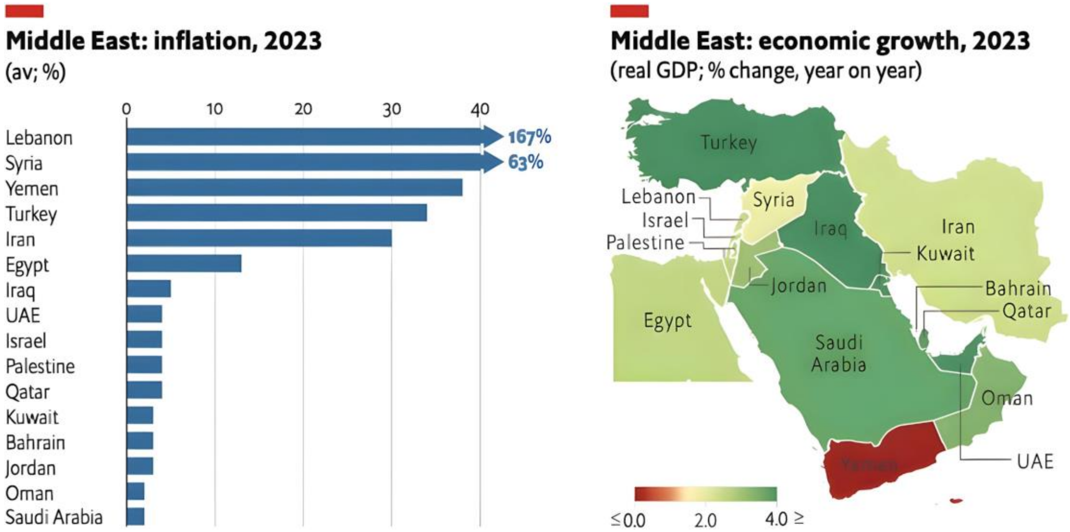


Figure 7. Middle Eastern economic growth and inflation indicators
(Source: EIU, Middle East outlook 2023, Weathering political and economic headwinds)

On the other hand, ongoing political unrest in various parts of the world, such as the conflict in Ukraine and escalating tensions in Gaza, Palestine, and Israel (UNWTO, 2023c), has had a widespread influence on the economies of member states. Other geopolitical tensions and ongoing travel restrictions due to the COVID-19 pandemic have exacerbated this situation (ILO, 2024). To a certain degree, the erosion of public trust could have a detrimental impact on public confidence and impede the revitalization of the tourism industry (Izvorski et al., 2023)

- According to (WTTC, 2023), the worldwide travel and tourism sector will experience a significant impact, with over 121 million jobs affected and a loss of $3.4 trillion in global GDP. Confronted by substantial decreases in income and unchanged expenses, many businesses have been compelled to implement furloughsor layoffs for a considerable number of employees (ILO, 2022b).
- Therefore, it is imperative to acknowledge the significance of these environmental factors. Since the middle of the twentieth century, the ME has experienced higher temperatures throughout the day and night, more frequent and intense heat waves, and a growing scarcity of water due to drought. The primary consequences of these alterations include heightened water shortages, elevations in sea levels, coral bleaching, the proliferation of algae blooms, and the intensification of extreme weather phenomena (UNWTO, 2024a).

DISCUSSION

The global pandemic has been unprecedented in recent history, resulting in substantial losses across various domains, including economic, human, social, health, and environmental. According to empirical evidence, companies that are equipped with information and have a wealth of knowledge and skills stored in their OM are better able to successfully address the challenges they face and make well-informed judgements. Furthermore, the impact of ODNA on the quality of organizational decisions was revealed through statistical analysis. This can be attributed to the fact that each organization's distinctive qualities and characteristics directly influenced its ability to handle uncertain and ambiguous situations during and beyond the pandemic. While some companies were able to effectively address the crisis, extract valuable lessons from it, and capitalize on opportunities despite the uncertain nature of the situation, others were unable to overcome these challenges. The identity of each organization played a significant role in addressing the subsequent challenges observed globally after 2019. Additionally, the researched companies demonstrated an understanding of the various organizational characteristics that form distinct ODNA. This understanding aids in identifying the crisis, market conditions, and business environment, as well as uncovering strengths and weaknesses and fostering a suitable organizational culture. To address and handle a crisis effectively, a company should enhance its internal elements, including organizational structure, skilled personnel, support from top management, and strategic flexibility.

According to the analysis reports from the International Tourism Organization and other international sources that research the state of the tourism industry in the ME before and after the pandemic. According to previous statistics, it can be concluded that the tourist sector in ME has new potential for growth. However, the success of tourism companies depends on their efforts, awareness of these opportunities, and ability to make the most of them. Upon analyzing the data from these studies, it is evident that countries in the ME are expediting their progress and exerting significant efforts to It is essential for companies to recognize that the dimensions of OIS support the continuous flow of unique human resources within the company. In the event of swiftly restoring their economic activity.

This has created numerous prospects for growth in this sector. Hence, companies must strive to enhance their performance and bolster their capacity to accurately forecast the future, fortify their defensive capabilities against hazards or risks, augment their cognitive perception, adaptable mindset, strategic consciousness, sensitivity towards the internal and external milieu, and proactively anticipate changes. To answer the last study question about how to improve the OIS of tourism companies in the Middle East so they can better handle economic, geopolitical, and health-related problems, we suggest a useful strategic development model that uses OIS features to help tourism companies deal with uncertain and unpredictable situations. This model in Figure (8) outlines the primary strategy, sub-strategies, and necessary methods and means to strengthen companies' resilience in response to the evolving environment and increasing threats to the tourism industry.

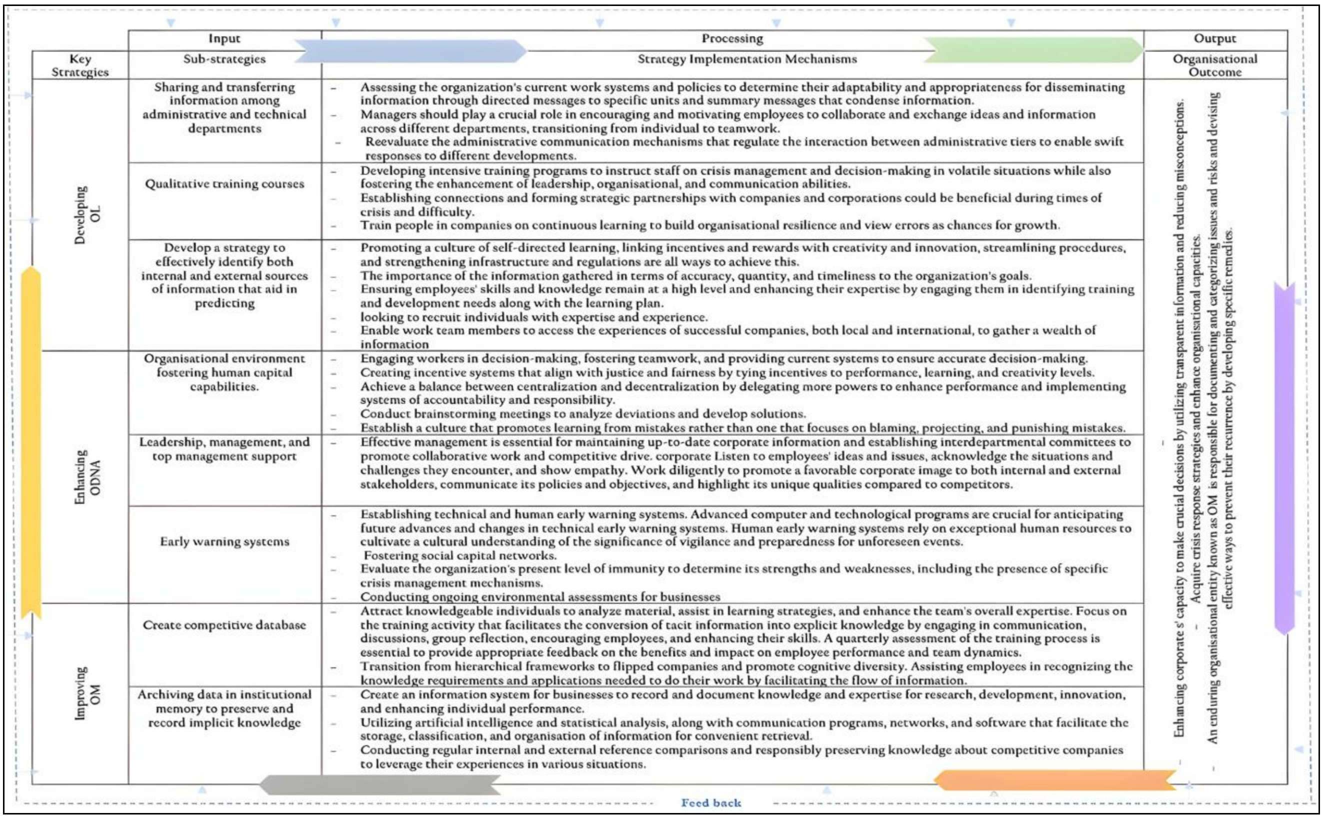


Figure 8. The Practical Strategic Development Model

Theoretical Implications

The current study has significant implications for researchers and academics, asit introduces an administrative concept and complements the findings of previousstudies. This study utilized a conceptual model to investigate the impact of OIS onthe ability of tourism companies to deal with uncertain and ambiguous situations. Asa result, this study offers an updated and comprehensive definition that highlights the organizational effects of OIS. Our findings indicate that it is essential to address OIS as a comprehensive approach within the business environment. This approach not only demonstrates the organization's capacity to handle challenges and crises but also its ability to anticipate future events.

To achieve this, a comprehensive vision must be developed that encompasses all internal processes, including those related to organizational structure and culture, communication, information systems, and decision-making, based on the three main dimensions (OL, OM, and ODNA), which serve as guiding principles for developing suitable ways to address situations characterized by uncertainty, ambiguity, crises, and organizational risks.

It is worth noting that the previous definition was derived from various administrative theories, focusing on their role in facilitating organizational flexibility and adaptability. This is achieved by influencing the organization's decisions and outcomes through ongoing assessment, modification, and evaluation. Hence, the theory of adaptation can be relied upon. Alternatively, if we acknowledge that these systems depend on previous experience and knowledge to address obstacles and provide new information required for structural interaction, they are not independent of their surroundings; thus, they rely on social exchange theory. This theory suggests that social contact among employees, involving the sharing of knowledge and the development of mutual trust, can enhance the system throughout the organization.

Managerial Implications

An organizational disaster or environmental virus, the initial harm suffered is the deterioration of the cultural and social fabric. This gives rise to the emergence of organizational migration of human capital organizational migration and, at times, the need to engage in incorrect and disruptive practices to restore the status quo.Therefore, it is crucial for companies to establish efficient channels or strategies for employees to provide feedback and strengthen the connections between management and work teams. By actively seeking input from employees, companies can fostertrust and beliefs that contribute to the development of robust ODNA. This enables companies to address and overcome issues effectively.

However, managers of tourist companies must understand that the key to survival and dealing with crises is to have a well-organized force that can consistently offer innovative solutions that adapt to changes and mitigate risks. This can be achieved by integrating and combining the various dimensions of an OIS in an interactive and mutually reinforcing manner. These systems enable companies to provide organizational, human, informational, and strategic assistance.

Therefore, the formation of a crisis team that encompasses a wide range of cognitive abilities is essential for ensuring a comprehensiveperspective. Such personnel effectively enhance TCACUA.

Ultimately, this study presents a practical strategic development model for managers of tourist companies. It focuses on the influence of OIS on improving skills and boosting performance.

CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH

This scientific work aimed to investigate the influence of OIS, specifically OL, OM, and ODNA, on TCACUA enhancement. We consider the significance of the tourism industry and its promising prospects in the Middle East, following the challenges it faced in 2019 and subsequent events. This prompted the authors to further investigate OIS, which is a comprehensive approach that improves an organization's capacity to address the challenges and crises it encounters. To substantiate this claim, we examined the feedback provided by the selection of tourism establishments in countries located in the ME using SmartPLS 4 software. Furthermore, it was subjected to further analysis. Global reports on the tourism industry in the ME concerning the circumstances preceding and following the COVID-19 pandemic.

Although the authors of this study made an effort to be comprehensive in their research, some limitations may be future contributions for researchers. Future studies should examine several limitations. The analysis of the reports only included Middle Eastern countries, which makes the study possible to be extrapolated to other countries around the world or expanded to include different sectors, such as manufacturing, universities, and banking services.

The OIS dimension hampers the ability of tourism companies to deal with uncertain and ambiguous situations in the period before and after the pandemic (2019 Q1 2024). This represents opportunities for future research to explore the relationship between OIS dimensions and various organizational factors, such as organizational sustainability, critical success factors, strategic leadership, and strategic business alignment.

Recently, the development of digital OIS technology has come to the fore in contemporary research, providing an opportunity to integrate it with artificial intelligence and communications technology.

Disclosure statement

The author declares that they have no affiliations with or involvement in any organization or entity with any financial interest in the subject matter or materials discussed inthis manuscript.

Author Contributions: Conceptualization, F.M. and E.H.; methodology, F.M.; software, E.H.; validation, F.M and E.S. ; formal analysis, F.M. ; investigation, F.M. ; data curation, F.M. ; writing - original draft preparation, F.M. and E.S.; writing - review and editing, F.M.; visualization, E.S. ; supervision, F.M. ; project administration, F.M. All authors have read and agreed to the published version of the manuscript.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCE

Aamina, M., Hadjer, D., & Amina, M. (2021). The influence of organizational DNA on the quality of healthcare services-an empirical study in the university hospital center of Sidi-Belabbas. *Economics and Sustainable Development Review*, *4*, 322-338. https://tinyurl.com/yrvaf2z2

Abraheem, M.K. (2023). Dynamic DNA: The three elements of organizational agility are entrepreneurial orientation, competitive intelligence, and strategic flexibility. *Int. J.Stud. Bus. Manag. Econ. Strateg*, *2*, 27-50. https://tinyurl.com/ 2db2avod

Abunaser, F.M., Al-Ani, W.T., Al-Housni, H.A., & Abunaser, F. (2023). Understanding academic loyalty and organizational immunity in higher education institutions: Faculty perspective introduction. *Journal of Namibian Studies*, *35*, 434-461. https://orcid.org/0000-0001-6354-4214

Al-Badayneh, G. (2021, 3). The impact of strategic awareness on enhancing organizational immunity system: An applied study on jordanian food manufacturing companies. *International Review of Management and Marketing*, *11*, 47-58. https://doi.org/10.32479/irmm.11239

Alejandro Alcalá-Ordóñez, J.G.B., & Cárdenas-García, P.J. (2023). Has the tourism-led growth hypothesis been confirmed? evidence from an updated literaturereview. *Current Issues in Tourism*, 1–37. https://doi.org/10.1080/13683500.2023.2272730

Al-Saidi, M. (2020). Building an organizational immune system scale system components and functions. *PalArch́s Journal of Archaeology of Egypt/Egyptology*, *17*, 14969-14992. https://archives.palarch.nl/index.php/jae/ article/view/5732

Al-Tahan, R.S.H., & Al-Hindawy, Z.A.U.A. (2021). The effect of organizationalhealth on strengthening organizational immune systems : An exploratory study of the opinions of a sample of doctors in imam zain al-abidin "be upon him" hospital in the holy city of Karbala. *Journal of Statistics and Management Systems*, *24*, 809-815. https://doi.org/10.1080/09720510.2020.1860505

Argote, L., Lee, S., & Park, J. (2021). Organizational learning processes and outcomes: Major findings and future research directions. *Management science*, *67* (9), 5399–5429. https://doi.org/10.1287/mnsc.2020.3693

Assayah, A.A.M. (2020). Organizational Immunity and its Effect on Strategic Technological Change Options A Field Study at Jordanian Industrial Companies Listed in Amman Stock Exchange. *Academy of Strategic Management Journal*, 19(5), 1-10. https://tinyurl.com/ypb8flwp

Aydug, D., & Esmahan, A. (2023). The mediation role of intentional organizational forgetting in the relationship between organizational learning and innovation management. *Journal of Workplace Learning*, *35* (1), 17–34. https://doi.org/10.1108/JWL-10-2021-0129

Binh, C.T., Quan, V.D.H., & Anh, D.B.H. (2023). A Case Study on the Relationship between Organizational Culture, Knowledge Sharing and Job Performance of Bank Employees. *Journal of Logistics, Informatics and Service Science*, *10*(2), 125-137. https://doi.org/10.33168/JLISS.2023.0209

Cegarra-Navarro, J.G., & Martelo-Landroguez, S. (2020). The effect of organizational memory on organizational agility: Testing the role of counter-knowledge and knowledge application. *Journal of Intellectual Capital*, *21*, 459-479. https://doi.org/10.1108/JIC-03-2019-0048

Colliers. (2023). EWAA Tourism III (Trends, Impacts, and the Future of EWAA). https://www.colliers.com/en-sa/research/ewaa-tourism-iii

De Jesus Ginja Antunes, H., & Pinheiro, P.G. (2020, 4). Linking knowledge management, organizational learning and memory. *Journal of Innovation and Knowledge*, *5*, 140-149. https://doi.org/10.1016/j.jik.2019.04.002

EIU. (2023a). *Middle east outlook 2023.* EIU: Economist Intelligence Unit. https://tinyurl.com/23qk9cq8

EIU. (2023b). *Tourism outlook 2023 turbulence in the travel industry*. EIU: EconomistIntelligence Unit. https://tinyurl.com/2baggclz

Elsanhawy, K.E.Y., & Badway, S.M. (2023). The impact of organizational DNA on corporate agility and sustainability-a field study on the egyptian petroleum sector (oil & gas companies). *Journal of Business*, *11* (2), 115–128. https://doi.org/10.12691/jbms-11-2-3

Escandon-Barbosa, D., & Salas-Pâramo, J. (2023). The role of informal institutions in the relationship between innovation and organisational learning in export performance: A bidirectional relation? *Asia Pacific Management Review*, *28* (2), 185–193. https://doi.org/10.1016/j.apmrv.2022.08.001

Farmaki, A. (2021). Memory and forgetfulness in tourism crisis research. *Tourism Management, 83,* 104210. https://doi.org/10.1016/j.tourman.2020.104210

Flanagan, C., & Phi, G.T. (2023). Employee learning in tourism experiences during covid-19: a community of practice perspective. *Current Issues in Tourism*, 1-15. https://doi.org/10.1080/13683500.2023.2231126

Gilles, M. (2022). "A force created": The us chamber of commerce and the politics of corporate immunity. DePaul L. Rev., 72, 139. https://larc.cardozo.yu.edu/faculty-articles/574

Govers, M., Gifford, R., Westra, D., & Mur-Veeman, I. (2024). Toward a theory of organizational DNA: Routines, principles, and beliefs (rpbs) for successful and sustainable organizational change. In J. L. Hefner, D. A. Cross, & P. D. Shay (Eds.), 22, 77-95, Emerald Publishing Limited. https:// doi.org/10.1108/S1474-823120240000022004

Guloglu, E., Bekmezci, M., Rehman, W.U., Jalil, F., & Sheikh, L. (2021). The impact of teachers' perceptions on organizational DNA to organizational commitment. *Multicultural Education*, *7*. https://doi.org/10.5281/ zenodo.5550655

Hadjer, D., & Amina, M. (2023). The use of organizational DNA in discriminating innovative organizations (case study of private Algerian enterprises). *Journal of Contemporary Business and Economic Studies* , 6(02), 247-260. https://doi.org/10.12816/0050878

Hameed, A., Kalkawi, K.A., Qasim, Z.N., Al, K., Zahraa, K., & Qasim, N. (2021). The impact of the knowledge management processes in the organizational immune systems a survey study for sample of the opinions of the higher and middle administrations in the company of Asia cell Iraq- Maysan province. *Al-Qadisiyah Journal for Administrative and Economic Sciences*, *23*, 29-42. .https://doi.org/10.33916/23.1.2021/29-42

Hassan, T.H., Salem, A.E., Abdelmoaty, M.A., & Saleh, M.I. (2022). Renewing The Ecotourism Investments' strategies in The Kingdom of Saudi Arabia: Social Exchange Theory Prospects. *Geo Journal of Tourism and Geosites*, *45*, 1661-1673. https://doi.org/10.30892/gtg.454spl16-987

Huang, J.J. (2013). Organizational knowledge, learning and memory – a perspective of an immune system. *Knowledge Management Research & Practice*, *11* (3), 230–240. https://doi.org/10.1057/kmrp.2011.48

ILO. (2022a). *The future of work in the tourism sector: Sustainable and safe recovery and decent work in the context of the covid-19 pandemic.* The International Labour Organization (ILO) Geneva, Switzerland. https://tinyurl.com/25w4pbrw

ILO. (2022b). *Technical meeting on covid-19 and sustainable recovery in the tourism sector.* https://tinyurl.com/27g7acxk

ILO. (2024). *Application of international labour standards 2024*. https://tinyurl.com/2y7nbblu

Ishie, P.O., & Eke, H.O. (2023). Corporate identity management: A panacea for organisational performance of hotels in rivers state. *GPH-International Journal of Business Management*, *6* , 140-158. https://doi.org/10.5281/zenodo.8318043

Izvorski, I., Lokshin, M., Norfleet, J.R.R., Singer, D., & Torre, I. (2023). *Europe and central Asia economic update, spring 2023: Weak growth, high inflation, and acost-of-living crisis*. World Bank Publications. https://doi.org/10.1596/978-1-4648-1982-7

Jaaron, A.A.M., Pham, D.T., & Cogonon, M.E. (2023). Systems thinking to facilitate "double loop" learning in tourism industry: a covid-19 response strategy. *Journal of Sustainable Tourism*, *31* , 1032-1050. https://doi.org/ 10.1080/09669582.2021.1948554

Kordab, M., Raudeliu¯niene˙, J., & Meidute˙-Kavaliauskiene˙, I. (2020). Mediating role of knowledge management in the relationship between organizational learning and sustainable organizational performance. *Sustainability (Switzerland)*, *12*, 1-20. https://doi.org/10.3390/su122310061

Korinth, B. (2022). Impact of the COVID-19 pandemic on international tourism incomein tourism receiving countries. *Sustainability*, *14*, 12550. https:// doi.org/10.3390/su141912550

Lee, K., Kim, Y., & Joshi, K. (2017). Organizational memory and new product development performance: Investigating the role of organizational ambidexterity. *Technological Forecasting and Social Change*, *120*, 117–129. https://doi.org/10.1016/j.techfore.2016.12.016

Li, M., Zhang, C., Wang, S., & Sun, S. (2023). Multi-scale analysis-driven tourismforecasting: insights from the peri-covid-19. *Current Issues in Tourism*, *26* , 32313254. https://doi.org/10.1080/13683500.2022.2144151

Liu, Q., Hu, H., & Guo, Y. (2020). Organizational quality specific immune maturity evaluation based on continuous interval number medium operator, *Symmetry*, *12*. https://doi.org/10.3390/SYM12060918

Liutikas, D., Kriauˇciunas, E., Baranauskiene, V., & Pociute-Sereikiene, G. (2024). Post-covid-19 era: Possibilities for responsible tourism. S.W. Maingi, V.G.B. Gowreesunkar, & M.E. Korstanje, 171-194, *Springer Nature Switzerland*. https://doi.org/10.1007/978-3-031-45866-8 10

Mahmood, Z.K., & Adel–Al-Jader, S. (2021). Servant leadership and their impact in organizational immune system: Analytical research. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, *12* , 3961-3973. https://doi.org/10.47059/revistageintec.v11i3.1974

Meher, J.R., Nayak, L., Mishra, R.K., & Patel, G. (2024). Impact of organizationallearning culture on organizational effectiveness: a serial mediation analysis with knowledge sharing and employee competencies. *VINE Journal of Information and Knowledge Management Systems*, *54*, 324-338. https://doi.org/ 10.1108/VJIKMS-10-2021-0230

Miller, K.D., Pentland, B.T., & Choi, S. (2012). Dynamics of performing and remembering organizational routines. *Journal of Management Studies*, *49* (8), 1536–1558. https://doi.org/10.1111/j.1467-6486.2012.01062.x

Nematpour, M., Khodadadi, M., Makian, S., & Ghaffari, M. (2024). Developinga competitive and sustainable model for the future of a destination: Iran's tourism competitiveness. *International Journal of Hospitality & Tourism Administration*, *25* , 92-124. https://doi.org/10.1080/15256480.2022.2081279

Rahman, M.K., Gazi, A.I., Bhuiyan, M.A., & Rahaman, A. (2021). Effect of covid-19 pandemic on tourist travel risk and management perceptions. *PLOS ONE* ,*16* . https://doi.org/10.1371/journal.pone.0256486

Rass, L., Treur, J., Kucharska, W., & Wiewiora, A. (2023). Adaptive dynamical systems modeling of transformational organizational change with a focus on organizational culture and organizational learning. *Cognitive Systems Research*, *79*, 85-108. .https://doi.org/10.1016/j.cogsys.2023.01.004

Schweizer, R., & Lagerström, K. (2020). "Wag the dog" initiatives and the corporate immune system. *Multinational Business Review*, *28*, 109-127. https://doi.org/10.1108/MBR-07-2019-0059

Schönherr, S., Eller, R., Kallmuenzer, A., & Peters, M. (2023). Organizational learning and sustainable tourism: The enabling role of digital transformation. *Journal ofKnowledge Management*, *27*, 82-100. https://doi.org/10.1108/ jkm-06-2022-0434

Simmons, O.S. (2013). The corporate immune system: Governance from the inside out. *U. Ill. L. Rev.*, 1131. https://ssrn.com/abstract=2263552

TE. (2023). *WTM global travel report in association with tourism economics*. https://tinyurl.com/22xukefn

UNWTO. (2020). *Unwto world tourism barometer.* https://www.eunwto.org/toc/wtobarometereng/18/7

UNWTO. (2023a). *Impact assessment of the covid-19 outbreak on international tourism.* https://tinyurl.com/23hza239

UNWTO. (2023b). *International tourism and covid-19.* https:// www.unwto.org/tourism-data/international-tourism-and-covid-19

UNWTO. (2023c). *UNWTO world tourism barometer.* https://www.eunwto.org/toc/wtobarometereng/21/4

UNWTO. (2024a). *International tourism to reach pre-pandemic levels in 2024.* www.unwto.org/market-intelligence.

UNWTO. (2024b, 1). *World tourism barometer.* https://doi.org/10.18111/wtobarometereng

Van den Brink, M. (2020, 5). "Reinventing the wheel over and over again". organizational learning, memory and forgetting in doing diversity work. *Equality, Diversity and Inclusion*, *39*, 379-393. https://doi.org/10.1108/ EDI-10-2019-0249

WB. (2023). *Impacts of the conflict in the middle east on the Palestinian economy*. https://tinyurl.com/2c9d7bnt

WEF. (2023a). *How the Middle East is striving to lead the way in sustainable tourism*. https://tinyurl.com/23hza239

WEF. (2023b). *Putting skills first opportunities for building efficient and equitable labour markets.* https://tinyurl.com/2c3rs8ag

Wen, J., Kozak, M., Yang, S., & Liu, F. (2021). Covid-19: potential effects on Chinese citizens' lifestyle and travel. *Tourism Review*, *76* (1), 74–87. .https://doi.org/10.1108/tr-03-2020-0110

WTTC.(2023).*The economic impact of travel & tourism.* https://wttc.org/research/economic-impact

Wu, Z., & McGoogan, J.M. (2020). Characteristics of and important lessons from the coronavirus disease 2019 (covid-19) outbreak in China: summary of a report of 72 314 cases from the chinese center for disease control and prevention. *Jama*, *323* (13), 1239–1242. https://doi.org/10.1001/jama.2020.2648

Xue, L., Qiang, L., Bing, L., & Yu, G. (2020). Influence mechanism of organizational quality acquired immune on quality performance based on immune perspective. *Accounting and Corporate Management*, *2*, 42-55. https://doi.org/0.23977/acccm.2020.020104

Wut, T.M., Ng, M.L.P., Lee, S.W., & Xu, J.B. (2022). Tourists' travel Behaviour After COVID-19. *Geo Journal of Tourism and Geosites*, *41*(2), 387-392. https://doi.org/10.30892/gtg.41207-841

Yang, X., Guo, Y., Liu, Q., & Zhang, D. (2021). Empirical evaluation on the effect of enterprise quality immune response based on EMIBSGTD-TAS. *Journal of Intelligent &Fuzzy Systems*, *40* (6), 11587–11606. .https://doi.org/10.3233/ jifs-202794

Zhang, X., Chu, Z., Ren, L., & Xing, J. (2023). Open innovation and sustainable competitive advantage: The role of organizational learning. *Technological Forecasting and Social Change*, *186* , 122114. https://doi.org/10.1016/ j.techfore.2022.122114

Zhou, B., Liu, Q., Guo, Y., & Cheng, C. (2021). Evaluation of immune system health of quality improvement teams in manufacturing enterprises. *Accounting andCorporate Management*, *3*, 13-18. https://doi.org/10.23977/acccm.2021.030103

Article history: Received: 26.03.2024 Revised: 24.05.2024 Accepted: 17.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.860-871
DOI 10.30892/gtg.542spl10-1261

FACTORS AFFECTING MILLENNIAL GENERATION'S INTENTION TO CHOOSE SPIRITUAL TOURISM IN VIETNAM: THE MEDIATING ROLE OF ATTITUDE AND MOTIVATION

Hoang Thi THAM
Thuongmai University, Faculty of Political Theory, Hanoi, Vietnam, e-mail: hoangtham@tmu.edu.vn

Bui Thi Quynh TRANG*
Thuongmai University, Faculty of Hospitality & Tourism, Administration and Business in Services, Tourism and Hospitality Research Group, Hanoi, Vietnam, e-mail: trang.btq@tmu.edu.vn

Vu Thi Hong PHUONG
Thuongmai University, Faculty of Economics, Hanoi, Vietnam, e-mail: phuong.vth@tmu.edu.vn

Kieu Thu HUONG
Thuongmai University, Faculty of Hospitality & Tourism, Administration and Business in Services, Tourism and Hospitality Research Group, Hanoi, Vietnam, e-mail: huong.kt@tmu.edu.vn

Citation: Tham, H.T., Trang, B.T.Q., Phuong, V.T.H., & Huong, K.T. (2024). FACTORS AFFECTING MILLENNIAL GENERATION'S INTENTION TO CHOOSE SPIRITUAL TOURISM IN VIETNAM: THE MEDIATING ROLE OF ATTITUDE AND MOTIVATION. *Geojournal of Tourism and Geosites*, 54(2spl), 860–871. https://doi.org/10.30892/gtg.542spl10-1261

Abstract: The study focuses on analyzing factors that influence the Millennial generation's intention to choose spiritual tourism and determining the mediating role of attitude and motivation in this relationship. Based on the theory of planned behavior, theories of motivation and basic human value theory, the study has identified 3 factors: Tourism destination image, spiritual belief and reference groups influence the Millennial generation's intention to choose spiritual tourism. A survey based on a sample of 287 domestic and international tourists of the Millennial generation participating in travel experiences at spiritual tourist destinations in Vietnam. After collecting data, SmartPLS software is used to test the relationships of the research model. Research results show that all three factors influence the Millennial generation's intention to travel spiritually and confirm the mediating role of attitude and motivation in this relationship.

Keywords: Attitude, travel motivation, spiritual tourism, intention, behavior, JEL classification: A14, M30, N30

* * * * * *

INTRODUCTION

According to Baker (2003), spirituality is a psychological aspect that exists in each person that helps find the meaning and purpose of life. It provides direction for the journey to find answers to life-oriented questions. Spiritual factors are proven to have a significant, positive impact on human health and spirit, thereby improving quality of life (Adegbolam, 2006; Counted et al., 2018; Koenig, 2012; Vitorino et al., 2018). Spiritual tourism is a type of tourism carried out to understand oneself and discover the meaning of life (Sirirat, 2019); At the same time, it connects with the supreme spirit and enriches spiritual values in life (Singh, 2009; Bone, 2013; Sharpley, 2011; Ivona and Privitera, 2019; Buzinde, 2020).

Mannell (2007) argues that the pressures of life and work have also motivated people to seek spirituality, heal their spirits, build good relationships, control their emotions, and control their health and improve themselves. The Millennial generation (Gen Y) is an ambitious generation, always wanting to do something new or break a record that was previously unattainable. They are not afraid to work hard to overcome challenges. This can have a negative impact on human psychology. However, according to Tudorache et al. (2019), Gen Y is also considered to be able to balance work and life in a sustainable way. According to Quintal et al. (2016), Tangsupwattana and Liu (2017), Husnain et al. (2019), Gen Y is the most promising, most vibrant consumer segment and is an economically dynamic market segment of the tourism industry, they have a desire to explore the spiritual world and experience different cultures. Gen Y members have high incomes and greater discretionary spending power (Chen and Chou, 2019; Gardiner et al., 2014). The rapid pace of development as well as the emergence of new trends has led to a drastic change in the behavior of Gen Y. Therefore, this group has become a key research segment for marketers (Bilgihan, 2016).

Currently, researchers around the world have been studying factors that can help develop spiritual tourism. A number of studies have been conducted on different aspects such as emphasizing spiritual tourism as a small part but a different product from religious tourism (Sirirat, 2019); research on the relationship between the attractiveness of spiritual tourism destinations with tourist satisfaction and intention to return (Timothy and Olsen, 2006; Chi and Qu, 2008; Um et al., 2006); attract spiritual tourists by building an attractive brand and image for spiritual tourism (Beerli and Martin, 2004; Phukan et al., 2012). When researching factors influencing spiritual tourism intention, Kumar et al. (2022)

* Corresponding author

conducted an overview of empirical articles on spiritual tourism and adopted the method of interpretive structural modeling (Interpretive Structural Modeling – ISM) to identify influencing factors including destination image, tourist spirituality, infrastructure, accessibility, destination costs, entertainment facilities, religious management, etc. Thus, each study has unique significance in determining concepts, components and factors affecting spiritual tourism intention. However, approaches based on theories of motivation, the theory of planned behavior (TPB) or value theory are still missing in the above studies. Therefore, the objective of this study is based on the integration of the theory of planned behavior, theories of motivation and basic human value theories to identify factors affecting Millennial generation's intention to choose spiritual tourism and the mediating role of attitude and motivation in this relationship. The research context was conducted at typical spiritual tourism destinations in Vietnam.

LITERATURE REVIEW

1. Theory related to travel behavioral intention

Theory of planned behavior

According to Eck and Gebauer (2022), behavioral intentions predict the likelihood of an individual's future actions. To express the relationship between beliefs and behavior, Ajzen's (1991) theory of Planned Behavior (TPB) was used, and also explains issues related to human behavior. This is a theory in the field of psychology and behavioral science that studies how people plan and control their behavior. TPB theory was developed from the Theory of Reasoned Action (TRA) of (Ajzen, 1991). TPB theory expands TRA theory by stating that behavioral intention is influenced by three factors: attitude toward the behavior, subjective norm, and perceived behavioral control. With the addition of the variable of perceived behavioral control, TPB theory has proven its value and effectiveness in a series of psychological studies related to human behavior. Attitude toward a behavior is influenced by two factors: a person's beliefs about the effects and results if performing the behavior and that person's assessment of the effects (Ajzen,1991).

Subjective norms are understood as an individual's perceptions and are influenced by beliefs and normative reasons or motivations to listen to social influences (Ajzen and Fishbein, 1975). Perceived behavioral control is an individual's perception of internal or external controls that govern behavior in a specific situation (Ajzen, 1991).

Theory of motivation

According to Grbac et al. (2013), the nature of behavioral intention is the result of the motivational process. A tourist is an individual consumer considered in psychological aspects, such as motivation, emotions and lifestyle (Decrop, 2006). In particular, motivation is considered as the reason, psychological cause, motivation and purpose to direct tourists' actions in a certain direction (Mlozi et al., 2013). Theory of motivation (Dunne et al., 2007) and motivation model (Crompton, 1979) are the most widely used approaches with two groups of factors: push motivation and pull motivation.

Motivation is significant in explaining the desire to travel, representing internal factors or emotional factors. According to Yoon and Uysal (2005), push factors include escape from the present, rest and relaxation, health and fitness, adventure and social interaction, spiritual belief, spending time with family and finding other joys,..

Motive pull explains the act of choosing a destination or type of travel. Pull motives include extrinsic factors related to natural and historical attractions, cuisine, people, recreational facilities, and destination image (Hyde, 2008; Swarbrooke and Horner, 2007) and reference group (Jalilvand et al., 2013).

2. Theory of value structure and content and characteristics of the Millennial generation

Since the birth of social science, “value” has been one of the important and core concepts in many fields such as society, psychology or other related fields. The theory of of value structure and content (Schwartz ,1992), suggests that within each person there can be 10 basic values, expressing the person's aspirational goals and behavioral motivations in life, including: Self-direction, Stimulation, Hedonism, Achievement, Power, Security, Conformity, Tradition, Benevolence and Universalism. These ten values represent four main, opposing aspects of the human value system including: Openness to change, Conservation, and Self- enhancement and self-transcendence.

To date, there are many different approaches to determining the human generation cycle. Inglehart's (1977) generational cohort theory has become a tool for dividing dominant customer groups because individuals belonging to a particular group will exhibit similar values, preferences, and experiences (Parment, 2013; Ladhari et al., 2019). Among the identified generation groups, studies often focus on Gen Y because, according to Glover (2010), Gen Y is an important consumer group in tourism because of their size and purchasing power, and their Y genes' values and behaviors may differ from the values and behaviors of previous generations. According to Lub (2013), Ordun (2015), Khera and Malik (2017), Messarra et al. (2016) identified Gen Y as individuals born after 1980. While another group of researchers suggested that Gen Y was identified in the late 1970s (Quintal et al., 2016; Dalla Pozza et al., 2017). However, such differences in timelines are acceptable given the common differences between countries and cultures (Soares et al., 2018). In this study, based on the proposal of Dalla Pozza et al. (2017), Cham et al. (2018), Chen and Chou (2019), Husnain et al. (2019), Gen Y is defined as individuals born between 1977 and 1994. Based on the theory of basic human values (Schwartz, 1992), Y gene characteristics are expressed as follows:

Regarding openness to change, Gen Y is a generation that is autonomous in thought and action, likes to seek new things, and wants to experience life's challenges (Schwartz, 2012). Therefore, in tourism, Gen Y often loves to travel, often has a desire to explore the world and experience different spiritual cultures.

Regarding conservation, Gen Y always focuses on personal and family safety; know how to find ways to balance life, respect traditions; maintain traditional values and ways of thinking, religious rituals etc. (Schwartz, 2012). Therefore, Gen

Y always has spiritual belief and always looks to tourist destinations to help control emotions and reduce stress. Regarding self-enhancement, Gen Y has been proven by the scientific community to be the most curious workforce today. They always want to learn and acquire new knowledge and skills in life and work, always like to explore and learn, are not afraid to set lofty goals and make constant efforts to achieve them (Schwartz, 2012). Generation Y also attaches great importance to building a better spiritual life for themselves and their families. This is what motivates them to set big financial or career goals. Regarding self-transcendence, according to Schwartz (2012), Gen Y knows how to listen and accept the opinions of others even when they do not agree with them, proactively absorb and learn. According to Pendergast (2009), the development of information and communication technology, one of the events that marked the rise of Gen Y, has created an increasingly wide gap between Gen Y and its values, characteristics of the previous generation.

3. Spiritual tourism and factors affecting the Millennial generation's intention to choose spiritual tourism

3.1. Spiritual tourism

Spiritual tourism is considered a type of tourism characterized by the intentional search for spiritual benefits that coincide with religious activities (Norman, 2014). Several studies on pilgrimage and religious tourism have been conducted under the term “spiritual tourism” (Messarra et al., 2016; Sharpley and Sundaram, 2005). While in some cases, tourist activities may not correspond to any religious activities and thus there is a separation of religious pilgrimage tourism from spiritual tourism (Norman, 2014). Spiritual tourism is considered a journey to a sacred site or temple for the purpose of spiritual development, which is important for an individual's beliefs or faith (Jesurajan and Prabhu, 2012). Spirituality is elusive (Coyle, 2002; Narayanasamy, 2014; Lepherd, 2015), whereby those who engage in religious and spiritual experiences reflect more positive lifestyles than others (Vishkin et al., 2019; Manning et al., 2019; Sulphey, 2020).

According to Haq and Medhekar (2016), Serrallonga (2018), Zsolnai and Flanagan (2019), spiritual tourism is considered a type of cultural tourism that focuses on thinking deeply about life and integrating body, mind and spirit together. It is described as traveling to a specific place or area for spiritual gain without any religious motive. It can also be explained as a type of tourism that is primarily aimed at achieving spiritual experiences. Spiritual tourism can be considered a broad term that includes tangible spiritual assets (mosques, churches, temples, shrines, monasteries, cathedrals, mountains, deserts, lakes, etc.) and intangible spiritual aspects (events, festivals, meetings, rituals, prayers...) (Cheer et al., 2017; Güzel and Sariyildiz, 2019; Ivona and Privitera, 2019).

3.2. Factors affecting the Millennial generation's intention to choose spiritual tourism

Currently, researchers have mentioned many factors that influence the intention to choose spiritual tourism (Kumar et al., 2022). However, to select appropriate influencing factors for the scope of the research, the article focusing on the Millennial generation will be conducted based on the following two bases:

(1), The research will integrate two TPB theories (Ajzen, 1991) and the theory of motivation (Dunne et al., 2007; Crompton, 1979) to identify factors that affect the intention to choose spiritual tourism.

(2), These factors will be placed in the context of value theory (Schwartz, 1992) to screen and select factors that match the value characteristics and behavioral motivations of the Millennial generation.

Thus, with 2 bases used as the basis for selecting groups of influencing factors, the study has identified 3 groups of factors influencing the intention to choose spiritual tourism, including destination image, spiritual belief and reference group.

First, destination image affects the attitudes and spiritual tourism motivations of the Millennial generation

Spiritual tourism is a hot topic of interest to academics. The role of marketing in this area will be to attract and motivate spiritual tourists by building an attractive brand and image for spiritual tourism (Beerli and Martin, 2004; Phukan et al., 2012; Le et al., 2023). Heritage buildings have been shown to be a source of spiritual inspiration for tourists (Willson and McIntosh, 2013). Spirituality is felt more in places with a rich cultural and heritage history (Kumar, 2019; Piewdang et al., 2013). Costs incurred when traveling are one of the important factors affecting tourist behavior (Nicolau and Más, 2006; Seyidov and Adomaitienė, 2017). Destination costs will impact tourists' decision-making attitudes regarding factors such as activities undertaken, length of stay, and costs incurred during the trip. This will either motivate or demotivate the spiritual traveler to undertake a journey. Community potential and cooperation are also one of the main characteristics to build the image of a spiritual tourism destination (Kuralbayev et al., 2017). Spirituality is often associated with positive well-being (Lifshitz et al., 2019). Relaxation, entertainment, and safety activities at the destination will tend to have a positive impact in reducing tourists' stress levels (Dowson, 2016; Moal-Ulvoas, 2016). Accessibility, infrastructure at the destination and travel attitudes and motivations are interconnected (Kumar et al., 2022). An accessible destination will appeal to travelers eager to enjoy their time traveling and seeking tranquility to escape mental chaos.

H1: Destination image has a positive impact on the attitude towards spiritual tourism of the Millennial generation

H2: Destination image has a positive impact on the Millennial generation's spiritual tourism motivation

Second, spiritual belief affects the attitudes and spiritual tourism motivations of the Millennial generation

For tourists, spiritual belief is especially meaningful and brings value to their spiritual life (Güzel and Sariyildiz, 2019). They are always attracted to different places or areas for spiritual reasons, motives or experiences. They are excited and eager to explore, search, and visit spiritual landscapes and remote, deserted areas (Smith et al., 2010; Haq and Wong, 2010). According to Abdul Halim et al. (2021), spiritual beliefs related to health, healing, and spiritual transformation are among the first important factors that cause an individual to embark on a spiritual journey. Spiritual journeys and spiritual connections or experiences can occur before, during and after a journey or visit. Spiritual belief can originate from the religion an individual follows, family traditions or local living customs. Individuals and groups of travelers with spiritual belief have the tendency and motivation to learn about different cultures, customs, beliefs, and religions; wanting to meet and interact with native people (Norman, 2014; Palmer, 2014); change their daily routine, participate in spiritual festivals, rituals and ceremonies; make life simple, easy to control emotions and achieve peace of mind and mental satisfaction; solve the problems; understand the illness, misfortune, and loss of loved ones; aware of one's own humanitarian and spiritual needs (Di Giovine and Choe, 2019)

H3: Spiritual belief has a positive impact on attitudes toward spiritual tourism of the Millennial generation

H4: Spiritual belief has a positive impact on the millennial generation's spiritual travel motivation

Third, reference group affects the attitudes and spiritual tourism motivations of the Millennial generation. People tend to follow their reference group consciously or subconsciously (Fernandes and Londhe, 2015). A person may have their own spiritual interests or because reference group influences tourist behavior. Families with elders with high spiritual intelligence tend to go on such trips with their families - including young children even though, at their age, they may not be spiritually awakened. Stress is a modern concept and even young children are affected by stress (Kleber, 2019; Lodha, 2018). Research by Munar and Jacobsen (2014), on the influence of information shared through media networks has a strong impact on tourists' attitudes and motivations. Kar et al., 2024 show that social networks are a mediating environment to help individuals receive and evaluate the experiences of people with travel experience. That means tourists are influenced by the information they receive through the process of absorbing experiences from reference group.

H5: Reference group has a positive impact on attitudes toward spiritual tourism of the Millennial generation

H6: Reference group has a positive impact on the Millennial generation's spiritual travel motivation.

Fourth, spiritual tourism attitudes and motivations affect the attitudes and spiritual tourism motivations of the Millennial generation.The relationship between attitude and behavioral intention has been mentioned in the TPB (Ajzen, 1991). According to researchers Di Pietro et al., 2012, the influence of attitude on choice intention is the most basic relationship in theoretical models of behavior. Recent studies also show the influence at many different levels of attitudes on travel choice intentions and plans.

H7: Attitude towards spiritual tourism has a positive impact on the intention to choose spiritual tourism of the Millennial generation

According to Munar and Jacobsen, 2014; Levitt et al., 2019 motivation is also the most important factor in studies on behavioral intentions in the field of tourism. According to Levitt et al. (2019), the level of motivation to participate in travel ranges from low, medium and high, the average group has the highest rate of participation in travel experiences. Furthermore, highly motivated tourists are willing to choose travel based on the availability of related activities. Seyanont (2017) believes that both push and pull factors influence tourists' intentions. According to Valeri (2023), it has been proven that a motivated spiritual tourist will be more inclined to consume spiritual tourism.

H8: Spiritual travel motivation has a positive impact on the Millennial generation's intention to choose spiritual tourism

Fifth, the mediating role of spiritual tourism attitudes and motivations in the relationship between tourism destination image, spiritual belief and reference group on the intention to choose spiritual tourism of the Millennial generation

According to content analysis of theories related to travel behavioral intentions, it has been shown that the intention to choose spiritual tourism is the result of attitudes toward spiritual tourism and motivation to perform spiritual tourism. In particular, according to Haq and Wong, 2010 tourism destination image includes resources, events, activities and spiritual journeys that act as catalysts in forming the intention to choose tourism. spiritual tourism by influencing tourists' cognitive attitudes and spiritual tourism motivations. Besides, spiritual belief also changes consumers' consumption patterns (Skousgaard, 2006). It regulates cognitive attitudes and motivates performance. A person with low spiritual belief may not feel motivated to undertake spiritual tourism (Norman, 2014; Palmer, 2014). According to Decrop (2006); Woodside and MacDonald (1994), influences from reference group have an important impact on each individual's perception of subjective norms, thereby creating spillovers and influencing attitudes. In addition, information shared through different media channels has a strong impact on tourists' motivation and behavioral intentions. Kainthola et al. (2024) through phenomenological analysis of interviews, the authors pointed out motivating factors such as spiritual beliefs and curiosity formed from information sources. References have formed the motivation of spiritual tourists and it is shown more clearly in their intention to choose spiritual tourism throughout the journey.

Thus, with the above analysis and the integration between two TPB theories (Ajzen, 1991) and motivation theory (Dunne et al., 2007; Crompton, 1979), 3 groups of factors have been shown: Destination image, spiritual belief and reference group influence the intention to choose spiritual tourism through cognitive attitudes about spiritual tourism and spiritual tourism motivation. Therefore, the study sets out two hypotheses as follows:

H9a,b,c: Attitude towards spiritual tourism plays a mediating role in transmitting the positive influence from tourism destination image, spiritual belief and reference group on the intention to choose spiritual tourism of the Millennial generation

H10a,b,c: Spiritual tourism motivation plays a mediating role in transmitting the positive influence from tourism destination image, spiritual belief and reference group on the world's intention to choose spiritual tourism of the Millennial generation. The proposed research framework is as follows Figure 1.

RESEARCH METHODS

1. Research context

Spiritual tourism is one of the popular types in Vietnam. Up to now, there are 18,491 temples, monasteries, meditation monasteries, retreats, Buddhist halls, and monasteries in Vietnam. Nearly 8,000 festivals take place across all regions of the country (of which 88.4% are folk festivals, 4.2% are historical festivals and 6.8% are religious and belief festivals) and more than 44,000 places, landscapes and historical relics, of which more than half are places that exploit the spiritual tourism model. The abundance of spiritual tourism destinations has created popular types of spiritual tourism in Vietnam, such as sightseeing activities, sightseeing at religious sites such as temples, pagodas, etc.

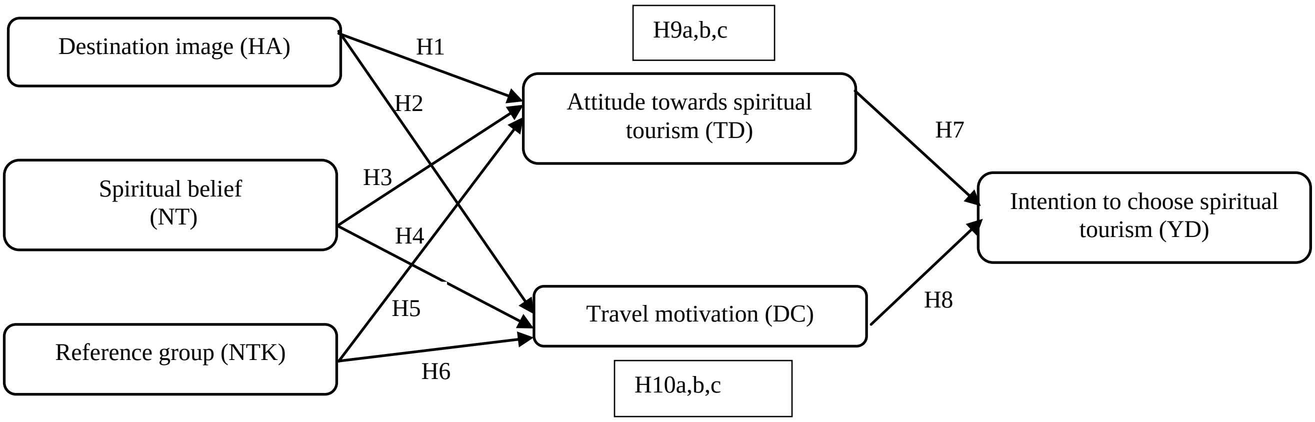


Figure 1. Model of factors affecting the Millennial generation's intention to choose spiritual tourism

Sightseeing activities that combine worship, prayer and other types of spiritual tourism have doctrinal goals to help people become more relaxed in their souls, thereby improving their health and leading a comfortable life. In Vietnam, spiritual tourism destinations are widely distributed throughout the country. However, the spatial scope of the research will be limited to typical spiritual tourist destinations in three geographical regions of Vietnam, specifically, the research focuses on understanding and surveying in Ninh Binh in the North. The Central region is typical with Da Nang spiritual tourist destination and the Southern region is typical with An Giang spiritual tourist destination. There are two reasons why the research team chose the typical spiritual tourism destinations mentioned above. First, these are destinations with rich spiritual tourism resources with systems of temples, pagodas, etc.; festivals, landscapes, and historical sites. Second, these destinations all attract a large number of domestic and foreign spiritual tourists to visit. Thus, based on the characteristics of spiritual tourism resources and the number of annual tourists, the study selected three typical tourist destinations Ninh Binh, Da Nang and An Giang representing the three regions of North, Central and South of Vietnam to carry out investigations and surveys.

2. Questionnaire design

In order to collect analytical data, a questionnaire was built with 21 scales inherited and developed from previous reputable research works. Most of the scales used in the questionnaire were inherited from foreign studies, so in order to check their suitability and ensure reliability, the research team consulted with 15 experts and researchers in the field of social sciences and tourism. In addition, the team conducted a test survey on 50 samples to calibrate the wording in the questionnaire to ensure clarity and ease of understanding. After comments from experts and feedback from respondents, some question items were revised and the questionnaire was completed with a 3-part structure: (i) introducing the purpose of the questionnaire; (ii) content of questions and (iii) demographic information. The Likert scale is used with 5 levels (level 1: completely disagree, level 5: completely agree).

3. Collecting data

Research participants are international and domestic tourists of the Millennial generation who intend to choose spiritual tourism at spiritual tourism destinations in Vietnam. A purposive non-random sampling method was used and the data collection period lasted 8 months from January 2023 to August 2023. A total of 300 surveys were distributed using both online formats. Directly and indirectly through the Google Forms application, the total number of valid questionnaires collected from the two survey forms was 287, reaching a rate of 79.3% (Table 1). Data after collection are processed through Smart PLS software version 4.0.9.2.

Table 1. Descriptive statistics of the study sample *(*Source: Compiled by the research team)

Characteristic	Indicator	Frequency	Percentage (%)
Gender	Male	113	39.37
	Female	174	60.63
Age	29 - 34 years old	67	23.34
	35 - 40 years old	91	31.71
	41- 46 years old	129	44.95
Income	Under 10 million VND	28	9.76
	From 10 to 15 million VND	74	25.78
	From 15 to 20 million VND	81	28.22
	Above 20 million VND	104	36.24

RESEARCH RESULTS

1. Evaluating the measurement model

First, the authors estimated convergence through the factor loadings of each factor and the Cronbach's Alpha coefficient

(CA), composite reliability (CR) and Average Variance Extracted (AVE) of each variable. The results of evaluating the outcome measurement model are shown in the figure (Figure 2) and statistical table below.

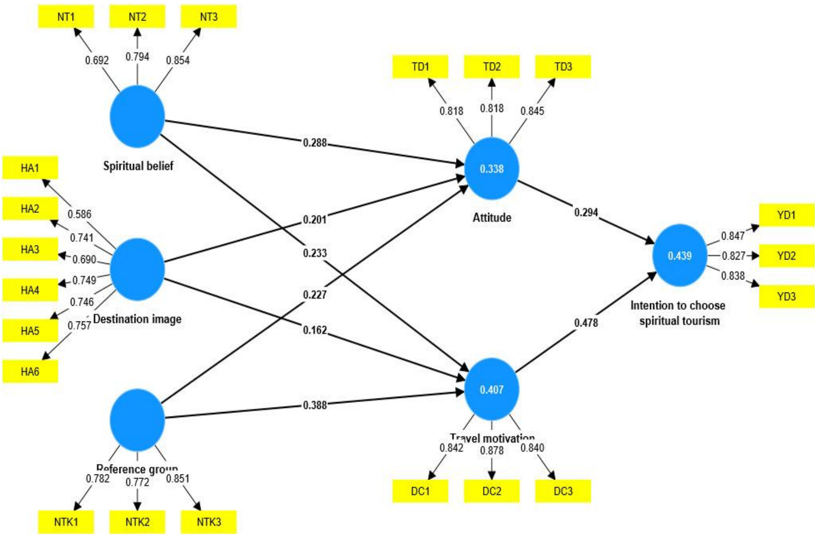


Figure 2. Results of estimating the reflective measurement model (Source: SmartPLS analysis results of the research team)

1.1. Assessing internal consistency reliability

The data analysis results below reflect internal consistency reliability (Table 2). Reliability indices through Cronbach's Alpha coefficient and composite reliability coefficient of latent concepts are all within the threshold recommended by Hair et al. (2019), the lowest is also 0.687 and the highest is 0.890. Thus, the measurement model of this study achieved internal consistency reliability when both alpha coefficient and composite reliability met the requirements.

Table 2. Results of internal consistency reliability assessment (Source: SmartPLS analysis results of the research team)

	Cronbach's alpha	**Composite reliability (rho_a)**	**Composite reliability (rho_c)**
Destination image	0.806	0.817	0.861
Reference group	0.722	0.724	0.844
Spiritual belief	0.687	0.723	0.825
Attitude towards spiritual tourism	0.770	0.775	0.867
Intention to choose spiritual tourism	0.787	0.792	0.875
Travel motivation	0.814	0.818	0.890

1.2. Evaluating convergence

The results of the extracted variance of each variable are shown through the index of convergent validity (represented by the AVE values of the latent concepts all > 0.5) which are good (Table 3). These indexes range from the value 0.510 to the value 0.729, all greater than 0.5 and meeting the condition of convergent validity. Thus, the scales in the model with the official sample achieve the necessary convergence accuracy.

Table 3. Results of average extraction variance analysis (Source: SmartPLS analysis results of the research team)

	Average variance extracted (AVE)
Destination image	0.510
Reference group	0.644
Spiritual belief	0.613
Attitude towards spiritual tourism	0.684
Travel motivation	0.729
Intention to choose spiritual tourism	0.701

Table 4. Evaluating the discriminant validity using Fornell and Larcker criteria (Source: SmartPLS analysis results of the research team)

	Destination image	Reference group	Spiritual belief	Attitude towards spiritual tourism	Intention to choose spiritual tourism	Travel motivation
Destination image	**0.714**					
Reference group	0.499	**0.802**				
Spiritual belief	0.582	0.388	**0.783**			
Attitude towards spiritual tourism	0.482	0.439	0.493	**0.827**		
Intention to choose spiritual tourism	0.551	0.593	0.536	0.506	**0.837**	
Travel motivation	0.491	0.559	0.477	0.446	0.609	**0.854**

1.3. Evaluating the discriminant validity

The Table 4 shows that the discriminant values for the four constructs all achieved discrimination because the square roots of the AVEs (main diagonal in bold) were higher than the off-diagonal correlations (rows and columns). For example, for the construct "Spiritual belief" the square root of AVE = 0.783, higher than the correlation values in its column (0.493, 0.536 and 0.477) and also higher in the same row (0.582 and 0.388). Similar to other latent structures, the main diagonal value also meets the requirements. In addition, according to Garson (2016), the discriminant value between two related latent constructs is proven when the HTMT coefficient < 1. Besides, according to Henseler et al. (2015), the value of the HTMT coefficient must be lower than 0.850. The Table 5 below shows that the HTMT coefficient of each structure has a value lower than 0.850 (the highest value is only 0.850 < 0.9). Therefore, discriminant validity criteria were established for HTMT. In summary, from the above results, the authors concluded that the scales used in the research model have achieved very good internal consistency reliability, convergence and discriminant validity. Therefore, all six scales of these latent constructs were used for analysis in the structural equation model.

Table 5. Evaluating the discriminant validity using HTMT criteria (Source: SmartPLS analysis results of the research team)

	Destination image	Reference group	Spiritual belief	Attitude towards spiritual tourism	Intention to choose spiritual tourism	Travel motivation
Destination image						
Reference group	0.643					
Spiritual belief	0.820	0.549				
Attitude towards spiritual tourism	0.594	0.589	0.653			
Intention to choose spiritual tourism	0.683	0.785	0.731	0.641		
Travel motivation	0.597	0.729	0.614	0.565	0.751	

2. Evaluating the SEM structural model

The results table shows that all direct relationships between variables are statistically significant and all research hypotheses are accepted at 95% confidence level (The P-value of all relationships is lower than 0.05) (Figure 3). This shows that all main effects in the model are confirmed to be statistically significant.

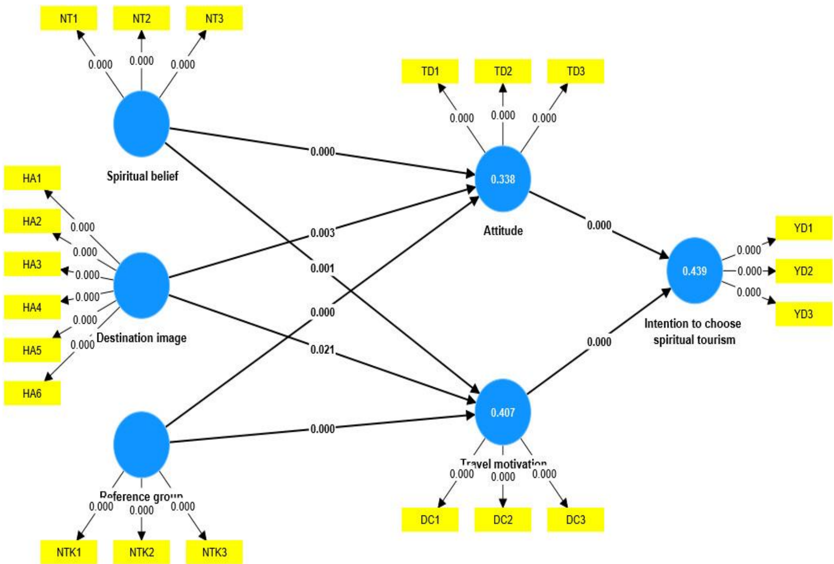


Figure 3. SEM structural model estimation results

In addition to the R2 coefficient to evaluate the endogenous structure, the change in the R2 value when an exogenous variable is removed, expressed through Cohen's impact measure (called the f^2 impact coefficient) (Table 6), also used to evaluate how important the removed variable is compared to the endogenous variable.

Table 6. SEM structural model estimation results (Source: SmartPLS analysis results of the research team)

	Structural path coefficient	**Standard deviation**	**Significance level (P values)**	**Conclusion Hypothesis**	**Value f^2**	**Degree of influence**
Destination image -> Attitude towards spiritual tourism	0.201	0.067	0.003	Accept	0.035	Small influence
Destination image -> Travel motivation	0.162	0.070	0.021	Accept	0.025	Small influence
Reference group -> Attitude towards spiritual tourism	0.227	0.062	0.000	Accept	0.057	Small influence
Reference group -> Travel motivation	0.388	0.057	0.000	Accept	0.187	Average influence
Spiritual belief -> Attitude towards spiritual tourism	0.288	0.067	0.000	Accept	0.081	Small influence
Spiritual belief -> Travel motivation	0.233	0.069	0.001	Accept	0.059	Small influence
Attitude towards spiritual tourism -> Intention to choose spiritual tourism	0.294	0.057	0.000	Accept	0.123	Small influence
Travel motivation -> Intention to choose spiritual tourism	0.478	0.059	0.000	Accept	0.326	Average influence

Table 7. Assessing model quality through the R-square index (Source: SmartPLS analysis results of the research team)

	R-square	**R-square adjusted**
Attitude towards spiritual tourism	0.338	0.331
Intention to choose spiritual tourism	0.439	0.435
Travel motivation	0.407	0.401

If the value $0.15 > f^2 \geq 0.02$, it proves that the exogenous variable has a small impact on the endogenous variable; $0.35 > f^2 \geq 0.15$ proves that the exogenous variable has a medium impact on the endogenous variable and if $f^2 \geq 0.35$ proves that the exogenous variable has a large impact on the endogenous variable (Cohen, 1988). If $f^2 < 0.02$, it is considered to have no impact (Table 7).

Table 8. Multicollinearity test results – external model

	VIF
HA1	1.366
HA2	1.637
HA3	1.566
HA4	2.084
HA5	2.236
HA6	1.796
NT1	1.254
NT2	1.387
NT3	1.421
NTK1	1.424
NTK2	1.349
NTK3	1.644
DC2	1.916
DC3	2.097
DC1	1.597
TD1	1.446
TD2	1.679
TD3	1.683
YD1	1.594
YD2	1.670
YD3	1.691

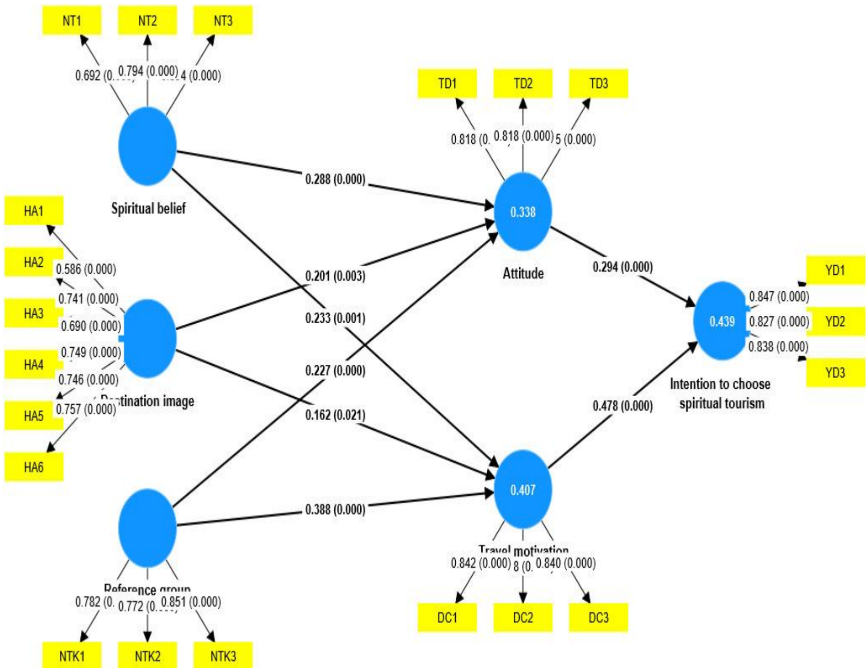


Figure 4. SEM model with intermediate variables

Table 9. Results of multicollinearity testing - internal model (Source: SmartPLS analysis results of the research team)

	Destination image	**Reference group**	**Spiritual belief**	**Attitude towards spiritual tourism**	**Intention to choose spiritual tourism**	**Travel motivation**
Destination image				1.744		1.744
Reference group				1.357		1.357
Spiritual belief				1.542		1.542
Attitude towards spiritual tourism					1.248	
Intention to choose spiritual tourism						
Travel motivation					1.248	

Checking multicollinearity

The results show that the variance magnification factor VIF indicates the association between the predictors does not violate the assumption of multicollinearity: Multicollinearity test results – external model (Table 8) and results of multicollinearity testing - internal model (Table 9). Because all coefficients are within the acceptable range, the value of the VIF coefficient is lower than 3, so the structural model does not occur (Hair et al., 2019). Thus, the research model does not have multicollinearity phenomenon.

3. Analyzing the role of intermediate variables

Intermediate variables play a very important role and appear commonly in studies using SEM models. This is considered a variable that transmits the impact from the explanatory variable to the dependent variable. This transmission contributes to explaining the nature of the cause-and-effect relationship between destination image, spiritual belief, reference group and motivation, travel attitudes and intention to choose spiritual tourism (Figure 4).

Results from Table 10 show that all indirect effects of the structural model are statistically significant (P-values are lower than 0.05). This result, when combined with the results of estimating direct relationships (Table 6), is statistically significant (P-value is lower than 0.05), this demonstrates that there is a partial mediating effect in the structural model. Besides, both direct and indirect effects are in the same direction (shown by the path coefficients of both Table 6 and Table 10, which have positive signs). From there, it can be concluded that the mediating effect of the model in this study is an additional partial mediating effect. This suggests that there may be additional potential mediating variables in the structural model, although they may convey less impact from destination image, spiritual belief, and reference group on intention to choose spiritual tourism. Considering each pair of mediating variables, it can be seen that motivation for the intention to choose spiritual tourism plays a more prominent mediating role than attitude towards the intention to choose spiritual tourism on all 3 links from destination image, spiritual belief and reference group to intention to choose spiritual tourism. This implies that motivation is the catalyst that conveys a stronger impact on the intention to choose spiritual tourism. However, the contribution of attitude to the intention to choose spiritual tourism is also significant on average with VAF values always higher than 25% (Table 10).

Table 10. Estimation results in the structural model with intermediate variables (Source: SmartPLS analysis results of the research team)

Mediating relationship	Path coefficient	T-statistic	Significance level (P values)	VAF value %	Conclusion about intermediate effect
Spiritual belief→ Attitude towards spiritual tourism→ Intention to choose spiritual tourism	0.085	3.336	0.001	43.4	Additional mediating effect
Destination image→ Attitude towards spiritual tourism→ Intention to choose spiritual tourism	0.059	2.564	0.010	43.4%	Additional mediating effect
Destination image → Travel motivation → Intention to choose spiritual tourism	0.077	2.164	0.031	56.6	Additional mediating effect
Reference group → Attitude towards spiritual tourism → Intention to choose spiritual tourism	0.067	2.722	0.007	26.6	Additional mediating effect
Reference group → Travel motivation → Intention to choose spiritual tourism	0.185	5.139	0.000	73.4	Additional mediating effect
Niềm tin tâm linh → Travel motivation → Intention to choose spiritual tourism	0.111	3.055	0.002	56.6	Additional mediating effect

DISCUSSION AND IMPLICATIONS

Based on the literature review, the study has integrated theories of planned behavior, motivation theory and basic human value theory to identify and test a model with 3 independent variables: Destination image, spiritual belief and reference group. By applying SmartPLS software in data processing, research results show that all three factors of all have an influence on attitudes, motivation and intention to choose spiritual tourism, in which the reference group has the strongest influence in relation to motivation and intention to travel with the highest structural path coefficient of 0.388 and in the relationship with spiritual travel attitudes and intentions, spiritual belief has the strongest influence with a structural path coefficient of 0.288. The study also identified the mediating role of travel attitudes and motivations in the relationship of the three factors with the Millennial generation's intention to choose spiritual travel. This result contributes to providing empirical evidence on the influence of factors on spiritual travel choices of the Millennial generation in Vietnam. The research team's findings have important theoretical and practical implications, consistent with many researchers Phukan et al. (2012); Kumar et al.(2022).

Theoretical implications

Our research has developed the original TPB theoretical model, which includes three main components: behavioral attitudes, subjective norms, and behavioral control by further integrating motivation theory and adding Personality traits of the Millennial generation. Therefore, it develops new components for measuring the influence on tourists' behavioral intentions. In addition, the article also tests the mediating role of attitude and motivation in the influence relationship of destination image, spiritual beliefs and reference groups on the intention to choose spiritual tourism by applying use Smartpls SEM.

Managerial implications

In Vietnam, the number of spiritual tourists is increasing, accounting for a large proportion of the overall tourist structure. Spiritual tourism and needs are increasingly diverse, not only limited to the framework of activities associated with religion but increasingly expanding to spiritual activities, national beliefs and other sacred elements. Spiritual tourism activities are increasingly proactive and in-depth and have become an indispensable need in the spiritual life of generations, especially for the Millennial generation with the aim of finding balance in life, control emotions and reduce stress. Therefore, to receive positive attitudes and motivation to perform spiritual tourism behavior from tourists, spiritual destinations need to diversify spiritual tourism products and improve the quality of tourism products, investment and upgrading of infrastructure, availability of services to enhance the image of spiritual tourism destinations. At the same time, spiritual destination management agencies need to research and evaluate issues of tourists' attitudes, motivations, behaviors, and experience expectations to take measures to maintain and enhance tourists' spirituality, thereby creating reference group and public opinion groups to stimulate tourists' motivation to choose spiritual tourism. Besides, there needs to be policies, strategies and marketing programs applied and implemented to increase the flow of spiritual tourists; Establish advertising and PR programs and apply them to each specific destination to improve the development capacity of spiritual tourism.

CONCLUSION AND NEW RESEARCH DIRECTIONS

This study is one of the first studies to investigate the influence of factors on the Millennial generation's intention to choose spiritual tourism and test the mediating role of attitudes and motivations in the relationship. The relationship between that factor and the Millennial generation's intention to choose spiritual tourism is based on the integration of 3 theories of planned behavior, motivation theory and basic human value theory. The study proposed a research model based on common perception and previous studies.

Although the study has important findings, there are still some limitations. *First*, this study was conducted using a purposive non-random sampling method, so the results are subjective, reducing its objectivity and generalization. Furthermore, the scope of the research was only conducted at 3 typical spiritual tourist destinations in 3 regions of Vietnam, so the experimental results only allow for some short-term conclusions and implications. *Second*, the study did not test the differences in the influence of factors on the attitudes and motivations of international tourists and domestic tourists with the intention of choosing spiritual tourism. Therefore, this may be a new research direction in the future.

Author Contributions: Conceptualization, B.T.Q.T and H.T.T; methodology, B.T.Q.T and H.T.T; software, V.T.H.P and K.T.H; validation, B.T.Q.T and K.T.H; formal analysis, B.T.Q.T and H.T.T; investigation, H.T.T, V.T.H.P and K.T.H.; data curation, B.T.Q.T and H.T.T.; writing - original draft preparation, B.T.Q.T and H.T.T.; writing - review and editing, B.T.Q.T; visualization, B.T.Q.T and H.T.T.; supervision, B.T.Q.T and V.T.H.P; project administration, B.T.Q.T and H.T.T. All authors have read and agreed to the published version of the manuscript.

Funding: This research is funded by Thuongmai University, Hanoi, Vietnam.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Abdul Halim, M.S., Tatoglu, E., & Mohamad Hanefar, S.B. (2021). A review of spiritual tourism: A conceptual model for future research. *Tourism and Hospitality Management*, 27(1). 119-141. http://doi.org/10.20867/thm.27.1.8

Adegbolam M. (2006). Spirituality and Quality of Life in Chronic Illness. *Journal of Theory Construction & Testing*, 10(2), 42-46

Ajzen, I. (1991). The theory of planned behavior, *Organizational Behavior and Human Decision Processes*, 50(2).179-211. https://doi.org/10.1016/0749-5978(91)90020-T

Ajzen, I., & Fishbein, M. (1975). A Bayesian analysis of attribution processes. *Psychological Bulletin, 82*(2), 261–277. https://doi.org/10.1037/h0076477

Baker, D.C. (2003). Studies of the inner life: The impact of spirituality on quality of life. *Quality of Life Research* 12(1). 51–57. http://dx. doi.org/10.1023/A:1023573421158

Beerli, A., & Martin, J.D. (2004). Factors influencing destination image. *Annals of tourism research*, 31(3), 657-681. https://doi.org/ 10.1016/j.annals.2004.01.010

Bilgihan, A. (2016). Gen Y customer loyalty in online shopping: An integrated model of trust, user experience and branding. *Computers in Human Behavior*, *61*, 103–113. https://doi.org/10.1016/j.chb.2016.03.014

Bone, K. (2013). Spiritual Retreat Tourism in New Zealand. *Tourism Recreation Research*, 38(3), 295–309. http://dx.doi.org/10.1023/A:1023573421158

Buzinde, C.N. (2020). Theoretical linkages between well-being and tourism: The case of self-determination theory and spiritual tourism. *Annals of Tourism Research*, Elsevier. 83(4). 102920. https://doi.org/10.1016/j.annals.2020.102920

Cham, T.H., Ng, C.K.Y., Lim, Y.M., & Cheng, B.L. (2018). Factors influencing clothing interest and purchase intention: a study of Generation Y consumers in Malaysia. *The international review of retail, distribution and consumer research*, *28*(2), 174-189. https://doi.org/10.1080/09593969.2017.1397045

Chen, C.F., & Chou, S.H. (2019). Antecedents and consequences of perceived coolness for Generation Y in the context of creative tourism-A case study of the Pier 2 Art Center in Taiwan. *Tourism Management*, 72, 121-129. https://doi.org/10.1016/j.tourman.2018.11.016

Cheer, J.M., Belhassen, Y., & Kujawa, J. (2017). The search for spirituality in tourism: Toward a conceptual framework for spiritual tourism. *Tourism Management Perspectives*, *24*, 252-256. https://doi.org/10.1016/j.tmp.2017.07.018

Chi, C.G.Q., & Qu, H. (2008). Examining the structural relationships of destination image, tourist satisfaction and destination loyalty: An integrated approach. *Tourism management*, 29(4), 624-636. https://doi.org/10.1016/j.tourman.2007.06.007

Counted, V., Possamai, A., & Meade, T. (2018). Relational spirituality and quality of life 2007 to 2017: An integrative research review. *Health and Quality of Life Outcomes*. 16(75). 1-18. https://doi.org/10.1186/s12955-018-0895-x

Coyle, J. (2002). Spirituality and health: towards a framework for exploring the relationship between spirituality and health. *Journal of advanced nursing*, *37*(6), 589-597. https://doi.org/10.1046/j.1365-2648.2002.02133.x

Crompton, J.L. (1979). Motivations for pleasure vacation. *Annals of Tourism Research*. 6(4). 408-424. https://doi.org/10.1016/0160-7383(79)90004-5

Dalla Pozza, I., Heitz-Spahn, S., & Texier, L. (2017). Generation Y multichannel behaviour for complex services: the need for human contact embodied through a distance relationship. *Journal of Strategic Marketing*, *25*(3), 226-239. https://doi.org/10.1080/0965254X.2017.1299785

Decrop, A. (2006). Vacation decision making. CABI, ISBN 184593041X, 9781845930417

Di Giovine, M., & Choe, J. (2019). Geographies of Religion and Spirituality: Pilgrimage Beyond the “Officially” Sacred. *Tourism Geographie*. 21(3). 361-383. https://doi.org/10.1080/14616688.2019.1625072

Di Pietro, L., Di Virgilio, F., & Pantano, E. (2012). Social network for the choice of tourist destination: attitude and behavioural intention. *Journal of Hospitality and tourism Technology*, 3(1), 60-76. https://doi.org/10.1108/17579881211206543

Dunne, G., Buckley, J., & Flanagan, S. (2007). City break motivation: The case of Dublin-A successful national capital. *Journal of Travel & Tourism Marketing*, *22*(3-4), 95-107. https://doi.org/10.1300/J073v22n03_08

Dowson, R. (2016). Event as spiritual pilgrimage: A case study of the 'Cherish'Christian women's conference. *International Journal of Religious Tourism and Pilgrimage*, *4*(ii), 12-28. https://doi.org/10.21427/D75M67

Eck, J., & Gebauer, J.E. (2022). A sociocultural norm perspective on Big Five prediction. *Journal of Personality and Social Psychology*, 122(3), 554–575. https://doi.org/10.1037/pspp0000387

Fernandes, S., & Londhe, B.R. (2015). Influence of social reference group on buying behavior, a comparative study of working and non working women in bangalore-A pilot study analysis. *Indian Journal of Science and Technology*, *8*, 95. https://doi.org/10.17485/ijst/2015/v8iS6/64720

Gardiner, S., Grace, D., & King, C. (2014). The generation effect: The future of domestic tourism in Australia. *Journal of Travel Research*, *53*(6), 705–720. https://doi.org/10.1177/0047287514530810

Glover, P. (2010). *Generation Y's Future Tourism Demand: Some Opportunities and Challenges*. Tourism and generation Y, 155-163, Cambridge, MA (USA). https://doi.org/10.1079/9781845936013.0155

Grbac, B., Damijanić, A.T., & Šergo, Z. (2013). Healthy Lifestyle as a Marketing Basis in Wellness Tourism. In *Marketing Asia Group (MAG) Scholar Global Business, Marketing & Tourism Conference*.

Güzel, Ö., & Sariyildiz, A. (2019). *From Spiritualism to a New Paradigm in Tourism: Spiritual Tourism and Motivations. In Spiritual and religious tourism: motivations and management* (41-50). Wallingford UK: CABI. https://doi.org/10.1079/9781786394163.0041

Haq, F., & Wong, H.Y. (2010). Is spiritual tourism a new strategy for marketing Islam?. *Journal of Islamic Marketing* 1(2). 136–148. https://doi.org/10.1108/17590831011055879

Haq, F., & Medhekar, A. (2016). *Is Spiritual Tourism an Innovation in Tourism for India and Pakistan? in: Leadership, Innovation and Entrepreneurship as Driving Forces of the Global Economy*: Proceedings of the 2016 International Conference on Leadership, Innovation and Entrepreneurship (ICLIE). Benlamri, R., & Sparer, M., (Eds.), Springer, 519-530, New York.

Husnain, M., Rehman, B., Syed, F., & Akhtar, M.W. (2019). Personal and in-store factors influencing impulse buying behavior among generation Y consumers of small cities. *Business Perspectives and Research*, 7(1), 92-107. https://doi.org/10.1177/2278533718800625

Hyde, K.F. (2008). Information processing and touring planning theory. *Annals of Tourism Research*, *35*(3), 712-731. https://doi.org/10.1016/j.annals.2008.05.001

Inglehart, R. (1977). *The Silent Revolution: Changing Values and Political Styles Among Western Publics.* Princeton: Princeton University Press.

Ivona, A., & Privitera, D. (2019). Places and religious bands: Explorations in spiritual tourism. *International Journal of Religious Tourism and Pilgrimage*. 7(4). 54–63. https://doi.org/10.21427/6cg5-s19

Jalilvand, M.R., Ebrahimi, A., & Samiei, N. (2013). Electronic word of mouth effects on tourists' attitudes toward Islamic destinations and travel intention: An empirical study in Iran. *Procedia-Social and Behavioral Sciences*, *81*, 484-489. https://doi.org/10.1016/j.sbspro.2013.06.465

Jesurajan, S.V.A., & Prabhu, S.V. (2012). Dimensions of spiritual tourism in Tuiticorin District of Tamil Nadu in India-a critical analysis. *Business Intelligence Journal*, *5*(2), 245-251.

Kar, P., Mohanty, A., & Mohanty, S. (2024). Tourist' attitude towards destination food image determinants. *Geojournal of Tourism and Geosites*, 53(2), 454–461. https://doi.org/10.30892/gtg.53208-1220

Kainthola, S., Chowdhary, N., Kaurav, R.P.S., & Tiwari, P. (2024). Motivations of urban millennials for spiritual travel in India. *Tourism Recreation Research*, 49(2). 410-425. https://doi.org/10.1080/02508281.2021.2008210

Khera, S.N., & Malik, S. (2017). Conceptualizing and measuring life priorities of Generation Y: evidences from Indian context, *Industrial and Commercial Training*. 49(2). 80-86. https://doi.org/10.1108/ICT-04-2016-0024

Kleber, R.J. (2019). Trauma and Public Mental Health: A Focused Review. *Frontiers in Psychiatry* 10, 451. Netherlands. https://doi.org/10.3389/fpsyt.2019.00451

Koenig, H.G. (2012). *Religion, Spirituality, and Health: The Research and Clinical Implications*. 1–33, ISRN Psychiatry. https://doi.org/10.5402/2012/278730

Kumar, S., Shekhar, N.G., & Guleria, N. (2019). Understanding dynamics of niche tourism consumption through interpretive structure modeling. *Saaransh: RKG Journal of Management*, *11*(1), 40-48.

Kumar, S., Gupta, S., & Asthana, S. (2022). Determinants of Spiritual Tourism Consumption: A Hierarchical Approach. *International Journal of Religious Tourism and Pilgrimage. 10(2):78-93*. https://doi.org/10.21427/t97s-s131

Kuralbayev, A., Abishov, N., Abishova, A., & Urazbayeva, G. (2017). The measurement of the spiritual tourism in regions of South Kazakhstan. https://www.um.edu.mt/library/oar//handle/123456789/29807

Ladhari, R., Gonthier, J., & Lajante, M. (2019). Generation Y and online fashion shopping: Orientations and profiles. *Journal of retailing and Consumer Services*, *48*, 113-121. https://doi.org/10.1016/j.jretconser.2019.02.003

Lepherd, L. (2015). Spirituality: Everyone has it, but what is it?. *International Journal of Nursing Practice*. 21(5), 566-574. https://doi.org/10.1111/ijn.12285

Le, T.D., Le, T.A., Nguyen, P.H., Ho, Y.T.P., & Le, B.H.P. (2023). Factors affecting the decision of selecting a destination for international tourist at the Hoi An World cultural heritage site. *GeoJournal of Tourism and Geosites*, 51(4spl), 1663–1675. https://doi.org/10.30892/gtg.514spl08-1163

Levitt, J.A., Zhang, P., DiPietro, R.B., & Meng, F. (2019). Food tourist segmentation: Attitude, behavioral intentions and travel planning behavior based on food involvement and motivation. *International Journal of Hospitality & Tourism Administration*, *20*(2), 129-155. https://doi.org/10.1080/15256480.2017.1359731

Lifshitz, R., Nimrod, G., & Bachner, Y.G. (2019). Spirituality and wellbeing in later life: a multidimensional approach. *Aging and Mental Health*. 23(8). 984–991. https://doi.org/10.1080/13607863.2018.1460743

Lub, X.D. (2013). *Generations and their psychological contracts*. Ipskamp.

Lodha, P. (2018). Internet addiction, depression, anxiety and stress among Indian youth. Indian J Ment Health, 5(4), 427. https://doi.org/10.30877/IJMH.5.4.2018.427-442

Mannell, R.C. (2007). Leisure, health and well-being. *World Leisure Journal*, *49*(3), 114-128. https://doi.org/10.1080/04419057.2007.9674499

Manning, L., Ferris, M., Narvaez Rosario, C., Prues, M., & Bouchard, L. (2019). Spiritual resilience: Understanding the protection and promotion of well-being in the later life. *Journal of religion, spirituality & aging*. 31(2).168-186. https://doi.org/10.1080/15528030.2018.1532859

Messarra, L.C., Karkoulian, S., & El-Kassar, A.N. (2016). Conflict resolution styles and personality: The moderating effect of generation X and Y in a non-Western context. *International journal of productivity and performance management*, *65*(6), 792-810. https://doi.org/10.1108/IJPPM-01-2016-0014

Mlozi, S., & Pesämaa, O. (2013). Adventure tourist destination choice in Tanzania. *Current Issues in Tourism*, 16(1), 63-95. https://doi.org/10.1080/13683500.2011.647807

Moal-Ulvoas, G. (2016). Spirituality and the travel motivations of older adults. *International Journal of Religious Tourism and Pilgrimage*, *4*(4), 7. https://doi.org/10.21427/D7BB14

Munar, A.M., & Jacobsen, J.K.S. (2014). Motivations for sharing tourism experiences through social media. *Tourism management*, *43*, 46-54. https://doi.org/10.1016/j.tourman.2014.01.012

Narayanasamy, A. (2014). The challenges of teaching and learning spirituality in nursing. *J Nurs Care.* 3(189), 2167-1168. https://doi.org/10.4172/2167-1168.1000189

Nicolau, J.L., & Mas, F.J. (2006). The influence of distance and prices on the choice of tourist destinations: The moderating role of motivations. *Tourism Management*, *27*(5), 982-996. https://doi.org/10.1016/j.tourman.2005.09.009

Norman, A. (2014). The varieties of the spiritual tourist experience. *Literature & Aesthetics*. 22(1), 20–37. https://openjournals.library.sydney.edu.au/LA/issue/view/646

Ordun, G. (2015). Millennial (Gen Y) consumer behavior their shopping preferences and perceptual maps associated with brand loyalty. *Canadian social science*, *11*(4), 40-55. https://doi.org/10.3968/6697

Palmer, D. (2014). Transnational Sacralizations: When Daoist Monks Meet Global Spiritual Tourists. *Ethnos: Journal of Anthropology,* 79(2), 169-192. https://doi.org/10.1080/00141844.2012.714396

Parment, A. (2013). Generation Y vs. Baby Boomers: Shopping behavior, buyer involvement and implications for retailing. *Journal of retailing and consumer services*, *20*(2), 189-199. https://doi.org/10.1016/j.jretconser.2012.12.001

Pendergast, D. (2009). Getting to know the Y generation. In *Tourism and generation Y* , 1-15). Wallingford UK: Cabi. https://doi.org/10.1079/9781845936013.0001

Piewdang, S., Mekkamol, P., & Untachai, S. (2013). Measuring spiritual tourism management in community: A case study of Sri Chom Phu Ongtu Temple, Thabo district, Nongkhai province, Thailand. *Procedia-Social and Behavioral Sciences*, *88*, 96-107. https://doi.org/10.1016/j.sbspro.2013.08.485

Phukan, H., Rahman, Z., & Devdutt, P. (2012). Effect of spiritual tourism on financial health of the Uttarakhand state of India, Int J Res Commer IT Manag, 2(2), 1–7.

Quintal, V., Phau, I., Sims, D., & Cheah, I. (2016). Factors influencing generation Y's purchase intentions of prototypical versus me-too brands. *Journal of Retailing and Consumer Services, 30*, 175–183. https://doi.org/10.1016/j.jretconser.2016.01.019

Schwartz, S.H. (1992). Universals in the content and structure of values: Theory and empirical tests in 20 countries. In M. Zanna (Ed.), *Advances in experimental social psychology* 25(1). 1-65. New York: Academic Press. http://dx.doi.org/10.1016/S0065-2601(08)60281-6

Schwartz, S.H. (2012). An overview of the Schwartz theory of basic values. *Online readings in Psychology and Culture*, *2*(1), 11. https://doi.org/10.9707/2307-0919.1116

Serrallonga, S.A. (2018). 14 Spiritual Tourism in Europe: The SPIRIT-Youth Project. https://doi.org/10.21832/9781845416461-021

Seyanont, A. (2017). Travel motivation and intention to revisit of European senior tourists to Thailand. *Universal Journal of Management*, 5(8), 365-372. https://doi.org/10.13189/ujm.2017.050801

Seyidov, J., & Adomaitienė, R. (2016). Factors influencing local tourists' decision-making on choosing a destination: a case of Azerbaijan. *Ekonomika*, *95*(3), 112-127. https://doi.org/10.15388/Ekon.2016.3.10332

Sharpley, R., & Jepson, D. (2011). Rural tourism: A spiritual experience? *Annals of Tourism Research.* 38(1). 52–71. https://doi.org/10.1016/j.annals.2010.05.002

Sharpley, R., & Sundaram, P. (2005). Tourism: A sacred journey? The case of ashram tourism, India. *International journal of tourism research*, *7*(3), 161-171. https://doi.org/10.1002/jtr.522

Singh, S. (2009). Spirituality and tourism An anthropologist's view. *Tourism Recreation Research* 34(2).143–155. https://doi.org/10.1080/02508281.2009.11081586

Sirirat, P. (2019). Spiritual tourism as a tool for sustainability: A case study of Nakhon Phanom province, Thailand. *International Journal of Religious Tourism and Pilgrimage* .7(3). 97–111. https://doi.org/10.21427/9nyd-w868

Skousgaard, H. (2006). A Taxonomy of Spiritual Motivations for Consumption. *Advances in consumer research*, *33*(1), p294

Smith, M., MacLeod, N., & Robertson, M.H. (2010). *Key concepts in tourist studies*. Sage.

Soares, A.M. (2018). Revisiting cultures' consequences in international marketing studies. *Journal of Global Scholars of Marketing Science*, *28*(2), 214-220. https://doi.org/10.1080/21639159.2018.1434807

Swarbrooke, J., & Horner, S. (2007). *Consumer behaviour in tourism*. Routledge.

Sulphey, M.M. (2020). Can spirituality and long-term orientation relate to workplace identity? An examination using SEM. *International Journal of Sociology and Social Policy*, 41(9/10), 1038-1057. https://doi.org/10.1108/IJSSP-06-2020-0211

Tangsupwattana, W., & Liu, X. (2017). Symbolic consumption and Generation Y consumers: evidence from Thailand. *Asia Pacific Journal of Marketing and Logistics*, 29(5), 917-932. 917-932. https://doi.org/10.1108/APJML-01-2017-0013

Timothy, D.J., & Olsen, D.H. (Eds.). (2006). Tourism, religion and spiritual journeys (Vol. 4). London: Routledge.

Tudorache, D.M., Niculescu, A., Musteaţă-Pavel, M., & Radu, A. (2019). Generation Y—Challenges for heritage planning. In V. Vasile (Ed.), *Caring and sharing: The cultural heritage environment as an agent for change,* 129–137, Springer

Um, S., Chon, K., & Ro, Y. (2006). Antecedents of revisit intention. *Annals of tourism research*, 33(4), 1141-1158. https://doi.org/10.1016/j.annals.2006.06.003

Valeri, M. (2023). Modelling the Effect of Spiritual Tourism Motivators on Spiritual Tourism Consumption, *Tourism: An International Interdisciplinary Journal*. 71(3).634 – 646. https://doi.org/10.37741/t.71.3.13

Vishkin, A., Ben-Nun Bloom, P., Schwartz, S.H., Solak, N., & Tamir, M. (2019). Religiosity and emotion regulation. *Journal of Cross-Cultural Psychology*, *50*(9), 1050-1074. https://doi.org/10.1177/0022022119880341

Vitorino, L.M., Lucchetti, G., Leao, F.C., Vallada, H., & Peres, M.F.P. (2018). The association between spirituality and religiousness and mental health. *Scientific Reports*.8(1).1-9. https://doi.org/10.1038/s41598-018-35380-w

Woodside, A.G., & MacDonald, R. (1994). General system framework of customer choice processes of tourism services. *Spoilt for choice*, *30*, 31-59. : http://hdl.handle.net/2345/3020

Yoon, Y., & Uysal, M. (2005). An examination of the effects of motivation and satisfaction on destination loyalty: a structural model. *Tourism management*, *26*(1), 45-56. https://doi.org/10.1016/j.tourman.2003.08.016

Zsolnai, L., & Flanagan, B. (2019). Spirituality in society and the professions. In *The Routledge International Handbook of Spirituality in Society and the Professions*, 3-4, Routledge.

Article history: Received: 28.02.2024 Revised: 27.05.2024 Accepted: 18.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.872-884
DOI 10.30892/gtg.542spl11-1262

DIGITAL LEADERSHIP AND CREATIVE PERFORMANCE IN TOURISM AND HOTEL ENTERPRISES: LEVERAGING STRATEGIC AGILITY AND ORGANIZATIONAL LEARNING CULTURE

Tarik Ali JASIM
Department of Economics of Investment and Business Management, Faculty of Business Economics, Alnahrain University, Baghdad, Iraq, e-mail: dr.tarik@nahrainuniv.edu.iq

Hazem Ahmed KHAIRY
Hotel Management Department, Faculty of Tourism and Hotels, University of Sadat City, Sadat City, Egypt, e-mail: hazem.khaiery@fth.usc.edu.eg

Sameh FAYYAD
Hotel Studies Department, Faculty of Tourism and Hotels, Suez Canal University, Ismailia, Egypt; Hotel Management Department, Faculty of Tourism and Hotels, October 6 University, Giza, Egypt, e-mail: sameh.fayyad@tourism.suez.edu.eg

Bassam Samir AL-ROMEEDY*
Tourism Studies Department, Faculty of Tourism and Hotels, University of Sadat City, Sadat City, Egypt, e-mail: bassam.samir@fth.usc.edu.eg

Citation: Jasim, T.A., Khairy, H.A., Fayyad, S., & Al-Romeedy, B.S. (2024). DIGITAL LEADERSHIP AND CREATIVE PERFORMANCE IN TOURISM AND HOTEL ENTERPRISES: LEVERAGING STRATEGIC AGILITY AND ORGANIZATIONAL LEARNING CULTURE. *Geojournal of Tourism and Geosites*, 54(2spl), 872–884. https://doi.org/10.30892/gtg.542spl11-1262

Abstract: The aim of this study is to explore the effect of digital leadership (DL) on creative performance (CP) by investigating the mediating roles of strategic agility (SA) and organizational learning culture (OLC) in tourism and hospitality industry. The study analyzed 320 responses from middle-level management at five-star hotels and category-A travel agencies in Egypt using the PLS-SEM technique and WarpPLS statistical software 7.0. Findings reveal that digital leadership positively affects creative performance, strategic agility, and organizational learning culture. In addition, CP is positively affected by SA and OLC. Moreover, findings confirm the mediation effects of strategic agility and organizational learning culture in the DL→CP relationship. The study provides practical insights for tourism and hospitality enterprises using Dynamic Capabilities Theory to enhance performance and agility in the digital age.

Keywords: Digital Leadership, Creative Performance, Strategic Agility, Organizational Learning Culture, Tourism and Hotel Industry

* * * * * *

INTRODUCTION

In today's swiftly changing business environment, digital leadership stands out as highly significant. With organizations adopting digitalization more and more to maintain competitiveness, the role of effective digital leadership becomes paramount in promoting innovation, fostering agility, and navigating intricate technological advancements. Digital leaders are instrumental in conceiving and executing digital transformation strategies, harnessing emerging technologies, and utilizing data-driven insights to improve operational efficiency, enhance customer experiences, and drive overall business performance (Ismail et al., 2023). Furthermore, in an environment where customer preferences and industry trends are continually shifting, the significance of digital leadership becomes even more pronounced. It becomes crucial for organizations to adapt to these changing market dynamics, explore novel business models, and provide innovative solutions that align with evolving customer demands (Libert et al., 2016). Therefore, digital leadership not only fosters organizational resilience and expansion but also ensures that businesses stay pertinent and competitive in an ever more digitally-driven environment (Chen et al., 2024). By adopting digital technologies, promoting innovation, and cultivating a culture of experimentation, digital leaders establish a milieu that encourages and fosters creative thinking and problem-solving. They offer the requisite resources and assistance to empower employees to explore fresh ideas, embrace risks, and collaborate across departments. Digital leadership also utilizes technology to improve communication, facilitate knowledge sharing, and spur idea generation, thereby instilling a sense of ownership and involvement among employees (Borowska, 2019; Benitez et al., 2022).

Proficient digital leaders exhibit the foresight and flexibility required to navigate the dynamic and swiftly evolving digital terrain. They welcome emerging technologies, track industry developments, and preemptively recognize opportunities and challenges. Through the utilization of digital resources and platforms, digital leaders empower

* Corresponding author

organizations to promptly adapt to market changes, explore novel business paradigms, and make well-informed decisions on the fly. They encourage employees to embrace change, cultivate an atmosphere of agility and innovation, and emphasize ongoing learning and enhancement (Sheninger, 2019; Ismail et al., 2023).

Moreover, adept digital leaders establish the ethos and trajectory for embracing digital metamorphosis and innovation within an organization (Borowska, 2019). They cultivate an environment that esteems openness, collaboration, and experimentation, prompting employees to embrace digital technologies and acclimate to evolving business milieus (Guinan et al., 2019). Digital leaders cultivate a culture that prioritizes continuous learning, fosters knowledge dissemination, and empowers employees to adopt digital tools and methodologies (Khan and Khan, 2019). By advocating for a digital-first mentality and exemplifying digital behaviors, digital leaders galvanize and incentivize employees to welcome digital initiatives, hone digital competencies, and contribute to the organization's digital transformation odyssey (Ismail et al., 2023).

The connection between strategic agility and creative performance is profound within organizational contexts (Alyahya et al., 2023). Strategic agility entails a proactive, adaptive, and responsive approach to identifying and seizing opportunities while managing risks (Setili, 2014). Creative performance involves the generation and implementation of innovative and valuable ideas, products, and processes (Frederiksen and Knudsen, 2017; Sokół and Figurska, 2021; Suksutdhi, 2024; Velwin et al., 2024). Strategic agility lays the groundwork for creative performance by fostering an atmosphere that promotes experimentation, risk-taking, and continuous learning (Ahammad et al., 2021). Organizations characterized by strong strategic agility tend to cultivate an innovative culture, empower creative thinking among employees, and offer the necessary resources and encouragement to explore and execute novel concepts (Shafique et al., 2020). Conversely, creative performance enhances strategic agility by generating innovative solutions, fostering competitive advantage, and keeping organizations at the forefront of the rapidly evolving business environment (Price and Toye, 2017).

As well, the organizational learning culture significantly influences creative performance within companies (Xie, 2019). This culture embodies values, norms, and practices that prioritize ongoing learning, knowledge exchange, and experimentation. It encourages employees to pursue new knowledge, reflect on experiences, and actively participate in learning endeavors. By creating a supportive and secure atmosphere for exploration and innovation, an organizational learning culture establishes the groundwork for individuals and teams to develop creative ideas and solutions (Al-Romeedy and Mohamed, 2022). It fosters collaboration, transparent communication, and the sharing of varied viewpoints, stimulating creativity and fostering the exploration of innovative ideas. Additionally, an organizational learning culture promotes risk-taking and views failures as essential learning experiences, thereby boosting creative performance by motivating individuals to innovate and challenge conventional wisdom (El-Awad et al., 2017; Henriksen et al., 2021).

Although digital leadership and creative performance have received considerable scholarly attention (Al-Romeedy and Mohamed, 2022), there remains a gap in research regarding the mediating role of strategic agility. Similarly, there is an underexplored area concerning the impact of organizational learning culture within the context of digital leadership and creative performance. This study aims to fill these gaps by examining how organizational learning culture mediates the association between digital leadership and creative performance. Another aspect of the research gap pertains to the scarcity of empirical investigations focusing on the tourism and hospitality sector. While existing studies have explored digital leadership and creative performance in general organizational contexts, there is a pressing need to scrutinize these associations within the unique environment of tourism and hospitality enterprises. Therefore, this study endeavors to examine the impact of digital leadership on creative performance, strategic agility, and organizational learning culture within this specific industry. Additionally, it seeks to evaluate the influence of strategic agility and organizational culture on creative performance. Finally, the study aims to delve into the mediating roles of strategic agility and organizational learning culture in the relationship between digital leadership and creative performance in tourism and hospitality businesses. Through attaining these objectives, the research aims to enrich the current literature by shedding light on the intricate interplay among digital leadership, strategic agility, organizational learning culture, and creative performance within the realm of tourism and hospitality enterprises. The discoveries gleaned from this study can offer valuable guidance to organizations operating in this sector, empowering them with actionable insights and best practices to harness the potential of digital leadership and augment creative performance. Ultimately, these insights can bolster their competitive edge and prosperity amidst the challenges and opportunities presented by the digital era.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Dynamic capabilities theory

Dynamic Capabilities Theory emphasizes an organization's capacity to effectively integrate, cultivate, and adjust internal and external competencies to navigate swiftly evolving environment (Bleady et al., 2018). Within this framework, digital leadership assumes a central role in cultivating an environment conducive to fostering dynamic capabilities. It is instrumental in discerning shifts within the digital sphere, capitalizing on opportunities driven by technology, and translating these insights into strategies that generate value. Particularly for tourism and hospitality enterprises, which operate in domains marked by ever-changing consumer preferences and technological innovations, digital leadership becomes indispensable (Franco, 2020). As well, strategic agility constitutes a fundamental aspect of dynamic capabilities, enabling businesses to swiftly adjust their strategies and operations in innovative ways that align with the requirements of a digital marketplace. Acting as a mediator between digital leadership and creative performance, strategic agility empowers organizations to efficiently implement and leverage innovative concepts (Al-Romeedy, 2019). An organizational learning culture represents another pivotal element within the realm of dynamic capabilities, entailing the ongoing development, revitalization, and restructuring of an organization's internal assets in light of both external and internal shifts. Within the framework of digital leadership, cultivating a culture that prioritizes learning and the exchange of knowledge augments the organization's capacity to innovate and proactively apply inventive solutions (Smerek, 2017). Ultimately, within this context, dynamic capabilities aim to bolster the organization's creative performance (Wilden et al., 2013). Through harnessing both strategic agility and an organizational learning culture, tourism and hospitality enterprises can not only flexibly respond to digital shifts but also spearhead innovative advancements that set them apart within the sector (Alqarni et al., 2023).

The effect of digital leadership on creative performance

Digital leadership encompasses the capacity of leaders to navigate and harness the potential of digital technologies and trends in steering organizational success. Leaders' adept in digital leadership comprehend the significance of utilizing digital tools, data analytics, and emerging technologies to forge opportunities, enrich customer experiences, and foster innovation within the organization (Sheninger, 2019). On the other hand, creative performance pertains to the aptitude of individuals or teams in conceiving and delivering high-caliber, innovative, and impactful creative outcomes. It encompasses facets such as ideation, problem-solving, originality, and the ability to elicit emotional responses from the intended audience (Al-Azab and Al-Romeedy, 2024). The influence of digital leadership on creative performance within organizations cannot be overstated. In an era where technology continually evolves and digitalization assumes greater significance across industries, leaders well-versed in digital tools and strategies can cultivate an atmosphere conducive to creativity and bolster overall performance (Sheninger, 2019). Digital leaders recognize the capacity of digital technologies to amplify creativity. They motivate their teams to utilize digital tools and platforms for ideation, collaboration, and experimentation with diverse creative methods. Through granting access to digital assets and advocating for a digital-centric mindset, leaders empower staff to explore inventive solutions and expand the horizons of creativity (Young, 2021). Digital leadership acknowledges the significance of both information and inspiration in fostering creativity. Utilizing digital platforms, it ensures that teams have access to a wealth of resources, including online databases, industry trends, market insights, and creative inspiration from diverse outlets. This accessibility to information widens perspectives, sparks creativity, and keeps teams abreast of the latest trends and advancements (Ismail et al., 2023; Shuhua and Kanokporn, 2023). Digital leadership additionally cultivates an atmosphere conducive to experimentation and iteration. It acknowledges that creativity evolves through trial and error, requiring the refinement of ideas over time (Schiuma et al., 2022; Fang, 2023). Leveraging digital tools enables swift prototyping, A/B testing, and data-driven experimentation, facilitating the exploration of diverse creative avenues. By promoting a culture of experimentation, leaders empower teams to take calculated risks and pursue innovation (Ogundipe et al., 2024; Ismail et al., 2023). So, the following hypothesis is assumed:

H1: Digital leadership positively affects creative performance.

The effect of digital leadership on strategic agility

Strategic agility denotes an organization's adeptness in promptly and adeptly reacting to shifts in the business milieu, seizing opportunities, and adjusting its strategies correspondingly. In today's digitally charged environment, characterized by swift technological advancements and market dynamics, digital leadership assumes a pivotal role in fostering and amplifying strategic agility (Al-Romeedy, 2019). Digital leadership comprehends the pivotal role of digital transformation in attaining strategic agility. It proactively discerns emerging technologies and trends capable of disrupting or opening new business avenues (Bellis et al., 2024). By embracing digital transformation, organizations can harness digital tools, data analytics, automation, and other digital capabilities to optimize operations, improve decision-making, and promptly adapt to market shifts. This flexibility empowers organizations to seize emerging opportunities and maintain a competitive edge (Benitez et al., 2022; Bahrami and Evans, 2014). Digital leadership underscores the utilization of data and analytics to steer strategic decision-making (Wang et al., 2022). Through digital tools and technologies, organizations access extensive data sets that inform and shape strategic trajectories (Ibeh et al., 2024). Leveraging data analytics, digital leadership delves into customer behavior, market dynamics, and competitive environment (Kolasani, 2023). These insights aid in pinpointing strategic openings, assessing risks, and executing well-informed choices. By embracing data-driven decision-making, agility is heightened as uncertainties diminish, empowering organizations to swiftly respond based on real-time insights (Medeiros and Maçada, 2022). Digital leadership advocates for efficient collaboration and communication throughout the organization (Sheninger, 2019). Utilizing digital tools and platforms, seamless communication becomes achievable, transcending geographical or organizational barriers (Nyathani, 2023). Leaders leverage these resources to promote cross-functional collaboration, knowledge dissemination, and idea exchange (Zhang and Guo, 2019). By fostering collaboration, digital leaders cultivate a culture of collective intelligence, facilitating swifter decision-making, information dissemination, and alignment with strategic objectives. This collaborative ethos bolsters agility by fostering a shared vision of the strategic trajectory and enabling synchronized action (Mukherjee, 2020; Ismail et al., 2023). Hence, the following hypothesis is postulated:

H2: Digital leadership positively affects strategic agility.

The effect of strategic agility on creative performance

Strategic agility plays a vital role in enhancing creative performance within organizations. It enables them to swiftly respond to evolving market conditions, directly influencing creative outcomes (Alqarni et al., 2023). In a dynamic business environment, where customer preferences, industry trends, and competitive dynamics evolve rapidly, strategic agility empowers organizations to detect these shifts early and adapt their creative strategies and approaches accordingly. This flexibility ensures that creative teams remain attuned to market demands, fostering the development of innovative solutions and the delivery of compelling and contextually relevant creative outputs (Al-Romeedy, 2019). Strategic agility underscores the importance of collaboration and cross-functional integration, leading to improved creative performance.

Agile organizations frequently promote collaboration among different departments and functions. This collaborative setting amalgamates diverse viewpoints, expertise, and talents, fostering creativity and innovation. When creative individuals collaborate with counterparts from various fields like marketing, technology, or product development, they acquire valuable insights, question assumptions, and generate more comprehensive and impactful creative endeavors (Kumkale, 2022).

Strategic agility fosters a culture of perpetual learning and adaptation, igniting creative performance. Agile organizations advocate for continuous skill enhancement, knowledge dissemination, and learning from both achievements and setbacks (Prange and Heracleous, 2018). Creative practitioners within such environments can broaden their skill repertoire, remain abreast of industry developments, and experiment with novel tools and methodologies (O'Grady and O'Grady, 2017). This emphasis on ongoing learning amplifies the creative process of individuals and teams, resulting in enhanced creative performance (Seevaratnam et al., 2023). Therefore, the following hypothesis is developed:

H3: Strategic agility positively affects creative performance.

The mediating role of strategic agility in the link between digital leadership and creative performance

Digital leadership encompasses establishing a well-defined vision and roadmap for harnessing digital tools within an organization, aligning digital initiatives with overarching organizational objectives (Mwita and Joanthan, 2019). Strategic agility acts as a mediator by ensuring the adaptability and responsiveness of these digital strategies to shifting business dynamics, it empowers organizations to fine-tune their digital strategies in response to market intelligence, customer input, and emerging trends, thereby ensuring that creative endeavors remain synchronized with the evolving digital terrain (Salmela et al., 2022). Digital leadership champions the integration of digital tools and workflows aimed at fostering creativity and innovation, encompassing collaboration platforms, digital project management systems, data analytics, and design software (Bellis et al., 2024). Strategic agility enables the seamless adoption and utilization of these digital tools within the creative process, empowering teams to experiment with emerging technologies, embrace agile methodologies, and iterate on their work in response to immediate feedback, thereby enhancing creative performance (Alqarni et al., 2023).

Digital leadership encourages the adoption of agile workflows and collaborative practices to elevate creative performance, necessitating the dismantling of conventional hierarchical structures and the cultivation of cross-functional teamwork. Strategic agility reinforces this collaborative ethos by furnishing the requisite tools, methodologies, and communication avenues to streamline agile workflows (Khairy et al., 2023). It guarantees that creative teams can collaborate seamlessly, exchange ideas freely, and iterate on creative endeavors promptly. Through this collaborative and nimble framework, creative performance is amplified, leveraging the collective expertise of diverse team members and fostering a shared commitment to creative outcomes (Al-Romeedy, 2019). Accordingly, the following hypothesis is suggested:

H4: Strategic agility mediates the link between digital leadership and creative performance.

The effect of digital leadership on organizational learning culture

Organizational learning culture pertains to the collective beliefs, principles, and actions within a company that foster ongoing learning, knowledge dissemination, and inventive thinking. It encapsulates the organization's stance on and backing for learning, cooperation, experimentation, and introspection. A robust organizational learning culture stimulates innovative thought processes, facilitates the acquisition of fresh insights and competencies, and empowers employees to embrace risk-taking and offer their distinct viewpoints (Al-Romeedy and Mohamed, 2022). Digital leadership significantly influences the establishment and nurturing of an organizational learning culture (Muniroh et al., 2022). Within this framework, learning assumes a strategic imperative under the purview of digital leaders. They comprehend that to remain competitive and innovative amidst digital advancements, organizations must incessantly learn and adapt. Digital leaders disseminate the significance of learning across all organizational tiers, aligning it with overarching strategic objectives, and allot resources and backing correspondingly. By elevating learning to a strategic priority, digital leaders underscore its significance, instilling a sense of purpose and trajectory for the organization's learning culture (Gfrerer et al., 2021; Aarons et al., 2014).

Digital leadership advocates for a growth-oriented mindset throughout the organization, emphasizing the belief that individuals and teams can enhance their capabilities and competencies through persistent effort, practice, and ongoing learning endeavors. Digital leaders actively encourage employees to embrace this growth mindset by highlighting the significance of learning, experimentation, and embracing novel challenges. This shift in mindset is crucial for cultivating an organizational culture centered around learning and development (Guinan et al., 2019; Sheninger, 2019). Digital leaders acknowledge the significance of ongoing learning in a swiftly changing digital environment. They proactively advocate for and facilitate opportunities for employees to gain fresh insights, enhance their skill sets, and develop new competencies. These initiatives may involve providing training sessions, workshops, webinars, or access to online educational resources (Karakose et al., 2022; Phakamach et al., 2023). By placing a premium on and dedicating resources to continuous learning, digital leaders establish a culture where employees feel encouraged and empowered to pursue knowledge acquisition and skill enhancement (Li et al., 2016). So, the following hypothesis is proposed:

H5: Digital leadership positively affects organizational learning culture.

The effect of organizational learning culture on creative performance

A robust learning culture fosters ongoing skill enhancement and development among staff members. It underscores the significance of remaining abreast of the latest trends, methodologies, and technologies within their respective fields. Continuous learning bolsters the capabilities of both individuals and teams, providing them with the necessary knowledge and expertise to generate innovative ideas. It empowers employees to engage in critical thinking, explore novel methodologies, and integrate fresh perspectives into their creative endeavors (Al-Romeedy and Mohamed, 2022). A culture of organizational learning underscores the significance of introspection and deriving insights from experience (North and Kumta, 2018). It prompts employees to assess their work critically, extract valuable lessons, and leverage these insights in subsequent endeavors. Through reflective practices, employees refine their creative methodologies, pinpoint areas ripe for enhancement, and progressively elevate their creative output (Jiao and Bu, 2024; Dinu et al., 2023). An organization fostering a robust learning culture allocates resources and establishes supportive mechanisms to facilitate continuous development. This entails offering avenues such as training initiatives, workshops, mentoring programs, and access to learning platforms (Meher et al., 2023; Sturm et al., 2021). Through these provisions, organizations empower their workforce to augment their competencies and expertise. With ample support for learning endeavors, employees are poised to excel creatively and produce top-tier outputs (Omilion-Hodges and Ackerman, 2018). An organizational learning culture that prioritizes diversity and inclusivity bolsters creative performance. Embracing a spectrum of perspectives, backgrounds, and experiences amplifies the creative reservoir within the workforce. Diverse insights and ideas from individuals with multifaceted backgrounds spur innovation, yielding a broader array of creative solutions. By nurturing an inclusive atmosphere where every voice is valued and honored, organizations harness the collective creativity of their diverse staff (Al-Romeedy and Mohamed, 2022). Hence, the following hypothesis is developed:

H6: Organizational learning culture positively affects creative performance.

The mediating role of organizational learning culture in the link between digital leadership and creative performance

Digital leadership underscores the imperative of perpetual learning and flexibility amidst technological progress and digital evolution. Leaders advocating for digital endeavors and welcoming novel technologies instill a sense of immediacy and inquisitiveness across the organization (Ismail et al., 2023). This mentality prompts employees to become adaptable learners, consistently refining their expertise and insights to synchronize with emerging digital advancements (Holbeche, 2023). An organizational learning culture bolsters this adaptability by furnishing resources, training avenues, and platforms for the dissemination of knowledge (Armanious and Padgett, 2021). Digital leadership promotes experimentation and risk-taking to stimulate innovation (Wang et al., 2022). Through endorsing a culture of experimentation, leaders cultivate an atmosphere where employees are motivated to trial new concepts, explore diverse strategies, and glean insights from setbacks. An organizational learning culture reinforces this experimental ethos by fostering psychological safety, creating an environment where employees feel at ease taking risks and extracting lessons from both triumphs and failures. This latitude for experimentation ignites creative performance and inspires employees to stretch the limits of their creativity (Liu et al., 2016; Mızrak, 2024; Edmondson, 2018). Digital leadership underscores the importance of utilizing data and feedback to inform decision-making and enhance performance. Leaders harness digital resources and analytics to collect insights, evaluate results, and offer feedback to their teams (Senadjki et al., 2024). This data-centric approach cultivates a culture of ongoing learning and refinement. An organizational learning culture empowers employees to scrutinize data, contemplate feedback, and utilize insights to improve their creative output. It nurtures a culture of responsibility and draws lessons from data-driven encounters (Al-Romeedy and Mohamed, 2022). Digital leadership acknowledges the significance of facilitating employee learning and growth through resource provision and support. Leaders allocate resources towards training initiatives, mentorship programs, and various learning avenues to enrich employees' digital competencies and expertise (Memon and Ooi, 2023). Concurrently, an organizational learning culture reinforces this effort by esteeming and prioritizing employee development. It furnishes platforms, materials, and incentives for continuous learning and skill augmentation, fostering an environment conducive to nurturing employees' creative capacities and fostering superior performance (Park et al., 2014; Hooi, 2019). Accordingly, the following hypothesis is proposed:

H7: Organizational learning culture mediates the link between digital leadership and creative performance.

The hypothesized research framework is presented in Figure (1) below.

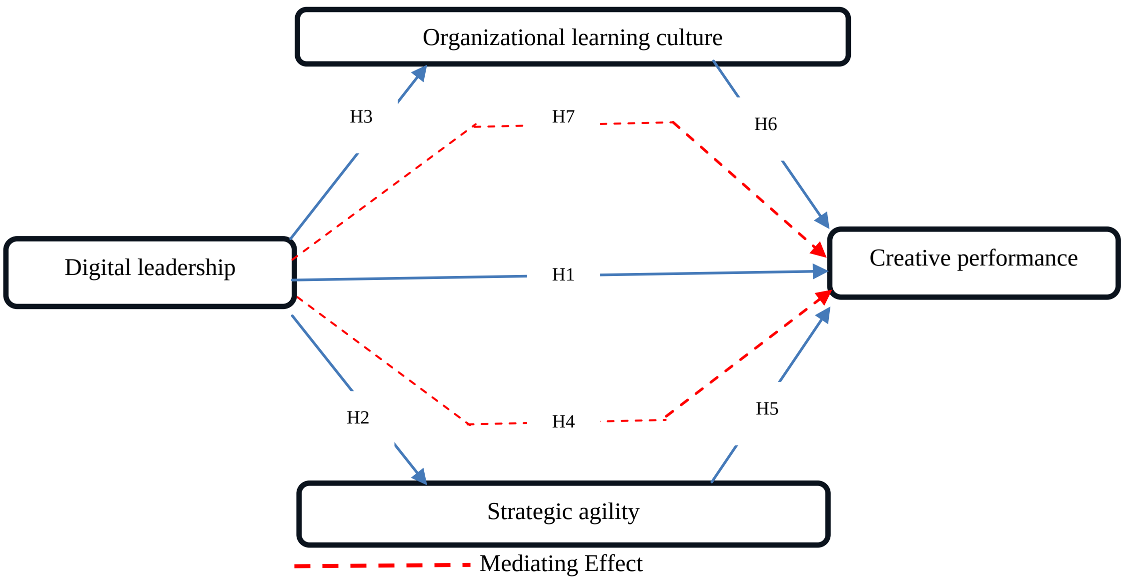


Figure 1. The hypothesized research framework

METHODOLOGY

Measurement and variables

A structured survey was used to explore the proposed model of the study that investigates the impact of digital leadership on creative performance, by examining the mediating roles of strategic agility (SA) and organizational learning culture (OLC) in hotel and tourism enterprises "five-star hotels and category-A tourist firms". Digital leadership was evaluated by a 7-item scale adapted from Claassen et al. (2021). Sample items includes: “I am involved in decisions that affect my work and my digital work environment” and “My digital literacy is encouraged by my manager”. In addition, creative performance was measured by an 8-item scale adapted from Mutonyi et al. (2020). For example, “I try out new technology, processes and techniques to complete my work” and “I often have new ideas to accomplish my work task”. Moreover, the strategic agility scale, developed by Tallon and Pinsonneault (2011), was utilized consisting of eight items. For example, “your firm responds to changes in aggregate consumer demand” and “your firm introduces new pricing schedules in response to changes in competitors’ prices”. Furthermore, organizational learning culture was assessed by a 7-item scale adapted form Lin and Huang (2021). For instance, “In my organization, people are rewarded for learning” and “In my organization; teams/groups revise their thinking as a result of group decisions or information collected”.

Sample and data collection procedures

The research examines middle-level management in Egypt's five-star hotels and travel agencies, highlighting their role in strategy formulation, product idea development, and organizational creativity. The Egyptian Ministry of Tourism and Antiquities has listed 30 five-star hotels and 1666 category-A travel companies in the Greater Cairo area for 2022 (Alshehri et al., 2024). The study utilized a convenience sample approach to gather data from volunteers in the Greater Cairo region of Egypt due to limited resources and dispersion of five-star hotels and travel agencies (Khairy and Elzek, 2024).

A questionnaire was distributed to 60 travel agencies and 25 five-star hotels, with 320 valid responses obtained from travel agencies and hotels, (n=120, 37.5%) and (n=200, 62.2%), respectively. Out of the 320 participants, 210 were men (65.63%) and 110 were women (34.38%); 55 (17.19%) were under 30 years, 198 (61.88%) were between 30 and 45, and 67 (20.94%) were beyond 45 years old. The study included 152 individuals (47.50%) who had one to less than three years of job experience, 126 (39.38%) had 3 to <6 years, and 42 (13.13%) had ≥6 years of experience.

Data analysis

The study utilized WarpPLS statistical software 7.0 for data processing. The study utilized PLS-SEM, a statistical method for theory validation and extension, for data processing in complex models. It is suitable for strategic and management studies, particularly in hospitality and tourism research. In addition, a multi-group analysis was conducted and revealed no significant differences in path coefficients between staff members of five-star hotels and travel agencies (P>0.05), despite changes in their work enterprises.

Table 1. Item loadings, Cronbach alpha, CR, AVE, and VIFs

Construct	Indicators	Item loading	Cronbach alpha	CR	AVE	VIFs
Digital leadership (DL)	DL.1	0.721	0.915	0.891	0.605	3.125
	DL.2	0.799				
	DL.3	0.808				
	DL.4	0.795				
	DL.5	0.841				
	DL.6	0.711				
	DL.7	0.762				
Creative performance (CP)	CP.1	0.851	0.935	0.920	0.642	1.797
	CP.2	0.757				
	CP.3	0.816				
	CP.4	0.769				
	CP.5	0.833				
	CP.6	0.801				
	CP.7	0.810				
	CP.8	0.768				
Strategic agility (SA)	SA.1	0.751	0.916	0.896	0.578	2.053
	SA.2	0.786				
	SA.3	0.736				
	SA.4	0.797				
	SA.5	0.745				
	SA.6	0.735				
	SA.7	0.799				
	SA.8	0.731				
Organizational learning culture (OLC)	OLC.1	0.806	0.940	0.925	0.690	2.394
	OLC.2	0.781				
	OLC.3	0.803				
	OLC.4	0.873				
	OLC.5	0.826				
	OLC.6	0.873				
	OLC.7	0.848				

ANALYSIS AND RESULTS

Measurement model

The four-factor model of digital leadership (DL), creative performance (CP), strategic agility (SA), and organizational learning culture (OLC) was tested using confirmatory factor analysis using WarpPLS software 7.0. The model's fit was analyzed using the ten fit indices suggested by Kock (2021): APC "P<0.05", ARS "P<0.05", AARS "P<0.05", AVIF "acceptable if ≤5, ideally ≤3.3", AFVIF "acceptable if ≤5, ideally ≤3.3", GoF "small ≥0.1, medium ≥0.25, large ≥ 0.36", SPR "acceptable if ≥ 0.7, ideally = 1", RSCR "acceptable if ≥ 0.9, ideally = 1", SSR "acceptable if ≥0.7", and NLBCDR "acceptable if ≥0.7". The proposed four-factor model provided well-fitted data: "APC=0.483, P<0.001; ARS=0.616, P<0.001; AARS=0.614, P<0.001; AVIF=3.987; AFVIF=2.750; GoF=0.622; SPR=1.000; RSCR=1.000; SSR=1.000; and NLBCDR=1.000". According to data tabulated in Table (1), the research constructs had composite reliability ratings above the minimal acceptable level (CR>0.70), with statistically significant item loadings (p<0.05).

Table 2. Discriminant validity results

	OLC	DL	CP	SA
Organizational learning culture (OLC)	**0.836**	0.778	0.456	0.566
Digital leadership (DL)	0.761	**0.836**	0.534	0.601
Creative performance (CP)	0.456	0.534	**0.801**	0.637
Strategic agility (SA)	0.566	0.601	0.637	**0.760**

The study's validity was also confirmed by AVE values of digital leadership, creative performance, strategic agility, and organizational learning culture (AVE>0.50), and the model is free of common method bias (VIFs≤3.3).Table (2) confirms the study model's discriminant validity, with higher AVE values and less than unity correlations between variables. In addition, the validity of the constructs was confirmed through the calculation of the HTMT, as shown in Table 3.

Table 3. HTMT for validity

HTMT ratios (good if < 0.90, best if < 0.85)	OLC	DL	CP	SA
Organizational learning culture (OLC)				
Digital leadership (DL)	0.822			
Creative performance (CP)	0.496	0.591		
Strategic agility (SA)	0.624	0.675	0.701	
P values (one-tailed) for HTMT ratios (good if < 0.05)	OLC	DL	CP	SA
Organizational learning culture (OLC)				
Digital leadership (DL)	<0.001			
Creative performance (CP)	<0.001	<0.001		
Strategic agility (SA)	<0.001	<0.001	<0.001	

Results of direct effects

Data in Figure (2) and Table (4) reveals that digital leadership (DL) positively affects creative performance (CP) (β=0.12, P=0.01), strategic agility (SA) (β=0.66, P<0.01), and organizational learning culture (OLC) (β=0.84, P<0.01). As DL increases, CP, SA, and OLC also increase, indicating that H1, H2, and H5 are supported. In addition, CP is affected by SA (β=0.48, P<0.01) and OLC (β=0.32, P<0.01). High SA and OLC levels tend to increase CP, supporting H3 and H6.

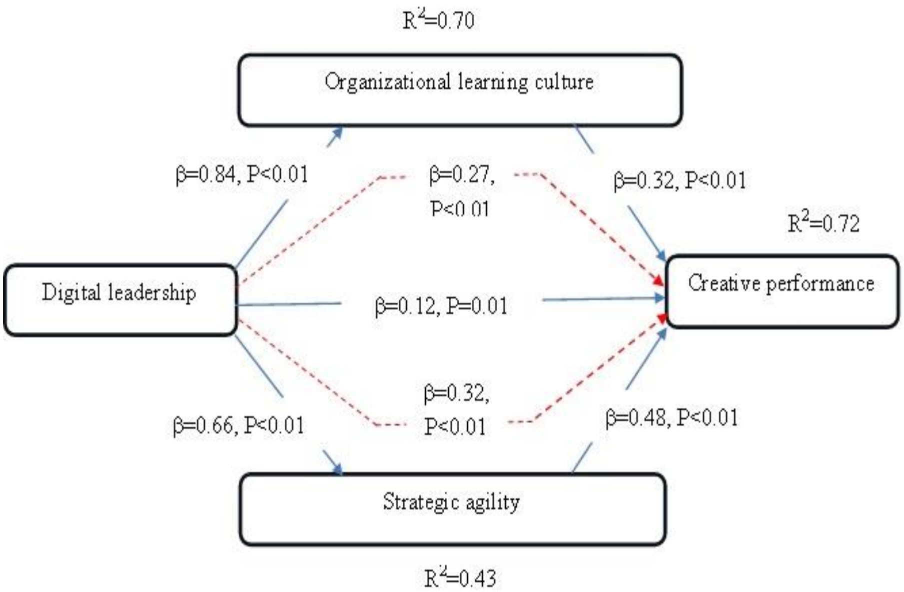


Figure 2. Final model of the study

Table 4. Direct effects

Hypotheses	Relationship	Direct effect (β)	**Sig.**	**Decision**
H1	DL→CP	0.12	P=0.01	Supported
H2	DL→SA	0.66	P<0.01	Supported
H3	DL→ OLC	0.84	P<0.01	Supported
H5	SA→CP	0.48	P<0.01	Supported
H6	OLC → CP	0.32	P<0.01	Supported

Mediation Analysis

Preacher and Hayes' (2008) approach was utilized to examine the mediation effects of strategic agility (SA), and organizational learning culture (OLC) in DL→CP relationship. The study found a significant indirect effect of SA {β=0.317 (0.660×0.480), SE=0.037, P<0.01, t-value=8.562; LL=0.244, UL=0.389} and OLC {β=0.269 (0.840×0.320), SE=0.037, P<0.01, t-value=7.265, LL=0.196, UL=0.341} on the DL→CP relationship, supporting the hypotheses of mediation (H4 and H7).

Table 5. Mediation analysis' Bootstrapped Confidence Interval

Hypo.	Relationship	Path a	Path b	Indirect Effect	SE	*t-value*	Bootstrapped Confidence Interval		*Decision*
							95% LL	95% UL	
H.4	DL→SA→CP	0.660	0.480	0.317	0.037	8.562	0.244	0.389	Mediation
H.7	DL→OLC→CP	0.840	0.320	0.269	0.037	7.265	0.196	0.341	Mediation

DISCUSSION

This study examines the efficacy of digital leadership in enhancing creative performance by investigating the roles of strategic agility and organizational learning culture in tourism and hospitality enterprises. The study indicates that digital leadership positively impacts creative performance, consistent with previous research by Schiuma et al. (2022) and Fang (2023). Digital leadership acknowledges the critical role of perpetual learning and skill enhancement in today's swiftly changing digital environment (Jameson et al., 2022). It promotes a culture where teams are encouraged to seize ongoing learning prospects, be it through online courses, webinars, or industry events. By staying abreast of the latest digital methodologies, tools, and trends, creative professionals can broaden their expertise and retain their competitive edge. This dedication to continual learning not only bolsters creative performance but also equips teams to capitalize on emerging technologies and prospects (Ismail et al., 2023). The study also indicates that digital leadership enhances strategic agility, in line with previous research by Bellis et al. (2024) and Ibeh et al. (2024). Digital leadership frequently spearheads the implementation of agile organizational structures and methodologies (Kupiek, 2021). Agile frameworks like Scrum or Kanban emphasize flexibility, responsiveness, and adaptability (Malakar, 2021). Encouraging cross-functional teams, empowered decision-making, and iterative workflows, digital leadership promotes agility (Kupiek, 2021).

Agile structures empower organizations to swiftly pivot priorities, reallocate resources, and adapt strategies in response to shifting market dynamics or emerging opportunities. This nimbleness augments strategic agility by enabling organizations to promptly align their capabilities with evolving business imperatives (Holbeche, 2023). In addition, the study indicates that strategic agility positively impacts creative performance, consistent with previous studies by Alqarni et al. (2023) and Seevaratnam et al. (2023). Strategic agility enables organizations to dynamically allocate resources, directly influencing creative performance (Egunjobi and Aremu, 2023). Creative endeavors typically demand diverse resources like talent, time, and budget. Within an agile framework, resources can be flexibly assigned or reassigned in response to shifting project priorities or emerging opportunities. This adaptability guarantees that creative teams access the requisite resources promptly, empowering them to produce top-tier work within designated timeframes. Efficient resource allocation enhances creative performance and empowers teams to navigate potential bottlenecks or limitations (Khairy et al., 2023).

Moreover, the study reveals that strategic agility plays a mediating role in digital leadership and creative performance relationship, consistent with previous research by Alqarni et al. (2023) and Bellis et al. (2024). Digital leadership underscores the significance of cross-functional collaboration (Yansen and Yujie, 2023). Strategic agility serves as a facilitator by enabling effective cross-functional collaboration among creative teams and other organizational units, such as marketing, technology, and data analytics (Hyun et al., 2023; Akter et al., 2023). This collaborative approach encourages the sharing of knowledge, amalgamates diverse viewpoints, and enriches the creative process. Strategic agility ensures that digital leaders cultivate an environment conducive to seamless collaboration across different teams, allowing them to leverage each other's expertise in pursuit of creative excellence (Defillippi et al., 2009; Ismail et al., 2023). Furthermore, the study indicates that digital leadership positively impacts organizational learning culture, consistent with previous research by Gfrerer et al. (2021) and Muniroh et al. (2022). Digital leadership cultivates a culture of collaboration and knowledge exchange throughout the organization. This entails dismantling barriers between departments and encouraging cross-functional cooperation (Yi, 2019). Utilizing digital tools and technologies, digital leaders facilitate communication, collaboration, and the dissemination of best practices and lessons learned. By fostering an environment where employees are encouraged to share their expertise, insights, and experiences, digital leaders establish a culture where knowledge circulates freely, and learning is deeply ingrained in the organizational ethos (Peng, 2022; Johannessen, 2020).

Additionally, the study indicates that an effective organizational learning culture can enhance creative performance, in line with previous research by Dinu et al. (2023) and Jiao and Bu (2024). An organizational learning culture motivates employees to venture into uncharted territories, test various methodologies, and embrace risks without apprehension of failure. This receptiveness nurtures creativity by providing individuals with the encouragement to explore unconventional paths and challenge conventional norms in their endeavors. Such a culture not only sparks novel ideas but also facilitates the swift evolution and enhancement of these concepts, vital for achieving fruitful creative results (Edmondson, 2018; Resnick, 2017).

Lastly, the study reveals that organizational learning culture plays a mediating role in influencing the relationship between digital leadership and creative performance, aligning with previous research of Al-Romeedy and Mohamed (2022) and Senadjki et al. (2024). Digital leaders exemplify a commitment to perpetual learning and creative prowess (Mollah et al., 2023). Their personal dedication to learning, adaptability, and ingenuity establishes the groundwork for the organizational learning ethos (Sheninger, 2019). Through active participation in learning endeavors, knowledge sharing, and demonstration of a growth-oriented mindset, leaders inspire and encourage employees to follow suit. By modeling these behaviors, leadership ignites a chain reaction across the organization, reinforcing the value of learning and catalyzing creative performance (Kouzes and Posner, 2024; Van Dijk et al., 2021).

Theoretical implications

This study substantially enhances Dynamic Capabilities Theory by illustrating the nuanced role of dynamic capabilities, such as strategic agility and organizational learning culture, under the purview of digital leadership. It elucidates these capabilities' pivotal function as mediators, translating leadership endeavors into measurable performance outcomes, particularly within industries reliant on swift adaptations to consumer trends and technological shifts. While Dynamic Capabilities Theory conventionally emphasizes an organization's adeptness in responding to technological and market shifts, it typically overlooks the significance of digital leadership. This study introduces digital leadership as a pivotal catalyst for dynamic capabilities, thereby infusing a contemporary perspective into the theory. Such inclusion is especially pertinent considering the rapid advancement of digital transformation across business realms and customer engagements, notably within the tourism and hospitality sectors.

The study provides valuable insights into the practical application of strategic agility and organizational learning culture to improve creative performance. By offering a framework for implementation, it not only offers practical guidance for businesses but also advances theoretical understanding regarding the systematic development and utilization of these capabilities. It demonstrates that strategic agility extends beyond swift responses to encompass effective opportunity capture, while an organizational learning culture entails instilling a mindset of continuous improvement to sustain long-term innovation efforts. As well, utilizing Dynamic Capabilities Theory within the context of the tourism and hospitality sector, the study enriches our industry-specific comprehension of dynamic capabilities. Given the distinct challenges posed by the service-oriented nature and consumer-centric focus of this sector, as well as the rapid evolution in consumer technology usage, these findings offer tailored insights. They demonstrate how businesses can adapt and thrive by cultivating agility and fostering a culture of continuous learning to effectively navigate the sector's complexities and remain competitive.

The findings prompt a more expansive understanding of dynamic capabilities, indicating their significance extends beyond mere adaptation to change, encompassing a pivotal role in fostering creative performance. This broadening of the theory underscores the proactive facets of dynamic capabilities, emphasizing their vital role not solely in ensuring organizational survival, but in enabling flourishing within competitive markets through innovative endeavors. In terms of theory, the study enhances Dynamic Capabilities Theory by incorporating digital leadership, offering a more nuanced insight into how contemporary leaders can adeptly utilize organizational resources and capabilities amidst digital shifts. On a practical level, it provides tangible guidance for industry practitioners on cultivating an atmosphere conducive to swift strategic adaptations and ongoing learning, serving as avenues to bolster innovation and creative outcomes.

Practical implications

This study carries various practical implications for companies within the tourism and hospitality sector. These implications, rooted in Dynamic Capabilities Theory, offer actionable guidance for organizations seeking to improve their performance and agility amid the digital age. To cultivate digital leadership capabilities, organizations can implement various strategies, including offering training programs, workshops, and coaching sessions aimed at enhancing leaders' digital literacy, technological acumen, and strategic prowess in the digital environment. These initiatives may cover diverse topics such as digital marketing, data analytics, emerging technologies, and strategies for digital transformation. Additionally, fostering collaboration between leaders and digital experts within the organization can be instrumental. This collaboration facilitates the exchange of insights on digital trends, opportunities, and challenges, empowering leaders to make well-informed decisions and effectively drive digital initiatives forward. Encouraging leaders to engage in industry events, conferences, and digital communities is also beneficial, as it allows them to expand their knowledge base, remain abreast of the latest industry practices, and forge connections with other digital leaders. Such external networking endeavors serve to augment their digital leadership competencies and provide access to valuable insights and best practices from the broader digital ecosystem.

In nurturing strategic agility, organizations ought to institute procedures and platforms for monitoring the external environment, encompassing factors like market trends, emerging technologies, competitors' strategies, and customer inclinations. This proactive stance allows organizations to promptly discern both opportunities and threats, facilitating agile decision-making and adaptation. Moreover, organizations should establish a decision-making framework conducive to agility, featuring elements such as decentralized decision-making, cross-functional collaboration, and rapid experimentation. By empowering employees across various levels to make decisions and undertake calculated risks, organizations cultivate a culture of agile decision-making. Additionally, organizations must devise mechanisms for flexible resource allocation, entailing the dynamic allocation of resources in response to shifting priorities, market dynamics, and emerging prospects. This may necessitate the adoption of agile project management methodologies and resource allocation processes designed to facilitate swift adjustments and resource reallocation.

To nurture an organizational learning culture, organizations can offer diverse learning avenues, including training programs, workshops, seminars, and online courses, aimed at enriching employees' knowledge and skills. These initiatives may cover areas such as digital technologies, creativity, innovation, customer experience, and other pertinent subjects. Establishing platforms for knowledge exchange, such as internal social networks, collaboration tools, and communities of practice, encourages employees to share their insights, experiences, and best practices. This fosters organizational learning and facilitates the dissemination of knowledge and innovative concepts. Furthermore, organizations should cultivate a supportive atmosphere that promotes experimentation and risk-taking. This entails embracing a mindset that regards failures as valuable learning experiences and acknowledges employees' innovative endeavors, even if they do not always yield successful outcomes. Encouraging experimentation fosters a culture of continual learning and innovation.

Importantly, to effectively integrate digital transformation and dynamic capabilities, organizations must synchronize their digital transformation endeavors with their overarching strategic objectives. This entails evaluating how digital technologies and competencies can bolster the organization's vision, mission, and long-term strategy. By harmonizing digital transformation initiatives with the cultivation of dynamic capabilities, organizations can guarantee that their digital endeavors contribute meaningfully to their overall performance and competitive edge. Strategic resource allocation is paramount for supporting both digital transformation initiatives and the cultivation of dynamic capabilities. This involves strategically allotting financial resources, technological infrastructure, and human capital to nurture digital leadership, strategic agility, and an organizational learning culture. Prudent resource allocation ensures that requisite investments are made to position the organization for success in the digital environment.

Significantly, organizations ought to foster a culture that prioritizes growth and learning, nurturing a mindset of continuous improvement among employees. This entails placing value on curiosity, ongoing learning endeavors, and personal advancement. Offering avenues for employees to enhance their digital proficiency and fostering an environment conducive to knowledge exchange and collaboration promotes continual learning. Moreover, organizations should establish platforms or initiatives that facilitate the generation of ideas, collaborative brainstorming sessions, and team-based problem-solving efforts. These platforms, which may include innovation labs, hackathons, cross-functional project teams, and suggestion systems, provide outlets for employees to share their insights, explore innovative approaches, and cultivate creativity and ingenuity within the organization. Recognizing and rewarding employees for their innovative contributions serves to incentivize and inspire them to remain engaged in continuous learning and idea generation. Organizations can institute recognition programs, innovation accolades, or performance-based incentives to honor and celebrate employees' endeavors in fostering creativity and innovation.

Limitations and future research

While the study provides valuable insights, it's essential to acknowledge its limitations and pinpoint potential avenues for future research. The study's reliance on a limited sample size from specific organizations within the tourism and hospitality industry might restrict the generalizability of the findings to the broader industry or other sectors. Future research endeavors could address this limitation by expanding the sample size and incorporating a more diverse array of organizations to bolster the applicability of the findings. Moreover, the study concentrated solely on exploring the mediating roles of strategic agility and organizational learning culture. Future research initiatives could delve into examining additional mediating or moderating variables that might influence the association between digital leadership and creative performance. For instance, variables such as organizational structure, employee motivation, or technological infrastructure could be further explored to offer a more comprehensive understanding of the dynamics at play.

The study centered on creative performance as its outcome variable. However, future research endeavors could explore the broader spectrum of performance outcomes associated with digital leadership, strategic agility, organizational learning culture, and dynamic capabilities. This may encompass long-term metrics like financial performance, customer satisfaction, and competitive advantage. In addition, future research could adopt a mixed methods approach that integrates both quantitative and qualitative methodologies. While the study predominantly relied on quantitative data, incorporating qualitative techniques such as interviews, focus groups, or case studies could yield deeper insights into the subjective experiences, perceptions, and contextual intricacies surrounding digital leadership, strategic agility, organizational learning culture, and creative performance. This blended approach would facilitate a more holistic understanding of the phenomena being studied. Extended longitudinal studies offer an opportunity to delve into the dynamic interplay among digital leadership, strategic agility, organizational learning culture, dynamic capabilities, and creative performance. Observing the evolution and interactions of these variables over time provides researchers with a comprehensive perspective. Through this lens, researchers can discern causal relationships, detect temporal patterns, and evaluate the enduring efficacy of organizational strategies.

Author Contributions: Author Contributions: Conceptualization, T.A.J., H.A.K, S.F, and B.S.A.; methodology, T.A.J., H.A.K, S.F, and B.S.A.; software, H.A.K, and B.S.A.; validation, H.A.K, and B.S.A.; formal analysis, H.A.K, and B.S.A.; investigation, T.A.J., H.A.K, S.F, and B.S.A.; data curation, T.A.J., H.A.K, S.F, and B.S.A.; writing - original draft preparation, T.A.J., H.A.K, S.F, and B.S.A.; writing - review and editing, T.A.J., H.A.K, S.F, and B.S.A.; visualization, T.A.J., H.A.K, S.F, and B.S.A.; supervision, T.A.J., H.A.K, S.F, and B.S.A.; project administration, T.A.J., H.A.K, S.F, and B.S.A. All authors have read and agreed to the published version of the manuscript.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Aarons, G., Ehrhart, M., Farahnak, L., & Sklar, M. (2014). Aligning leadership across systems and organizations to develop a strategic climate for evidence-based practice implementation. *Annual review of public health*, *35*, 255-274. https://doi.org/10.1146/annurev-publhealth-032013-182447

Ahammad, M., Basu, S., Munjal, S., Clegg, J., & Shoham, O. (2021). Strategic agility, environmental uncertainties and international performance: The perspective of Indian firms. *Journal of World Business*, *56*(4), 101218. https://doi.org/10.1016/j.jwb.2021.101218

Akter, S., Hossain, M., Sajib, S., Sultana, S., Rahman, M., Vrontis, D., & McCarthy, G. (2023). A framework for AI-powered service innovation capability: Review and agenda for future research. *Technovation*, *125*, 102768. https://doi.org/10.1016/j.technovation.2023.102768

Al-Azab, M., & Al-Romeedy, B. (2024). Servant leadership and tourism businesses' outcomes: a multiple mediation model. *Tourism Review*, *79*(1), 184-204. https://doi.org/10.1108/TR-11-2022-0538

Alqarni, K., Agina, M., Khairy, H., Al-Romeedy, B., Farrag, D., & Abdallah, R. (2023). The Effect of Electronic Human Resource Management Systems on Sustainable Competitive Advantages: The Roles of Sustainable Innovation and Organizational Agility. *Sustainability*, *15*(23), 16382. https://doi.org/10.3390/su152316382

Al-Romeedy, B. (2019). Strategic agility as a competitive advantage in airlines–case study: Egypt air. *Journal of the Faculty of Tourism and Hotels-University of Sadat City*, *3*(1), 1-15. https://doi.org/10.21608/MFTH.2019.45538

Al-Romeedy, B., & Mohamed, A. (2022). The Impact of organizational learning on organizational success in EgyptAir: Organizational power as a moderator. *International Journal of Tourism and Hospitality Management*, *5*(2), 1-17. https://doi.org/10.21608/IJTHM.2022.211465

Alshehri, N.Z., Baquero, A., Abd-Elhady, M.H., Salama, W.M.E., Khairy, H.A., & Abouelenien, R.E.I. (2024). Green hrm and green competitive advantage in hotel and tourism industry: a mediated moderation model using eco-innovation and green psychological climate. *GeoJournal of Tourism and Geosites*, 52(1), 313–322. https://doi.org/10.30892/gtg.52130-1207

Alyahya, M., Aliedan, M., Agag, G., & Abdelmoety, Z. (2023). Understanding the Relationship between Big Data Analytics Capabilities and Sustainable Performance: The Role of Strategic Agility and Firm Creativity. *Sustainability*, *15*(9), 7623.

Armanious, M., & Padgett, J. (2021). Agile learning strategies to compete in an uncertain business environment. *Journal of Workplace Learning*, *33*(8), 635-647. https://doi.org/10.1108/JWL-11-2020-0181

Bahrami, H., & Evans, S. (2014). *Super-flexibility for knowledge enterprises: a toolkit for dynamic adaptation*. Springer.

Bellis, P., Cunial, M., & Trabucchi, D. (2024). Mastering hybrid worlds through digital leadership: The role of agility in fostering innovation. *Business Horizons*. https://doi.org/10.1016/j.bushor.2024.04.002

Benitez, J., Arenas, A., Castillo, A., & Esteves, J. (2022). Impact of digital leadership capability on innovation performance: The role of platform digitization capability. *Information & Management*, *59*(2), 103590. https://doi.org/10.1016/j.im.2022.103590

Bleady, A., Ali, A., & Ibrahim, S. (2018). Dynamic capabilities theory: pinning down a shifting concept. *Academy of Accounting and Financial Studies Journal*, *22*(2), 1-16.

Borowska, G. (2019). Digital leadership for digital transformation. *Współczesna Gospodarka*, *10*(3), 11-19.

Chen, A., Li, L., & Shahid, W. (2024). Digital Transformation as the Driving Force for Sustainable Business Performance: A Moderated Mediation Model of Market-driven Business Model Innovation and Digital Leadership Capabilities. *Heliyon*, 10, e29509. https://doi.org/10.1016/j.heliyon.2024.e29509

Claassen, K., Dos Anjos, D.R., Kettschau, J., & Broding, H.C. (2021). How to evaluate digital leadership: a cross-sectional study. *Journal of Occupational Medicine and Toxicology*, *16*, 1-8. https://doi.org/10.1186/s12995-021-00335-x

Defillippi, R., Arthur, M., & Lindsay, V. (2009). *Knowledge at work: Creative collaboration in the global economy*. John Wiley & Sons.

Dinu, E., Vătămănescu, E., Stăneiu, R., & Rusu, M. (2023). An exploratory study linking intellectual capital and technology management towards innovative performance in kibs. *Sustainability*, *15*(2), 1356. https://doi.org/10.3390/su15021356

Edmondson, A. (2018). *The fearless organization: Creating psychological safety in the workplace for learning, innovation, and growth*. John Wiley & Sons.

Egunjobi, O., & Aremu, A. (2023). Strategic Agility and Organizational Competitiveness of Small and Medium Enterprises in Oyo State, Nigeria: Mediating Role of Organizational Culture. *Zakariya Journal of Social Science*, *2*(2), 30-42. https://doi.org/10.59075/zjss

El-Awad, Z., Gabrielsson, J., & Politis, D. (2017). Entrepreneurial learning and innovation: The critical role of team-level learning for the evolution of innovation capabilities in technology-based ventures. *International Journal of Entrepreneurial Behavior & Research*, *23*(3), 381-405. https://doi.org/10.1108/IJEBR-06-2016-0177

Fang, L. (2023). Examining the Effects of Digital Leadership Strategies on Enhancing Organizational Innovation Performance. *Journal of Logistics, Informatics and Service Science*, *10*(4), 318-335. https://doi.org/10.33168/JLISS.2023.0422

Franco, M. (2020). *Digital leadership: A new leadership style for the 21st century*. BoD–Books on Demand.

Frederiksen, M., & Knudsen, M. (2017). From creative ideas to innovation performance: The role of assessment criteria. *Creativity and Innovation Management*, *26*(1), 60-74. https://doi.org/10.1111/caim.12204

Gfrerer, A., Rademacher, L., & Dobler, S. (2021). Digital needs diversity: Innovation and digital leadership from a female managers' perspective. In *Digitalization: Approaches, Case Studies, and Tools for Strategy, Transformation and Implementation*, 335-349, Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-69380-0_19

Guinan, P., Parise, S., & Langowitz, N. (2019). Creating an innovative digital project team: Levers to enable digital transformation. *Business Horizons*, *62*(6), 717-727. https://doi.org/10.1016/j.bushor.2019.07.005

Henriksen, D., Henderson, M., Creely, E., Carvalho, A., Cernochova, M., Dash, D., & Mishra, P. (2021). Creativity and risk-taking in teaching and learning settings: Insights from six international narratives. *International Journal of Educational Research Open*, *2*, 100024. https://doi.org/10.1016/j.ijedro.2020.100024

Holbeche, L. (2023). *The agile organization: how to build an engaged, innovative and resilient business*. Kogan Page Publishers.

Hooi, L. (2019). Firm performance: is organizational learning capability the magic wand?. *International Journal of Productivity and Performance Management*, *68*(8), 1411-1433. https://doi.org/10.1108/IJPPM-01-2019-0023

Hyun, Y., Park, J., Kamioka, T., & Chang, Y. (2023). Organizational agility enabled by big data analytics: information systems capabilities view. *Journal of Enterprise Information Management*, *36*(4), 1032-1055. https://doi.org/10.1108/JEIM-03-2022-0077

Ibeh, C., Asuzu, O., Olorunsogo, T., Elufioye, O., Nduubuisi, N., & Daraojimba, A. (2024). Business analytics and decision science: A review of techniques in strategic business decision making. *World Journal of Advanced Research and Reviews*, *21*(02), 1761-1769. https://doi.org/10.30574/wjarr.2024.21.2.0247

Ismail, A., Hidajat, T., Dora, Y., Prasatia, F., & Pranadani, A. (2023). *Leading the Digital Transformation: Evidence from Indonesia*. Asadel Publisher.

Jameson, J., Rumyantseva, N., Cai, M., Markowski, M., Essex, R., & McNay, I. (2022). A systematic review and framework for digital leadership research maturity in higher education. *Computers and Education Open*, *3*, 100115. https://doi.org/10.1016/j.caeo.2022.100115

Jiao, P., & Bu, W. (2024). The Impact of Organizational Learning on Organizational Resilience in Construction Projects. *Buildings*, *14*(4), 975. https://doi.org/10.3390/buildings14040975

Johannessen, J. (2020). *Knowledge management for leadership and communication: AI, innovation and the digital economy*. Emerald Group Publishing.

Karakose, T., Kocabas, I., Yirci, R., Papadakis, S., Ozdemir, T., & Demirkol, M. (2022). The development and evolution of digital leadership: A bibliometric mapping approach-based study. *Sustainability*, *14*(23), 16171. https://doi.org/10.3390/su142316171

Khairy, H.A., & Elzek, Y. (2024). The impact of nepotism and workplace gossip on job performance in travel agencies and hotels in Egypt: the moderating role of organizational justice. *Journal of Human Resources in Hospitality & Tourism*, *23*(1), 52-75. https://doi.org/10.1080/15332845.2023.2253673

Khairy, H., Baquero, A., & Al-Romeedy, B. (2023). The effect of transactional leadership on organizational agility in tourism and hospitality businesses: The mediating roles of Organizational Trust and Ambidexterity. *Sustainability*, *15*(19), 14337. https://doi.org/10.3390/su151914337

Khan, N., & Khan, A. (2019). What followers are saying about transformational leaders fostering employee innovation via organisational learning, knowledge sharing and social media use in public organisations?. *Government Information Quarterly*, *36*(4), 101391. https://doi.org/10.1016/j.giq.2019.07.003

Kock, N. (2021). WarpPLS User Manual: Version 7.0. Laredo, TX: ScriptWarp Systems.

Kolasani, S. (2023). Leadership in business innovation and transformation, navigating complex digital landscapes and enterprise technology ecosystems and achieving sustainable growth in today's rapidly evolving market. *International Journal of Holistic Management Perspectives*, *4*(4), 1-23.

Kouzes, J., & Posner, B. (2024). *The student leadership challenge: Five practices for becoming an exemplary leader*. John Wiley & Sons.

Kumkale, İ. (2022). *Organizational mastery: The impact of strategic leadership and organizational ambidexterity on organizational agility*. Springer Nature.

Kupiek, M. (2021). *Digital leadership, agile change and the emotional organization: emotion as a success factor for digital transformation projects*. Springer Nature.

Li, W., Liu, K., Belitski, M., Ghobadian, A., & O'Regan, N. (2016). e-Leadership through strategic alignment: An empirical study of small-and medium-sized enterprises in the digital age. *Journal of Information Technology*, *31*, 185-206. https://doi.org/10.1057/jit.2016.10

Libert, B., Beck, M., & Wind, J. (2016). *The network imperative: How to survive and grow in the age of digital business models*. Harvard Business Review Press.

Lin, C.Y., & Huang, C.K. (2021). Employee turnover intentions and job performance from a planned change: the effects of an organizational learning culture and job satisfaction. *International Journal of Manpower*, *42*(3), 409-423. https://doi.org/10.1108/IJM-08-2018-0281

Liu, D., Jiang, K., Shalley, C., Keem, S., & Zhou, J. (2016). Motivational mechanisms of employee creativity: A meta-analytic examination and theoretical extension of the creativity literature. *Organizational behavior and human decision processes*, *137*, 236-263. https://doi.org/10.1016/j.obhdp.2016.08.001

Malakar, S. (2021). *Agile Methodologies In-Depth: Delivering Proven Agile, SCRUM and Kanban Practices for High-Quality Business Demands (English Edition)*. BPB Publications.

Medeiros, M., & Maçada, A. (2022). Competitive advantage of data-driven analytical capabilities: the role of big data visualization and of organizational agility. *Management Decision*, *60*(4), 953-975. https://doi.org/10.1108/MD-12-2020-1681

Meher, J., Mishra, R., Panigrahi, R., Patel, G., & Jena, L. (2023). Does learning culture enhance organizational performance? A serial mediator with knowledge management and organizational intelligence. *Knowledge Management Research & Practice*. https://doi.org/10.1080/14778238.2023.2278729

Memon, K.R., & Ooi, S.K. (2023). Identifying digital leadership's role in fostering competitive advantage through responsible innovation: A SEM-Neural Network approach. *Technology in Society*, *75*, 102399. https://doi.org/10.1016/j.techsoc.2023.102399

Mızrak, F. (2024). Effective change management strategies: Exploring dynamic models for organizational transformation. In *Perspectives on artificial intelligence in times of turbulence: Theoretical background to applications*, 135-162, IGI Global.

Mollah, M., Choi, J., Hwang, S., & Shin, J. (2023). Exploring a pathway to sustainable organizational performance of South Korea in the digital age: The effect of digital leadership on IT capabilities and organizational learning. *Sustainability*, *15*(10), 7875. https://doi.org/10.3390/su15107875

Mukherjee, A. (2020). *Leading in the digital world: How to foster creativity, collaboration, and inclusivity*. MIT Press.

Muniroh, M., Hamidah, H., & Abdullah, T. (2022). Managerial implications on the relation of digital leadership, digital culture, organizational learning, and innovation of the employee performance (case study of PT. Telkom digital and next business department). *Management and Entrepreneurship: Trends of Development*, *1*(19), 58-75. https://doi.org/10.26661/2522-1566/2022-1/19-05

Mutonyi, B.R., Slåtten, T., & Lien, G. (2020). Organizational climate and creative performance in the public sector. *European Business Review*, *32*(4), 615-631. https://doi.org/10.1108/EBR-02-2019-0021

Mwita, M., & Joanthan, J. (2019). Digital leadership for digital transformation. *Electronic Scientific Journal*, *10*(4), 2082-2677.

North, K., & Kumta, G. (2018). *Knowledge management: Value creation through organizational learning*. Springer.
Nyathani, R. (2023). Preparing for the Future of Work: How HR Tech is Shaping Remote Work. *Journal of Technology and Systems*, *5*(1), 60-73. https://doi.org/10.47941/jts.1498
O'Grady, J., & O'Grady, K. (2017). *A Designer's research manual, updated and expanded: succeed in design by knowing your clients and understanding what they really need*. Rockport Publishers.
Ogundipe, D., Babatunde, S., & Abaku, E. (2024). AI and product management: A theoretical overview from idea to market. *International Journal of Management & Entrepreneurship Research*, *6*(3), 950-969. https://doi.org/10.51594/ijmer.v6i3.965
Omilion-Hodges, L.M., & Ackerman, C.D. (2018). From the technical know-how to the free flow of ideas: exploring the effects of leader, peer, and team communication on employee creativity. *Communication Quarterly*, *66*(1), 38-57. https://doi.org/10.1080/01463373.2017.1325385
Park, Y., Song, J., Yoon, S., & Kim, J. (2014). Learning organization and innovative behavior: The mediating effect of work engagement. *European Journal of Training and Development*, *38*(1/2), 75-94. https://doi.org/10.1108/EJTD-04-2013-0040
Peng, B. (2022). Digital leadership: State governance in the era of digital technology. *Cultures of Science*, *5*(4), 210-225. https://doi.org/10.1177/2096608321989835
Phakamach, P., Panjarattanakorn, D., & Onsampant, S. (2023). Conceptualization and development of digital leadership to drive corporate digital transformation for sustainable success. *International Journal of Educational Communications and Technology*, *3*(2), 27-39.
Prange, C., & Heracleous, L. (2018). *Agility. X: How organizations thrive in unpredictable times*. Cambridge University Press.
Preacher, K.J., & Hayes, A.F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior research methods*, *40*(3), 879-891. https://doi.org/10.3758/BRM.40.3.879
Price, C., & Toye, S. (2017). *Accelerating performance: How organizations can mobilize, execute, and transform with agility*. John Wiley & Sons.
Resnick, M. (2017). *Lifelong kindergarten: Cultivating creativity through projects, passion, peers, and play*. MIT press.
Salmela, H., Baiyere, A., Tapanainen, T., & Galliers, R. (2022). Digital agility: Conceptualizing agility for the digital era. *Journal of the Association for Information Systems*, *23*(5), 1080-1101. https://doi.org/10.17705/1jais.00767
Schiuma, G., Schettini, E., Santarsiero, F., & Carlucci, D. (2022). The transformative leadership compass: six competencies for digital transformation entrepreneurship. *International Journal of Entrepreneurial Behavior & Research*, *28*(5), 1273-1291. https://doi.org/10.1108/IJEBR-01-2021-0087
Seevaratnam, V., Gannaway, D., & Lodge, J. (2023). Design thinking-learning and lifelong learning for employability in the 21st century. *Journal of Teaching and Learning for Graduate Employability*, *14*(1), 182-201. https://doi.org/10.21153/jtlge2023vol14no1art1631
Senadjki, A., Au Yong, H., Ganapathy, T., & Ogbeibu, S. (2024). Unlocking the potential: the impact of digital leadership on firms' performance through digital transformation. *Journal of Business and Socio-economic Development*, *4*(2), 161-177. https://doi.org/10.1108/JBSED-06-2023-0050
Setili, A. (2014). *The agility advantage: How to identify and act on opportunities in a fast-changing world*. John Wiley & Sons.
Shafique, I., Ahmad, B., & Kalyar, M. (2020). How ethical leadership influences creativity and organizational innovation: Examining the underlying mechanisms. *European Journal of Innovation Management*, *23*(1), 114-133. https://doi.org/10.1108/EJIM-12-2018-0269
Sheninger, E. (2019). *Digital leadership: Changing paradigms for changing times*. Corwin Press.
Shuhua, N., & Kanokporn, C. (2023). Resilient Leadership, Innovation, Executive Incentives, and Sustainable Business Performance: An Empirical Study. *Journal of Logistics, Informatics and Service Science*, 10(4), 1-19. https://doi.org/10.33168/JLISS.2023.0401
Smerek, R. (2017). *Organizational learning and performance: The science and practice of building a learning culture*. Oxford university press.
Sokół, A., & Figurska, I. (2021). The importance of creative knowledge workers in creative organization. *Energies*, *14*(20), 6751. https://doi.org/10.3390/en14206751
Sturm, T., Gerlach, J., Pumplun, L., Mesbah, N., Peters, F., Tauchert, C., & Buxmann, P. (2021). Coordinating Human and Machine Learning for Effective Organizational Learning. MIS quarterly, 45(3), 1581. https://doi.org/10.25300/MISQ/2021/16543
Suksutdhi, T. (2024). Innovation model of human resources training and development for the hotel industry from the asean standard framework: a case in nakhon ratchasima province, Thailand. *GeoJournal of Tourism and Geosites*, 52(1), 267–275. https://doi.org/10.30892/gtg.52126-1203
Tallon, P.P., & Pinsonneault, A. (2011). Competing perspectives on the link between strategic information technology alignment and organizational agility: insights from a mediation model. *MIS quarterly*, 463-486.
Van Dijk, D., Kark, R., Matta, F., & Johnson, R. (2021). Collective aspirations: collective regulatory focus as a mediator between transformational and transactional leadership and team creativity. *Journal of Business and Psychology*, *36*, 633-658. https://doi.org/10.1007/s10869-020-09692-6
Velwin, W., Idris, G., Engkos, A., & Agustinus, B. (2024). Improving Sustainability in the Small-Medium Culinary Industry: Analyzing the Role of Open Innovation and Competitive Advantage. *Journal of System and Management Sciences*, 14(2), 172-187. https://doi.org/10.33168/JSMS.2024.0211
Wang, T., Lin, X., & Sheng, F. (2022). Digital leadership and exploratory innovation: From the dual perspectives of strategic orientation and organizational culture. *Frontiers in Psychology*, *13*, 902693. https://doi.org/10.3389/fpsyg.2022.902693
Wilden, R., Gudergan, S., Nielsen, B., & Lings, I. (2013). Dynamic capabilities and performance: strategy, structure and environment. *Long range planning*, *46*(1-2), 72-96. https://doi.org/10.1016/j.lrp.2012.12.001
Xie, L. (2019). Leadership and organizational learning culture: a systematic literature review. *European journal of training and development*, *43*(1/2), 76-104. https://doi.org/10.1108/EJTD-06-2018-0056
Yansen, Y., & Yujie, Z. (2023). The Impact of Transformative Digital Leadership on Organizational Innovation: A Case Study of Successful Digital Transformation. *International Journal of Advanced Research in Technology and Innovation*, *5*(1), 57-71. https://doi.org/10.55057/ijarti.2023.5.1.6
Yi, Z. (2019). A leader's approaches to fostering a culture of knowledge sharing in an information organization. *Library Management*, *40*(8/9), 593-600. https://doi.org/10.1108/LM-11-2018-0083
Young, J. (2021). *Leadership Resilience in a Digital Age*. Routledge.
Zhang, L., & Guo, H. (2019). Enabling knowledge diversity to benefit cross-functional project teams: Joint roles of knowledge leadership and transactive memory system. *Information & Management*, *56*(8), 103156. https://doi.org/10.1016/j.im.2019.03.001

Article history: Received: 24.03.2024 Revised: 28.05.2024 Accepted: 18.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.885-895
DOI 10.30892/gtg.542spl12-1263

EFFECT OF GREEN INCLUSIVE LEADERSHIP ON EMPLOYEES' GREEN WORK ENGAGEMENT IN HOTELS AND TRAVEL AGENCIES: THE ROLE OF GREEN INTRINSIC MOTIVATION

Farida Mostafa Ibrahim ELADAWI*
Hotel Studies Department, Faculty of Tourism and Hotels, Mansoura University, Mansoura, Egypt, e-mail: faridaeladawi@gmail.com

Mohamed Khalil ELNAGGAR
Department of History and Islamic Civilization, College of Arts, Humanities and Social Sciences, University of Sharjah, Sharjah, United Arab Emirates, e-mail: mo.alnajar@sharjah.ac.ae

Mohammed Ezzat HASHAD
Hotel Management Department, Faculty of Tourism and Hotels, University of Sadat City, Sadat City, Egypt, e-mail: mohamed.hashad@fth.usc.edu.eg

Amira Haliem Ibrahiem AWAD
Tourism Studies Department, Faculty of Tourism and Hotels, Helwan University, Cairo, Egypt, e-mail: amira.haliem205@gmail.com

Ahmed Abd El-Karim Ghanem ABD EL-HALIM
Hotel Studies Department, Al Alson Higher Institute for Tourism, Hotels and Computer, Cairo, Egypt, e-mail: Ghanem_ahmed84@yahoo.com

Citation: ElAdawi, F.M.I., Elnaggar, M.K., Hashad, M.E., Awad, A.H.I., & Abd El-Halim, A.A.E.K.G. (2024). EFFECT OF GREEN INCLUSIVE LEADERSHIP ON EMPLOYEES' GREEN WORK ENGAGEMENT IN HOTELS AND TRAVEL AGENCIES: THE ROLE OF GREEN INTRINSIC MOTIVATION. *Geojournal of Tourism and Geosites*, 54(2spl), 885–895. https://doi.org/10.30892/gtg.542spl12-1263

Abstract: This study aims to explore the effect of green inclusive leadership (GIL) on green work engagement (GWE). It also examines the mediating role of employees' green intrinsic motivation (GIM). The study investigated 50 category-A travel agencies and 20 five-star hotels in the Greater Cairo region of Egypt. The PLS-SEM approach was used to analyze 392 responses obtained from full-time employees. Results revealed that green inclusive leadership positively impacts employees' green intrinsic motivation and green work engagement. In addition, employees' green intrinsic motivation positively impacts green work engagement and mediates the relationship between green inclusive leadership and employees' green work engagement. The study offers comprehensive insights into green inclusive leadership, employee intrinsic motivation, and work engagement in the Egyptian tourism and hotel industry.

Keywords: G reen inclusive leadership, green work engagement, green intrinsic motivation, tourism and hotel industry, Egypt

* * * * * *

INTRODUCTION

Hospitality and tourism organizations worldwide are undergoing a strategic shift towards environmental sustainability, with a growing focus on integrating green behaviors and practices into their operations and services (Streimikiene et al., 2021; Aboramadan et al., 2022; Alqarni et al., 2023; Velwin et al., 2024). At the heart of this movement lies the critical role of employees' environmentally conscious actions, termed green behaviors (e.g., GWE), which have emerged as key catalysts for successfully implementing eco-friendly practices within the workplace (Dumont et al., 2017). Furthermore, fostering employee engagement in such practices is essential for the effectiveness of any environmental management initiative (Karatepe et al., 2022; Shuhua and Kanokporn, 2023; Al-Romeedy and Khairy, 2024). According to Bhutto et al. (2021), GWE refers to the level of employee involvement in tasks related to environmental sustainability. This encompasses their passion for such tasks, dedication to achieving environmental goals, and a sense of pride, immersion, and commitment to ecological efforts within their work. Research has identified several key factors influencing GWE, where employees dedicate themselves to promoting environmentally sustainable practices within their workplaces (Suksutdhi, 2024). These factors are commonly identified across various studies, such as job characteristics (Rai et al., 2017), HRM practices (Ababneh, 2021), and leadership (Aboramadan et al., 2022; Fang, 2023).

Hospitality and tourism organizations recognize the crucial role work engagement plays in organizational success (Karatepe et al., 2022; Alagarsamy et al., 2023). Inclusive leadership emerges as a powerful driver of this engagement, fostering a positive and productive work environment (Bao et al., 2022). Green Inclusive Leadership (GIL) stood out as a relational approach within the landscape of contemporary leadership styles. Characterized by its openness to innovative

* Corresponding author

green ideas, active discussion of pro-environmental goals, and accessibility for consultation on organizational environmental challenges, GIL fosters a collaborative environment where achieving sustainability becomes a shared responsibility (Aboramadan et al., 2022). Bhutto et al. (2021) defined GIL as the leadership style characterized by transparency, accessibility, and collaborative interaction with employees in pursuit of environmental goals and green processes or services. In essence, GIL leaders act as motivators, promoting active employee participation and dialogue around environmental solutions (Patwary et al., 2023). While fostering a readily accessible and open leadership style is commendable, research by Bhutto et al. (2021) concluded that it may not be the sole catalyst for maximizing green work engagement. Their findings indicate that mere leader accessibility and openness do not automatically translate into heightened employee dedication, energy, and absorption in environmentally sustainable practices.

Putra et al. (2017) posit that some intervening mechanisms (e.g., intrinsic motivation) can increase employees' work engagement. The self-determination theory (SDT) proposed by Ryan and Deci (2000a) underscores the fundamental role of motivational drivers in employee engagement, extending to the realm of green work. Gagné and Deci (2005) differentiated between intrinsic and extrinsic motivation. Activities perceived as inherently interesting, challenging, and purpose-driven fuel intrinsic motivation, leading to enhanced personal satisfaction and fulfillment (Deci et al., 2017). This type of motivation is critical for sustaining work engagement, especially in the context of GWE (Putra et al., 2017, Aboramadan, 2022). Intrinsic motivation refers to the inherent desire to engage in an activity for the inherent satisfaction and enjoyment it provides, independent of external rewards (Ryan and Deci, 2000b). Drawing on this, the current study defines green intrinsic motivation (GIM) as the internal drive to engage in environmentally friendly behaviors for personal satisfaction and fulfillment. As Deci and Ryan (2013) argue, GIM thrives when individuals possess a strong internal locus of causality, feeling responsible and in control of their actions and their positive impact on the environment. Previous studies highlighted the relationship between inclusive leadership and work engagement in a non-green context (e.g., Aslan et al., 2021; Vakira et al., 2023). In the green context, scholars examined the impact of green inclusive leadership on some variables, such as green creativity (Bhutto et al., 2021), employee green behaviors (Aboramadan et al., 2022), and green organizational citizenship (Abdou et al., 2023). The study conducted by Aboramadan et al. (2022) analyzed the effect of GIL on employees' green behaviors, such as green knowledge-sharing behavior, green service recovery performance, and green innovative work behavior. Aboramadan and his colleagues further recommended future research to investigate the impact of GIL on other green behaviors, such as GWE, which indicates a substantial gap that persists in recognizing the direct relationship between GIL and GWE. To our knowledge, no study has examined the direct relationship between GIL and GWE or the indirect relationship between the two constructs, considering GIM as a potential mediating factor, particularly within the hospitality and tourism industry. Hence, the current study has two aims. First, bridge the gap in the literature by investigating the relationship between GIL and GWE. Second, examine the mediating role of GIM in the GIL-GWE relationship in the hospitality and tourism industry. The flow chart of the research methodology is presented in Figure 1 below.

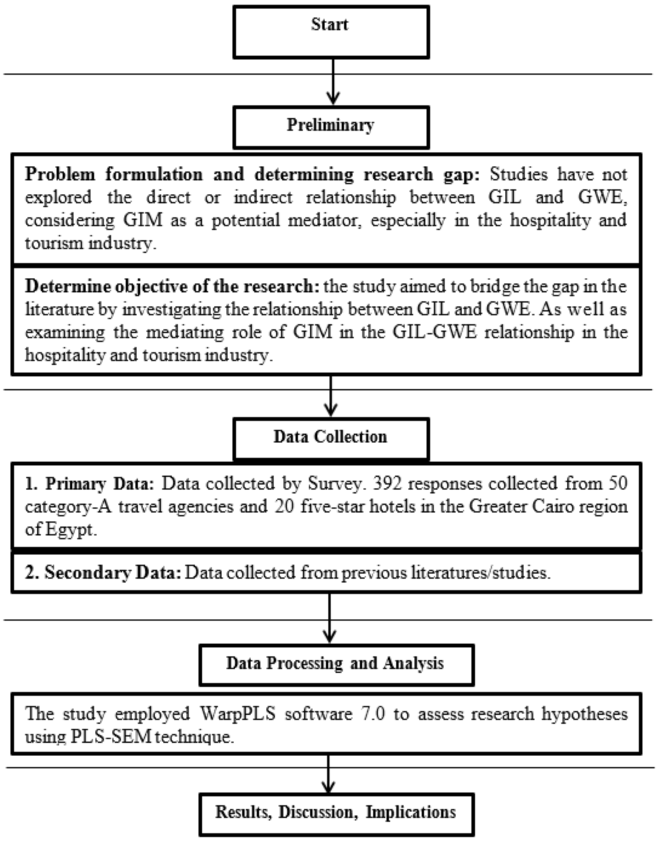


Figure 1. A flow chart of research methodology

THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

Green Inclusive Leadership and Green Work Engagement

Active involvement in work activities "work engagement" can strongly reflect employees' demonstrably strong commitment (Khairy et al., 2023a). This commitment manifests as enthusiastic and proactive participation, motivating them to tackle diverse tasks and excel across various facets of their work (Schaufeli et al., 2006). GWE refers to the concerted effort and dedication employees devote to fostering a sustainable work environment. It manifests in their adherence to eco-friendly practices and their entrenched sense of belonging within an organization committed to environmental responsibility (Aboramadan, 2022). GWE transcends mere compliance with environmental initiatives. It signifies a deep employee commitment to actively contribute to a sustainable work environment (Bhutto et al., 2021). This commitment manifests in both cognitive focus and emotional dedication towards tasks associated with eco-friendliness, reflecting a heightened level of seriousness in preserving the environment. As a key indicator of active pro-environmental participation, GWE underscores the crucial role employees play in fostering a truly green workplace (Marini et al., 2023; Khairy et al., 2024).

The relationship between inclusive leadership and work engagement was established through several aspects (Aslan et al., 2021). Firstly, Carmeli et al. (2010) and Hollander (2012) argue that by fostering an environment of trust and psychological safety through open communication, accessibility, and emotional support, inclusive leaders foster intrinsic motivation and risk-taking, leading to enhanced work engagement. Secondly, Bannay et al. (2020) assert that inclusive leaders demonstrate a commitment to their team's development by investing in targeted resources and opportunities for skill enhancement and knowledge acquisition. This not only equips employees for success but also propels work engagement. Thirdly, Carmeli et al. (2010) and Zeng et al. (2020) indicated that inclusive leaders move beyond directive styles, actively engaging their teams in decision-making processes and granting them autonomy. This promotes employees' feelings of ownership and responsibility, demonstrably translating into more work engagement. In the green context, Abdou et al. (2023) concluded that GIL transcends mere environmental advocacy. It necessitates the active engagement and empowerment of employees in sustainability initiatives, fostering a culture of shared environmental stewardship within the organization. This inclusive approach demonstrably enhances GWE, leading to demonstrably improved environmental outcomes. Therefore, the study hypothesized that:

H**1:** GIL positively affects GWE

Green Inclusive Leadership and Green Intrinsic Motivation

Employee behaviors are often driven by intrinsic or extrinsic motivations (Norton et al., 2015). Intrinsic motivation arises from the inherent satisfaction and interest individuals find in a task, fostering autonomy and personal fulfillment. In contrast, extrinsic motivation stems from external rewards, recognition, or even the fear of punishment, influencing behavior through external pressures (Ryan and Deci, 2000b). Within the self-determination theory (SDT), intrinsic motivation signifies the apex of autonomous behavior (Gagné and Deci, 2005). This inherent drive propels employees toward pro-environmental tasks intrinsically perceived as interesting and stimulating, resulting in personal pleasure and satisfaction (Deci et al., 2017). Building on this definition, Li et al. (2020) defined green intrinsic motivation as the internalized desire to engage in pro-environmental behaviors. This self-determined motivation arises from personal values, interests, and a sense of responsibility toward the environment, resulting in internal rewards such as satisfaction and fulfillment. Green inclusive leaders prioritize cultivating GIM in their employees, fostering a sense of competence, autonomy, and relatedness within the workplace (Yanzi and Yanan, 2019). This unique leadership style cultivates a fair and equitable environment, demonstrably propelling intrinsic motivation toward environmental sustainability. Notably, green-inclusive leaders provide frequent feedback and recognition for both green practices and professional development. This directly addresses the fundamental psychological needs outlined by SDT "competence, autonomy, and relatedness", which demonstrably foster employees' intrinsic motivation (Qasim et al., 2022). Supportive leadership is well-established as a predictor and nurturer of employee intrinsic motivation within the organizational behavior literature (Shu, 2015; Bande et al., 2016; Faraz et al., 2021). Inclusive leaders embody this principle by actively supporting their team members. They demonstrate openness, availability, and accessibility, ensuring employees' expectations, needs, and aspirations are heard and addressed (Hudie et al., 2017). Moreover, inclusive leadership fosters trust and loyalty by demonstrably valuing employee contributions, actively responding to ideas, and providing essential emotional support (Javed et al., 2019). This approach engenders a demonstrably more supportive organizational climate compared to other leadership styles (Choi et al., 2017). Within this supportive environment, employees are empowered to take initiative, adapt to changing circumstances, and freely share information and opinions (Zeng et al., 2020; Khairy et al., 2023b). Inclusive leaders further demonstrate their commitment to employee success by actively engaging in supporting business processes and motivating their teams to overcome challenges (Bannay et al., 2020). Hence, the following hypothesis was proposed:

H2: GIL positively affects employees' GIM

Green Intrinsic Motivation and Green Work Engagement

GWE refers to a positive and fulfilling state of mind specifically related to environmental practices and initiatives within the workplace (Schaufeli et al., 2006; Aboramadan, 2022). It is characterized by three key components: vigor where employees exhibit high energy and mental flexibility, demonstrating a willingness to invest effort and persevere in green work endeavors, even when faced with difficulties; dedication refers to aligning environmental responsibility with personal values, individuals find meaning and significance in their green roles, readily adapting to the demands of their environmental work; and absorption indicates that employees experience deep immersion and focus in their green tasks, driven by a strong desire to contribute positively to environmental goals (Karatepe et al., 2022; Marini et al., 2023).

Previous studies suggested that employees engage in environmentally friendly behaviors at work (e.g., GWG) due to intrinsic and extrinsic motivation (Norton et al., 2015; Shu, 2015; Xu et al., 2022). GIM fuels eco-friendly behaviors driven by personal satisfaction and enjoyment. Unlike external rewards, this motivation stems from within (Deci and Ryan, 2013). When individuals feel an internal sense of control over their green actions, this "locus of causality" empowers them to actively create positive environmental change. For example, a deep love for nature and responsible practices can inspire employees to engage in developing products and services that minimize environmental impact, driven by their values and commitment to sustainability (Li et al., 2020). Regarding the relationship between GIM and GWE, the current study was drawn on SDT. SDT explains how intrinsic and extrinsic motivations influence pro-environmental behaviors (Ryan and Deci, 2000a; Duong et al., 2023). Intrinsically motivated individuals act because they find the activity inherently interesting, enjoyable, and fulfilling (Ryan and Deci, 2000a). This includes internalized and identified motivations, where the action aligns with personal values and feels important (Yang and Thøgersen, 2022). For example, individuals might be intrinsically motivated to practice green behaviors because they find them enjoyable and contribute to environmental well-being. They engage in these activities for the inherent satisfaction and pleasure they derive, not external rewards (Koo et al., 2015; Duong et al., 2023). So, the current study proposes that when employees have Intrinsic love, passion, and interest in the environment, they are more likely to engage in green work as they find GWE more interesting, enjoyable, and fulfilling for their environmental passion. Consequently, the following hypothesis was formulated:

H3: GIM positively affects GWE

The Mediating Role Green Intrinsic Motivation

The current study employed the social exchange theory (SET) of Blau (1964, 2017) and the SDT of Ryan and Deci (2000a) to indicate how green inclusive leaders encourage employees' green work engagement by affecting their green intrinsic motivation. SET underscores the notion that social interactions are fundamentally reciprocal exchanges (Blau, 1964, 2017). Inclusive leaders who demonstrate openness, accessibility, and availability initiate a positive exchange with their employees (Carmeli et al., 2010). This, in turn, fosters a sense of obligation among employees to reciprocate through enhanced vigor, dedication, and absorption in their work, which constitutes work engagement, especially when employees experience their work as enjoyable, interesting, and inherently satisfying (Saks, 2019). This intrinsic drive amplifies the positive effects of inclusive leadership, creating a mutually reinforcing cycle that culminates in enhancing work engagement (Shu, 2015; Abdou et al., 2023). Furthermore, SDT identified three fundamental psychological needs that drive intrinsic motivation: autonomy, competence, and relatedness (Ryan and Deci, 2000a). When individuals engage in activities that fulfill these needs, they experience inherent satisfaction and enjoyment, leading to intrinsically motivated behavior (Güntert, 2015). Inclusive leadership ignites intrinsic motivation by nurturing employee autonomy and competence. They do this by empowering decision-making, investing in skill development, and recognizing achievements (Güntert, 2015).

Consequently, employees reciprocate by exhibiting high levels of work engagement, characterized by vigor, dedication, and absorption in their work (Shu, 2015). The current study, grounded in both SET and SDT, proposes that GIL drives intrinsic motivation in employees, leading them to actively engage in green tasks and pro-environmental behaviors. Green inclusive leaders embody openness, accessibility, and availability. These traits, according to SET, establish a positive exchange relationship with employees (Yanzi and Yanan, 2019). In response, employees are intrinsically motivated to reciprocate by enhancing their green work engagement (Cenkci et al., 2021). This engagement manifests through the dedication of their emotional, cognitive, and physical resources to their work (Bao et al., 2022). SDT further supports this dynamic. Leaders who offer encouragement and recognition for green initiatives spark interest and enthusiasm among employees, fostering deeper engagement with environmentally focused tasks (Bhutto et al., 2021). By creating a culture of open dialogue and inquiry, green inclusive leaders also cultivate genuine curiosity in their teams, motivating them to engage in green work with zeal and dedication (Aboramadan et al., 2022; Abdou et al., 2023). Essentially, GIL fosters a mutually beneficial cycle. Leaders create an environment that fosters GIM, and employees reciprocate by dedicating their efforts towards more GWE. Hence, the study hypothesized that:

H4: GIM positively mediates the relationship between GIL and GWE.

The conceptual framework of the study is illustrated in Figure 2 below.

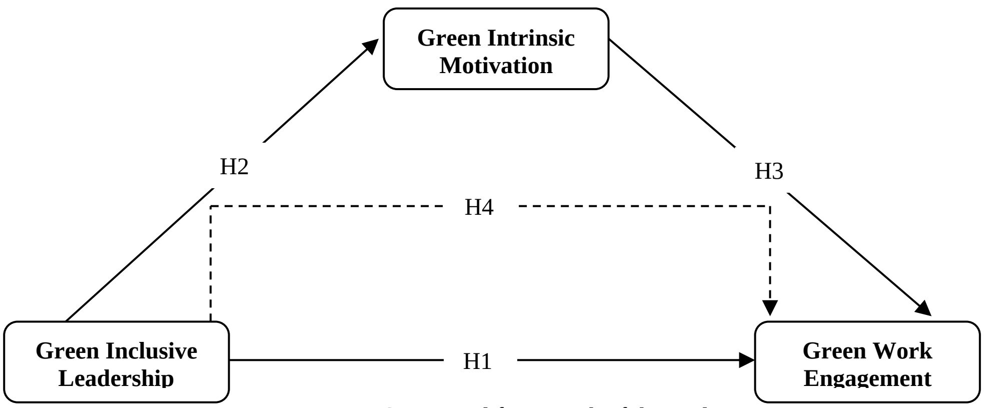


Figure 2. Conceptual framework of the study

METHODOLOGY

Measures

This is a survey-based study that explores the impact of green inclusive leadership on green work engagement in five-star hotels and category-A travel agencies, examining the mediating role of employees' green intrinsic motivation. A 9-item scale developed by Carmeli et al. (2010) was used to evaluate green-inclusive leadership.

For example, “The manager is accessible for discussing emerging pro-environmental problems” and “The manager is open to hearing g new pro-environmental ideas”. In addition, a 6-item scale adapted from Aboramadan (2022) was used to measure employees' green work engagement. For example, “I am proud of the environmental work that I do” and “I am immersed in my environmental work”. Moreover, a 6-item scale developed by Li et al. (2020) was utilized to assess employees' green intrinsic motivation. For instance, “I enjoy trying to complete environmental tasks in my workplace” and “I enjoy improving existing green ideas in my workplace”.

Population and sample

The study analyzed five-star hotels and travel agencies-category-A in Egypt's hospitality and tourism industry using a convenience sample strategy. The researchers' large population and limited resources have led to a significant challenge in their research endeavor which is why this study relied on a convenience sampling technique (Hashad et al., 2023). Data from employees of Egypt's five-star hotels and category-A travel agencies, which continuously offer superior customer service and are dedicated to green initiatives, was used to assess the research model. The Egyptian Ministry of Tourism and Antiquities (2022) reported that the Greater Cairo region of Egypt has 30 five-star hotels and 1666 travel agencies category-A. The study involved 50 travel agencies and 20 hotels, with a response rate of 56%, based on 392 valid questionnaires out of 700 distributed. Out of 392 employees, 52.30% (n= 205) were in five-star hotels, while 47.70% (n=187) were in travel agencies (Figure 3).

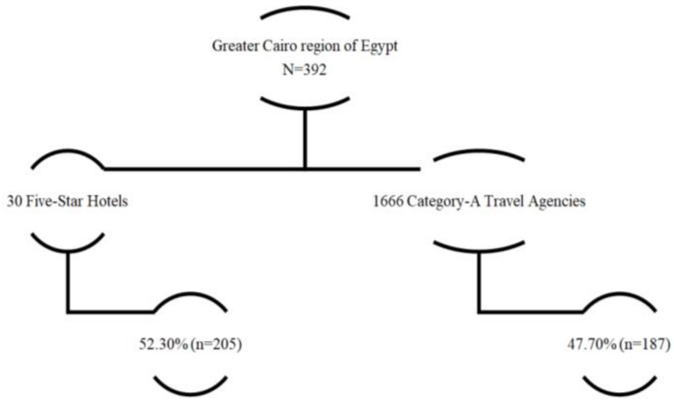


Figure 3. Study sample

Respondents’ profile

According to Table 1, 392 employees were involved in this study; 308 (78.57%) were males and 84 (21.43%) were females. There were 178 (45.41%) employees below the age of 30 and 32 (8.16%) above the age of 50. In addition, more than two-thirds (n=268, or 68.37%) held a bachelor's degree. Furthermore, about half of the participants (n=182, 46.43%) had two to five years of work experience.

Table 1. Respondents’ profile (N=392)

		Frequency	Percent
Gender	Male	308	78.57
	Female	84	21.43
Age group	< 30 years	178	45.41
	30 : < 40 years	136	34.69
	40 : ≤ 50 years	46	11.73
	> 50 years	32	8.16
Educational level	High schools/institute	94	23.98
	Bachelor	268	68.37
	Master/PhD	30	7.65
Tenure	1:< 2 years	122	31.12
	2 to <5 years	182	46.43
	≥5 years	88	22.45

Data analysis

This study employed WarpPLS software 7.0 to assess research hypotheses using PLS-SEM, a popular analytical technique in tourism and hospitality research. The study utilized PLS-SEM, a statistical method for theory validation and data processing in complex models, suitable for strategic and management studies in hospitality and tourism research (Abouelenien et al., 2024; Alshehri et al., 2024; Khairy and Elzek, 2024). In addition, the Multi-Group Analysis was first conducted and revealed no significant differences in path coefficients according to the differences in the workplace “travel agencies or hotels”.

RESULTS

Reliability and validity

According to Table (2), the research constructs exhibited composite reliability (CR) ratings above the minimally acceptable level (CR>0.70), with all item loadings being statistically acceptable (Loadings >0.50, p<0.05). The study's convergent validity was also confirmed by the AVE values exceeding 0.50 (Gerbing and Anderson, 1988). It can also be noted that the model is considered free of common method bias since the variance inflation factors (VIFs) for every latent variable are ≤3.3 (Kock, 2015). Table (3) confirms the study model's discriminant validity, with each variable's AVE value exceeding the maximum common value and a significant correlation between latent variables which is less than unity. The validity of the constructs was confirmed through the calculation and proof of the HTMT since it is < 0.85, as shown in Table (4).

Table 2. Factor loadings, Cronbach Alpha, CR, AVE, and VIF

	Item loading	CR	CA	AVE	VIFs
Green inclusive leadership (GIL)	-	0.924	0.905	0.579	2.060
GIL.1	0.871				
GIL.2	0.824				
GIL.3	0.808				
GIL.4	0.832				
GIL.5	0.820				
GIL.6	0.804				
GIL.7	0.669				
GIL.8	0.607				
GIL.9	0.541				
Green work engagement (GWE)	-	0.900	0.867	0.602	2.219
GWE.1	0.810				
GWE.2	0.826				
GWE.3	0.778				
GWE.4	0.815				
GWE.5	0.740				
GWE.6	0.676				
Green intrinsic motivation (GIM)	-	0.919	0.894	0.657	1.793
GIM.1	0.695				
GIM.2	0.804				
GIM.3	0.774				
GIM.4	0.856				
GIM.5	0.849				
GIM.6	0.869				

Table 3. Discriminant validity

	GIL	GIM	GWE
Green inclusive leadership (GIL)	0.761	0.590	0.688
Green intrinsic motivation (GIM)	0.590	0.810	0.629
Green work engagement (GWE)	0.688	0.629	0.776

Table 4. HTMT for validity

HTMT ratios (good if < 0.90, best if < 0.85)	GIL	GIM	GWE
Green inclusive leadership (GIL)			
Green intrinsic motivation (GIM)	0.686		
Green work engagement (GWE)	0.796	0.719	
P values (one-tailed) for HTMT ratios (good if < 0.05)	GIL	GIM	GWE
Green inclusive leadership (GIL)			
Green intrinsic motivation (GIM)	<0.001		
Green work engagement (GWE)	<0.001	<0.001	

Table. 5. Model fit and quality indices

	Assessment	Criterion
Average path coefficient (APC)	0.505, P<0.001	P<0.05
Average R-squared (ARS)	0.534, P<0.001	P<0.05
Average adjusted R-squared (AARS)	0.533, P<0.001	P<0.05
Average block VIF (AVIF)	2.084	acceptable if <= 5, ideally <= 3.3
Average full collinearity VIF (AFVIF)	2.024	acceptable if <= 5, ideally <= 3.3
Tenenhaus GoF (GoF)	0.572	small >= 0.1, medium >= 0.25, large >= 0.36
Sympson's paradox ratio (SPR)	1.000	acceptable if >= 0.7, ideally = 1
R-squared contribution ratio (RSCR)	1.000	acceptable if >= 0.9, ideally = 1
Statistical suppression ratio (SSR)	1.000	acceptable if >= 0.7
Nonlinear bivariate causality direction ratio (NLBCDR)	1.000	acceptable if >= 0.7

Research model fit and quality metrics

Kock's (2021) model fit and quality index criteria were all met by the current study (Table 5).

Hypotheses testing results

Hypotheses testing results shown in Figure (2) indicate that green inclusive leadership (GIL) positively impacts green work engagement (GWE) (β=0.45, P<0.01), and green intrinsic motivation (GIM) (β=0.63, P<0.01). This means that as GIL increases, GWE and employee GIM tend to be high, supporting both H1 and H2. In addition, employee GIM positively impacts their GWE (β=0.43, P<0.01). This means that when GIM is higher, GWE tends to be high. Therefore, H3 is supported. Figure (4) also shows that green inclusive leadership interpreted 40% of the variance in employees' green intrinsic motivation (R2=0.40). Moreover, green inclusive leadership and green intrinsic motivation interpreted 67% of the variance in employee green work engagement (R2=0.67).

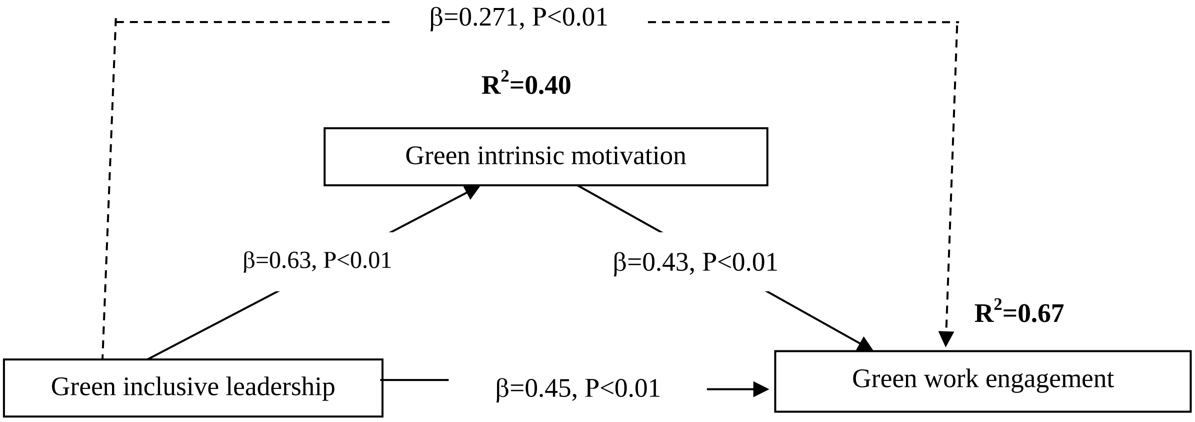


Figure 4. The final model of the study

Finally, bootstrapping analysis was used to investigate the indirect effect to evaluate the role of green intrinsic motivation as a mediator (Table 6). The indirect effect's Std. β=0.271 (0.630×0.430) was significant (P<0.001), with a t-value of 7.968, according to the bootstrapping procedure. Additionally, mediation is confirmed by the fact that a "95% Bootstrapped Confidence Interval" (LL=0.204, UL=0.338) does not cross a zero in the middle. Therefore, it can be said that there is statistically significant evidence supporting the role that green intrinsic motivation plays as a mediator in the relationship between green inclusive leadership and green work engagement. H4 is therefore supported.

Table 6. Mediation analysis

H4	Path a GIL-GIM	Path b GIM-GWE	Indirect Effect	SE	t-value	Bootstrapped Confidence Interval		Decision
						95% LL	95% UL	
GIM as mediator	0.630	0.430	0.271	0.034	7.968	0.204	0.338	Mediation

DISCUSSION

The study investigates the impact of green inclusive leadership on green work engagement and the mediating role of employees' green intrinsic motivation. The research model was established and tested, incorporating four hypotheses (H1, H2, H3, and H4). The study found that green inclusive leadership positively influences green work engagement (H1-supported) and employees' green intrinsic motivation (H2-supported). These findings exhibit notable concordance with earlier research in green context conducted by Fang et al. (2021), and Patwary et al. (2023).

Inclusive leadership fosters team relationships, boosts employee loyalty, and promotes green behavior, demonstrating resource accessibility and innovative employee behavior, particularly in the hospitality and tourism industry (Bhutto et al., 2021). Decuypere and Schaufeli (2020) suggest that approachable and open-minded leaders motivate followers to invest their energy in their work. Inclusive leaders positively impact green human resources practices, prioritizing employee needs and increasing engagement with green practices in tourism and hotel enterprises, thereby boosting motivation. In addition, green inclusive leadership positively impacts the hospitality and tourism sector by transforming corporate policies into guidelines and training employees on green outcomes.

This approach fosters positive perceptions of the organization's green climate by providing freedom and achieving green objectives (Bhutto et al., 2021). Further, the findings are in line with studies conducted in non-green contexts, such as Ly (2024) and Cin and Sönmez (2024). The study also found that green intrinsic motivation positively influences green work engagement (H3-supported) and positively mediates the relationship between green inclusive leadership and employees' green work engagement (H4-supported). These results are consistent with Bhutto et al. (2021) and Aboramadan et al. (2022), Green inclusive leadership can enhance green work engagement by motivating employees through an open approach (Bhutto et al., 2021). Green inclusive leadership, a style that prioritizes employee needs, can boost engagement in the tourism and hospitality sector by focusing on green-related work tasks (Aboramadan et al., 2020). This approach can enhance green work engagement, highlighting the energy expended and commitment to green tasks. In addition, leaders significantly contribute to employees' perceived organizational support by providing essential organizational resources, as they are considered a crucial source of support (Huning et al., 2020). GIL fosters positive employee perceptions of green organizational support by making leaders accessible and open to addressing environmental issues, thereby promoting positive green work experiences (Aboramadan et al., 2022).

Theoretical and practical implications

The current study offers valuable theoretical contributions, particularly to SET and SDT, enriching the field of green organizational behaviors. Notably, the findings bolster the core principles of both theories: our results reinforce the fundamental views of SET, illustrating that supportive leadership fosters reciprocal positive behaviors from employees. By establishing a climate of inclusivity and environmental commitment, organizations incentivize intrinsic motivation and encourage employees to reciprocate through increased engagement in green practices. Further, the findings resonate with SDT's emphasis on intrinsic motivation as a key driver of engagement. The mediating role of GIM highlights that when green inclusive leaders exhibit openness, availability, and accessibility, it ensures employees' expectations, needs, and aspirations are heard and addressed, leading to satisfying their needs and motivating their engagement in green behaviors. The positive influence of GIL on GWE, mediated by GIM, underscores the belief that employees respond to inclusive leadership with more commitment and engagement. Further, the study emphasizes the critical role of leadership in fostering GIM, a key driver of GWE. Leaders who champion both environmental sustainability and inclusivity can directly influence GWE while simultaneously nourishing GIM. This occurs by addressing employees' passion and interest in green values and providing opportunities for active involvement in sustainability efforts. Furthermore, the study establishes a positive correlation between GIM and GWE. Intrinsic motivation is known to fuel employee vigor, dedication, and absorption, leading to enhanced engagement with tasks that align with their values.

This suggests that employees with higher GIM are more likely to actively participate in green initiatives, which do not entail advanced cognitive skills. Otherwise, the study built a comprehensive framework for understanding GWE, highlighting the interconnectedness of leadership, motivation, and engagement in the context of sustainability. Notably, it identifies GIM as a key mediator between GIL and GWE. This underscores the leadership's critical role in fostering GIM through an inclusive and values-aligned environment. Such an environment fuels intrinsic motivation, leading to deeper engagement in green initiatives regardless of job boundaries. Therefore, cultivating GIM should be central to any leadership strategy for promoting GWE. This study lays the groundwork for further research on effective leadership practices for GIM and their applicability across diverse contexts. Ultimately, translating these insights into actionable strategies empowers workforces to actively contribute to a more sustainable future.

The findings of the study offer some key practical implications for tourism and hotel industry practitioners seeking to advance environmental sustainability through leadership, motivation, and employee engagement: Firstly, hospitality and tourism organizations must prioritize GIL style by selecting and training leaders who exhibit a strong personal commitment to environmental sustainability and are adept at fostering inclusion within the workforce.

Furthermore, integrate modules on environmental stewardship and inclusive leadership into training programs, equipping leaders to promote green practices and foster a green-value-driven work environment. Secondly, fostering GWE in hospitality and tourism organizations is a significant matter. Tourism and hotel enterprises can increase their employees' GWE by providing employees with the resources, recognition, and opportunities necessary to actively participate in environmentally responsible practices. In addition, designing clear and accessible avenues for employee engagement in green initiatives fosters a sense of ownership and meaningful contribution. Thirdly, tourism and hotel enterprises must comprehend the mechanism of motivation to cultivate employees' GIM by promoting a comfortable and meaningful work environment that enhances employee well-being and connects their work to broader environmental impact, increasing intrinsic motivation and driving deeper engagement. Finally, hospitality and tourism organizations must create feedback mechanisms and recognition systems to highlight employee contributions to sustainability initiatives, strengthen intrinsic motivation, and reinforce desired behaviors. By adopting these evidence-based strategies, tourism and hotel enterprises can cultivate a workforce with a genuine intrinsic motivation to embrace green practices, ultimately contributing to a more sustainable and responsible hospitality and tourism industry.

Limitations and future research

This study successfully explored the relationships between green inclusive leadership, green work engagement, and green intrinsic motivation in the context of five-star hotels and category-A travel agencies in Egypt. While the findings offer valuable insights into this specific environment, acknowledging certain limitations is crucial for future research exploration. Firstly, the study focused on five-star hotels and category-A travel agencies in Egypt, which restricted its direct applicability to broader populations and settings. Future research should aim to replicate the findings in diverse organizational contexts, including green-certified hotels across different star ratings (4/5-star), other hospitality and tourism sectors, such as restaurants and airlines, and broader geographical areas, especially across the Middle East and other African countries. These explorations will enhance the generalizability of the findings and contribute to a more comprehensive understanding of the interdependencies between the examined constructs. Secondly, the current study primarily focused on GWE as the key outcome variable. However, to gain a more holistic perspective on the effectiveness of GIL, future investigations could examine its impact on a broader range of green behaviors.

Analyzing its influence on specific actions like green recycling, green commitment, and green voice behavior would offer valuable insights into how GIL translates into tangible environmental outcomes. Furthermore, exploring the relative efficacy of different green leadership styles alongside GIL holds significant promise.

By comparing the predictive power of styles like green servant leadership, green transformational leadership, and GIL on green behavioral outcomes, the hospitality and tourism literature can be enriched with a deeper understanding of how leadership dynamics shape employee environmental engagement.

This comparative analysis would provide valuable guidance on fostering optimal leadership approaches for specific contexts and desired behaviors. Third, the current study investigated the mediating role of green intrinsic motivation in the relationship between green inclusive leadership and green work engagement. Therefore, further research may explore the moderating effect of GIM in the GIL-GWE relationship or investigate the mediating/moderating role of other factors like green dynamic capabilities, green ambidexterity, green organizational identification, etc. Finally, this study employed a quantitative approach using questionnaires. While effective, incorporating qualitative methods offers additional insights, as conducting in-depth interviews or focus groups will provide a deeper understanding of employee experiences and perceptions regarding GIL and its impact on GWE. By integrating qualitative methodologies, future research can offer a more nuanced and holistic perspective on the investigated relationships.

Author Contributions: Conceptualization, F.M.I.E. and M.E.H. and A.H.I.A. and A.A.Gh.A.; methodology, F.M.I.E. and M.E.H. and A.H.I.A. and A.A.Gh.A.; software, F.M.I.E. and M.E.H. and A.H.I.A. and A.A.Gh.A.; validation, F.M.I.E. and M.E.H. and A.H.I.A. and A.A.Gh.A.; formal analysis, M.E.H.; investigation, F.M.I.E. and M.Kh.E. and M.E.H. and A.H.I.A. and A.A.Gh.A.; data curation, F.M.I.E. and M.Kh.E. and M.E.H. and A.H.I.A. and A.A.Gh.A.; writing - original draft preparation, F.M.I.E. and M.E.H. and A.H.I.A. and A.A.Gh.A.; writing - review and editing, F.M.I.E. and M.Kh.E. and M.E.H. and A.H.I.A. and A.A.Gh.A.; visualization, F.M.I.E. and M.E.H. and A.H.I.A. and A.A.Gh.A.; supervision, F.M.I.E. and M.E.H. and A.H.I.A. and M.Kh.E. and A.A.Gh.A.; project administration, M.E.H. and M.Kh.E. All authors have read and agreed to the published version of the manuscript.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Ababneh, O.M.A. (2021). How do green HRM practices affect employees' green behaviors? The role of employee engagement and personality attributes. *Journal of Environmental Planning and Management*, *64*(7), 1204-1226. https://doi.org/10.1080/09640568.2020.1814708

Abouelenien, R.E.I., Abd-Elhady, M.H., Hussien, I.M., & Hashad, M.E. (2024). The effect of job insecurity on employees' job performance in the hospitality and tourism industry: The role of work alienation. *Journal of the Faculty of Tourism and Hotels-University of Sadat City*, *8*(1/1), 1-20.

Abdou, A.H., Al Abdulathim, M.A., Hussni Hasan, N.R., Salah, M.H.A., Ali, H.S.A.M., & Kamel, N.J. (2023). From green inclusive leadership to green organizational citizenship: Exploring the mediating role of green work engagement and green organizational identification in the hotel industry context. *Sustainability*, *15*(20), 14979. https://doi.org/10.3390/su152014979

Aboramadan, M. (2022). The effect of green HRM on employee green behaviors in higher education: The mediating mechanism of green work engagement. *International Journal of Organizational Analysis*, *30*(1), 7-23. https://doi.org/10.1108/IJOA-05-2020-2190

Aboramadan, M., Albashiti, B., Alharazin, H., & Dahleez, K.A. (2020). Human resources management practices and organizational commitment in higher education: The mediating role of work engagement. *International Journal of Educational Management*, *34*(1), 154-174. https://doi.org/10.1108/IJEM-04-2019-0160

Aboramadan, M., Crawford, J., Turkmenoglu, M.A., & Farao, C. (2022). Green inclusive leadership and employee green behaviors in the hotel industry: Does perceived green organizational support matter?. *International Journal of Hospitality Management*, *107*, 103330. https://doi.org/10.1016/j.ijhm.2022.103330

Alagarsamy, S., Mehrolia, S., & Aranha, R.H. (2023). The mediating effect of employee engagement: How employee psychological empowerment impacts the employee satisfaction? A study of Maldivian tourism sector. *Global Business Review*, *24*(4), 768-786. https://doi.org/10.1177/0972150920915315

Alqarni, K., Agina, M., Khairy, H., Al-Romeedy, B., Farrag, D., & Abdallah, R. (2023). The effect of electronic human resource management systems on sustainable competitive advantages: The roles of sustainable innovation and organizational agility. *Sustainability*, *15*(23), 16382. https://doi.org/10.3390/su152316382

Al-Romeedy, B.S., & Khairy, H.A. (2024). Eco-innovation and hospitality and tourism business resilience: The mediating role of green dynamic capabilities. In *Shifts in Knowledge Sharing and Creativity for Business Tourism* ,17-36, IGI Global. https://doi.org/10.4018/979-8-3693-2619-0.ch002

Alshehri, N.Z., Baquero, A., Abd-Elhady, M.H., Salama, W.M.E., Khairy, H.A., & Abouelenien, R.E.I. (2024). Green HRM and green competitive advantage in hotel and tourism industry: A mediated moderation model using eco-innovation and green psychological climate. *GeoJournal of Tourism and Geosites*, *52*(1), 313–322. https://doi.org/10.30892/gtg.52130-1207

Aslan, H., Mert, I.S., & Sen, C. (2021). The effect of inclusive leadership on the work engagement: An empirical study from Turkey. *The Journal of Asian Finance, Economics and Business*, *8*(11), 169-178. https://doi.org/10.13106/JAFEB.2021.VOL8.NO11.0169

Bande, B., Fernández-Ferrín, P., Varela-Neira, C., & Otero-Neira, C. (2016). Exploring the relationship among servant leadership, intrinsic motivation and performance in an industrial sales setting. *Journal of Business & Industrial Marketing*, *31*(2), 219-231. https://doi.org/10.1108/JBIM-03-2014-0046

Bannay, D.F., Hadi, M.J., & Amanah, A.A. (2020). The impact of inclusive leadership behaviors on innovative workplace behavior with an emphasis on the mediating role of work engagement. *Problems and Perspectives in Management*, *18*(3), 479-491. https://doi.org/10.21511/ppm.18(3).2020.39

Bao, P., Xiao, Z., Bao, G., & Noorderhaven, N. (2022). Inclusive leadership and employee work engagement: A moderated mediation model. *Baltic Journal of Management*, *17*(1), 124-139. https://doi.org/10.1108/BJM-06-2021-0219

Bhutto, T.A., Farooq, R., Talwar, S., Awan, U., & Dhir, A. (2021). Green inclusive leadership and green creativity in the tourism and hospitality sector: Serial mediation of green psychological climate and work engagement. *Journal of Sustainable Tourism*, *29*(10), 1716-1737. https://doi.org/10.1080/09669582.2020.1867864

Blau, P.M. (1964). *Exchange and power in social life*. Wiley, New York, USA.

Blau, P.M. (2017). *Exchange and power in social life*. Routledge, London, UK. https://doi.org/10.4324/9780203792643

Carmeli, A., Reiter-Palmon, R., & Ziv, E. (2010). Inclusive leadership and employee involvement in creative tasks in the workplace: The mediating role of psychological safety. *Creativity Research Journal*, *22*(3), 250-260. https://doi.org/10.1080/10400419.2010.504654

Cenkci, A.T., Bircan, T., & Zimmerman, J. (2021). Inclusive leadership and work engagement: The mediating role of procedural justice. *Management Research Review*, *44*(1), 158-180. https://doi.org/10.1108/MRR-03-2020-0146

Choi, S.B., Tran, T.B.H., & Kang, S.W. (2017). Inclusive leadership and employee well-being: The mediating role of person-job fit. *Journal of Happiness Studies*, *18*(6), 1877-1901. https://doi.org/10.1007/s10902-016-9801-6

Cin, S., & Sönmez, B. (2024). The relationship between inclusive leadership and work engagement in hospital employees. *Psychology of Leaders and Leadership.* Advance online publication. https://doi.org/10.1037/mgr0000152

Deci, E.L., & Ryan, R.M. (2013). *Intrinsic motivation and self-determination in human behavior.* Springer Science & Business Media, Berlin, Germany.

Deci, E.L., Olafsen, A.H., & Ryan, R.M. (2017). Self-determination theory in work organizations: The state of a science. *Annual Review of Organizational Psychology and Organizational behavior, 4*, 19-43. https://doi.org/10.1146/annurev-orgpsych-032516-113108

Decuypere, A., & Schaufeli, W. (2020). Leadership and work engagement: Exploring explanatory mechanisms. *German Journal of Human Resource Management*, *34*(1), 69-95. https://doi.org/10.1177/2397002219892197

Dumont, J., Shen, J., & Deng, X. (2017). Effects of green HRM practices on employee workplace green behavior: The role of psychological green climate and employee green values. *Human Resource Management*, *56*(4), 613-627. https://doi.org/10.1002/hrm.21792

Duong, C.D., Nguyen, T.H., & Nguyen, H.L. (2023). How green intrinsic and extrinsic motivations interact, balance and imbalance with each other to trigger green purchase intention and behavior: A polynomial regression with response surface analysis. *Heliyon*, *9*(10), e20886. https://doi.org/10.1016/j.heliyon.2023.e20886

Fang, L. (2023). Examining the effects of digital leadership strategies on enhancing organizational innovation performance. *Journal of Logistics, Informatics and Service Science, 10*(4), 318-335. https://doi.org/10.33168/JLISS.2023.0422

Fang, Y.C., Ren, Y.H., Chen, J.Y., Chin, T., Yuan, Q., & Lin, C.L. (2021). Inclusive leadership and career sustainability: Mediating roles of supervisor developmental feedback and thriving at work. *Frontiers in Psychology*, *12*, 671663. https://doi.org/10.3389/fpsyg.2021.671663

Faraz, N.A., Ahmed, F., Ying, M., & Mehmood, S.A. (2021). The interplay of green servant leadership, self-efficacy, and intrinsic motivation in predicting employees' pro-environmental behavior. *Corporate Social Responsibility and Environmental Management*, *28*(4), 1171-1184. https://doi.org/10.1002/csr.2115

Gagné, M., & Deci, E.L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, *26*(4), 331-362. https://doi.org/10.1002/job.322

Gerbing, D.W., & Anderson, J.C. (1988). An updated paradigm for scale development incorporating unidimensionality and its assessment. *Journal of Marketing Research*, *25*(2), 186-192. https://doi.org/10.1177/002224378802500207

Güntert, S.T. (2015). The impact of work design, autonomy support, and strategy on employee outcomes: A differentiated perspective on self-determination at work. *Motivation and Emotion*, *39*(1), 74-87. https://doi.org/10.1007/s11031-014-9412-7

Hashad, M.E., Hussien, I.M., Abd-Elhady, M.H., & Abouelenien, R.E.I. (2023). The effect of internal marketing on job performance in hotels and travel agencies: The mediating role of knowledge sharing. *Journal of the Faculty of Tourism and Hotels-University of Sadat City*, *7*(2/2), 144-163.

Hollander, E. (2012). *Inclusive leadership: The essential leader-follower relationship*. Routledge, London, UK.

Hudie, X., Yun, C., & Fuqiang, Z. (2017). Inclusive leadership, perceived organizational support, and work engagement: The moderating role of leadership-member exchange relationship. In *2017 7th International Conference on Social Network, Communication and Education (SNCE 2017)*, 239-243, Atlantis Press. https://doi.org/10.2991/snce-17.2017.48

Huning, T.M., Hurt, K.J., & Frieder, R.E. (2020). The effect of servant leadership, perceived organizational support, job satisfaction and job embeddedness on turnover intentions: An empirical investigation. In *Evidence-Based HRM: A Global Forum for Empirical Scholarship*, 8(2), 177-194, Emerald Publishing Limited. https://doi.org/10.1108/EBHRM-06-2019-0049

Javed, B., Abdullah, I., Zaffar, M.A., Haque, ul.A., & Rubab, U. (2019). Inclusive leadership and innovative work behavior: The role of psychological empowerment. *Journal of Management & Organization*, *25*(4), 554-571. https://doi.org/10.1017/jmo.2018.50

Karatepe, T., Ozturen, A., Karatepe, O.M., Uner, M.M., & Kim, T.T. (2022). Management commitment to the ecological environment, green work engagement and their effects on hotel employees' green work outcomes. *International Journal of Contemporary Hospitality Management*, *34*(8), 3084-3112. https://doi.org/10.1108/IJCHM-10-2021-1242

Khairy, H.A., & Elzek, Y. (2024). The impact of nepotism and workplace gossip on job performance in travel agencies and hotels in Egypt: The moderating role of organizational justice. *Journal of Human Resources in Hospitality & Tourism*, *23*(1), 52-75. https://doi.org/10.1080/15332845.2023.2253673

Khairy, H.A., Baquero, A., Al-Abyadh, M.H., & Alsetoohy, O. (2023a). How is work disengagement affected by workplace bullying in the hotel industry? The role of authentic leadership. *African Journal of Hospitality, Tourism and Leisure*, *12*(4),1437-1452. https://doi.org/10.46222/ajhtl.19770720.441

Khairy, H.A., Fahmy, N.S., Awad, A.H.I., & Ashour, E.Z. (2024). Green work engagement and green competitive advantage in five-star hotels and travel agencies: The role of green creativity. *Journal of the Faculty of Tourism and Hotels-University of Sadat City*,

8(1/1), 113-125. https://doi.org/10.21608/MFTH.2024.342738
Khairy, H.A., Liu, S., Sheikhelsouk, S., EI-Sherbeeny, A.M., Alsetoohy, O., & Al-Romeedy, B.S. (2023b). The Effect of benevolent leadership on job engagement through psychological safety and workplace friendship prevalence in the tourism and hospitality industry. *Sustainability, 15*(17), 13245. https://doi.org/10.3390/su151713245
Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration (ijec), 11*(4), 1-10. https://doi.org/10.4018/ijec.2015100101
Kock, N. (2021). *WarpPLS User Manual: Version 7.0*. ScriptWarp Systems, Laredo, Texas, USA.
Koo, C., Chung, N., & Nam, K. (2015). Assessing the impact of intrinsic and extrinsic motivators on smart green IT device use: Reference group perspectives. *International Journal of Information Management*, *35*(1), 64-79. https://doi.org/10.1016/j.ijinfomgt.2014.10.001
Li, W., Bhutto, T.A., Xuhui, W., Maitlo, Q., Zafar, A.U., & Bhutto, N.A. (2020). Unlocking employees' green creativity: The effects of green transformational leadership, green intrinsic, and extrinsic motivation. *Journal of Cleaner Production*, *255*, 120229. https://doi.org/10.1016/j.jclepro.2020.120229
Ly, B. (2024). Inclusion leadership and employee work engagement: The role of organizational commitment in Cambodian public organization. *Asia Pacific Management Review*, *29*(1), 44-52. https://doi.org/10.1016/j.apmrv.2023.06.003
Marini, M., Handoyo, S., & Sukadiono, S. (2023). Green work engagement: A literature review. In *RSF Conference Series: Business, Management and Social Sciences*, 3(3), 179-185. https://doi.org/10.31098/bmss.v3i3.662
Norton, T.A., Parker, S.L., Zacher, H., & Ashkanasy, N.M. (2015). Employee green behavior: A theoretical framework, multilevel review, and future research agenda. *Organization & Environment*, *28*(1), 103-125. https://doi.org/10.1177/1086026615575773
Patwary, A.K., Mohd Yusof, M.F., Bah Simpong, D., Ab Ghaffar, S.F., & Rahman, M.K. (2023). Examining proactive pro-environmental behaviour through green inclusive leadership and green human resource management: An empirical investigation among Malaysian hotel employees. *Journal of Hospitality and Tourism Insights*, *6*(5), 2012-2029. https://doi.org/10.1108/JHTI-06-2022-0213
Putra, E.D., Cho, S., & Liu, J. (2017). Extrinsic and intrinsic motivation on work engagement in the hospitality industry: Test of motivation crowding theory. *Tourism and Hospitality Research*, *17*(2), 228-241. https://doi.org/10.1177/1467358415613393
Qasim, S., Usman, M., Ghani, U., & Khan, K. (2022). Inclusive leadership and employees' helping behaviors: Role of psychological factors. *Frontiers in Psychology*, *13*, 888094. https://doi.org/10.3389/fpsyg.2022.888094
Rai, A., Ghosh, P., Chauhan, R., & Mehta, N.K. (2017). Influence of job characteristics on engagement: Does support at work act as moderator?. *International Journal of Sociology and Social Policy*, *37*(1/2), 86-105. https://doi.org/10.1108/IJSSP-10-2015-0106
Ryan, R.M., & Deci, E.L. (2000a). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68-78. https://doi.org/10.1037/0003-066X.55.1.68
Ryan, R.M., & Deci, E.L. (2000b). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, *25*(1), 54-67. https://doi.org/10.1006/ceps.1999.1020
Saks, A.M. (2019). Antecedents and consequences of employee engagement revisited. *Journal of Organizational Effectiveness: People and Performance*, *6*(1), 19-38. https://doi.org/10.1108/JOEPP-06-2018-0034
Schaufeli, W.B., Bakker, A.B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement, 66*(4), 701-716. https://doi.org/10.1177/0013164405282471
Shu, C.Y. (2015). The impact of intrinsic motivation on the effectiveness of leadership style towards on work engagement. *Contemporary Management Research*, *11*(4), 327-350. https://doi.org/10.7903/cmr.14043
Shuhua, N., & Kanokporn, C. (2023). Resilient leadership, innovation, executive incentives, and sustainable business performance: An empirical study. *Journal of Logistics, Informatics and Service Science, 10*(4), 1-19. https://doi.org/10.33168/JLISS.2023.0401
Streimikiene, D., Svagzdiene, B., Jasinskas, E., & Simanavicius, A. (2021). Sustainable tourism development and competitiveness: The systematic literature review. *Sustainable development*, *29*(1), 259-271. https://doi.org/10.1002/sd.2133
Suksutdhi, T. (2024). Innovation model of human resources training and development for the hotel industry from the asean standard framework: A case in Nakhon Ratchasima Province, Thailand. *GeoJournal of Tourism and Geosites, 52*(1), 267–275. https://doi.org/10.30892/gtg.52126-1203
The Egyptian Ministry of Tourism and Antiquities. (2022). *Hotel and tourism companies and establishments: Directory of hotel establishments and tourism companies, the Ministry of Tourism: Egypt*. https://mota.gov.eg/ar/
Vakira, E., Shereni, N.C., Ncube, C.M., & Ndlovu, N. (2023). The effect of inclusive leadership on employee engagement, mediated by psychological safety in the hospitality industry. *Journal of Hospitality and Tourism Insights*, *6*(2), 819-834. https://doi.org/10.1108/JHTI-09-2021-0261
Velwin, W., Idris, G., Engkos, A., & Agustinus, B. (2024). Improving sustainability in the small-medium culinary industry: Analyzing the role of open innovation and competitive advantage. *Journal of System and Management Sciences. 14*(2), 172-187. https://doi.org/10.33168/JSMS.2024.0211
Xu, Y., Liu, D., & Tang, D.S. (2022). Decent work and innovative work behaviour: Mediating roles of work engagement, intrinsic motivation and job self-efficacy. *Creativity and Innovation Management*, *31*(1), 49-63. https://doi.org/10.1111/caim.12480
Yang, X., & Thøgersen, J. (2022). When people are green and greedy: A new perspective of recycling rewards and crowding-out in Germany, the USA and China. *Journal of Business Research*, *144*, 217-235. https://doi.org/10.1016/j.jbusres.2022.01.086
Yanzi, W., & Yanan, T. (2019). A research on the motivating mechanism of inclusive leadership on employees' constructive deviance. *Foreign Economics & Management*, *41*(03), 54-69. https://doi.org/10.16538/j.cnki.fem.2019.03.004
Zeng, H., Zhao, L., & Zhao, Y. (2020). Inclusive leadership and taking-charge behavior: Roles of psychological safety and thriving at work. *Frontiers in Psychology*, *11*(62), 1–11. https://doi.org/10.3389/fpsyg.2020.00062

Article history: Received: 02.04.2024 Revised: 29.05.2024 Accepted: 19.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.896-905
DOI 10.30892/gtg.542spl13-1264

SENSORY MARKETING AND PURCHASING BEHAVIOR LINKING COFFEE FAMILIES' CULTURE WITH THE CONSUMER

Geraldine TORIBIO-TAMAYO
Universidad Privada del Norte, Business Faculty, Lima, Peru, e-mail: geraldinetoribio.t@gmail.com

Jackelin Briggite ROJAS-ROSALES
Universidad Privada del Norte, Business Faculty, Lima, Peru, e-mail: jackelinrr110@gmail.com

Diana Carolina MARTÍNEZ-TORRES
Fundación Universitaria Colombo Internacional-Unicolombo, Business Administration Program, Bolívar, Colombia, e-mail: dcmartinez@unicolombo.edu.co

Daniel Amadeo ROBLES-FABIAN
Universidad Privada del Norte, Business Faculty, Lima, Peru, e-mail: daniel.robles@upn.pe

Franklin CORDOVA-BUIZA*
Universidad Privada del Norte, Research, Innovation and Social Responsibility Department, Lima, Peru; Universidad Continental, Faculty of Business Sciences, Huancayo, Peru, e-mail: franklin.cordova@upn.edu.pe

Citation: Toribio-Tamayo, G., Rojas-Rosales, J.B., Martínez-Torres, D.C., Robles-Fabian, D.A., & Cordova-Buiza, F. (2024). SENSORY MARKETING AND PURCHASING BEHAVIOR LINKING COFFEE FAMILIES' CULTURE WITH THE CONSUMER. *Geojournal of Tourism and Geosites*, 54(2spl), 896–905. https://doi.org/10.30892/gtg.542spl13-1264

Abstract: Sensory marketing focuses on generating a positive experience for users through their senses, their past, their imagination or their emotions; and in tourist businesses such as coffee shops, which share the characteristics of a restaurant and a bar, it connects the tourist with the culture of the coffee families of the place visited. This research identifies the relationship between sensory marketing and purchase behaviour by assessing consumer needs and characteristics that are presented when purchasing a product in coffee shops in emerging economy countries. This is a quantitative, non-experimental, cross-sectional, correlational research, with a sample of 400 customers of coffee shops in Peru and Colombia under a probabilistic sampling, using a 33-item questionnaire for data collection and IBM SPSS as an instrument for quantitative data analysis. The results show a moderate and significant positive relationship of 0.576 in Peru and 0.419 in Colombia between sensory marketing and purchase behavior. It is also highlighted that for the Peruvian consumer, the management of the senses (50.2%) and pre-purchase moment (47%) are important, and for the Colombian consumer the management of emotions (71.3%) and post-purchase moment (67.9%) are important. It is concluded that there is a relationship between sensory marketing and purchase behavior in the coffee shops studied, so it is recommended to address sensory marketing strategies and emphasize the sensory experience during the consumer's purchase process, highlighting the culture of coffee families as a competitive advantage.

Keywords: Shopping experience, consumer behavior, coffee shops, Peru, Colombia

* * * * * *

INTRODUCTION

The pandemic resulting from SARS-CoV-2, or new Coronavirus disease (Covid-19), has managed to impact the operation of different economic sectors in various ways, including production, processing, marketing, and consumer demand (Food and Agriculture Organization of the United Nations [FAO], 2020). The gastronomic sector has not been immune to this scenario. In particular, in the coffee shop segment, demand has been affected; however, in this stage of crisis, the opportunity to bring the coffee experience closer to the public is also highlighted (Cámara Peruana de Café y Cacao, 2021), taking into account that current consumers have changed their purchase behavior (Jiménez-Marín et al., 2019; Sutiadiningsih et al., 2024). Likewise, according to the National Coffee Federation of Colombia [FNC] (2020), the pandemic has not affected coffee consumption on a large scale since domestic purchases grew by 15%, promoted by the increase in household consumption, although, due to the contingency policies, consumption in coffee shops did decrease.

Sensory marketing seeks to facilitate the acquisition of products and services. Thus, the connection between the act of purchase and the senses arises to create experiences in the consumer since 95% of the emotional purchase decisions of individuals are made in 2.5 seconds (Álvarez del Blanco, 2020). Likewise, it is detected that the transformation of purchase behavior is a consequence of the greater consumer demand since it is evident that the consumer is more indifferent to traditional stimuli and more eager to try new experiences (Huerta-Tantalean et al., 2024; Zacipa et al., 2016). In that sense, companies can not only sell their products and services by highlighting their functional benefits, but

* Corresponding author

they must also create positive and memorable experiences through the five senses (Alcaide, 2018; Garcillán López-Rúa, 2015). Therefore, the following general research problem is posed: what is the relationship between sensory marketing and purchase behavior in coffee shops, in Peru and Colombia?

LITERATURE REVIEW

The study of the relationship between sensory marketing and purchase behavior is relatively new (Hultén et al., 2009; Krishna, 2010). A few years ago, sensory marketing appeared as a tool to captivate the minds of consumers in a purchase (Lindstrom, 2010). Sensory marketing explores different strategies that can enhance the brand image of a company and, in turn, relate to the personality and style of consumers (Hultén et al., 2009). According to Krishna (2010), sensory marketing is a key agent in consumer behavior, as it involves consumer senses. Schiffman and Wisenblit (2015), cited in Espinel et al. (2019), define that consumer behavior occurs when inquiring, testing, and discarding products and/or services. It also focuses on aspects such as the time, money, and commitment spent by the individual in the search for items that generate benefits and experiences when purchased. To address the study variables, there are important concepts. Krishna (2010) refers to the relationship between sensory marketing and purchase behavior, given that consumers involve the senses in their behavior. In that line, Palma-Pérez et al. (2018) describe the relationship between sensory marketing and consumer purchase behavior through the senses, emotions, and purchase phases, which are taken as dimensions in this study.

For the company to be successful, it must impact the five human senses at a deeper level than mass and relationship marketing (Hultén et al., 2009). According to Altamore et al. (2018), stimulating the five senses through the experience of an individual allows the company to be differentiated and generate value. Therefore, it is important to establish sensory strategies.

Sensory marketing suggests proper planning and consistency when using stimulation, as it highlights the participation of the five senses (Ortegón-Cortázar and Gómez, 2016). In line with this, Hultén (2011) mentions that human beings develop experiences through multisensory stimuli, which involve the intervention of more than one of the senses in consumption. Thus, to create value in the shopping experience, consumers must develop multisensory communication stimulating different senses, which allows getting closer to the public by creating more outstanding brands in the consumer's mind (Hultén, 2011; Zacipa et al., 2016). Regarding sensory marketing, the first sense to be stimulated is sight since it can be influenced 83% by the external context of a store (Garcillán López-Rúa, 2015). Viteri and Colcha (2018) mention that implementing images of the products to be offered increases the expectation and persuades the consumer. Likewise, creating and highlighting sensations increases the attractiveness of the products and services provided, making advertising more efficient (Allana et al., 2020). The auditory sense in sensory marketing is perceived through the sound or music of a store, which reflects an increase in the permanence and comfort of the customer (González and Pallarés, 2020; Jiménez-Marín et al., 2019). This sense can be used during events, music festivals, and shows, where the public perceives information and stimuli that generate different experiences depending on the mood of the consumer (Portella and Schoproni, 2016). Likewise, its use in stores shows results in the emotional experience due to the musical ambiance, which would be induced by the rhythm and intensity of the sound (Avendaño et al., 2015).

The sense of smell is key to generating emotions and experiences, taking advantage of the natural instinct of the human being since it breathes 20,000 times a day; therefore, this is always active (Czaplewski et al., 2013). There are strategies in sensory marketing that use scent to differentiate, remember, evoke, and identify products (Rodríguez-Díaz and Gallardo-Echenique, 2020). In this line, they can be applied in aromatherapy, which could have an impact on increasing sales, time spent in the store, and customer satisfaction (Jiménez-Marín et al., 2018).

The sense of taste in sensory marketing is more complex because it involves direct contact with the consumer or their voluntary participation, and, in some cases, a combination with the other senses, such as sight, touch, smell, and hearing, for the sake of attracting their attention (Alcaide, 2018; Gavilán and Manzano, 2018; Potjanajaruwit et al., 2024). Likewise, Costales (2021) the combination of smell and taste serves to repeat purchases, building expectations, satisfaction, and loyalty.

Touch is another key sense that allows the brain to identify sensations, evaluate options and intervene in decision-making, not only because of the direct information it receives but also because of the connection with the other senses. It also allows identifying textures and shapes along with other sensory aspects, such as weight, size, and temperature, as it contributes to a better understanding of the perceived value, confidence in the purchase, and inclination to pay (Alcaide, 2018; Gavilán and Manzano, 2018). Regarding emotions, sensory marketing contributes to the development of memorable experiences, with an appropriate delimitation of the senses and proper choice and evaluation of tangible and abstract elements to be used in a store (Rodas and Montoya, 2018). Likewise, the perception of the customer experience will also have an impact on loyalty; the actions taken by the brand must be in accordance with the psychological, cultural, and social factors since a first impression could mean everything: to comply quickly, personalized attention, elegance, friendliness, and problem-solving will influence the image of the stores and ensure continuous customers (Flores, 2018).

The purchase behavior variable is influenced by the marketing activity used at the point of sale (Llovet, 2016). Consumer behavior can be defined as the way an individual behaves in the decision-making process when acquiring a new product or service to satisfy needs (Espinel et al., 2019; Rocha-Vallejos et al., 2022). Consequently, consumers cannot devise their preferences in brands using only rational attributes, so they seek brands that create experiences that intrigue them in a sensory and emotional way (Ebrahim et al., 2016). Thus, if a customer has high expectations, he or she will be guided by previous experiences of other subjects to issue opinions; if the store achieves customer satisfaction, this will result in a positive experience (Rodríguez-Ardura and Ammetller, 2018).

The shopping experience seeks total customer satisfaction to exceed their expectations through customization and emotional connection with tangible and sensory elements in the atmosphere and ambiance so that the company can link emotions between the customer and the brand (Alcaide et al., 2019; Cordova-Buiza et al., 2022a). Likewise, for a pleasant shopping experience, the interior elements of a store, such as lighting, air conditioning, sound, smells, and colors, must link properly (Gusó, 2017; Olavarria-Benavides et al., 2021). The market where consumers choose their future purchases is oversaturated with competitive products, so they are more demanding and informed when shopping and looking for experiences (Marín and Gómez, 2021; Cordova-Buiza et al., 2022b). In that sense, the consumer goes through three phases: first, the pre-purchase, where expectations are developed; second, the purchase, where the perception of value is maximized through sensory stimuli; and third, the post-purchase, where the user experience is obtained (Manzano et al., 2012; Paredes-Rivadeneyra et al., 2024). Several precedents study sensory marketing and purchase behavior. Jiménez-Marín et al. (2019) propose that an establishment should be multisensory to produce shopping experiences specific to the brand since the potential of sensory marketing lies in the communication that can be established through the senses and, therefore, lasting memories with the customer. A representative case is Starbucks Corporation, an international coffee chain, where sensory marketing was applied, generating a personal and pleasant atmosphere, which allowed customers to buy products as well as experiences (Alcaide, 2018).

In that sense, Altamore et al. (2018) state that the gustatory sense is not influenced by the context where food is consumed; however, consumers appreciate the brand better if the atmosphere is coherent with their food. Gómez and García (2012) agree that the atmosphere of the establishment and physical stimuli influence consumer behavior. Reinoso et al. (2017), in contrast, mention that taste expectations are influenced by the sense of sight through color.

The study by Gómez-Suárez and Yagüe (2021) shows that the consumer's emotional experience is linked to post-purchase and positive evaluation, being these pillars important in their word-of-mouth recommendation of the brand. Gomes et al. (2013) indicate that sensory marketing is related to the experience in an establishment since it stimulates the senses and conveys emotions, which achieve a positive feeling in the consumer.

On the other hand, Rodas and Cervantes (2017) mention that the purchase process of the public has been influenced by factors involving the environment, such as reference groups, training, and culture, so the individual is highly attracted by marketing strategies. Therefore, adding the sensory resource allows for designing experiences that impact positively or negatively. These results are part of the purchase decision and promote brand loyalty.

Espinel et al. (2019) highlight other factors in consumer behavior, such as proximity, ease of credit, and personalized attention. In addition, they recommend that marketing strategies should be directed towards women because their decisions are decisive in the selection of the place of purchase. Palma-Pérez et al. (2018) establish a highly positive correlation between sensory marketing and the purchase behavior of consumers in the city of Manta; they argue that companies should start by updating their traditional marketing approach with sensory marketing so that it can guide not only the consumer purchase process but also brand recall. Marín and Gómez (2021) analyze the correlation between the Purchase Behavior and Sensory Marketing variables in customers of Zara and Stradivarius stores located in a shopping center in Cadiz, Spain. The results show that sensory marketing has a positive influence on consumer purchase behavior at the point of sale, and the senses stimulated in the stores are touch, followed by sight, smell, and hearing. In Latin America, coffee shops such as Juan Valdez enjoy great recognition, as they have 335 stores in Colombia, and are present in 33 international markets, where the brand has addressed the use of sensory strategies. For this reason, this research will take the example of Juan Valdez Colombia as a leader and reference, comparing its reality in the Peruvian context and seeking the relationship of consumer purchase behavior with the sensory marketing strategies of the Juan Valdez coffee shop in Peru.

AIMS AND HYPOTHESES

According to the aforementioned, the objective of this research is to determine the relationship between sensory marketing and consumer purchase behavior in coffee shops in Peru and Colombia. Likewise, the following hypothesis is proposed: there is a significant relationship between sensory marketing and the purchase behavior of coffee shops in Peru and Colombia. It should be noted that this research provides a basis for future studies on sensory marketing since it aims to measure the relationship between sensory marketing and the purchase behavior of Juan Valdez customers in two South American cities, Lima and Cartagena, and to identify a relationship between the Sensory Marketing and Purchase Behavior variables. Likewise, due to its geographic location, it allows to deepen the impact of sensory marketing in the Peruvian context and to compare the reality of purchase behavior regarding other cultures.

From the review of the previous literature, it can be seen that there is a scientific gap regarding the relationship between sensory marketing and purchase behavior, so the research on this subject sets new precedents and clarifies doubts. Therefore, the following hypotheses have been formulated:

Hypothesis 1: Sensory marketing is significantly related to the purchase behavior of consumers of coffee shops in Peru and Colombia.

Hypothesis 2: Sensory marketing is significantly related to pre-purchase among consumers of coffee shops in Peru and Colombia.

Hypothesis 3: Sensory marketing is significantly related to purchase among consumers of coffee shops in Peru and Colombia.

Hypothesis 4: Sensory marketing is significantly related to post-purchase among consumers of coffee shops in Peru and Colombia.

MATERIALS AND METHODS

To meet the objectives of this study, a quantitative research study of a non-experimental and cross-sectional design was carried out. It was non-experimental because the variables were not manipulated intentionally; only events were observed in their existing natural context and then analyzed. Likewise, cross-sectional research was applied since data were collected at a unique moment (Hernández et al., 2010). Finally, the research has a correlational level or scope, expressed in two variables in the study hypothesis. The flow chart of the methodology can be seen in Figure 1

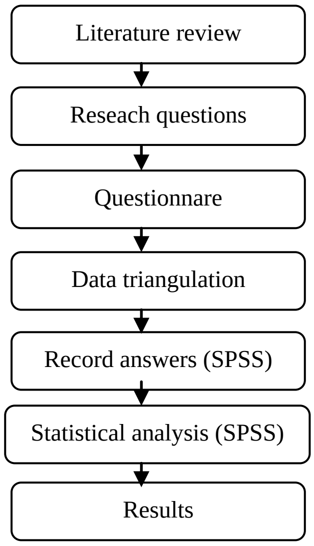


Figure 1. Flowchart of methodolody steps

In Table 1, the sample of this study is comprised of consumers in the city of Lima, Peru, and Cartagena, Colombia. The population of this study is comprised of individuals of both sexes, between 18 and 60 years old.

Table 1. General composition of the sample

	Number of Juan Valdez consumers in Peru	%	Number of Juan Valdez consumers in Colombia	%
Gender				
Women	232	58	234	58.5
Men	168	42	166	41.5
Age				
18 - 35	350	87.5	286	71.5
36 - 50	41	10.3	92	23
51 and over	9	2.2	22	5.5
N = 400				

The probabilistic sampling was applied according to Robles (2019) for the proportion, the sample size is calculated using the expression. In Table 2, you can see the description of each element of the formula.

$$n = \frac{N \times {Z_a}^2 \times p \times q}{d^2 \times (N-1) + {Z_a}^2 \times p \times q}$$

Table 2. Description of each element of the formula for sample size calculation

Za	Value of the standard normal distribution for a given confidence level
N	Population size
n	Sample size
d	Maximum tolerable estimation error
p	Proportion of elements that have the characteristic of interest
q	1-p

The study instrument is a questionnaire presented and validated by Palma-Pérez et al. (2018), with a Cronbach's Alpha of 0.90, which indicates that it is a reliable instrument for its application. This instrument is composed of 33 items, with closed-ended questions, on a Likert scale ranging from 1 to 5, where 1 totally disagree, 2 disagree, 3 neither agree nor disagree, 4 agree, and 5 totally agree. The team of this research also obtained the Cronbach's Alpha of the instrument applied in both countries; the coefficients are presented in the section of "results." Data was collected through the survey, between June and September 2023, distributed through Google Forms, and shared via e-mail, WhatsApp, Facebook, Messenger, and Fan Pages of coffee consumers. Data analysis is demonstrated in IBM SPSS, a software that allows measuring the correlation between variables through Spearman's Rho, Chi-square, Pearson, and reliability through Cronbach's Alpha (Arce and Real, 2001). Similarly, Microsoft Office Excel was used in pivot tables on the database, and IBM SPSS V.25 was used for the quantitative analysis to establish the relationship between the variables.

Regarding the ethical aspects of this research, first, the intellectual property of the various authors of the theories and results of the studies is safeguarded, citing them correctly and specifying the bibliographic sources. Finally, the identity of the respondents in each country is kept confidential.

RESULTS

The results of the instrument used are presented below, based on the statistical analysis, which determined a reliability of 0.963 for the instrument applied in Peru and 0.923 for the one applied in Colombia (Table 3).

Table 3. Reliability statistics

Cronbach's alpha	N of elements	Country
0.963	33	Peru
0.923	33	Colombia

Descriptive Analysis

Through the descriptive statistics, a table with the results of the applied instrument, which were obtained after processing in the IBM SPSS software, is presented so that the numerical data are organized by dimension for later interpretation. In Table 4, shows that in Peru 56% give a high percentage to the Sensory Marketing variable, demonstrating that the brand influences consumers through sensory stimuli. Likewise, it is shown that, in Colombia, there is a 55.1% high percentage in the same variable. In Table 5, as for the Purchase Behavior variable, shows that Peru has a high percentage of 57.3%, while Colombia has a high percentage of 55.8%, showing similar behavior in this variable.

Table 4. Distribution of frequencies and percentage of the Sensory Marketing variable

		Frequency (Peru)	Frequency (Colombia)	Percentage (%) (Peru)	Percentage (%) (Colombia)
Valid	Low	29	19	7.2	4.5
	Medium	147	170	36.8	40.4
	High	224	232	56.0	55.1
	Total	400	421	100.0	100.0

Table 5. Distribution of frequencies and percentage of the Purchase Behavior variable

		Frequency (Peru)	Frequency (Colombia)	Percentage (%) (Peru)	Percentage (%) (Colombia)
Valid	Low	21	17	5.3	4.0
	Medium	150	169	37.5	40.1
	High	229	235	57.3	55.8
	Total	400	421	100.0	100.0

Table 6. Distribution of frequencies and percentage of The Senses dimension

		Frequency (Peru)	Frequency (Colombia)	Percentage (%) (Peru)	Percentage (%) (Colombia)
Valid	Low	28	19	7.0	4.5
	Medium	171	209	42.8	49.6
	High	201	193	50.2	45.8
	Total	400	421	100.0	100.0

Table 7. Distribution of frequencies and percentage of the Emotions dimension

		Frequency (Peru)	Frequency (Colombia)	Percentage (%) (Peru)	Percentage (%) (Colombia)
Valid	Low	31	33	7.8	7.8
	Medium	114	88	28.5	28.7
	High	255	300	63.7	71.3
	Total	400	421	100.0	100.0

Table 8. Distribution of frequencies and percentage of the Pre-purchase dimension

		Frequency (Peru)	Frequency (Colombia)	Percentage (%) (Peru)	Percentage (%) (Colombia)
Valid	Low	22	26	5.5	6.2
	Medium	190	237	47.5	56.3
	High	188	158	47.0	37.5
	Total	400	421	100.0	100.0

In Table 6, for the dimension "The Senses," shows that Peru has a high percentage of 50.2% compared to Colombia, which has a high percentage of 45.8%. For this variable, Colombia ranks the senses at a medium level, with a percentage of 49.6%, a higher percentage than Peru, whose sample assumes a percentage of 42.8% under this distribution, reflecting the slight differences between countries in terms of the importance given to this sense. In Table 7, regarding the "Emotions" dimension, both countries assume high importance. In this regard, Colombia presents 71.3% of high qualification, while Peru shows a high percentage of 63.7%; slight differences but focusing on the same level. In Table 8, shows that in the "Pre-purchase" dimension, Peru ranks in the high category with 47% and Colombia only 37.5% with a high percentage, while the medium rating is given by 47.5% and 56.3%, respectively, for both countries, showing, in the case of Peru, an undefined trend in the level of importance of this dimension. In Table 9, regarding the "Purchase" dimension described, Peru has a high percentage of 70%, while Colombia has a high percentage of 73.9%. The medium rating is given by 24.3% and 20.7%, respectively, a trend of similar behavior between the two countries. Finally, in the "post-purchase" dimension described in Table 10, Colombia shows a high rating percentage of 67.9%, while Peru has a rating of 62.7% for the same dimension. The medium level is assumed by 32.5% for Peru and 27.1% for Colombia.

Table 9. Distribution of frequencies and percentage of the Purchase dimension

		Frequency (Peru)	Frequency (Colombia)	Percentage (%) (Peru)	Percentage (%) (Colombia)
Valid	Low	23	23	5.8	5.5
	Medium	97	87	24.3	20.7
	High	280	311	70.0	73.9
	Total	400	421	100.0	100.0

Table 10. Distribution of frequencies and percentage of the post-purchase dimension

		Frequency (Peru)	Frequency (Colombia)	Percentage (%) (Peru)	Percentage (%) (Colombia)
Valid	Low	19	21	4.8	5.0
	Medium	130	114	32.5	27.1
	High	251	286	62.7	67.9
	Total	400	421	100.0	100.0

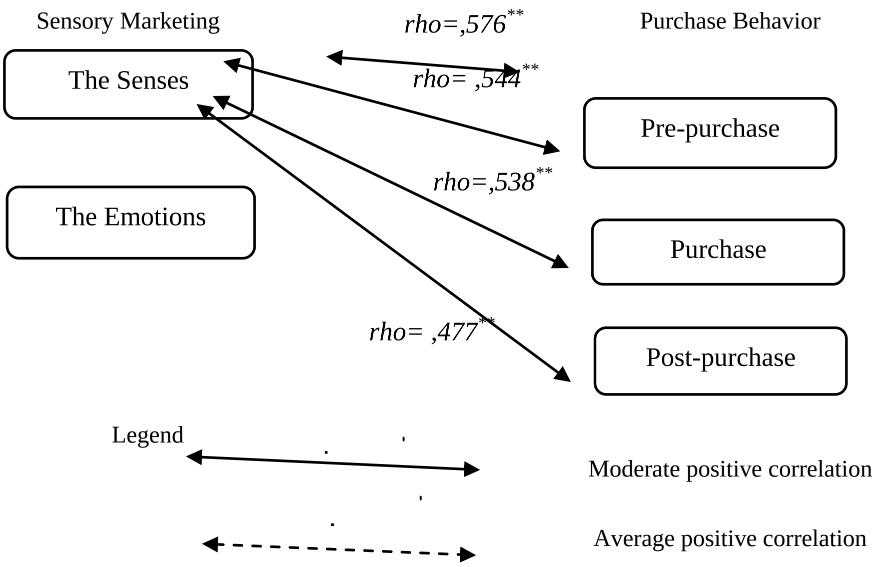


Figure 2. Correlation between Sensory Marketing and Purchase Behavior, data from Peru

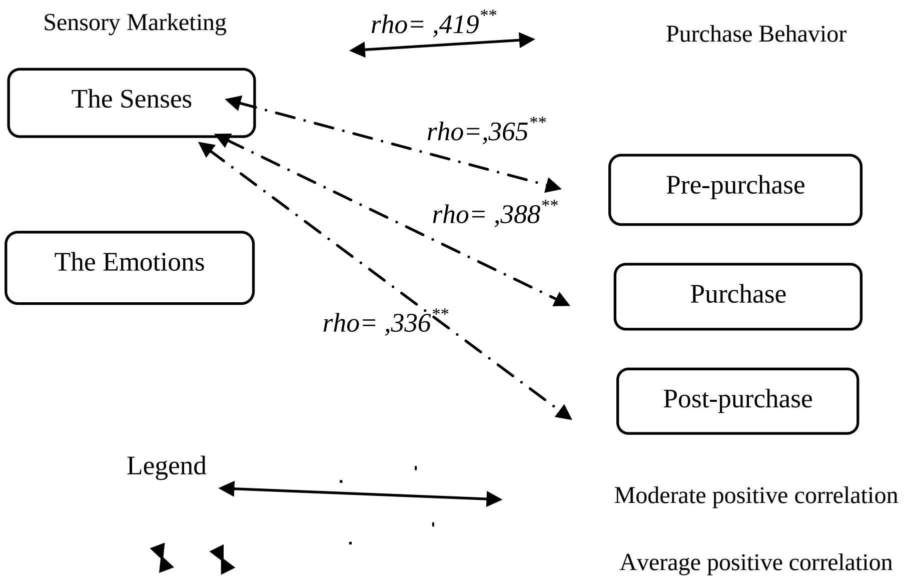


Figure 3. Correlation between Sensory Marketing and Purchase Behavior, data from Colombia

Correlational analysis

To interpret the correlation between the variables studied, the classification by Mondragón (2014) is referred to regarding the Spearman's Rho coefficient, which varies from -1 to 1, and the value 0 indicates nullity due to the non-existence of a relationship. In line with the analysis of results in Table 11, for the sample of Peru, a Spearman's Rho correlation of 0.576** between sensory marketing and purchase behavior is obtained, with a bilateral significance, which corresponds to the objective of the research, proving that there is a considerable positive correlation, while, for the sample of Colombia, an average positive correlation of 0.419** is obtained.

In that sense, there is a joint association of both variables. To show the correlations between Sensory Marketing and the dimensions of Purchase Behavior in more detail. Figure 2 shows a considerable positive correlation between Sensory Marketing and the Pre-purchase and Purchase dimensions, while the Post-purchase dimension shows an average positive correlation with the data from Peru. In Figure 3 shows an average positive correlation between Sensory Marketing and the Pre-purchase, Purchase, and Post-purchase dimensions for the data from Colombia.

Table 11. Correlation between the variables Sensory Marketing and Purchase Behavior

			Sensory Marketing	Purchase Behaviour	Sensory Marketing	Purchase Behaviour
			(Peru)		(Colombia)	
Spearman's Rho	Sensory Marketing	Correlation coefficient	1,000	,576**	1,000	,419**
		Sig. (bilateral)	.	,000	.	,000
		N	400	400	421	421
	Purchase Behaviour	Correlation coefficient	,576**	1,000	,419**	1,000
		Sig. (bilateral)	,000	.	,000	.
		N	400	400	421	421
**. The correlation is significant at the 0.01 level (bilateral)						

DISCUSSION

The objective of this study was to determine if there is a relationship between Sensory Marketing and the Purchase Behavior of consumers of coffee shops in Peru and Colombia. This was based on the need to improve the understanding of sensory marketing, which is often applied to consumers in business premises, who, through their senses by touching, feeling, and tasting the product, can decide or influence the purchase at the point of sale (Kim et al., 2021; Marín and Gómez, 2021). From the academic perspective, Ortegón-Cortázar and Gómez (2016) consider that research in this field has increased over the years. Although there is little exploration of marketing about purchase behavior (Rodas and Cervantes, 2017), however understanding and measuring customer purchase behavior is fundamental (Klaus et al., 2023) and sensory marketing provides necessary tools to address it, therefore, the present study is positioned as an example to stimulate additional research attention in this direction, it responds to the call of Krishna et al. (2016) for additional research on sensory marketing.

In particular, the study was conducted during the Covid-19 pandemic in 2021. The pandemic is predicted to have a long-term psychological impact on the population that experienced it (Rigoberto, 2020). The findings of the study provide not only empirical evidence to support sensory marketing in the shopping experience (Ortegón-Cortázar and Gómez, 2016) but also a comprehensive view of the roles of consumer behavior in different geographical spaces (in this case, Peru and Colombia). This study focused on the relationship between sensory marketing and consumer purchase behavior in coffee shops, where a moderate positive correlation was found in Peru, and a medium positive correlation in Colombia, reflecting that Peruvian consumers are slightly more attracted to the sensory marketing strategies employed than Colombian consumers. This finding is consistent with previous sensory research supporting a dominant role of the senses in consumer behavior (Kim et al., 2021).

Regarding sensory marketing and the pre-purchase and purchase dimensions, it is shown that there is a considerable positive correlation, and, in the post-purchase dimension, an average positive correlation in Peruvian consumers, which is similar to the results by Bhubaneswari and Biswajit (2021), who recognize the impact of different sensory stimuli due to packaging, promotional activities, design and other motivations that influence purchase behavior.

In the data from Colombia, sensory marketing, and the pre-purchase, purchase, and post-purchase dimension, a positive average correlation is demonstrated; the finding of this study corroborates previous sensory research in fashion purchase contexts (Marín and Gómez, 2021). According to Jiménez-Marín et al. (2019), consumers are attracted to sensory marketing techniques at the point of sale. From Vasconcelos Teixeira (2020), the consumption of the experiences provided by these coffee shops is especially in demand there. For Martino et al. (2021), there is a greater demand from consumers to know the attributes of the coffee they will taste, so, by adding special elements to coffee presentations, hedonic judgments will be issued, optimizing the sensory experience with the beverage. Based on the sensory marketing strategies, Starbucks is a coffee shop that has become a meeting place, offering a relevant and differentiated service, obtaining holistic results (Tsai, 2005). Similarly, the Juan Valdez brand has positioned itself worldwide as the best Colombian coffee (Meneses and Vilchez, 2017). Consequently, it is suggested to continue studying the effectiveness of sensory marketing strategies, not only in the coffee shops or food and beverage sector but also in the different sectors of the industry, relating it to other variables such as service quality, branding, merchandising, neuromarketing, among others.

CONCLUSION

This research demonstrates a relevant positive relationship between sensory marketing and purchase behavior, so it sets a theoretical precedent in the Peruvian and Colombian environment of consumers of coffee shops. Therefore, it is helpful for future research in designing and implementing sensory marketing strategies on business premises.

Regarding the descriptive analysis, it was found that the comparison between the groups of Peruvian and Colombian consumers regarding the relationship between sensory marketing and purchase behavior is relatively high; however, a higher percentage difference was found in the Colombian sample regarding the dimensions of senses, emotions, and pre-purchase, which implies an evaluation of sensory marketing strategies according to the location of the coffee shop since there are indications that the impact is also aligned to the geographical area where the store is located, and, therefore, to the customs of the area. In short, sensory marketing has a large-scale impact on consumer purchase behavior. Even if they are of different nationalities, they can be impacted by strategies that, in the long term, and because of being involved in the purchase process, a recommendation or brand recall can be obtained.

Finally, it is recommended that companies include sensory marketing in their strategies to be implemented, especially in the coffee shop and restaurant sectors, highlighting presenting the culture of coffee families as a competitive advantage. Because of this, strategies that impact the haptic, acoustic, optical, olfactory, and gustatory levels can represent multiple benefits for the permanence and/or growth of the business in the market. It is also suggested to use their own strategies that generate brand recall since this is a highly competitive market in which consumers are difficult to satisfy.

It would be interesting for future research to continue exploring the relationship between sensory marketing and purchase behavior based on correlational studies in other regions of the world since their connection provides a large-scale opportunity to detect shortcomings in the purchase process and create dynamic strategies based on sensory marketing.

The study shows that the relationship between the variables expressed can be applied in any commercial area, analyzing and/or correlating the dimensions involved in this theoretical approach. It is expected to contribute to sensory marketing and consumer purchase behavior at a theoretical and strategic level.

Author Contributions: Conceptualization, G.T.T. and J.B.R.R.; methodology, F.C.B. and D.M.; software, G.T.T.; validation, F.C.B.; formal analysis, D.M.; investigation, G.T.T. and J.B.R.R.; data curation, G.T.T. and J.B.R.R.; writing - original draft preparation, G.T.T. and J.B.R.R.; writing - review and editing, F.C.B. and D.C.M.T.; visualization, J.B.R.R.; supervision, F.C.B.; project administration, D.C.M.T. All authors have read and agreed to the published version of the manuscript.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Alcaide, J.C. (2018). Sensomárketing: Coreografía para los cinco sentidos [‘Sensomarketing’ Choreography for the five senses]. *Marketing and Sales*, 150, 16-25. https://dialnet.unirioja.es/servlet/articulo?codigo=6479494

Alcaide, C.J., Carlos, D.M., & Almarza, C. (2019). *Customer experience*. Alfaomega Esic. Ed. 1.

Allana, B., Leite, M., Alencar de Farias & Moraes. (2020). In the Purchase's Essence: Sensory and symbolic elements in the descriptions of perfume sales over the Internet. *Consumer Behavior Review*, 4(3). http://portal. amelica.org/ameli/jatsRepo/364/3641460004/index.html

Altamore, L., Ingrassia, M., Chironi, S., Columba., Sortino, G., Vukadin, A., & Bacarella, S. (2018). Pasta experience: Eating with the five senses-A pilot study. AIMS *Agriculture and Food*, 3(4), 493-520. https://doi.org/10.3934/agrfood.2018.4.493

Álvarez del Blanco, R.M. (2020). Neuromarketing: decodificar la mente del consumidor. [Neuromarketing: decoding the mind of the consumer]. *Management & Innovation*, 27. 16-23. https://dialnet.unirioja.es/servlet/articulo?codigo=6409734

Avendaño, W., Paz, L., & Rueda, G. (2015). Estímulos auditivos en prácticas de neuromarketing. Caso: Centro Comercial Unicentro, Cúcuta, Colombia [Auditory stimuli in neuromarketing practices. Case: Unicentro Shopping Centre, Cúcuta, Colombia]. *Cuadernos de Administración*, 31(53), 117-129.

Bhubaneswari, B., & Biswajit, D. (2021). A paradigm shift: Nano-sensory nudges stimulating consumer's purchase behavior for green products driving towards environmental sustainability. *Materials Today: Proceedings*. 80 (3), 3887-3892. https://doi.org/10.1016/j.matpr.2021.07.407

Cámara Peruana de Café y Cacao. (2021). Con envío: Este 2021 el Café se reacomoda expectante [With dispatch: In 2021, the coffee industry will be in a state of readjustment]. https://camcafeperu.com.pe/ES/articulo.php?id=51

Czaplewski, A. J., McNulty, P, & Olson, E., M. (2013). El aroma del exito [The "aroma" of success]. *Marketing and Sales,* 117, 6-14. https://dialnet.unirioja.es/servlet/articulo?codigo=4317909

Cordova-Buiza, F., Aguirre-Maldonado, M.F., & Alor-Rau, D.A. (2022a). The profile of the Apple brand consumer: electronic equipment and software in Lima-Peru [conference] International Professional Communication IEEE , Limerick, Ireland, 418-422. https://doi.org/10.1109/ProComm53155.2022.00083

Cordova-Buiza, F., Urteaga-Arias, P.E., & Coral-Morante, J.A. (2022b). Relationship between social networks and customer acquisition in the field of IT solutions. *IBIMA Business Review*, 2022 (2022). https://doi.org/10.5171/2022.631332

Costales, P. (2021). Consumir sensaciones y emociones: así es como trabaja el sensorial marketing. *Real Estate Market & Lifestyle*. https://realestatemarket.com.mx/noticias/mercado-inmobiliario/33121-consumir-sensaciones-y-emociones-asi-trabaja-el-marketing-sensorial

Ebrahim, R., Ghoneim, A., Irani, Z., & Fan, Y. (2016). A brand preference and repurchase intention model: the role of consumer experience. *Marketing Management*, 32(13-14),1230-1259. https://doi.org/10.1080/0267257X.2016.1150322

Espinel, B., Monterrosa-Castro, I., & Espinosa-Pérez, A. (2019). Factores que influyen en el comportamiento del consumidor de los negocios al detal y supermercados en el Caribe colombiano [Factors influencing consumer behaviour in retail shops and supermarkets in the Colombian Caribbean]. *Lasallista de Investigación*, 16(2), 4-27. https://doi.org/10.22507/rli.v16n2a1

Flores, A. (2018). *Servicio en restaurante [Restaurant service]*. RA-MA Editorial. 1st ed. 276 p.

Food and Agriculture Organisation of the United Nations. (2020). Seguridad alimentaria bajo la pandemia del Covid-19 [Food and Agriculture Organisation of the United Nations: Food Security under the COVID-19 Pandemic]. https://www.fao.org/fileadmin/user_ upload/rlc/docs/covid19/Boletin-FAO-CELAC.pdf

Gavilán, D., & Manzano, R. (2018). Tacto y Gusto, los grandes olvidados [Touch and Taste, the forgotten greats]. *Marketing y Ventas*, 150. 34-41. https://dialnet.unirioja.es/servlet/articulo?codigo=6479496

Garcillán López-Rúa, M. (2015). Persuasión a través del marketing sensorial y experiencial [Persuasion through sensory and experiential marketing]. *Opción*, 31(2), 463-478.

Gomes, A., De Azevedo, M., & Gomes, A. (2013). El sistema de oferta de restaurantes de alta gastronomía. Una perspectiva sensorial de las experiencias de consumo [The haute cuisine restaurant supply system. A sensory perspective on consumption experiences]. *Estudios y Perspectivas en Turismo*, 22(2), 336-356. http://www.scielo.org.ar/scielo.php?script=sci_arttext&pid=S1851-173220 13000200009&lng=es&tlng=es

Gómez, M., & García, C. (2012). Marketing sensorial: Cómo desarrollar la atmósfera del establecimiento comercial [Sensory marketing: How to develop the atmosphere of the retail outlet]. *En Distribución y Consumo*, 39(2), 30-39. https://dialnet.unirioja.es/servlet/articulo?codigo=3906035

Gómez-Suárez, M., & Yagüe, M.J. (2021). Making sense from experience: How a sustainable multi-sensory event spurs word-of-mouth recommendation of a destination brand. *Sustainability*, 13(11), 5873. https://doi.org/10.3390/su13115873

González, Z.F., & Pallarés, C. (2020). La experiencia Nespresso, el marketing sensorial aplicado al sector del café [The Nespresso experience, sensory marketing applied to the coffee industry], *Miguel Hernández Communication Journal*, 11(1), 75 - 96. https://doi.org/10.21134/mhcj.v11i0.325

Gusó, S.A. (2017). *Visual merchandising y tecnología: Seducir al shopper en el punto de venta* [Visual merchandising and technology: Seducing the shopper at the point of sale]. Editorial ESIC.

Hernández, R., Fernández, C., & Baptista, P. (2010). *Metodología de la investigación [Research methodology]* (5ta ed.), México: McGraw-Hill. 656 p.

Huerta-Tantalean, L.N., Carrasco-Carrasco, N.A., Castillo-Silva, M.E., Cordova-Buiza, F., & Auccahuasi, W. (2024). Behavior of the Peruvian Consumer Towards American Casual Dining Restaurant Chains. *Lecture Notes in Networks and Systems*, 774, 60-70. https://doi.org/10.1007/978-3-031-43733-5_6

Hultén, B. (2011). Sensory marketing: the multi-sensory brand-experience concept. *European Business Review*, 23 (3), 256-273. https://doi.org/10.1108/09555341111130245

Hultén, B., Broweus, N., & Van Dijk, M. (2009). *Sensory Marketing*. Great Britain: Britain Palgrave Macmillan. https://doi.org/10. 1057/9780230237049

Jiménez-Marín, G., Bellido-Pérez, E., & López-Cortés, Á. (2019). Marketing Sensorial: El concepto, sus Técnicas y su Aplicación en el punto de venta [Sensory Marketing: The concept, its techniques and its application at the point of sale]. *Vivat Academia*, 22(148), 121-147. https://doi.org/10.15178/va.2019.148.121-147

Jiménez-Marín, G., Elías-Zambrano, R., & García-Medina, I. (2018). El modelo de Hulten, Broweus y Van Dijk de marketing sensorial aplicado al retail español. Caso textil [The Hulten, Broweus and Van Dijk model of sensory marketing applied to Spanish retailing. Textile case]. *Revista Mediterránea de Comunicación*, 9(1), 401–409. https://doi.org/10.14198/MEDCOM2018.9.1.25

Klaus, P., Kuppelwieser, V., & Heinonen, K. (2023). Quantifying the influence of customer experience on consumer share-of-category. *Journal of Retailing and Consumer Services*, 73. https://doi.org/10.1016/j.jretconser.2023.103375

Kim., M., Kim., J., Park., M.J., & Yoo, J. (2021). The roles of sensory perceptions and mental imagery in consumer decision-making. *Journal of Retailing and Consumer Services*, 61. https://doi.org/:10.1016/j.jretconser.2021.102517

Krishna, A. (2010). Sensory marketing: Research on the sensuality of products. Nueva York: Routledge. 1st edition. 426 p.

Krishna, A., Cian, L., & Sokolova, T. (2016). The power of sensory marketing in advertising, *Current Opinion in Psychology*, 10, 142-147. https://doi.org/10.1016/j.copsyc.2016.01.007

Lindstrom, M. (2010). *Brand Sense. Sensory secrets behind the stuff we buy.* New York: Simon & Schuster. 192 p.

Llovet, R.C.L. (2016). Razones para la emoción en el consumo de moda [Reasons for emotion in fashion consumption]. Vivat Academia, Revista de Comunicación. 19 (137), 57-77. https://doi.org/10.15178/va.2016.137.57-77

Marín, P.P., & Gómez, D. (2021). Comportamiento de compra y marketing de los sentidos: un análisis de su influencia en los compradores de moda [Shopping behaviour and sensory marketing: an analysis of their influence on fashion shoppers]. *Vivat Academia. Revista de Comunicación*, 154, 459-79. https://doi.org/10.15178/va.2021.154.e1366

Martino., C., Sousa., A., Lima de Oliveira., A., Fernandes, Amara, L., & Pimenta., J. (2021). Do consumers perceive sensory differences by knowing information about coffee quality? *LWT*, 4(3),138. https://doi.org/10.1016/j.lwt.2020.110778

Manzano, R., Gavilan, D., Avello, M., Abril, C., & Serra, T. (2012). Marketing sensorial: comunicar con los sentidos en el punto de venta . Madrid: Pearson

Meneses, J., & Vilchez, E. (2017*). Estudio de la marca-ingrediente: Caso Juan Valdez, como factor de posicionamiento y contribución al aumento de exportaciones en el mercado del café* [Brand-ingredient study: Juan Valdez case, as a positioning factor and contribution to increasing exports in the coffee market]. Graduate thesis, Universidad Peruana de Ciencias Aplicadas (UPC). http://repositorioacademico.upc.edu.pe/upc/handle/10757/621556

Mondragón, A. (2014). Uso de la Correlación de Spearman en un estudio de intervención en fisioterapia [Use of Spearman's Correlation in a physiotherapy intervention study]. *Scientific movement*, 8(1), 98-104.

National Coffee Federation of Colombia. (2020). Informe del Gerente al 88 Congreso Nacional de Cafeteros [Manager's Report to the 88th National Congress of Coffee Growers]. https://www.flipsnack.com/federaciondecafeteros/informe-del-gerente-al-88-congreso-nacional-de-cafeteros-virtual.html

Olavarria-Benavides, H.L., Carassa, A.G.C., & Cordova-Buiza, F. (2021). Travel influencers as a factor in choosing a tourist destination post COVID-19: Analysis of the national tourist [Conference]. *Sciences and Humanities International Research IEEE, SHIRCON* https://doi.org/10.1109/SHIRCON53068.2021.9652385

Ortegón-Cortázar, L., & Gómez, A. (2016). Gestión del marketing sensorial sobre la experiencia del consumidor [Sensory marketing management on consumer experience]. *Ciencias Sociales*, 22 (3), 67-83.

Palma-Pérez, X., Arteaga-Flores, R., Ponce-Andrade, J., Loor-Chávez, T., Calderón-Bailón, J., & Mejía-Vásquez, P. (2018). El marketing sensorial y su influencia en el comportamiento de compra de los consumidores de la ciudad de Manta, Ecuador [Sensory marketing and its influence on the purchasing behaviour of consumers in the city of Manta, Ecuador]. *Dominio de las Ciencias,* 4(4), 145-158. https://doi.org/10.23857/dc.v4i4.828

Paredes-Rivadeneyra, E.D., Cordova-Buiza, F., & Torres-Linares, C.A. (2024). Experience Marketing Management for Commercial Success in a shopping mall in Peru. *Lecture Notes in Networks and Systems*, 774, 137-147. https://doi.org/10.1007/978-3-031-43733-5_13

Portella, C., & Schoproni, R. (2016). Marketing de experiência: estratégias para impulsionar o market share e fortalecer a marca do energético energy [Experience marketing: strategies to boost market share and strengthen the energy brand]. *Administração da Universidade Federal de Santa Maria*, 9, 88-106.

Potjanajaruwit, P., Klaysung, S., & Sukavejworakit, K. (2024). Business partnerships, personnel competency, and marketing strategies influencing the success of tourism business operations in Thailand. *GeoJournal of Tourism and Geosites*, 52(1), 203-211. https://doi.org/10.30892/gtg.52119-1196

Reinoso, F., Moors, P., Wagemans, J., & Spence, C. (2017). The Influence of Color on the Consumer's Experience of Beer. *Frontiers in psychology*. https://doi.org/10.3389/fpsyg.2017.02205

Rigoberto, C. (2020). Effects of the COVID-19 pandemic on consumer behavior. *Innovare Revista de Ciencia y Tecnología*. 9 (2). https://doi.org/10.5377/innovare.v9i2.10208

Robles, B. (2019). Population and sample. 30(1), 245-246. http://doi.org/10.22497/PuebloCont.301.30121

Rocha-Vallejos, K.H., Rabanal-Altamirano, S.N., Robles-Fabian, D.A., & Cordova-Buiza, F. (2022). Does brand love strictly increase purchase intention? the case of linio. *Innovative Marketing*, 18(4), 36-47. https://doi.org/10.21511/im.18(4).2022.04

Rodas, J., & Cervantes, J. (2017). *El marketing sensorial en el proceso de toma de decisiones de compra: análisis exploratorio [Sensory marketing in the purchase decision-making process: an exploratory analysis]* [conference]. XXII Congreso Internacional de Contaduría, Administración e Informática, Mexico City, Mexico.

Rodas, J., & Montoya, L. (2018). Methodological proposal for the analysis and measurement of sensory marketing integrated to the consumer experience. *DYNA.* 85(207), 54-59.

Rodríguez-Ardura, I., & Ammetller, G. (2018). *Principios y estrategias de marketing [Marketing principles and strategies]*. 1. Barcelona, Editorial UOC. 538 p.

Rodríguez-Díaz, M.A., & Gallardo-Echenique, E. (2020). Odotipo, la identidad olfativa de una marca [Odotype, a brand's olfactory identity]. *Revista Ibérica De Sistemas e Tecnologias De Informação*, 34, 158-171. http://hdl.handle.net/10757/656661

Schiffman, L., & Wisenblit, J. (2015). *Comportamiento del consumidor* [Consumer behaviour] (11th ed.). Mexico: Pearson Education.

Sutiadiningsih, A., Mahfud, T., Dang, V.H., Purwidiani, N., Rachma Wati, G., & Dewi, I.H.P. (2024). The role of gastronomy tourism on revisit and recommendation intentions: the mediation analysis of tourist satisfaction. *GeoJournal of Tourism and Geosites*, 52(1), 195-202. https://doi.org/10.30892/gtg.52118-1195

Tsai S.P. (2005). Integrated marketing as management of holistic consumer experience. *Business Horizons,* 48(5), 431-441. https://doi.org/10.1016/j.bushor.2005.02.005

Vasconcelos Teixeira, L. (2020). *The consumption of experiences in specialty coffee shops. In* Coffee Consumption and Industry Strategies in Brazil, Woodhead Publishing, 275-295. https://doi.org/ 10.1016/B978-0-12-814721-4.00010-X

Zacipa, I., Tur, V., & Segarra, S. (2016). Tendencias publicitarias en Iberoamérica. Diálogo de saberes y experiencias [Advertising trends in Ibero-America. Dialogue of knowledge and experiences*]. Colección Mundo Digital de Revista Mediterránea de Comunicación*, 8. 378 p.

Article history: Received: 26.03.2024 Revised: 30.05.2024 Accepted: 19.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.906-914
DOI 10.30892/gtg.542spl14-1265

VOLCANO TOURISM: HOW DO DESTINATION AWARENESS AND CREDIBILITY DEVELOP VISIT INTENTION FOR MOUNT BROMO IN INDONESIA

Usep SUHUD
Faculty of Economics, Universitas Negeri, Jakarta, Indonesia, e-mail: usuhud@unj.ac.id

Mamoon ALLAN*
Faculty of Archaeology and Tourism, University of Jordan, Amman, Jordan, e-mail: m.allan@ju.edu.jo

Wong Chee HOO
Faculty of Business and Communications, INTI International University, Nilai, Malaysia, e-mail: cheehoo.wong@newinti.edu.my

Citation: Suhud, U., Allan, M., & Hoo, W.C. (2024). VOLCANO TOURISM: HOW DO DESTINATION AWARENESS AND CREDIBILITY DEVELOP VISIT INTENTION FOR MOUNT BROMO IN INDONESIA. *Geojournal of Tourism and Geosites*, 54(2spl), 906–914. https://doi.org/10.30892/gtg.542spl14-1265

Abstract: This study investigates the impact of destination awareness, credibility, reputation, and association on visit intention. The study was conducted at Mount Bromo, in Indonesia's East Java Province, which has become a popular destination for domestic and international tourists. The study involved 227 participants selected through the convenience sampling method, and the collected data were analysed using exploratory and confirmatory factor analysis and structural equation models. The study found that destination awareness and credibility significantly influenced destination reputation and association, which, in turn, had a significant impact on visiting intentions. These research findings are essential in advancing volcano tourism studies and provide a deeper understanding of the factors influencing tourist intention to visit such destinations. The implications of these research findings can guide tourism industry practitioners and decision-makers in developing more effective marketing strategies, and this study contributes significantly to volcano tourism literature.

Keywords: destination credibility, destination image, destination reputation, volcano tourism

* * * * * *

INTRODUCTION

Overall, volcano tourism, a multifaceted exploration of destinations with active and dormant volcanoes, provides unique insight into geological and cultural intricacies (Suhud and Allan, 2024; Dowling et al., 2021). Jiménez-Barreto et al. (2023) highlight the scarcity of studies on residents' attitudes post-natural calamities, emphasising the fresh start mindset. In the Philippines context, Ong et al. (2023) explore factors influencing revisitation intentions to Taal Volcano post-recovery. Suhud and Allan (2019) highlight Indonesia's burgeoning interest in volcano tourism, emphasising the need to market its 127 active volcanoes. Marin et al. (2023) focus on the indigenous nature of the Ungaran volcano-geothermal area, highlighting tourism's potential to intertwine geological knowledge with socio-cultural acceptance.

Suhud et al. (2023) and Erfurt (2022) investigate factors influencing tourists' intentions to revisit volcanic destinations, emphasising perceived value, destination image, and place attachment. Platania et al. (2022) delve into the economic sustainability of volcanic sites, proposing differential entrance fees based on visitors' willingness to pay and demand elasticity.

In volcano tourism discourse, academic attention has grown considerably, and it has intrigued scholars from several countries (Suhud and Allan, 2022). However, studies on tourist behaviour, including destination credibility, awareness, reputation, and association are still uncommon. This study aims to fill this knowledge gap by examining these variables' effect on tourist visit intentions, focusing on Mount Bromo in Indonesia.

Destination credibility, reflecting trustworthiness and reliability, is pivotal for Mount Bromo. Higher awareness levels, crucial in influencing decisions, can be achieved through practical promotional efforts. A positive reputation, shaped by favourable past experiences, attracts visitors, and encourages repeat visits. Destination association explores mental connections individuals form with specific attributes, influencing visit intentions.

Incorporating these variables is rooted in their significance, providing a comprehensive framework to analyse and enhance Mount Bromo's appeal. Located in Java Tengah province, Mount Bromo, an active volcano, is a sought-after destination for domestic and international tourists, offering a captivating blend of natural beauty and cultural richness.

LITERATURE REVIEW

Destination Awareness

According to various studies, destination awareness incorporates the understanding and recognition of a specific

* Corresponding author

destination by potential tourists. Also, it has a significant impact in influencing tourists' decisions, perceptions, and intentions to travel. Vila et al. (2021) underscored the impact of destination awareness on viewers' travel choices after exposure to TV series featuring various destinations. Their research findings indicated that media exposure significantly shapes tourists' preferences, with destination awareness emerging as a crucial factor. Haarhoff and De Klerk (2019) explored South Africa's efforts to shape international visitors' perceptions in the context of national branding. Their study revealed that the overall attractiveness of the country positively influenced respondents' intentions to revisit. It reinforces the understanding that destination awareness, shaped by branding initiatives, contributes significantly to tourists' decision-making processes.

Dedeoğlu et al. (2020) investigated the role of social media in influencing destination awareness. They further reveal that social media sharing positively impacts destination brand awareness and subsequently influences perceptions of service and natural quality. It emphasises the contemporary influence of digital platforms on shaping destination awareness among potential tourists. Safira and Salsabilia (2022) focused on halal destination awareness in West Sumatra, emphasising the significance of catering to specific target audiences.

Their study demonstrated that halal brand awareness influences loyalty towards West Sumatra as a Muslim-friendly travel destination. It suggests that destination awareness tailored to cultural or religious preferences is crucial in fostering loyalty. Guided by the customer-based brand equity model, Teodorović et al. (2020) evaluate Serbia's brand equity as a tourist destination, and highlight the underdeveloped destination image within Serbia's domestic tourism market, emphasising the critical role of destination awareness in shaping the country's customer-based brand equity.

Destination Awareness and Destination Reputation

Up till now several studies have investigated the impact of destination awareness on destination reputation. Thus, Thakshak (2018) found that brand awareness significantly influences brand reputation. It aligns with the research findings of Qalati et al. (2019), Foroudi (2019), and Jung and Seock (2016). Regarding destination awareness and its impact on destination reputation, these studies suggest that a higher level of awareness about a destination contributes positively to its overall reputation. Thakshak's (2018) focus on brand awareness implies that a destination's image and recognition are crucial in shaping how potential tourists perceive it.

Similarly, the studies by Qalati et al. (2019), Foroudi (2019), and Jung and Seock (2016) indicate the importance of awareness in building and maintaining a positive reputation for brands. Therefore, enhancing the positive influence of destination awareness on a destination's reputation makes it more appealing to potential tourists.

Destination Awareness and Destination Association

A plethora of studies shed light on the relationship between brand awareness and brand association, considering them crucial components of brand equity. Accordingly, Wang et al. (2021), Bae et al. (2020), and Severi and Ling (2013) document the influence of brand awareness on brand association.

Together, these studies emphasise the significant role of destination awareness in shaping destination association. Following the perspective from the branding literature, brand awareness acts as a foundation that allows individuals to recognise and recall specific aspects of a destination. The research findings from Wang et al. (2021), Bae et al. (2020), and Severi and Ling (2013) indicate that a higher level of destination awareness contributes positively to the formation of associations related to that destination. It suggests that as tourists become more aware of a destination, they are more likely to associate it with favourable attributes, contributing to a positive overall destination association.

Based on the findings of preceding research initiatives, this study formulates the ensuing hypotheses for empirical testing:

H1 – Destination awareness will have a significant impact on destination reputation.

H2 – Destination awareness will have a significant impact on destination association.

Destination Credibility

Based upon the following studies, Jiménez-Barreto et al. (2020), Molinillo et al. (2022), del Barrio-Garcia and Prados-Peña (2019), Reitsamer and Brunner-Sperdin (2021), and Jun (2020), the concept of destination credibility refers to the perceived authenticity, trustworthiness, and believability associated with a destination brand. It encompasses various factors such as online destination brand experience, enduring culture involvement, brand identification, reputation, attachment, brand extension authenticity, and brand signalling. Jiménez-Barreto et al. (2020) highlighted the importance of online interactions in shaping tourists' behavioural intentions, emphasising the positive direct and indirect associations between online destination brand experience, perceived online destination brand credibility, and users' intentions to visit or recommend a destination.

In this context, destination credibility involves the trust visitors place in the online representation of a destination. Molinillo et al. (2022) provided a broader conceptualisation by integrating constructs like enduring culture involvement, destination brand identification, reputation, and attachment into the understanding of destination brand credibility. Their research delved into the factors contributing to the formation of destination brand credibility and how brand attachment acts as a mediator in this relationship. Del Barrio-Garcia and Prados-Peña (2019) explored brand extension within heritage destination branding, unravelling the direct and indirect effects of brand extension authenticity on equity, mediated through brand extension credibility. This study underscored the complexities associated with brand extension strategies, emphasising credibility's role in ensuring the success of such extensions. Reitsamer and Brunner-Sperdin (2021) blended brand signalling and attachment theories, emphasising the crucial role of place brand credibility. Their findings showed how credible place brands foster consumer attachment, impacting word of mouth and intention to return.

It sheds light on the influence of credibility in shaping tourists' behaviour and communication. Jun (2020) explored the context of Airbnb, revealing that perceived risks, brand credibility, and experience play crucial roles in intentions to stay. The study in South Korea demonstrated the dominance of brand credibility in shaping users' and non-users intentions to stay, emphasising its critical nature for decision-making, particularly in the realm of intangible and heterogeneous products.

Destination Credibility and Destination Reputation

There is an urgent need for studies evaluating the impact of destination credibility on destination reputation persists; moreover, several relevant studies offer valuable insights for application. A study by Hur et al. (2014) examining the influence of corporate brand credibility on reputation revealed a significant impact, indicating that corporate brand credibility significantly affects reputation. This congruent finding is echoed by Wang et al. (2021), reinforcing the notion that the credibility of a brand, whether corporate or destination-specific, holds a substantial sway over its reputation. Although direct research on destination credibility and reputation remains limited, these referenced studies contribute essential perspectives and methodologies adapted to explore the intricate dynamics between credibility and reputation in the context of destinations.

Destination Credibility and Destination Association

To date many studies have assessed brand credibility and association. Chen et al. (2013) conducted a study examining the influence of brand credibility on brand association, revealing a statistically significant impact of brand credibility on brand association. This finding aligns with the parallel conclusions presented by Wang et al. (2021). These studies contribute to the broader understanding of the correlation between credibility and association in the branding context, offering insights that could extend to destination-related perceptions. Despite the scarcity of direct studies on destination credibility and association, these references provide a foundation for exploring the interconnected dynamics of credibility and association within the context of destinations.

After drawing insights from prior research endeavours, the following hypotheses have been formulated as follows:

H3 – Destination credibility will have a significant impact on destination reputation.

H4 – Destination credibility will have a significant impact on destination association.

Destination Reputation

As illustrated by various studies, destination reputation refers to the aggregate perceptions, evaluations, and beliefs among tourists and other stakeholders regarding a specific destination. These studies delve into the multifaceted nature of destination reputation, investigating the factors that contribute to its formation and the subsequent implications on tourism-related behaviours. For instance, studies conducted by Hassan and Soliman (2021) and Su et al. (2020) examine the influence of destination social responsibility on tourists' perceptions and behaviours. They highlight the role of DSR in impacting tourists' trust, revisiting intention, and intention to visit. Moreover, various studies have revealed that tourists' perceptions can significantly influence their behavioural intentions. For example, Hassan and Soliman (2021) emphasise the impact of DSR on reputation, trust, and revisit intention. In contrast, Widjaja et al. (2020) examine how Islamic attributes and affective image contribute to building the reputation of a halal tourism destination. In the same vein, Iglesias-Sánchez et al. (2019) focus on the impact of Web 2.0 conversations and co-creation on destination reputation, providing insights into the strategic role of social media in decision-making and brand building. Similarly, Molinillo et al. (2022) propose a conceptual framework that considers enduring cultural involvement, brand identification, and reputation as influencers of destination brand credibility. In summary, these studies provide a better understanding of destination reputation, its antecedents, and consequences on various aspects of tourism behaviour. Despite sharing common themes and findings, the diversity in research questions, methodologies, and contexts provides a more nuanced perspective on this intricate field.

Destination Reputation and Visit Intention

investigating the impact of destination reputation on visit intention remains a relatively scarce study area. However, several pertinent references shed light on the significance of reputation in influencing behavioural intentions. Gupta et al. (2020) conducted a study examining the impact of store reputation on purchase intention, revealing a significant positive association. This research finding aligns with similar conclusions drawn in studies presented by Yu et al. (2023), Abdullah and Budiman (2019), Balakrishnan and Foroudi (2020), Agmeka et al. (2019), Aradena et al. (2020), Jung and Seock (2016), Vorobyova (2021), Wang et al. (2021), and Kircova and Esen (2018). Overall, these studies highlight the consistent influence of reputation on behavioural intentions across various contexts, reinforcing that a positive reputation significantly contributes to favourable intentions, whether in retail stores or potentially extending to the realm of destination visitation.

Building upon the foundations laid by antecedent studies, the hypothesis advanced for examination is as follows.

H5 – Destination reputation will have a significant impact on visit intention.

Destination Association

It could be argued that destination association pertains to the mental connections, perceptions, and attributes that individuals link with a specific destination. These studies delve into the multifaceted nature of destination association, exploring the factors contributing to its formation and the subsequent implications for its image and attractiveness. Research on destination association in tourism is limited, but several studies are worth comparing and discussing. Xu and Ho's (2021) research notes the underutilisation of brand association in tourism studies and examines study tours as educational tourism. Huang et al. (2015) investigate Mainland Chinese tourists' perceptions of Taiwan's destination brand associations, while Jin et al. (2019) explore the relationship between a brand's colour identity, brand association, and brand loyalty. Abruruman et al. (2020) focus on the impact of brand equity on tourists' intentions to visit specific destinations, focusing on the UAE. While all these studies centre around brand association and its effect on tourism behaviour, they differ in their particular contexts, the focus of influence, variables and dimensions, and target tourist segments. Despite these differences, all studies rely on empirical evidence to support their findings and highlight the generally positive influence of brand association in tourism.

Destination Association and Visit Intention

The impact of destination association on visit intention still needs to be explored within scholarly discourse. However, Abruruman et al. (2020) found that brand association significantly influences visit intention, shedding light on the importance of associative elements in shaping individuals' intentions to visit a destination. Whilst other research, such as that conducted by Rizkianti and Kurniawati (2021), Le-Hoang et al. (2020), Kurniawan and Diryana (2015), and Rungsrisawat and Sirinapatpokin (2019), has unveiled the significant influence of brand association on purchase intention. While these studies pertain to brands, their findings suggest broader applicability, hinting at the potential impact of destination association on visit intention. This aspect warrants further scholarly attention and investigation.

In the light of the antecedent studies, this hypothesis has been formulated as follows:

H6 – Destination association will have a significant impact on visit intention.

As shown in Figure 1, the framework includes several interconnected components that help us understand the relationships between different factors. The main aim of this framework is to explore how diverse factors interact within the context of Mount Bromo as a tourism destination. The framework involves destination awareness and credibility as the initial driving forces and then links these two factors to destination reputation and destination association. The basic idea is that visitors' awareness of the destination and their perception of its credibility will impact how they view the destination regarding its reputation and associated attributes. The model further moves to the third component, where the influences focus more on behavioural intent. Likely, destination reputation and association play crucial roles in shaping the visit intention for potential tourists. This step represents the culmination of cognitive and perceptual processes into a tangible behavioural outcome.

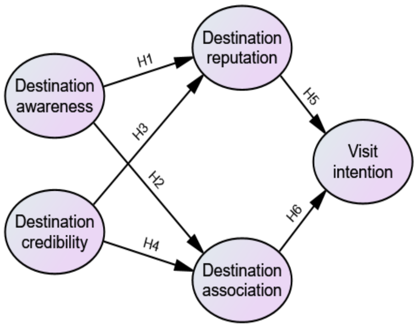


Figure 1. The Theoretical Framework (Source: The authors, 2024)

METHODS

Measures

In this study, we have adopted a framework that involves measuring each variable analysed through indicators previously used in studies related to marketing and tourism. Brand awareness was measured using indicators derived from Severi and Ling (2013). Similarly, brand credibility was measured using indicators from Chen et al. (2013). This study assesses destination reputation using indicators previously used by Artigas et al. (2015). On the other hand, brand association items were adapted from Chen et al. (2013). Lastly, we adapted an indicator previously used in research by Su et al. (2022) to measure destination trust. When measuring visit intention, we used indicators from Ahn and Kwon (2020).

A six-point Likert-type scale was used to respond to the items. The scale ranged from ‘Strongly Disagree’ to ‘Strongly Agree’. By adopting a framework that utilises previously tested indicators, we can effectively measure and analyse critical variables in the marketing and tourism domain.

Data Analysis Methods

The study underwent four stages of data processing, beginning with the First Validity Test using Exploratory Factor Analysis (EFA) to identify the factor structure of the indicators. It determines the validity of an indicator if it scores 0.4 or higher. Next, it conducted the Reliability Test to measure the reliability of the constructs used in the research. This study considers a construct reliable if it has an alpha (alpha) score of 0.7 or higher. The Third Stage involved the Second Validity Test using Confirmatory Factor Analysis (CFA) to test the validity of the constructs identified through EFA. Probability, CMIN/DF, CFI, and RMSEA were the four model evaluation criteria. Lastly, this study conducted the Hypothesis Test using the Structural Equation Model (SEM) to test the hypotheses proposed in the research. If a hypothesis scores a Critical Ratio (CR) score of 1.96 or higher, this study accepts it. Probability, CMIN/DF, CFI, and RMSEA were the four model evaluation criteria. Overall, the study underwent a rigorous data processing approach to ensure the validity and reliability of the constructs used and the accuracy of the hypotheses tested through SEM (Table 1).

Table 1. Criteria of a Fitted Model

Criteria	Rule of Thumb	Resources
Probability	$0.05 < p < 1.00$	Schermelleh-Engel et al. (2003)
CMIN/DF	$0 \leq CMIN/DF \leq 2$	Tabachnick et al. (2007)
CFI	$0.95 \leq CFI \leq 1.00$	Hu and Bentler (1995)
RMSEA	$0 \leq RMSEA \leq 0.06$	Hu and Bentler (1999)

RESULTS

Participants: The study involved 227 tourists with travel experience out of town or abroad in the last six months, with a minimum age limit to 17 years old. This study's researchers expected all participants to have heard about Mount Bromo's tourist destination. This study used the convenient sampling method to select a sample of participants consisting of 39 males (17.2%) and 188 females (82.8%). Of the total participants, 177 people (78%) revealed they had visited Mount Bromo. Regarding age distribution, most participants were aged 21 to 25 years old, totalling 141 people (62.1%). Most participants, as many as 123 people (54.2%), did not have a job when conducting the research. Additionally, most participants, specifically 193 people (85%), were unmarried. These demographic data points provide an overview of the characteristics of study participants which varied in age, employment status, and marital status (Table 2).

Table 2. Profile of Participants

Profile		Frequency	Percent
Sex	Male	39	17.2
	Female	188	82.8
	Total	227	100.0
Age	17-20	41	18.1
	21-25	141	62.1
	26-29	28	12.3
	30-34	10	4.4
	35-39	3	1.3
	40-45	2	.9
	46-49	2	.9
Occupational Status	Employed	80	35.2
	Unemployed	123	54.2
	Self-employed	24	10.6
Marital Status	Unmarried	193	85.0
	Divorced/separated	2	.9
	Married	32	14.1

Data Validity and Reliability Tests

This study has conducted the data validity and reliability tests, and it can show the research results in Table 3. Based on the research results, we can observe that each measured construct variable maintains the indicators set. The awareness destination maintains eight indicators with a high level of reliability, indicated by Cronbach's alpha value of 0.907. Similarly, the construct of destination credibility is maintained with six indicators, showing strong reliability with an alpha value of 0.946. The reputation destination, which consists of five indicators, shows good internal consistency with an alpha value of 0.895. In addition, the destination association construct, supported by six indicators, achieves satisfactory reliability, as reflected in Cronbach's alpha value of 0.914. Finally, the visit intention construct preserves the nine indicators with a high level of reliability, marked by an alpha value of 0.961. All rescued indicators show strong validity in measuring the observed variables. Moreover, all constructs show an alpha score above 0.8, indicating high level of reliability in measuring these variables. These findings confirm the credibility of the collected data and provide a solid foundation for subsequent analysis and interpretation.

Table 3. Results of Data Validity and Reliability Tests

	Variables and Indicators	Factor Loadings	Cronbach’s Alpha
	Destination Awareness		0.907
AW8	When it comes to Mount Bromo, I can immediately remember its name.	0.858	
AW6	Bromo is the name of a mountain that I know very well.	0.804	
AW4	I have an opinion about Mount Bromo.	0.803	
AW1	I am aware of Mount Bromo.	0.803	
AW3	I know what Mount Bromo looks like.	0.790	
AW5	I can recognise the name of Mount Bromo among the names of other volcanoes.	0.781	
AW7	I often see posts about Mount Bromo on social media.	0.749	
AW2	When considering volcanoes, Mount Bromo is one of the mountain names that comes to mind.	0.654	
	Destination Credibility		0.946
CR4	Mount Bromo delivers what it promises.	0.916	
CR6	I can trust the claims of Mount Bromo.	0.909	
CR2	Mount Bromo can deliver what it promises.	0.904	
CR5	Mount Bromo has a name I can trust.	0.894	
CR3	Mount Bromo can provide clear, organised, and expert information.	0.889	
CR1	Mount Bromo reminds me of someone who is competent and knows what he is doing.	0.834	
	Destination Reputation		0.895
RE4	People talk about Mount Bromo very well.	0.867	
RE1	The reputation of Mount Bromo is excellent.	0.855	
RE3	People respect Mount Bromo.	0.854	
RE5	Mount Bromo's reputation gets support from its history.	0.818	
RE2	Mount Bromo has a better reputation than other similar places.	0.811	
	Destination Trust		0.912

TR5	I believe there are management standards for the management of Mount Bromo.	00.890	
TR4	I believe there are clear guidelines for visitors to Mount Bromo.	0.877	
TR2	I hope that the management of Mount Bromo will actively offer help when I'm in trouble.	0.851	
TR3	I hope for humane service facilities for visitors to Mount Bromo.	0.846	
TR1	I believe that the management of Mount Bromo will try to understand my needs.	0.840	
	Destination Association		0.914
AS2	Mount Bromo is different from other volcanoes that I know.	0.899	
AS5	There are more reasons to visit Mount Bromo than other volcanoes.	0.887	
AS1	Mount Bromo has its characteristics.	0.881	
AS4	Mount Bromo is no stranger to me.	0.875	
AS3	I trust the company that owns a particular product/brand that appears on social media.	0.772	
	Destination Image		0.961
IM4	Mount Bromo is exhilarating.	0.901	
IM1	Mount Bromo is fun.	0.899	
IM5	Mount Bromo is calming.	0.896	
IM7	Mount Bromo is friendly.	0.876	
IM9	Mount Bromo is interesting.	0.876	
IM2	Mount Bromo is relaxing.	0.874	
IM3	Mount Bromo is charming.	0.870	
IM8	Mount Bromo is easily accessible.	0.849	
IM6	Mount Bromo is innocent.	0.843	
	Visit Intention		0.953
V3	I intend to visit Mount Bromo shortly.	0.949	
V2	I will try to visit Mount Bromo shortly.	0.943	
V1	I plan to visit Mount Bromo shortly.	0.939	
V4	I am willing to visit Mount Bromo shortly.	0.914	

Hypotheses Tests

The structural model depicted in Figure 2 represents the tested hypotheses. This study measures the feasibility of this model through several evaluation indicators. The Comparative Fit Index (CFI) score of 0.993 indicates the level of fit of the model with the observed data, close to the ideal value of 1.00. In addition, the Root Mean Square Error of Approximation (RMSEA) score of 0.036 indicates that the model has a low estimation error rate. This study also assesses the model with a Chi-Square-to-Degrees of Freedom ratio (CMIN/DF) score of 1.287, which indicates the alignment of the model with the data, and a Comparative Fit (CR) score of 0.70, which describes the overall feasibility of the model. These values indicate that the model has good quality and effectively reflects the relationships between the variables studied according to the hypothesis proposed. The study findings in Table 4 report the test results of the six hypotheses. The Critical Ratio (CR) scores for all hypotheses range from 2.666 to 7.611, indicated a strong significance level. The CR scores that exceed the threshold value confirm that the hypotheses significantly impact the variables tested. These results suggest a consistent and robust relationship between the variables studied, providing empirical support for the study's conceptual framework. These findings have important implications for the validity and reliability of the study's conclusions in the context of the relationship between the variables examined.

Table 4. Results of the Hypotheses Tested Note: (***) P value is less than 0.0001

Hypotheses	Paths	C.R.	P	Results
H1	Destination awareness > Destination reputation	5.585	***	Accepted
H2	Destination awareness > Destination association	4.191	***	Accepted
H3	Destination credibility > Destination reputation	4.934	***	Accepted
H4	Destination credibility > Destination association	7.611	***	Accepted
H5	Destination reputation > Visit intention	2.666	.008	Accepted
H6	Destination association > Visit intention	3.641	***	Accepted

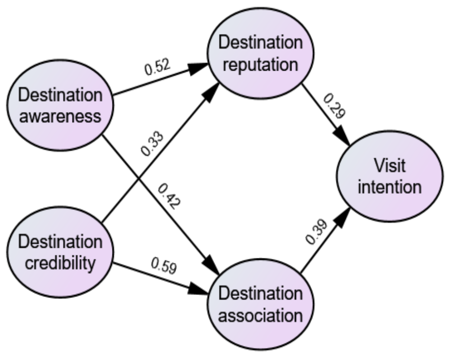


Figure 2. Structural Model of the Hypotheses Tested (Source: The authors 2024)

DISCUSSION

The research results show that the first hypothesis was accepted and destination awareness significantly influences destination reputation with a CR score of 5.585. This result is in line with the results presented by Qalati et al. (2019), Foroudi (2019), and Jung and Seock (2016). In this case, it is thought that increased awareness of a destination contributes positively to it's the overall reputation of the destination, which may explain the impact of destination awareness on a destination's reputation. Qalati et al. (2019), Foroudi (2019), and Jung and Seock (2016) emphasise that a destination's image and recognition play a significant role in shaping how potential tourists perceive it. Enhanced destination awareness will likely create a positive perception of the destination, influencing its reputation and making it more attractive to potential visitors. The second hypothesis was accepted, showing that destination awareness significantly impacts destination association, with a CR score of 4.191. This finding is consistent with the results of Wang et al. (2021), Bae et al. (2020), and Severi and Ling (2013). Thus, destination awareness significantly impacts destination association, which is supported by the previous studies. Destination awareness is pivotal in tourists' perceptions and associations with Mount Bromo. The results suggest that as tourists become more aware of the destination, their associations with Mount Bromo become more pronounced and positive, influencing their overall perception and intention to visit.

Additionally, the third hypothesis that destination credibility significantly impacts destination reputation was accepted, and the CR score was 4.934. This finding is aligned with the results demonstrated by Hur et al. (2014) and Wang et al. (2021). In this context, this study can attribute the significant impact of destination credibility on destination reputation to the perceived trustworthiness, reliability, and positive attributes associated with Mount Bromo. Hur et al. (2014) highlighted the vital role of corporate brand credibility in shaping a destination's reputation, indicating that a credible destination is more likely to be positively regarded by tourists. Similarly, Wang et al. (2021) emphasised the importance of credibility in contributing to a favourable destination reputation. Thus, the positive impact of destination credibility on destination reputation underscores the significance of establishing a trustworthy and credible image of Mount Bromo among tourists.

The results showed that the fourth hypothesis was accepted, and that destination credibility significantly influences Destination Association, with a CR score of 7.611. This finding aligns with the outcomes demonstrated by Chen et al. (2013) and Wang et al. (2021). Hence, we can attribute the substantial impact of destination credibility on the Destination Association to the tourists' perception of the credibility of Mount Bromo as a destination. Chen et al. (2013) highlighted that credibility plays a considerable role in shaping tourists' associations with a destination. The credibility of Mount Bromo, established through various factors such as sustainability, publicity, and environmental motivation, might create a positive association in the minds of tourists. Wang et al. (2021) further support this notion by emphasising the enduring influence of credibility in shaping destination-related associations. Therefore, the perceived trustworthiness and credibility of Mount Bromo contribute significantly to the formation of positive associations, influencing tourists to visit the destination.

The fifth hypothesis was accepted, suggesting that destination reputation significantly impacts Visit Intention with a CR score of 2.666. This finding accords with the outcomes presented by Yu et al. (2023), Abdullah and Budiman (2019), Balakrishnan and Foroudi (2020), Agmeka et al. (2019), Aradena et al. (2020), Jung and Seock (2016). Accordingly, we can attribute the significant impact of destination reputation on visit intention to the positive perceptions and reputation associated with Mount Bromo. Yu et al. (2023) emphasised the influential role of destination reputation in shaping tourists' intentions to visit, highlighting the importance of a favourable reputation for attracting visitors. In addition, Abdullah and Budiman (2019), Balakrishnan and Foroudi (2020), Agmeka et al. (2019), Aradena et al. (2020), and Jung and Seock (2016) also demonstrated the substantial influence of destination reputation on visit intention, indicating that a positive reputation enhances tourists' likelihood of intending to visit Mount Bromo.

Besides, the sixth hypothesis was accepted, indicating that the destination association significantly impacts visit Intention with a CR score of 3.641. This observation is in line with the outcomes demonstrated by Rizkianti and Kurniawati (2021), Le-Hoang et al. (2020), Kurniawan and Diryana (2015), and Rungsrisawat and Sirinapatpokin (2019). In this context, we can attribute the substantial impact of the destination association on visit intention to the tourists' perceptions of Mount Bromo. Rizkianti and Kurniawati (2021) emphasised the influence of brand association on visit intention, suggesting that a positive association with a destination contributes to an increased intention to visit. Likewise, Le-Hoang et al. (2020), Kurniawan and Diryana (2015), and Rungsrisawat and Sirinapatpokin (2019) demonstrated the importance of destination association in shaping tourists' intentions to visit. The positive reputation and associations linked with Mount Bromo contribute significantly to the heightened intention among tourists to visit the destination.

CONCLUSION

The findings of the curerrent study revealed several insights into tourists behaviour regarding the volcano, Mount Bromo. One important finding is that tourists' awareness of the destination have significant impacts on its reputation and association. It means the more tourists are informed of Mount Bromo's existence, the more positive the destination's reputation and association will be. Another significant finding is that destination credibility is crucial in shaping tourists' views of destination reputation and association. It was also confirmed that a positive destination reputation has a significant impact on visit intention. Furthermore, how tourists associate themselves with Mount Bromo influences their intention to visit the destination. The findings of this study provide a deeper understanding of the factors that influence tourist perceptions and visit intentions. One significant contribution is the confirmation that destination awareness significantly influences destination reputation and association. It strengthens the theoretical basis that tourists' knowledge and information about a destination shape their perception and relationship within it. The study also contributes to understanding the role of destination credibility in shaping destination reputation and association with tourists. It provides a conceptual framework that considers how trust in a destination influences positive perception. Moreover, the study found a positive relationship between destination reputation and visit intention, which complements the understanding of the relationship between destination image and tourist motivation. Lastly, the study's discovery that associating a destination influences visit intentions completely helps to understand the connection between tourists and destinations.

This study has highlighted valuable insights for managing tourism destinations, particularly for enhancing the attractiveness of Mount Bromo and increasing visits to such destination. The research findings suggest that increasing awareness about the destination can significantly influence positive perceptions and emotional connection. Moreover, emphasising trust, transparency, quality services, and responsible management can boost a destination's credibility and reputation. Building a positive image of Mount Bromo through unique promotional programs and improving tourism services can also increase visit intentions. Finally, creating experiences that evoke emotions and a close relationship between tourists and destinations can enhance visitor associations with Mount Bromo. These implications can guide practitioners in the tourism industry to design effective strategies for destination management.

The study found several limitations that should be acknowledged. Study results revealed a significant relationship between variables of destination awareness, credibility and reputation, and visitation intentions. However, the model tested may only capture a few factors that may influence tourist behaviour. Other variables such as individual preferences, previous experience, or external factors may also play a significant role in shaping the visitation intention, but were not considered in this study. Future research should broaden the range of variables included in the analytical model. Variables such as price, transport accessibility, or local cultural factors can provide further insight into the factors influencing tourists' intentions to visit Mount Bromo. Finally, further study could include a more in-depth analysis of how psychological and emotional factors influence the relationship among the selected variables.

Author Contributions: Conceptualization, U.S. methodology, U.S., and M.A..; software, U.S.; validation, U.S. and. M.A.; formal analysis, U.S. investigation, U.S, M.A. and W.CH. data curation, U.S, M.A. and W.CH..; writing - original draft preparation, U.S. writing - review and editing, U.S, M.A. and W.CH.; visualization, M.A. and W.CH.; supervision, U.S.; project administration, U.S. All authors have read and agreed to the published version of the manuscript.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: This research was supported by the Directorate General of Higher Education, Ministry of Education and Culture, Republic of Indonesia.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Abdullah, T.M.K., & Budiman, P. (2019). The role of corporate social responsibility towards purchase intention: the mediating effect of brand image and corporate reputation. *WoMELA-GG 2019: The 1st Workshop on Multimedia Education, Learning, Assessment and its Implementation in Game and Gamification in conjunction with COMDEV 2018, Medan Indonesia, 26th January 2019, WOMELA-GG,* 197.

Abruruman, A., Kumail, T., Sadiq, F., & Abbas, S.M. (2020). Influence of brand equity on intentions to visit tourist destinations: The case of United Arab Emirates outbound travellers. *International Journal of Innovation, Creativity and Change. 14*(9), 624-644.

Agmeka, F., Wathoni, R.N., & Santoso, A.S. (2019). The influence of discount framing towards brand reputation and brand image on purchase intention and actual behaviour in e-commerce. *Procedia Computer Science, 161*, 851–858. https://doi.org/10.1016/j.procs.2019.11.192

Ahn, J., & Kwon, J. (2020). CSR perception and revisit intention: the roles of trust and commitment. *Journal of Hospitality and Tourism Insights*, *3*(5), 607–623. https://doi.org/10.1108/JHTI-02-2020-0022

Aradena, R.Z.K., El Fajri, R., Octora, Y., & Setiawan, E.B. (2020). The effect on repurchase intention: Comparisons of service quality, reputation, and brand image (Case study: Citilink and Lion Air in Jakarta, Indonesia). *Advances in Transportation and Logistics Research*, *3*, 727–736. https://doi.org/10.25292/atlr.v3i0.336

Artigas, E.M., Vilches-Montero, S., & Yrigoyen, C.C. (2015). Antecedents of tourism destination reputation: The mediating role of familiarity. *Journal of Retailing and Consumer Services*, *26*, 147–152. https://doi.org/10.1016/j.jretconser.2015.06.005

Bae, S., Jung, T.H., Moorhouse, N., Suh, M., & Kwon, O. (2020). The influence of mixed reality on satisfaction and brand loyalty in cultural heritage attractions: A brand equity perspective. *Sustainability*, *12*(7), 1-22.

Balakrishnan, J., & Foroudi, P. (2020). Does corporate reputation matter? Role of social media in consumer intention to purchase innovative food product. *Corporate Reputation Review*, *23*, 181–200. https://doi.org/10.1057/s41299-019-00078-w

Chen, T.Y., Yeh, T.L., & Jheng, W.S. (2013). Factors influencing brand association. *African Journal of Business Management*, *7*(19), 1914–1926. s http://www.academicjournals.org/AJBM. https://doi.org/10.5897/AJBM11.2462

Dedeoğlu, B.B., Van Niekerk, M., Küçükergin, K.G., De Martino, M., & Okumuş, F. (2020). Effect of social media sharing on destination brand awareness and destination quality. *Journal of Vacation Marketing*, *26*(1), 33–56.

del Barrio-Garcia, S., & Prados-Peña, M.B. (2019). Do brand authenticity and brand credibility facilitate brand equity? The case of heritage destination brand extension. *Journal of Destination Marketing & Management*, *13*, 10–23. https://doi.org/10.1016/j.jdmm.2019.05.002

Dowling, R. Allan, M., & Grünert, N. (2021). Geological Tourist Tribes. In: *Consumer Tribes in Tourism Contemporary Perspectives on Special-Interest Tourism*. Pforr, C. Dowling, R. & Volgger, M. Springer Singapore. https://doi.org/10.1007/978-981-15-7150-3_9

Erfurt, P. (2022). Volcano tourism and visitor safety: Still playing with fire? A 10-year update. *Geoheritage*, *14*(2), 56. https://doi.org/10.1007/s12371-022-00691-y

Foroudi, P. (2019). Influence of brand signature, brand awareness, brand attitude, brand reputation on hotel industry's brand performance. *International journal of hospitality management*, *76*, 271–285. https://doi.org/10.1016/j.ijhm.2018.05.016

Gupta, M.K., Kaur, J., & Duggal, M.V. (2020). Private Brands Waiting to Be Purchased-the Store Image Story. *Asian Journal of Marketing*, 14: 1-9. https://doi.org/10.3923/ajm.2020.1.9

Hassan, S.B., & Soliman, M. (2021). COVID-19 and repeat visitation: Assessing the role of destination social responsibility, destination reputation, holidaymakers' trust and fear arousal. *Journal of Destination Marketing & Management, 19*, 100495. https://doi.org/10.1016/j.jdmm.2020.100495

Haarhoff, R., & De Klerk, B. (2019). Destination South Africa: analysis of destination awareness and image by international visitors. *GeoJournal of Tourism and Geosites*, 24(1), 201–211. https://doi.org/10.30892/gtg.24116-353

Huang, Z., Li, M., & Li, Q. (2015). An examination of Taiwan destination brand associations: From the perspective of mainland Chinese tourists. *Journal of Travel & Tourism Marketing*, 32(1–2), 50–64. https://doi.org/10.1080/10548408.2014.986012

Hur, W.M., Kim, H., & Woo, J. (2014). How CSR leads to corporate brand equity: Mediating mechanisms of corporate brand credibility and reputation. *Journal of Business Ethics*, *125*, 75–86. https://doi.org/10.1007/s10551-013-1910-0

Iglesias-Sánchez, P.P., Correia, M.B., & Jambrino-Maldonado, C. (2019). Challenges in linking destinations' online reputation with competitiveness. *Tourism & Management Studies*, *15*(1), 35–43. https://doi.org/10.18089/tms.2019.150103

Jiménez-Barreto, J., Gutiérrez-Taño, D., Díaz-Armas, R., & Campo, S. (2023). Residents' fresh start mindset and attitudes towards tourism after a natural disaster: the case of the volcano in La Palma. *Current Issues in Tourism*, 26(22), 3721–3733. https://doi.org/10.1080/13683500.2022.2147269

Jiménez-Barreto, J., Rubio, N., Campo, S., & Molinillo, S. (2020). Linking the online destination brand experience and brand credibility with tourists' behavioral intentions toward a destination. *Tourism Management*, 79, 104101. https://doi.org/10.1016/j.tourman.2020.104101

Jin, C., Yoon, M., & Lee, J. (2019). The influence of brand color identity on brand association and loyalty. *Journal of Product & Brand Management*, *28*(1), 50–62. https://doi.org/https://doi.org/10.1108/JPBM-09-2017-1587

Jun, S.H. (2020). The effects of perceived risk, brand credibility and past experience on purchase intention in the Airbnb context. *Sustainability*, *12*(12), 5212. https://doi.org/10.3390/su12125212

Jung, N.Y., & Seock, Y.K. (2016). The impact of corporate reputation on brand attitude and purchase intention. *Fashion and Textiles*, *3*, 1–15. https://doi.org/10.1186/s40691-016-0072-y

Kircova, I., & Esen, E. (2018). The effect of corporate reputation on consumer behaviour and purchase intentions. *Management Research and Practice*, *10*(4), 21–32.

Kurniawan, G.I., & Diryana, I. (2015). Impact on green purchase intention by brand equity dimension. *International Conference on Economics and Banking (iceb-15)*, 380–386.

Le-Hoang, P.V., Nguyen, G.T., Phung, H.T., Ho, V.T., & Phan, N.T. (2020). The relationship between brand equity and intention to buy: The case of convenience stores. *Independent Journal of Management & Production*, *11*(2), 434–449. https://doi.org/10.14807/ijmp.v11i2.1062

Marin, J., Paskarana, A., Sandy, E.B.S., & Agustian, J. (2023). Assessing geotourism aspects of Ungaran geothermal areas for promoting sustainable energy through volcano-geothermal tourist destination. *IOP Conference Series: Earth and Environmental Science*, *1245*(1), 12018.

Molinillo, S., Japutra, A., & Ekinci, Y. (2022). Building brand credibility: The role of involvement, identification, reputation and attachment. *Journal of Retailing and Consumer Services*, *64*, 102819. https://doi.org/10.1016/j.jretconser.2021.102819

Ong, A.K., Prasetyo, Y.T., Borja, A.K.., Hosillos, F.A., Perez, Y.F., Robas, K.P., Persada, S.F., & Nadlifatin, R. (2023). Factors affecting revisiting behavior to Taal Volcano during the post recovery 2020 eruption: An extended theory of planned behavior approach. *International Journal of Disaster Risk Reduction*, *86*, 103552. https://doi.org/10.1016/j.ijdrr.2023.103552

Platania, M., Sharpley, R.A.J., Rizzo, M., & Ruggieri, G. (2022). The contingent equilibrium during imbalanced volcano tourism demand through fee estimation: An empirical analysis of tourism in Mount Etna. *Journal of Environmental Management*, *316*, 115235. https://doi.org/10.1016/j.jenvman.2022.115235

Qalati, S.A., Wenyuan, L., Kwabena, G., Erusalkina, D., Pervaiz, S., & Author, C. (2019). Influence of brand equity on brand performance: role of brand reputation and social media. *International Journal of Research and Review*, *6*(9), 304–317.

Reitsamer, B.F., & Brunner-Sperdin, A. (2021). It's all about the brand: place brand credibility, place attachment, and consumer loyalty. *Journal of Brand Management*, *28*, 291–301. https://doi.org/10.1057/s41262-020-00229-z

Rizkianti, H., & Kurniawati, K. (2021). Determinan purchase intention: perspektif pelanggan minimarket. *Journal of Management and Business Review*, *18*(2), 124–136. https://doi.org/10.34149/jmbr.v18i2.275

Rungsrisawat, S., & Sirinapatpokin, S. (2019). Impact of brand equity on consumer purchase intent. *Utopía y praxis latinoamericana: revista internacional de filosofía iberoamericana y teoría social*, *6*, 360–369

Safira, A., & Salsabilia, N. (2022). The influence of halal destination awareness on halal destination loyalty: A study on West Sumatera. *AFEBI Islamic Finance and Economic Review*, *7*(01), 32–44. https://doi.org/10.47312/aifer.v7i01.561

Severi, E., & Ling, K.C. (2013). The mediating effects of brand association, brand loyalty, brand image and perceived quality on brand equity. *Asian Social Science*, *9*(3), 125. http://dx.doi.org/10.5539/ass.v9n3p125

Su, L., Lian, Q., & Huang, Y. (2020). How do tourists' attribution of destination social responsibility motives impact trust and intention to visit? The moderating role of destination reputation. *Tourism Management*, *77*, 103970. https://doi.org/10.1016/j.tourman.2019.103970

Su, L., Yang, Q., Swanson, S.R., & Chen, N.C. (2022). The impact of online reviews on destination trust and travel intention: The moderating role of online review trustworthiness. *Journal of Vacation Marketing*, *28*(4), 406–423. https://doi.org/10.1177/135676672110632

Suhud, U., & Allan, M. (2019). Exploring the impact of travel motivation and constraint on stage of readiness in the context of volcano tourism. *Geoheritage*, *11*(3), 927–934. https://link.springer.com/article/10.1007/s12371-018-00340-3

Suhud, U., & Allan, M. (2024). Structural model of tourists' visit intention relating to Mount Ijen, a volcano tourism destination: The lack role of novelty-seeking, self-congruity, and destination personality? *Geoheritage*, *16*(1). https://doi.org/10.1007/s12371-024-00926-0

Suhud, U., & Allan, M. (2022). Travel motivation, destination image, and stage of intention to visit Anak Krakatau mount: A Study of Volcano Tourism in Indonesia. Anuário Do Instituto de Geociências, 45. https://doi.org/10.11137/1982-3908_2022_45_45982.

Suhud, U., Allan, M., Fauzi, A.A., & Kurniawan, R. (2023). Tourists' intentions to revisit a geothermal site: The case of Kawah Putih. *Geoheritage*, *15*(2), 44. https://doi.org/10.1007/s12371-023-00814-z

Teodorović, M., Popesku, J., & Pavlović, D. (2020). Building a domestic destination brand: A case of Serbia. *TEME*, 929–945. https://doi.org/10.22190/TEME181113063T.

Thakshak. (2018). Analysing customer based airline brand equity: Perspective from Taiwan. *Future Business Journal*, *4*(2), 233–245. https://doi.org/10.1016/j.fbj.2018.07.001.

Vila, N.A., Brea, J.A.F., & de Carlos, P. (2021). Film tourism in Spain: Destination awareness and visit motivation as determinants to visit places seen in TV series. *European Research on Management and Business Economics*, *27*(1), 100135. 100135. https://doi.org/10.1016/j.iedeen.2020.100135

Vorobyova, D.K. (2021). The Effect of Brand Perception in Malaysia's International Airline Industry During Covid 19. *Annals of Social Sciences & Management Studies*, *6*(4). https://doi.org/10.19080/asm.2021.06.555693

Wang, S., Liao, Y., Wu, W., & Le, K. (2021). The role of corporate social responsibility perceptions in brand equity, brand credibility, brand reputation, and purchase intentions. *Sustainability*, *13*(21), 11975. https://doi.org/10.3390/su132111975

Widjaja, Y.I., Khalifa, G., & Abuelhassan, A. (2020). The effect of Islamic attributes and destination affective image on the reputation of the Halal tourism destination of Jakarta. *Journal of Environmental Management and Tourism*, *11*(2), 299–313. https://doi.org/10.14505//jemt.v11.2(42).08

Xu, J., & Ho, P. (2021). Whether educational tourism can help destination marketing? An investigation of college students' study tour experiences, destination associations and revisit intentions. *Tourism Recreation Research*, 49(1), 131–146. https://doi.org/10.1080/02508281.2021.1972723

Yu, H., Ahn, M., & Han, E. (2023). Key driver of textile and apparel industry management: fashion brand ESG and brand reputation. *Frontiers in Environmental Science*, 11. https://doi.org/10.3389/fenvs.2023.1140004

Article history: Received: 27.03.2024 Revised: 31.05.2024 Accepted: 20.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.915-920
DOI 10.30892/gtg.542spl15-1266

THE EVALUATION OF TRANSPORT ACCESSIBILITY OF SHCHUCHINSK-BOROVOYE RESORT AREA USING GEOINFORMATION SYSTEMS

Gulnara AKHMETBEKOVA*
L.N. Gumilyov Eurasian National University, Faculty of Natural Sciences, Astana, Kazakhstan, e-mail: gulnara---89@mail.ru

Ivan PLACHINTA
Kokshetau Shoqan Ualikhanov University, Pedagogical Institute, Faculty of History and Geography, Kokshetau, Kazakhstan, e-mail: plachinta-ivan@mail.ru

Abdimazhit SAIPOV
L.N. Gumilyov Eurasian National University, Faculty of Natural Sciences, Astana, Kazakhstan, e-mail: saipov1954@mail.ru

Aleksandr DUNETS
Altai State University, Department of Economic Geography and Cartography, Barnaul, Russia, e-mail: dunets@mail.ru

Citation: Akhmetbekova, G., Plachinta, I., Saipov, A., & Dunets, A. (2024). THE EVALUATION OF TRANSPORT ACCESSIBILITY OF SHCHUCHINSK-BOROVOYE RESORT AREA USING GEOINFORMATION SYSTEMS. *Geojournal of Tourism and Geosites*, 54(2spl), 915–920. https://doi.org/10.30892/gtg.542spl15-1266

Abstract: The aim of the article is to evaluate the transport accessibility of the Shchuchinsk-Borovoye resort area within the territory of Kazakhstan and border areas of the Russian Federation. The aim of the study is to demonstrate the accessibility of the resort area from cities and populated areas, using information provision and to identify areas with varying spatial accessibility. The primary method of evaluation involves a series of operations in the “ArcGIS.10" system (including kriging, the method of direct transport distance, and interpolation of data using the inverse distance weighting method). The results are presented as a series of maps illustrating the accessibility of resort areas from cities and populated areas, using isolines and coloring techniques. The transport accessibility of the resort area is identified and evaluated, highlighting the importance of transport infrastructure in the development of the tourism cluster. The main conclusion of the research focuses on the calculated indicators of accessibility and the density of the transport network in the region.

Keywords: transport accessibility, density of transport network, thickness of transport network, method of isolines, method of kriging, direct transport distance, transport route

* * * * * *

INTRODUCTION

In the modern era of the worldwide tourism market, accessibility plays a crucial role as more and more tourists expand the geography of their journeys, seeking new experiences and discovering the geographic diversity of our planet. Kazakhstan is of vital interest to tourists due to its diverse natural and recreational potential, ranking 129th in the world for the level of contribution of tourism to the country’s GDP (Pashkov et al., 2023). Moreover, programs and plans are currently being developed to improve this sector, as tourism is expected to be the primary field of development at both national and regional levels (Zhidkoblinova, 2013; Abubakirova et al., 2016; Tulbayeva et al., 2017). Engaging tourists and satisfying their demands are essential economic goals for the country (Laifa and Benhassine, 2023). As part of potential tourist destination territories, the evaluation of transport accessibility is a key aspect of recreational geography (Sansyzbayeva et al., 2021). There is a clear connection between transport accessibility and economic growth (Jiang et al., 2023).

Moreover, many interrelations are formulated between transport and tourism (Toth et al., 2014). The availability and deficiency of transport routes have a direct impact on the number of tourists and bring mutual benefits (Zhang and Ju, 2021; Ramadan, 2020). Transport accessibility is synonymous with the concept of equality of access to a particular destination (Rahman and Rigar Neema, 2015) and has a considerable influence on the development of tourist destinations (Mikhaylova et al., 2023). Accessibility of transport is a measure of spatial distribution from the point that was adjusted considering the capacity and desire to undergo spatial separation (Gómez et al., 2023). Meanwhile, rather significant importance has time period (Karlinova and Krcal, 2022). Taking into consideration the fact that transport accessibility has different characteristics in different times of day (Hlusko et al., 2024). «Service density and expected travel time are major influencing factors on whether public transport is used» (Truden et al., 2022). The concept of transport accessibility is considered as a function to reach a particular destination using a vehicle and represents the mobility of a person. In the second part of the 20th century, different definitions of the concepts of transport and integral accessibility were formulated in the scientific area (Pirie, 1979).

The given article is devoted to the evaluation of transport accessibility of Shchuchinsk- Borovoye resort area, which is the main tourist attraction of Akmola region in the north of Kazakhstan and detection of regions, which need the

* Corresponding author

enhancement of transport network to increase the influx of tourist and building the image of the resort area. To ensure the validity of the results and provide a comprehensive report, the study is conducted within the territory of the site and the Burabay National Park, as Burabay is indeed part of SBRA (Figure 1).

Figure 1. Geographical location of SBRA (Source: Author, created in the program ArcGIS.10)

The tourist attraction in the Shchuchinsk-Borovoye resort area extends beyond a single natural location, encompassing the appeal of the entire landscape (Mukayev et al., 2022). The presence of numerous lakes, geomorphological formations such as convex mountain ranges with island hilly regions, and the combination of fresh air and diverse natural environments contribute to the area's attractiveness (Atasoy et al., 2022). The relief of the region is a significant factor in meeting the recreational demands of tourists (Zhanabayev et al., 2023).

SBRA is situated within the boundaries of the Burabay district in the Akmola region, providing the territory with superior transport infrastructure and attracting visitors with approximately 190 tourist attractions (Evloeva and Titova, 2020). The development of tourism in the region plays a vital role in establishing sustainable infrastructure, including the road system, network, and utility sector. SBRA is located 250 km from the city of Astana, 90 km from the center of the Akmola region in the city of Kokshetau, and 22 km from the center of the Burabay district in the city of Schuchinsk (Chirikov et al., 2008). The resort area is traversed by a 6-lane highway of national significance, known as the "Astana-Borovoe" road, as well as railway lines such as "Almaty-Petropavlovsk" and "Kyzylorda-Kokshetau," on which high-speed trains such as "Tulpar-Talgo" operate. The railway station in "Burabay Resort" in Shchuchinsk serves as one of the nearest transport hubs. Aviational means of transport accessibility for SBRA include the international airport in Astana and the national airport in Kokshetau. However, road transportation remains the most popular means of access, making it the focus of transport accessibility evaluation. Currently, the asphalt-concrete transport coverage of the territory, stretching for 9 km, is being renewed, and car roads along Lake Tekekol to the "Northern Diversion of Lake Chebache" road, stretching for 13 km, are being built as part of the development plan for SBRA.

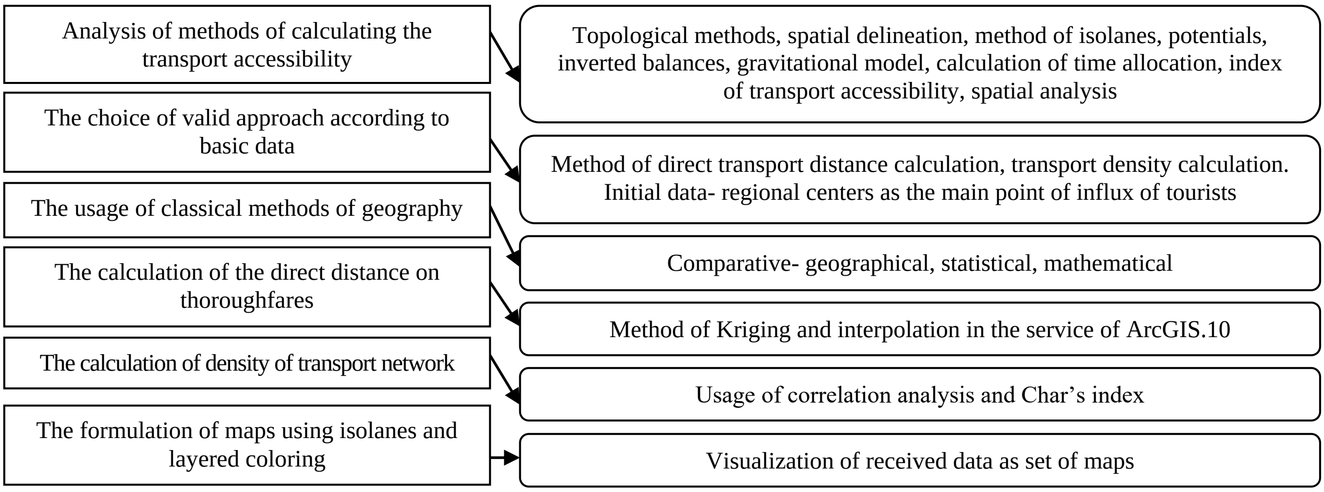


Figure 2. Flow chart of the methodology (Source: created by the autors)

MATERIALS AND METHODS

In the science of geography, numerous types of calculations for transport accessibility are integrated into groups such as topological, spatial delineation, isolines, potentials, and inversion balance. Modern research is based on methods such as spatial and temporal analysis of transport accessibility (Truden et al., 2022). «The Space-Time Accessibility (STA) model is broadly used to measure person-based accessibility based on the space, time, and transport constraints experienced at the individual level in connection to the actual modal choices of observed individuals» (Dianin et al., 2024). Additionally, there are less common methods such as the gravitational model, calculation of time for movement, index of transport accessibility, and spatial analysis. The flow chart of the methodology can be seen in Figure 2.

On the basis of analysis of methods of measuring the transport accessibility, optimal approaches were selected to conduct the research. The analysis was carried out using a comparative-geographical method, analyzing the spatial layout of transport routes, and defining correlation dependencies by studying the relationship between variables. Classical geographical methods such as statistical data processing and mathematical analysis were employed (Wendt and Bogdał-Brzezinska, 2018). As for measurement of transport accessibility, cities such as Pavlodar, Petropavlovsk, Kostanay, Kokshetau and Astana were chosen as examples of regional centers with major influx of visitors , particularly they were shown as starting points of transportation distance calculation (Battakova and Saipov, 2022). On the basis of analysis of methods of measuring the transport accessibility, optimal approaches were selected to conduct the research. «GIS-based methods are useful tools to assess accessibility to public transport» (Zochowska et al., 2022). The method of kriging was used to measure the distance of transportation. The method of kriging involves an interactive investigation of spatial phenomena, wherein selected variables are scattered in the area of interpolating points. The main formula of kriging involves the sum of weighted data:

$$\check{Z}(s_0) = \sum_{i=1}^{N} \lambda_i Z(s_i), \quad \text{(Zhang and Ju, 2021)}$$

where: $Z(s_i)$ – the measured value at the *i*th location, λ_i – an unknown weight for the measured value at the *i*th location; s_0 the location of the prediction, N - the number of measured values. An advantage of the kriging is that it gives the chance to process a large array of data, which is unevenly distributed across timelines and space. In forming the evaluation of transport accessibility for the Burabay district and SBRA, a wide range of initial data were utilized, including the highway network obtained from satellite imagery from Google Earth, space images from the USGS website, electronic maps such as Google Maps, Yandex Maps, OpenStreetMap, and atlases of highways. The measurement of transport accessibility in the ArcGIS 10 system was conducted using the “New Service Area” function from the tools of Network Analyst.

While making the evaluation of transport accessibility of Burabay district and SBRA, following initial data was obtained: the network of highways from space images provided by Google Earth, space images of USGS, electronic maps of Google maps, Yandex maps, Open Street Map, atlases of highways. The calculation of transport accessibility in the system ArcGIS.10 was done by using the function “New Service Area” from the tools of Network Analyst. The cities that are considered as regional centers were chosen as main points of reference , because a major influx of tourists are formulated there.

The direct distance of transportation routes (railways and highways) was estimated, and the area of accessibility from each center of the district was identified. Maps representing transport accessibility were created using isolines with layered paint, which offers a more vivid representation compared to other approaches. The result of this method is the spatial differential accessibility of populated areas. The Char coefficient was chosen as an indicator to characterize the density of the traffic network and was implemented for measuring the traffic network density and selecting figures for correlational analysis.

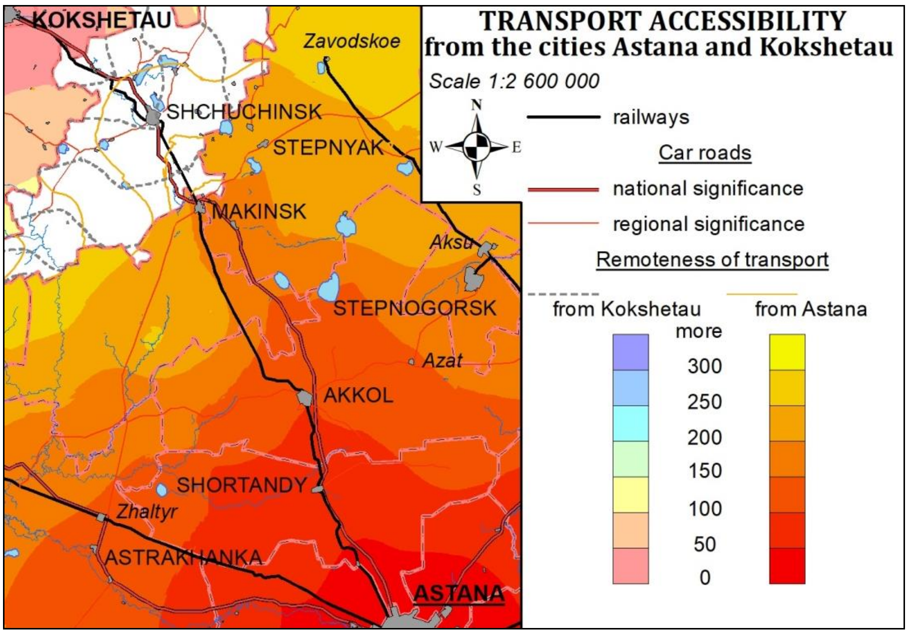


Figure 3. Transport accessibility of SBRA (Source: Author, created in the program ArcGIS.10)

RESULTS AND DISCUSSIONS

During the analysis of the transport network, which encompasses highways and railways in SBRA, it was revealed that the main modes of transportation are road and rail. The assessment of transport accessibility was conducted on both national and regional highways and railways. Additionally, in the investigated area, there are three major road hubs: Astana, Kokshetau, and Shchuchinsk.

Major regional centers were selected to ensure the accurate calculation of transport accessibility, as the development of transport infrastructure plays a crucial role in attracting tourists to these locations. In the case of Kokshetau city in the Akmola region, transport accessibility is extensive, particularly in the northwest part (Figure 3). High-quality transport accessibility can be observed through the presence of the national significance highway A-2, which stretches over 452 km.

The distance between Kostanay and SBRA is 511 km, typically taking around 9 hours by car. Regarding railway service, trains such as Atyrau-Astana, Uralsk-Astana, and Kostanay-Karaganda are available, with travel times ranging from 9 to 11 hours Regarding Pavlodar, the distance is approximately 578 km on highway A-17, with an estimated travel time of around 10 hours and 40 minutes. Alternatively, the railway line passes through Pavlodar-Presnogorkovskaya, with the station in Shchuchinsk «Borovoe Resort» reachable in 11 hours (Figure 4).

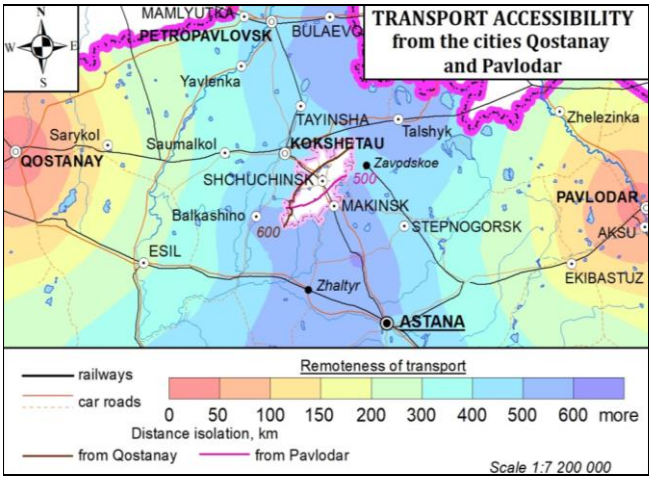


Figure 4. Transport accessibility of SBRA
and Burabay district from Kostanay and Pavlodar
(Source: Author, created in the program ArcGIS.10)

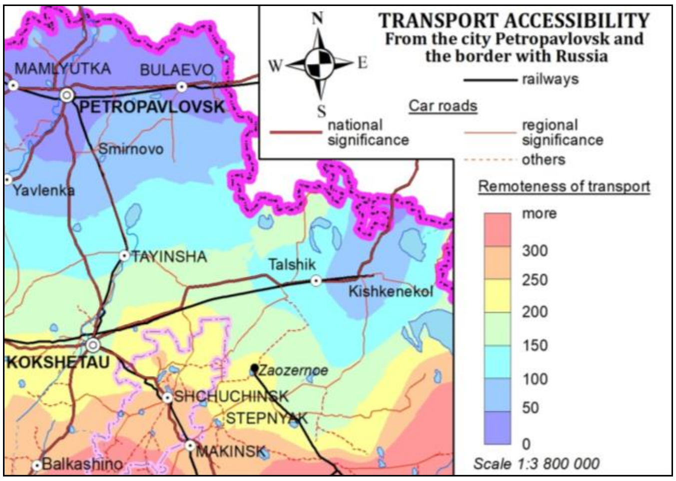


Figure 5. Transport accessibility if SBRA and
Burabay district from Petropavlovsk and borders with Russia
(Source : Author, created in the program ArcGIS.10)

The strategic border location of SBRA provides an opportunity to attract a large number of tourists from frontier areas of Kazakhstan and neighboring regions of the Russian Federation (Dmitriyev et al., 2021). According to data from the Tourism Management of Akmola Province, approximately 30% of tourists in SBRA are Russian citizens.

During the Universal Exhibition “EXPO-2017,” the number of foreign tourists increased, with visitors from 80 out of 115 countries involved in the exhibition visiting the resort. Research on the accessibility of the resort from Petropavlovsk and the borders with Russia indicates popularity among locals from regions such as Omsk, Tomsk, Tyumen, Novosibirsk, and cities in the Urals (Figure 5). For example, SBRA can be reached via highway transport in just 5 hours from Omsk, making it easily accessible for Russian tourists. Moreover, many Russian tourists visit the Borovoe resort by car for eco-friendly trips such as tent tours and hiking.

Additionally, the stunning combination of mountains and green fields, diverse range of activities, mountain sports, and thriving infrastructure of the resort make it attractive for visitors from the Russian Federation.

The overall length of the national road in the Burabay region is 72.1 km. Foreign researchers have analyzed the significance of roadways as a transportation factor (Talebi et al., 2019). Roads of regional importance comprise 136 km. On average, the density of the road network is 4.0 km/100 km2 in Kazakhstan, while in the Burabay region, it fluctuates between 0.005 km/100 km2 and a maximum of 0.3 km/100 km2 around the SBRA (Figure 6). Furthermore, the density of the road network in the SBRA was calculated using correlation analysis and the Char index. The Char index is calculated by the formula:

$$D = L / \sqrt{S\Pi}, \text{ (Banister, 2012)}$$

where L – total length of highways, S – area of the territory, Π – number of populated centers. The provided coefficient is adapted from Engel’s coefficient, as it addresses a drawback such as the distortion of the level of development of transport roads.

The density and thickness of the transport network with Char’s index were calculated using raster interpolation, employing the inverse distance weighting method. This method implies that the influence of the mapped variable (Char’s index) decreases as one moves away from the object’s location (SBRA).

The result of the research has shown that the territory of northern and southern parts of Burabay region have low levels of transport network density (less than 0,01 km/100 km ^{2}, which in turn influences the transport accessibility of SBRA. Main influx of tourists came from regional centers, where the roadways are qualitative and save time for travelers. The improvement of road network in northern and southern parts of the region, the enhancement of roadways will give opportunity to enlarge the number of visitors, to boost the economic efficiency and competitiveness of tourism in SBRA.

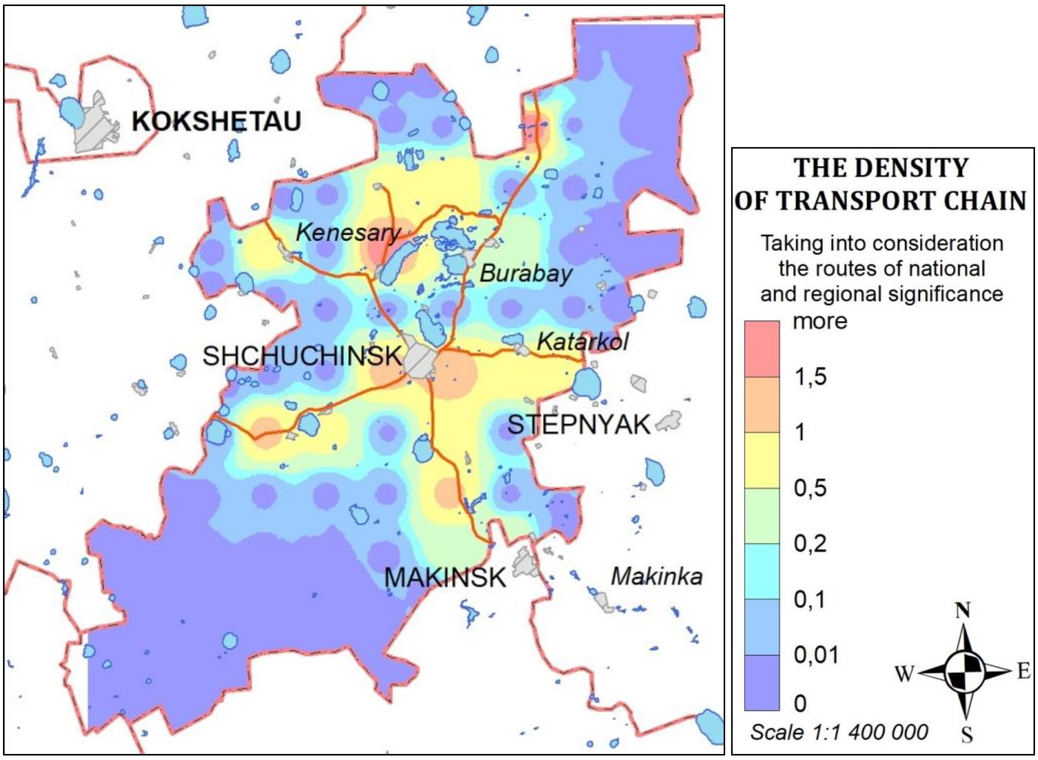


Figure 6. The density of transport network in SBRA and Burabay region using Char's method
(Source: Author, created in the program ArcGIS.10)

CONCLUSION

After studying a wide range of approaches to evaluate transport accessibility, we have opted for optimal methods for measuring the accessibility of the resort area Shchuchinsk-Borovoye and the district of Borovoe. The chosen methods have given us a chance to analyze transport accessibility, taking into consideration the initial data. For the development of touristic resorts, transport is one of the important factors to accelerate the processes of modernization of logistics and infrastructure. Comparative analysis using the method of direct transport distances, interpolation of data gave the chance to define the regions with minimal density of transport network and accessibility. The given areas need the improvement of conditions of transport routes to increase the influx of tourists.

The maps, created by the authors using software, visually represent the transport accessibility of the analyzed area. Transport accessibility of the resort area from regional centers and the Russian Federation was estimated using direct transport distance and kriging methods, as well as the calculation of direct transport distances for road and rail transports. The correlation between length indicators, highway indicators, land area, and the number of localities was shown using the Char index. The results of index calculation are depicted on the map, indicating the density of transport accessibility through interpolation of raster, applying the method of inverse distance calculation.

The collected data, which emphasizes the length and density of the transport network and accessibility of SBRA from regional centers, enables us to conclude that the transport network and accessibility of the resort are distant from the cities of regional significance. This gives the opportunity for relative accessibility of tourist destinations and the possibility to explore the resort using highway and railway transportation.

Author Contributions: Conceptualization, G.A and I.P.; methodology, A.S. and G.A.; software, I.P.; validation, A.S. and A.D.; formal analysis, G.A.; investigation, A.S.; data curation, G.A.; writing - original draft preparation, G.A.; writing - review and editing, A.S., A.D. and G.A.; visualization, I.P.; supervision, G.A. and I.P; project administration, G.A. All authors have read and agreed to the published version of the manuscript.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Abubakirova, A., Syzdykova, A., Kelesbayev, D., Dandayeva, B., & Ermankulova, R., (2016). Place of Tourism in the Economy of Kazakhstan Republic. *Procedia Economics and Finance*, 39, 3-6. https://doi.org/10.1016/S2212-5671(16)30232-5

Atasoy, E., Atiş, E., Kanagatov, Z., Izenbaev, B., Kabiyev, Y.S., & Seraliyev, A. (2022). Characteristics and tourism potential of the Burabay National Park (Kazakhstan). *GeoJournal of Tourism and Geosites*, 43(3), 1129–1137. https://doi.org/10.30892/gtg.43334-928

Banister, D., (2012). Transport and economic development: reviewing the evidence. *Transport Reviews* 32 (1), 1-2. http://hdl.handle.net/10.1080/01441647.2011.603283.

Battakova, K., & Saipov, A. (2022). Healthcare and wellness tourism for people with occupational diseases in Central Kazakhstan. *GeoJournal of Tourism and Geosites*, 45(4spl), 1586–1593. https://doi.org/10.30892/gtg.454spl07-978

Chirikov, A.l., Pozdnyak, G.V., & Kamenskaya, İ.Y. (2008). *Atlas Mira, (World Atlas*), İzdatelstvo Oniks, Moskova (in Russian).

Dianin, A., Gidam, M., & Hauger, G. (2024). Measuring public transport accessibility to fixed activities and discretionary opportunities: a space–time approach. *Eur. Transp. Res. Rev.* 16, 9. https://doi.org/10.1186/s12544-024-00636-2

Dmitriyev, P.S., Fomin, I.A., Nazarova, T.V., & Wendt, J.A. (2021). Transport accessibility of the lake ecosystems in the North Kazakhstan region as a factor of tourism development. *GeoJournal of Tourism and Geosites*, 35(2), 289–296. https://doi.org/10.30892/gtg.35204-650

Evloeva, A.S., & Titova, M.A. (2020). Prospects for The Development of Tourist Anımatıon in the Terrıtory of the Shchuchınsky Borovsky Resort Zone of the Akmola Region. *Magyar Tudományos Journal*, 40, 10-13

Gómez, J.M., Moncada, C.A., & Escobar, D.A. (2023). Spatial equity analysis of educational service. Methodological proposal based on a transport supply model. *GeoJournal of Tourism and Geosites*, 51(4spl), 1622–1628. https://doi.org/10.30892/gtg.514spl03-1158

Hlusko, R., Stanek, R., Durcek, P., & Kusendova, D. (2024). Urban public transport system accessibility for different groups of residents: Case of Bratislava city. *Case Studies on Transport Policy*, 16. https://doi.org/10.1016/j.cstp.2024.101200

Jiang, S., Cai, C., & Xiao, L. (2023). Intercity accessibility and equity: Empirical study of high speed rail and air travel network in China, *Case Studies on Transport Policy*, 13. https://doi.org/10.1016/j.cstp.2023.100995

Karlinova, B., & Krcal O. (2022). The value of travel time for long-distance railway passenger transport in the Czech Republic,*Case Studies on Transport Policy*, 10(3). https://doi.org/10.1016/j.cstp.2022.05.008

Laifa, I., & Benhassine, N. (2023). Evaluation of the attractiveness of tourism in Algeria: multicriteria method applied to areas of tourist expansion. *GeoJournal of Tourism and Geosites*, 49(3), 988–997. https://doi.org/10.30892/gtg.49314-1098

Mikhaylova, A.A., Bocharnikov, V.N., Giricheva, E.E., Hvaley, D.V., & Mikhaylov, A.S. (2023). Geospatial modeling of the distribution of tourist attractions for the functional delimitation of coastal zones. *GeoJournal of Tourism and Geosites*, 50(4), 1494–1505. https://doi.org/10.30892/gtg.50429-1147

Mukayev, Z., Ozgeldinova, Z., Dasturbayev, S., Ramazanova, N., Zhanguzhina, A., & Bektemirova, A. (2022). Landscape and recreational potential of the mountainous territories of the Turkestan region of the Republic of Kazakhstan. *GeoJournal of Tourism and Geosites*, 41(2), 362–367. https://doi.org/10.30892/gtg.41204-838

Pashkov, S., Mazhitova, G., Sedelnikov, I., Ospan, G., & Sagatbayev, Y. (2023). Assessment of tourism and climate potential of territories of Northern Kazakhstan. *GeoJournal of Tourism and Geosites*, 48(2spl), 725–732. https://doi.org/10.30892/gtg.482spl06-1072

Pirie, G.H. (1979). Measuring Accessibility: A Review and Proposal. *Environ. Plan.* A Econ. Sp. 11, 299–312. https://doi.org/10.1068/a110299

Rahman, M., & Nigar Neema, M. (2015). A GIS Based Integrated Approach to Measure the Spatial Equity of Community Facilities of Bangladesh. *AIMS Geosci*. 1, 21–40. https://doi.org/10.3934/geosci.2015.1.21

Ramadan, M. (2020). Impact of Road Infrastructure on Tourism Development in Kosovo. *International Journal of Management*, 11, 466–474. *International Journal of Management (IJM)*, 11(4), 466-474. http://www.iaeme.com/ijm/issues.asp?JType=IJM&VType=11&IType=4. Journal Impact Factor (2020): 10.1471

Sansyzbayeva, A., Saipov, A., Dunets, A., Mussagaliyeva, A., & Ramazan, A. (2021). Geography of natural and recreational facilities in the development of economic integration of the border areas of Northern Kazakhstan and the Russian Federation. *GeoJournal of Tourism and Geosites*, 35(2), 499–506. https://doi.org/10.30892/gtg.35230-677

Talebi, M., Majnounian, B., Makhdoum, M., Abdi, E., Omid, M., Marchi, E., & Laschi, A. (2019). A GIS-MCDM-Based Road Network Planning for Tourism Development and Management in Arasbaran Forest. Iran. *Environ Monit Assess*, 191, 647. https://doi.org/10.1007/s10661-019-7831-3

Tulbayeva, A., Abdikarimova, M., Ganitaev, M., Imangulova, T., & Pestova, A. (2017). Optimization problems distribution of investments for the implementation strategy of domestic tourism in Kazakhstan. *Espacios*, 38(47)

Truden, C., Kollingbaum, M.J., Reiter, C., & Schasché, S.E. (2022). A GIS-Based Analysis of Reachability Aspects in Rural Public Transportation. *Case Stud. Transp. Policy, 10*, 1827–1840. https://doi.org/10.1016/j.cstp.2022.07.012.

Toth, G., Dávid, L.D., & Vasa, L. (2014). The role of transport in European tourism flows. *Acta Geographica Slovenica*, *54*(2), 311–320. https://doi.org/10.3986/AGS54205

Wendt, J.A., & Bógdał-Brzezińska, A. (2018). Problematyka, metody i problemy badań w geografii turystycznej. In Olszewski-Strzyżowski D.J., Dróżdż R., Pasek M., (red.), *Turystyka*. *Nowe Trendy, Zeszyty Naukowe*, 7, Polska Izba Turystyki, 7-42.

Zhanabayev, D., Dzhanaleeva, K., Ramazanova, N., Keukenov, Y., Mendybayeva, G., & Makhanova, N. (2023). Morphological Characteristics of East Kazakhstan as a factor of geotourism development. *GeoJournal of Tourism and Geosites*, 46(1), 174–183. https://doi.org/10.30892/gtg.46119-1013

Zhang, S., & Ju, H. (2021). The Regional Differences and Influencing Factors of Tourism Development on Hainan Island, China. *PLoS ONE*, 16, e0258407. https://doi.org/10.1371/journal.pone.0258407

Zhidkoblinova, O. (2013). State policy of tourism industry development in the republic of Kazakhstan. *World Applied Sciences Journal*, 23(8), 1079-1084. https://doi.org.10.5829/idosi.wasj.2013.23.08.13128

Zhidkoblinova, O. (2013). State policy of tourism industry development in the republic of Kazakhstan. *World Applied Sciences Journal*, 23(8), 1079-1084. https://doi.org.10.5829/idosi.wasj.2013.23.08.13128

Zochowska, R., Kłos, M., Soczówka, P., & Pilch, M. (2022). Assessment of Accessibility of Public Transport by Using Temporal and Spatial Analysis. *Sustainability*, 14*(23*), 16127. https://doi.org/10.3390/su142316127

Article history: Received: 28.03.2024 Revised: 03.06.2024 Accepted: 21.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.921-926
DOI 10.30892/gtg.542spl16-1267

PRIORITY DEVELOPMENT AREAS OF NATURE TOURISM RESOURCES IN SHAKI-ZAGATALA ECONOMIC AND GEOGRAPHIC REGION

Zaur Tahir IMRANI[*]
Ministry of Science and Education of the Republic of Azerbaijan, Institute of Geography named after academician H.A. Aliyev, Baku, Azerbaijan, e-mail: zaur_imrani@mail.ru

Aynur Ilgar HUSEYNZADE
Azerbaijan Tourism and Management University, Tourism and Hospitality Faculty, Department of Tourism Business, Baku, Azerbaijan, e-mail: aynur.huseynzade@atmu.edu.az

Bahadur Anver BILALOV
Azerbaijan Tourism and Management University, Tourism and Hospitality Faculty, Department of Tourism Business, Baku, Azerbaijan, e-mail: b.bilalov@atmu.edu.az

Citation: Imrani, Z.T., Huseynzade, A.I., & Bilalov, B.A. (2024). PRIORITY DEVELOPMENT AREAS OF NATURE TOURISM RESOURCES IN SHAKI-ZAGATALA ECONOMIC AND GEOGRAPHIC REGION. *Geojournal of Tourism and Geosites*, 54(2spl), 921–926. https://doi.org/10.30892/gtg.542spl16-1267

Abstract: Nature-based tourism makes individual tourist trips attractive. In this regard, when its scale becomes massive, it stimulates the socio-economic development of the region and significantly contributes to the gross domestic product. In this regard, tourism, considered a priority area of regional sustainable development, should be constantly developed. In addition, its sustainability should be measured mainly by nature tourism resources. Purpose. The main purpose of the research is the comprehensive analysis of the Shaki-Zagatala economic-geographic region, being considered one of the regions with the richest natural and tourism resources of Azerbaijan, the current problems and the priority directions that stimulate development. Research method. Analysis of nature tourism resources includes historical, comparative analysis, and descriptive observation methods. Result. The research process studied the natural conditions of the region from the tourism attractiveness point of view, determined the advantage of the relief factor during nature tourism trips, studied the indicators of climate comfort for the efficient organisation of tourists' recreation, evaluated the tourism importance of forest resources, and analysed the hydro-tourism potential of water resources in recreation and health. Finally. The materials provided in the research process can be used in preparing regional development programs.

Keywords: tourism, nature tourism, wildlife tourism, ecotourism, adventure tourism, hydro-tourism.

* * * * * *

INTRODUCTION

Human-nature relations develop in a constantly changing context. Human intervention in nature leads to the emergence of several ecological problems. In such a situation, human-nature relations are approached from a creative functional perspective in the process of organising tourism work. Thus, nature-based tourism is considered a strong point of sustainable development as it performs functions such as understanding nature, protecting it, and involving it in the economic cycle. Nature tourism is aimed at developing people's ability to understand nature. In a strict sense, nature tourism is called "tourism based on natural attractions". In a roundabout sense, nature tourism requires maximum use of all its components without damaging nature (Brockington et al., 2008). Nature tourism has become very sensitive, which includes such opportunities as organising environmental education for tourists during the organisation of trips, promoting nature conservation, getting to know the traditions and culture of the local population, achieving economic efficiency, and contributing to the sustainable development of the visited regions.

The research aims at comprehensively studying the natural and tourism resources of the Shaki-Zagatala economic and geographic region and attracting its advantages to the tourism cycle. Achieving the goal requires the solution of the following tasks:

- explaining the concept of nature tourism on scientific grounds;
- explaining the advantages of nature tourism resources;
- compiling a distribution map of nature tourism resources; and
- determining the degree of use of nature tourism resources.

Several scientists and specialists have conducted research on the scientific-theoretical basis of nature tourism resources, their important features, distribution areas, degree of use, potential natural monuments, and other important components. For example, D.M.Olson sees the development of nature based tourism in biodiversity, equating it with

[*] Corresponding author

ecotourism, while Ch.R.Goeldner and J.R.B.Ritchie state the idea that tourism can be developed in different directions and explain its advantages from a theoretical point of view. Sh.S. Shimova equates nature tourism with wild nature, considering the ecosystem to be its important component. In this regard, Z.T.Imrani values the geographical environment as the leading force of nature tourism, states that recreation resources play an important role in the development of human health and socio-economic activity, seeing its effectiveness in the planning of nature tourism resources. K.Z. Zeynalova defines natural tourism resources the most optimal way of sustainable development.

MATERIALS AND METHODS

During the research process, scientific expeditions and field studies conducted in 2010-2023, as well as analytical fund materials related to the topic were used. In addition to these, historical and comparative analysis, and descriptive observation methods, which are different approaches to developing and improving tourism based on the natural environment and the surrounding world, were applied in the analysis of nature tourism resources.

Actual data and events were improved according to the requirements of different periods and the advantages of development were taken into account, using the historical method. Thus, the logical unity of the historicity principle serves to achieve a more realistic effect (Mammadov, 2013). The method of comparative analysis includes understanding reality, comparing unknown data, and determining reality by comparing the quality of one phenomenon with the quality of another one. This method allows deeper analysis of the practical activity (Tille, 1978). The descriptive observation method helps to better understand the nature of the research based on the collection of visual empirical data, monitoring the dynamics of the development and activity of the object, process, and event (Gurbanzade, 2018).

RESULTS AND DISCUSSION

1. The concept of nature tourism

Tourism development is mainly biodiversity-based “nature-based” tourism (Olson et al., 2001). Therefore, the object of nature tourism is living and non-living nature (Kosolapoe, 2005). Its thematic areas include nature tourism, wildlife tourism, bio-tourism, ecotourism, adventure tourism, etc.

Nature tourism is described as an implementation of various types of activities based on nature (Goeldner and Ritchie, 2011), while wildlife tourism features the non-consumptive and environmentally positive impacts of visiting wildlife (Newsome et al., 2012). Bio-tourism is tourism that is a manifestation of the natural life of both individual species of plants and biocenoses (Tikhomirov, 2007); ecotourism is promoted as a way for people to have a positive impact on the environment (Mckinney, 2016), while adventure tourism is intended for those with a high degree of risk-taking and physical endurance during trips related to nature tourism (Buckley, 2006).

The concept of geographical environment in nature tourism combines climatology, geomorphology, soil science, biogeography, and other fields of science (Imrani and Kazimova, 2023). The World Wildlife Fund for Nature calls nature tourism the promotion of nature conservation (Shimova, 2014). Thus, nature tourism does not cause the physical destruction of biological resources, which is one of the most critical problems of sustainable development. In addition to preserving rare and endangered species of flora and fauna, nature tourism has a positive effect on the ecosystem, while it is sometimes valued as an economic activity for the local population.

In a general sense, it could be stated that nature tourism is a type of tourism related to the care of the environment. It has specific potential opportunities that require a caring approach to nature, effective use of natural resources, their protection, as well as improving the well-being of the local population. In addition to these, nature tourism serves to improve the economic and social lifestyles of the local population and to form an ecological culture by organising nature tourism trips.

2. Research object

The Shaki-Zagatala economic-geographic region is bordered by the Republic of Dagestan of the Russian Federation to the north, the Republic of Georgia (the Mazim River) to the west, the Girdmanchay River valley to the east, and the Ganikh-Ayrichay depression to the south. According to its natural conditions, the territory is divided into three places: the southern slope of the Greater Caucasus, the Ganikh-Haftaran valley, and the foothills of the Orta Kura (Ajinohur and Turud-Sarija plains - the mountainous part of Shaki) (Mammadov et al., 2012).

The territory of the economic-geographic region includes the administrative regions of Gabala, Oghuz, Shaki, Gakh, Zagatala, and Balakan. The distance between administrative district centres within the region is at least 30 km, at most 194 km, and the distance between them and the capital city of Baku equals 225-419 km. The territory of the economic-geographic region is 8.84 thousand km^2, which makes up 10.2% of the country’s territory. The population of the area is 623.6 thousand people (2022), which makes up 6.2% of the country’s population. The population density is 71 people per km^2. The settlement system in the economic-geographic region is represented by six administrative regions, six cities, eight settlements, and 336 rural settlements (Regions of Azerbaijan, 2023). Shaki-Zagatala economic-geographical region borders the Republic of Dagestan of the Russian Federation at 185 km and the Republic of Georgia at 150 km. This plays an exceptional role in the formation of the geopolitical situation of the region.

3. Analysis and discussion

Being one of the rapidly developing areas in our modern era, tourism has a mechanism of impact on nature and its resources. Effective use of nature tourism resources (recreational resources) and their management requires optimisation of socio-economic activity and related infrastructure of any region (Imrani and Veliyeva, 2023). Thus, along with stimulating the socio-economic situation, tourism has a positive effect on the development of transport, trade, construction, healthcare, agriculture, production of consumer goods, and many other areas (Imrani et al., 2021). However, several important issues need to be resolved to develop the tourism sector. These include determining the more attractive areas from the tourism perspective, conducting their assessment, and determining the existing potential. The potential opportunities of nature-based tourism include the relief factor, climate comfort, forest resources, and water resources.

One of the most optimal ways of sustainable development in the Shaki-Zagatala economic-geographical region, located in the northwestern part of Azerbaijan, on the southern slope of the Great Caucasus Mountains, is related to the involvement of nature tourism resources in the economic cycle (Zeynalova, 2020). It is known that one of the main ways to achieve the development of a sustainable tourism economy is related to the presence of nature tourism resources and settlements in that area. Thus, settlements play a significant role in organising tourists' reception, lodging, feeding, use of guide services and other activities before organising trips to the more attractive areas of nature tourism resources.

Compared to other regions of Azerbaijan, the Shaki-Zagatala economic-geographical region has a low level of urbanisation. Only 3.3% of the urban population of the republic lives in the territory of the economic-geographic region. This indicator is almost two times lower than the republican level. Unlike cities, the distribution areas of rural settlements are wider. They can be divided into three groups: villages in plain areas (72.4%), villages in foothills (21.8%), and villages in mountainous areas (16%). It can be concluded that tours related to nature tourism resources are mainly related to plains and lowlands. However, it should not be forgotten that tourists mainly prefer the foothills and mountainous areas, which are more attractive places for nature tourism resources.

Relief is one of the main components of nature tourism resources that stand out for its attractiveness. Thus, relief is one of the main tools in developing nature tourism and stimulates its development. The territory of the Shaki-Zagatala economic-geographic region is distinguished by its unique relief conditions. The mountainous zone of the area includes the northern part of the Main Caucasus range between the Mazimchay River and the Goychay River. Here, sharply divided relief forms take a better position. The middle and low mountain belts are mostly covered with forests; however, erosion, landslides, hill-creeps, and floods have become intensive in these areas stemming from deforestation. The Ganikh-Ayrichay Valley, which surrounds the southern part, is composed of young sediments and river deposits of the fourth period; the plain parts are of alluvial and alluvial-prolluvial origin.

The main Caucasus Range, covering the northern zone, has altitudes of more than 3000 m. The southern slopes, divided by narrow valleys, fall into the Ganikh-Ayrichay Valley and pass to the foothills in the southwestern part. The sloping plain of the Ganikh-Ayrichay foothills stretches 120 km from northwest to southeast (Geography of the Republic of Azerbaijan, 2014). The Shaki-Zagatala economic-geographic region is mainly represented by altitude belts such as mountain-steppe, mountain-forest, subalpine and alpine meadows, and nival area. 54% of its territory is located in areas with a slope of 5^o, 18% in $5\text{-}10^o$, 22.4% in $10\text{-}15^o$, and 5.6% in areas with a slope of 15^o and higher. The highest peak of the area is the Guton Mountain (3648 m) between the Balakan and Zagatala administrative regions (Budagov, 2003). Since the area is mainly mountainous, it has very favourable conditions and potential opportunities for organising hiking and trekking trips as a nature tourism reserve. In high mountain areas, it is possible to develop such types of tourism as mountaineering and ice climbing. In addition to these, river valleys also play the role of the primary means of transportation and collection of erosion and washout materials, which are rich in valuable components in the form of scattering, in all stages of development of the modern relief. Therefore, river valleys and terraces have a magnificent view. In this regard, riverbanks enjoy vast potential opportunities to organise nature tourism recreation places.

One of the main components of nature tourism resources is related to the climate factor. A favourable climate stimulates tourist trips and promotes mass tourism. This, in turn, serves as a source of income.

The climate of the Shaki-Zagatala economic-geographical region is primarily mild and humid, and it receives a lot of solar energy and radiation throughout the year. The number of sunny hours is 2200-2300 per year, and the total solar radiation fluctuates between 120-148 kcal/cm^2. The subtropical climate prevails in areas up to 500-700 m above sea level. The average annual temperature is 6-14^{o}C in Balakan and fluctuates between 0-14^{o}C in the rest of the regions.

Table 1. Main climate indicators of the Shaki-Zagatala economic-geographic region (Hajiyev, 1977)

City and administrative districts	during the year						
	Total solar radiation, kcal/cm^2	Average temperature ^{o}C	Absolute minimum temperature ^{o}C	Absolute maximum temperature ^{o}C	Amount of precipitation, mm	Possible evaporation, mm	Number of snowy days
Zagatala	124.1	12.5	-23	38	1036	850	22
Balakan	124.1	13.2	-21	37	943	871	22
Gakh	123.0	12.2	-23	38	920	837	24
Shaki	122.0	12.0	-23	37	803	824	26
Oghuz	123.6	11.9	-23	38	1128	769	45
Gabala	123.6	10.6	-26	37	1027	680	45

The annual amount of precipitation is 300-350 mm around Ajinohur, 500-700 mm in Ganikh-Ayrichay, and 900-1300 mm in other areas (Budagov, 2003). Although the indicators of total solar radiation (122.0-124.1 kcal/cm^2) are close to each other throughout the year, the average temperature (10.6-13.2^{o}C) is slightly different (Hajiyev, 1977). Thus, the lowest indicator of average air temperature (10.6^{o}C) was recorded in Gabala, while the highest indicator (13.2^{o}C) was recorded in Balakan regions. The absolute minimum air temperature varies between -21-26^{o}C, and the absolute maximum temperature varies between 37-38°C. The annual amount of precipitation is relatively less in Shaki, Gakh, and Balakan, and more in Gabala, Zagatala, and Oghuz regions. Possible evaporation during the year is 680-871 mm. The number of snow-covered days was high in the Gabala and Oghuz regions (45 days), based on which the Tufandagh winter-summer tourism recreation complex operates in Gabala (Table 1). The comfort provided by the climate and the relief of the area create favourable conditions for the development of nature tourism resources in the economic-geographic region.

Forests are considered a unique component of nature tourism resources. Forests in the Shaki-Zagatala economic-geographic region make up 27% of the total area. Forests are more densely located in the middle and lower mountain zones: in the basins of Katekhchay, Mazimchay, and Balakanchay Rivers, as well as in the territory of the Zagatala state nature reserve (Figure 1, c). The oldest and largest trees of the area are the 300-year-old Celtis in "Gosha Ziyarat Piri", a pair of 350-year-old *Platanus orientalis* in front of the Shaki Khan Palace, a 500-year-old *Platanus orientalis* in front of the Shaki bus station, the famous "Babaratma Piri" 900-year-old *Platanus orientalis* located on the outskirts of Babaratma village, 1000-year-old *Platanus orientalis* in the village of Gudula, and 1000-year-old *Populus* near the city of Shaki (Soltanova, 2015). The forests in the territory of the Oghuz region of the Shaki-Zagatala economic-geographic region, which have the richest forest resources in Azerbaijan, are called the "Switzerland of Azerbaijan". The local population widely uses the pine forest in Kish village of the Shaki district to treat asthma. Therefore, forests are widely used as a nature tourism resource. For example, the fact that Jar village of the Zagatala district is surrounded by the Tala, Bekmez, and Zilban rivers, and a dense forest area in the heart of the mountains has given impetus to the development of tourism here. The fact that the nature tourism resources are so compact within one area has led the villagers to rent their houses to tourists in the summer months and to guide pedestrian tours and horseback trips.

a. Kurmukchay River and Ilisu Ulu Bridge, Ilisu state nature reserve in the background

b. Katekh waterfall on Katekhchay River

c. Zagatala State Nature Reserve

d. Hamambulag thermal water, used in an artisanal way

e. Nohur Lake or Nohurgishlaq reservoir

f. Tufandag winter-summer Tourism Recreation Complex

Figure 1. Natural monuments with higher potential for nature tourism resources in the Shaki-Zagatala economic-geographical region

Among the nature tourism resources, water resources can combine all components. Watersheds together with relief, climate, and forest resources serve to create sustainable tourism zones. The rivers of the Shaki-Zagatala economic-geographical region, that were studied, are the left tributaries of the Ganikh River and have a favourable water balance structure. However, there is a water shortage in the lower mountainous areas during the summer months. This creates an obstacle in the irrigation of agricultural fields, and the population mainly meets their needs at the expense of underground water. In mountainous areas, the residents use water from rivers and springs (Aliyev, 2000). There are Mazimchay, Kish, Shinchay, Balakenchay, Ayrichay, Kurmukchay (Figure 1, a), Katekh (Figure 1, b), Karachay, Demiraparanchay, and other rivers, as well as Tufan Lake, Nohur Lake (Figure 1, e), Ajinohur Lake, and the Ayrichay reservoir within the territory. However, they are not fully used as a nature tourism resource. Their efficient assimilation will enable the socio-economic development of the region, especially the economic potential of mountain villages.

As Oghlanbulag, Gizbulag, Hamambulag (Figure 1, d), Aghbulag, Bum, Khalkhal, Chimchimak, Moksu, Bugusshor, Alibeyli, Susken, and others are rich in thermal and mineral springs along the tectonic breaks and cracks in the mountainous and plain belts of the Shaki-Zagatala economic-geographical region (mainly villages), the settlements are laid out in chain order. In some cases, this has led to the creation of rural agglomerations. Nature tourism is developed based on thermal and mineral waters. Especially in the summer months, tourists make mass visits to these areas and use traditional methods to treat diseases such as nerves, skin, cardiovascular, and musculoskeletal (Figure 2).

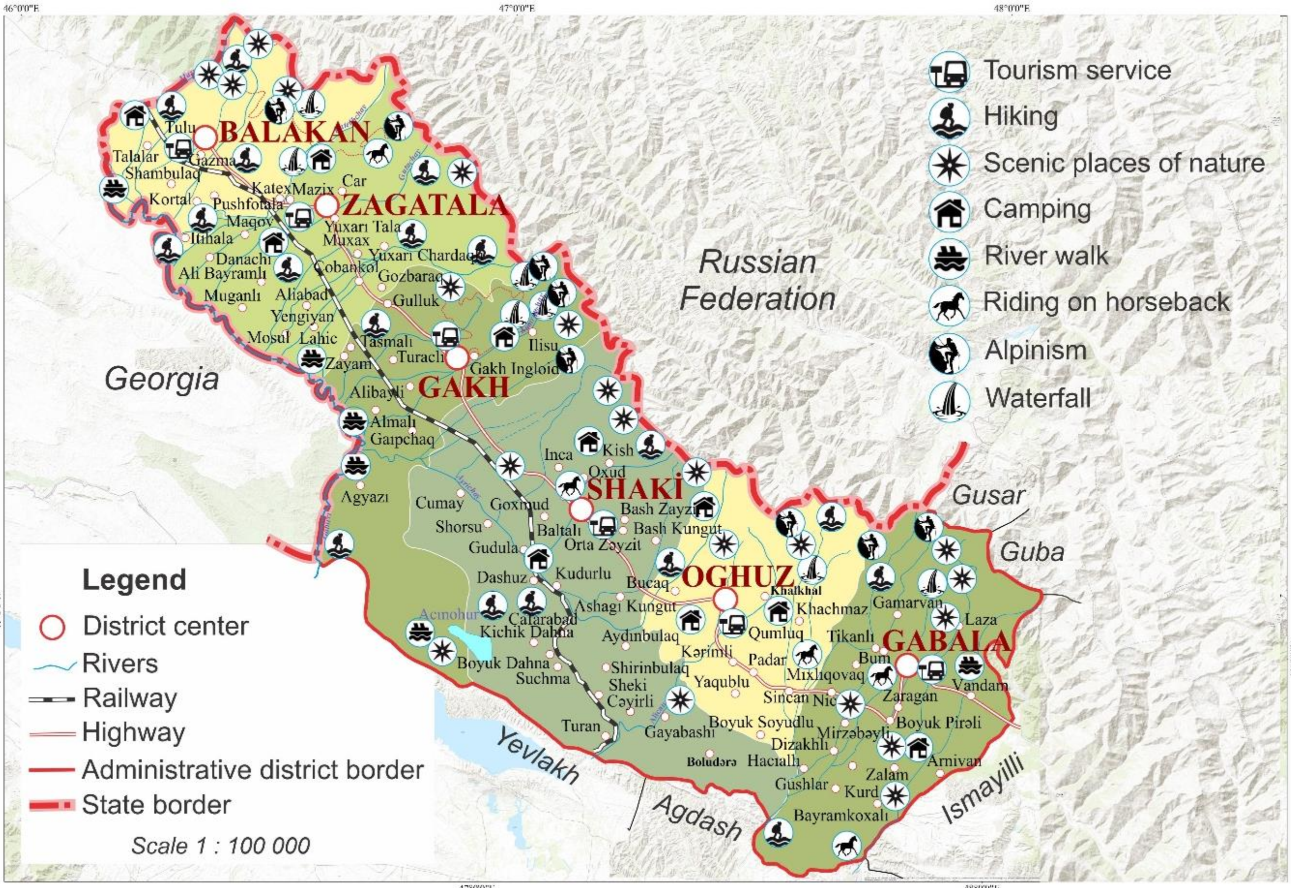


Figure 2. Distribution map of nature tourism resources in the Shaki-Zagatala economic-geographical region

CONCLUSIONS

Most of the settlements in the Shaki-Zagatala economic-geographic region are located between 200-500 m altitude. The population is more densely populated within the boundaries of this altitude zone, but the nature tourism resources are not used enough. Despite the predominance of steep slopes, steep rocks, landslides, and floods in the relief of the areas of the economic-geographical region located above 1500 m, the nature tourism resources here are more widely involved in the tourism cycle. The Shaki-Zagatala economic-geographical region has a wide variety of climate comfort, clean mountain air, forests, alpine and subalpine meadows, and thermal and mineral waters as a nature tourism resource.

However, this potential has yet to be fully used. Tourists visit the area only in the summer months to take advantage of the nature tourism resources. In the winter months, except for the Tufandagh winter-summer (Figure 1, f) tourism recreation complex, tourist visits to other areas are short-term (1-3 days).

The Shaki-Zagatala economic-geographical region has great potential for nature tourism resources. Effective use of these resources can stimulate regional socio-economic development and condition future prospects. In this connection, nature tourism resources with more favourable conditions should be identified, the economic advantages of nature tourism resources should be explained to rural communities, recommendations for the future sustainable development of nature tourism resources should be prepared for the villagers, and educational work should be carried out among the population.

Based on numerous expeditions and fund materials obtained in the research process in the Shaki-Zagatala economic and geographical region, it could be stated that the region has not been studied at any level in terms of nature tourism. In the future, it is necessary to conduct scientific-theoretical and practical-applied research in this direction.

Author Contributions: Conceptualization, Z.I.; methodology, Z.I.; software, A.H.; validation, Z.I. and B.B.; formal analysis, B.B.; investigation, Z.I. and A.H.; data curation, B.B.; writing - original draft preparation, Z.I.; writing - review and editing, B.B. and A.H.; visualization, A.H.; supervision, B.B.; project administration, Z.I. All authors have read and agreed to the published version of the manuscript.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Aliyev, F.S. (2000). *Azərbaycan Respublikasının yeraltı suları, ehtiyatlarından istifadə və geoekoloji problemləri [Use of underground water, resources, and geo-ecological problems of the Republic of Azerbaijan]*. Baku: Chashioghlu, 326, (In Azerbaijan).

Brockington, D., Duffy, R., & Idoe, J. (2008). *Nature unbound: conservation, capitalism and the future of protected areas*. London: Earthscon, 249.

Buckley, R. (2006). *Adventure tourism*. Gold Coast: OAI, 484. https://archive.org/details/adventuretourism0000buck

Budagov, B.A. (2003). *Azərbaycan Respublikasının regional coğrafi problemləri. Şəki-Zaqatala iqtisadi rayonu [Regional geographical problems of the Republic of Azerbaijan]*. The Shaki-Zagatala economic region. Baku: Nafta-Press, 190, (In Azerbaijan).

Goeldner, C.R., & Ritchie, J.R.B. (2011). *Tourism: Principles, practices, philosophies*. New Jersey: Wiley, 512.

Gurbanzade, A.A. (2018). *Analitik coğrafiya [Analytic geography]*. Baku: Kooperasiya, 168, (In Azerbaijan).

Hajiyev, G.A. (1977). Azərbaycan SSR inzibati rayonlarının iqlim səciyyəsi *[Climate characteristics of the administrative regions of the Azerbaijan SSR]*. Baku: Elm, 269, (In Azerbaijan).

Imrani, Z.T., Karimova, E.J., & Zeynalova, K.Z. (2021). *Роль туроператоров и турагентов в развитии ту-ристического сектора в Азербайджане [Role of tour operators and travel agents in the development of the tourist sector in Azerbaijan]*. Bulletin of Udmurt University, 31(2), 209-215, (In Russia). https://doi.org/10.35634/2412-9518-2021-31-2-209-215

Imrani, Z.T., & Kazimova, S.T. (2023). *Определение туристско-рекреационного потенциала методом ландшафтного планирования (на примере Губинского района) [Assessing tourist and recreational potential using the landscape planning method (the case study of the Guba district)]*. News of Tula State University, 4, 158-170, in Russia, WOS. https://tidings.tsu.tula.ru/tidings/pdf/web/preview_therest_ru.php?x=tsu_izv_earth_science_2023_04_a&year=2023

Imrani, Z.T., & Veliyeva, G.V. (2023). Regionalization of resort-recreational zones of Azerbaijan and possibilities of using them studies case: Gusar tourism-recreational zone. *Universidad y Sociedad*, 5(3), 554-56, WOS. https://rus.ucf.edu.cu/index.php/rus/article/view/3810

Kosolapoe, A.B. (2005). *Теория и практика экологического туризма [Theory and practice of ecological tourism]*. Moscow: KNORUS, 240, (In Russia).

Mammadov, K.A. (2013). *Elmi-tədqiqat işlərinin metodikası [Methodology of scientific research works]*. Baku: Muterjim, 104, (In Azerbaijan).

Mammadov, G., Yusifov, E., Khalilov, M., & Karimov, V. (2012). *Azərbaycan: ekoturizm potensialı: I cild [Azerbaijan: potential of ecotourism: Volume I.]* Baku: Sharg-Garb, 360, (In Azerbaijan).

Mammadov, R.M. (2016). *Şəki-Zaqatala iqtisadi-coğrafi rayonunda əhali məskunlaşması və demoqrafik inkişaf problemləri [Geography of the Republic of Azerbaijan, Volume 1]*. Baku: Avropa, 184, (In Azerbaijan).

Mckinney, T. (2016). *Ecotourism / The International Encyclopedia of Primatology, 3(1). Oxford: Wiley-Blackwell*, 1608. https://doi.org/10.1002/9781119179313.wbprim0120

Newsome, D., Moore, S.A., & Dowling, R.K. (2012). *Natural area tourism: ecology, impacts and management*. Clevedon: Channel View, 457.

Olson, D., Dinerstein, E., Wikramanayake, D., Burgess, N., Powell, G., Underwood, E., D'amico, J., Itoua, I., Strand H., Morrison, J., Loucks, C., Allnutt, T., Ricketts, T., Kura Y., Lamoreux, J., Wettengel, W., Hedao, P., Kassem, K. (2001). Terrestrial ecoregions of the world: a new map of life on Earth. *BioScience*, 51(11), 933-938. https://doi.org/10.1641/0006-3568(2001)051[0933:TEOTWA]2.0.CO;2

Regions of Azerbaijan: statistical collection. (2023). Baku: Chashioghlu SP, 864.

Shimova, S.S. (2014). *Устойчивый туризм [Sustainable tourism]*. Minsk: RIPO, 158, (In Russia).

Soltanova, H.B. (2015). *Azərbaycan Respublikasında turizm və onun inkişafı [Tourism and its development in the Republic of Azerbaijan]*. Baku: AzTU, 238, (In Azerbaijan).

Tikhomirov, N.V. (2007). *Экологический туризм [Ecological tourism]*. Yaroslavl: YSU, 91, (In Russia).

Tille, A.A. (1978). *Социалистическое сравнительное правоведени [Socialist comparative jurisprudence]*. Moscow: Legal literature, 208, (In Russia).

Zeynalova, K.Z. (2020). Tourism potential of Shaki-Zagatala economic-geographical region and ways of using them. *Geography and natural resources*, 2(12). 73-78. https://journal.geonatres.az/s%c9%99ki-zaqatala-iqtisadi-cografi-rayonunun-turizm-potensiali-v%c9%99-onlardan-istifad%c9%99-yollari/

Article history: Received: 29.03.2024 Revised: 04.06.2024 Accepted: 24.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.927-940
DOI 10.30892/gtg.542spl17-1268

A BIBLIOMETRIC REVIEW OF NATURALIST ENVIRONMENTAL EDUCATION, 1937–2023

Xie LIU*
Faculty of Design and Architecture, University Putra Malaysia, Selangor, Malaysia, e-mail: gs62057@student.upm.edu.my

Mohd Kher HUSSEIN
Faculty of Design and Architecture, University Putra Malaysia, Selangor, Malaysia, e-mail: mohdkher@upm.edu.my

Mohd Sallehuddin BIN MAT NOOR
Faculty of Design and Architecture, University Putra Malaysia, Selangor, Malaysia, e-mail: mohd-sallehuddin@upm.edu.my

Citation: Liu, X., Hussein, M.K., & Bin Mat Noor, M.S. (2024). A BIBLIOMETRIC REVIEW OF NATURALIST ENVIRONMENTAL EDUCATION, 1937–2023. *Geojournal of Tourism and Geosites*, 54(2spl), 927–940. https://doi.org/10.30892/gtg.542spl17-1268

Abstract: The significance of naturalist environmental education (NEE) which primarily focuses on human-nature relationships lies in its ability to mitigate detrimental influences on environmental quality and foster environmental awareness, thereby averting adverse ecological consequences. Through a bibliometric examination of the literature using Scopus, this research attempted to chart and evaluate the intellectual production associated with NEE. The findings are based on a statistical analysis of 1553 documents using the VOSviewer software. Results indicate there has been a significant increase in global scholarly focus on NEE and the pattern of publications trend follows a four-stage progression. "Social Sciences" has the greatest number of relevant articles. Keywords including education literacy and sustainable development are of utmost importance. There is clear evidence of global scientific collaboration among developed countries. It's crucial for scholars to prioritize interdisciplinary collaboration within NEE, and enhance adult environmental literacy on developing countries.

Keywords: naturalist, environmental education, bibliometric analysis, VOSviewer Scopus

* * * * * *

INTRODUCTION

Currently, there is a multitude of environmental crises being experienced globally, including issues such as air and water pollution, global warming, and the decrease of biodiversity. These crises have resulted in significant detrimental effects on both human civilization and the natural world (Dai et al., 2020; Tienhaara, 2010). Furthermore, there has been a noticeable decline in individuals' interaction with the natural environment (Ives et al., 2018). The absence of 'natural' interaction is crucial as societies are dependent on nature (Chu and Karr, 2017; Horlings and Kanemasu, 2015). Researchers have also found a correlation between the prevalence of chronic illnesses and mental problems and the proximity to urban regions with fewer natural areas and fewer opportunities for outdoor recreation(Vieira et al., 2022). However, mankind is gradually, although at a sluggish pace, recognizing the vulnerability of the natural environment and the ecological services it offers (Tregidga and Laine, 2022).T herefore, it is imperative to promptly address the prevailing circumstances and effectively respond to this crisis by means of the promotion of environmental consciousness and the dissemination of knowledge pertaining to ecosystem preservation and sustainability (Varela-Candamio et al., 2018).

Environmental education (EE) is a strategic approach that fosters collaborative environments, allowing diverse individuals to contribute their local knowledge, experiences, beliefs, and practices with the goals of promoting environmentally related awareness, attitudes, behavior, skills, and eventually action through education (Ardoin et al., 2020a; Hens, 2004; UNESCO, 1978). EE has played an important part in promoting active involvement in improving the long-term sustainability of human-nature relations, and the capacity to increase interest in biodiversity (Tiago et al., 2024). It maintains the primary duty of reestablishing the link between nature and communities (Ardoin and Bowers, 2020; Bob Jickling and Wals, 2008; Mastrángelo et al., 2019; Vieira et al., 2022). Against this background, Sauvé (1996) conducted an investigation pertaining to the prevailing patterns in EE, leading to the determination of 15 distinct trends or currents in this field which including naturalist (Sauvé, 1996). The naturalist current perspective posits that the objective of EE should include the promotion of individuals' affinity and connection with the natural world (Frantz and Mayer, 2014).

Nature connection refers to an individual's feeling of being affiliated with nature, whereby one perceives oneself as an essential component of the natural world (Nisbet et al., 2009).The extent of connectedness to nature which contains lifestyle, outdoor time, protection of forest lands, attention to plants and animals, etc. serves as an indicator of the level of proximity between the individual and the natural setting (Otto and Pensini, 2017).The degree of connection individuals experience with nature serves as a significant predictor of both their ecological behavior and subjective wellbeing (Mayer and Frantz, 2004; Otto and Pensini, 2017). To deepen the degree of connection individuals to nature to reach the EE goal, Naturalist environmental education (NEE) conceptualizes nature as both a repository of information, a facilitator or a

* Corresponding author

teacher of learning (Hall and Clover, 1997) since it has the potential to enhance learners' attention, reduce stress levels, foster self-discipline, stimulate interest and pleasure in the learning process, and encourage physical activity and fitness. Nature also provides a quieter, safer, and more cooperative learning environment, as well as a setting that encourages developmentally advantageous kinds of play through a mix of "loose parts" and autonomy (Kuo et al., 2019). Recent studies have revealed that a sense of awe, subsequently fosters an increased sense of connectedness to nature (Ng et al., 2023).

Although research suggests that an increasing number of virtual teaching methods, such as virtual collaboration (Manongga and Suharti, 2022), mobile learning (Huynh et al., 2023) and artificial intelligence (An and Ma, 2024) can be used for NEE. However, direct encounters with nature are the most efficient way to employ nature as an instructor in NEE activities. These activities include engaging in gardening, caring for animals, participating in activities like playing and visiting green areas, camp programs and so on (Collado et al., 2013; Duerden and Witt, 2010a; Ernst and Theimer, 2011; Inoue et al., 2019; Zwierzchowska and Lupa, 2021). In addition, the strengthening of links is naturally related not only to the type of activity, but also to its duration. Researchers advise that environmental educators provide time for participants to just "be" in nature throughout their programs (Chawla and Cushing, 2007). Due to the effectiveness of NEE is significantly influenced by the amount of time people spend engaging with nature in an immersive manner.

Within the realm of environmental psychology, Kals et al. (1999) identified the primary determinant of affinity towards nature as the frequency of one's exposure to natural environments and the previous intensity of one's exposure to nature, particularly during infancy (Kals et al., 1999). Positive changes in environmental behavior may be shown after as few as half a day of exposure to EE in a natural setting (Sellmann and Bogner, 2013; Whitburn et al., 2023). However, achieving persistent benefits likely requires repeated and long-term exposures. The research conducted by Krettenauer et al. demonstrates that as adolescents and young adults persist in their engagement with pro-environmental behavior, they exhibit a growing inclination to endorse pro-environmental norms (Krettenauer et al., 2024).

Furthermore, repeated programs may provide enduring impacts (Braun and Dierkes, 2017; Schultz and Tabanico, 2007; Stern et al., 2008). NEE activities can observably increase environmental awareness and behavior. According to Siegmar Otto and Pensini, the true manifestation of ecological behavior necessitates the cultivation of intrinsic motivation by inducing a sense of connection with nature (Otto and Pensini, 2017). A study was conducted to compare students who had prior experience in outdoor NEE activities with those who did not. The findings indicated that the former group had a robust and well-defined empathic connection to nature. Additionally, they had enhanced social interaction and elevated moral judgments (Ernst and Theimer, 2011). In addition, the findings of Giusti et al. (2018) suggest that children who initially exhibit connection to the natural world may benefit from an introduction to NEE, and cultivate a sense of concern for and responsibility toward nature (Giusti et al., 2018).

In response to the growing environmental crisis, EE was promoted early on as an effective tool. Along with the development of urbanisation, people have realised the importance of connecting to nature and called for the reestablishment of natural links. How to effectively establish links with nature, NEE, a subfield of EE, has become an area worth exploring.

However, even though there has been a meteoric rise in the amount of research published on the topic of EE, with several areas making significant strides forward, opinions on NEE and related matters continue to differ, such as how environmental settings interact with children (Liu and Green, 2023; Tamblyn et al., 2023), integrated NEE within other discipline curricula (Boarin and Martinez-Molina, 2022), poverty reduction in the developing world (Şekercioĝlu, 2012), social ecosystem (Sato and Kitamura, 2023), NEE for sustainable tourism (Atikah et al., 2022) and so on, which still need more research. Therefore, there is a notable absence of a complete and visually presented study pertaining to the development and patterns of NEE. It is essential to conduct a thorough and comprehensive assessment of this field.

Quantitative literature review methodologies encompass systematic strategies for scrutinizing and amalgamating numerical data derived from scholarly articles or publications pertinent to a delineated research subject or inquiry. For instance, Antunes et al.adopt the Systematic Literature Review (SLR) methodology in accordance with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) Statement guidelines (Antunes et al., 2022). Hojcska and Szabó conducted secondary research, employed spatial inequality test methodologies to scrutinize the spatial disparages within natural treatment factors and medicinal water institutions utilizing secondary data (Hojcska and Szabo, 2021).

However, as a quantitative research method, bibliometric analysis has the advantages of quantitative assessment, identifying key contributors, mapping knowledge landscape, objective evaluation, and decision support. Researchers have employed bibliometric methods to explore various environmental sustainability-related topics within the scope of NEE. For instance, studies have delved into sustainable entrepreneurship education (Rosário and Raimundo, 2024), the influence of educational leadership on teachers' subjective well-being (Karakus et al., 2024), environmental sustainability disclosure in Asian countries (Wahyuningrum et al., 2023), and forest landscape planning and management (França et al., 2022). Additionally, literature has utilized CiteSpace to visually analyze the progressions in EE research using The Web of Science core collection database (Tian et al., 2024). However, attention to the NEE subfield has not been observed in the SCOPUS database. Simultaneously, science mapping or knowledge mapping is an emerging multidisciplinary discipline. Its purpose is to detect, analyze, categorize, and visually show the many manifestations of scientific interconnections within a continuously evolving knowledge landscape. Although the first publication on NEE dates back to 1937, there has been a limited number of bibliometric research conducted on this topic. Therefore, the aim of the study is to assess the existing body of NEE, including its main research scope, development trends, research areas, personnel composition, and primary objectives. The anticipated outcome is to possibly provide recommendations for further investigations within this field. The results supplemented the theoretical framework of EE and proposed strategies for sustainable development and addressing environmental crises.

Based on the results, this study concludes that there has been a significant increase in academic interest in NEE on a worldwide level, as seen by the quick growth in publications over the last six years. Furthermore, it is recommended that interdisciplinary partnerships be fostered to facilitate future advancements in NEE research; “Social Sciences” has the highest number of relevant articles; the journal "Environmental Education Research" seems to be the predominant scholarly platform for doing research in the field; education literacy and sustainable development related keywords are all crucial terms other than “children” and “curriculum”; There is discernible global scientific collaboration primarily concentrated among developed countries; and correlation between citation preferences and national level is substantiated, while co-authorship among authors and organizations could not be undertaken. Therefore, it is imperative for academics to prioritize the exploration of multidisciplinary cooperation in the context of NEE, enhance the environmental literacy of adults, and direct their efforts toward developing countries. The limitations of this study lie in its reliance on bibliometric analyses, which primarily focus on quantitative indicators such as citation counts, author keywords, and publication frequency.

While these analyses can effectively identify patterns and trends in research output pertaining to NEE, they may lack depth in interpretation. Despite the analysis of the content of the top 10 most-cited articles, understanding the significance or ramifications of these findings necessitates supplementary context and qualitative analysis. Moreover, the subjective nature of decisions regarding the selection of databases, search terms, and inclusion criteria in bibliometric reviews introduces potential biases that may impact the outcomes and conclusions of the analysis.

MATERIALS AND METHODS

This research employs bibliometric analysis to investigate the worldwide trajectory of NEE from 1937 to 2023 (as of October 16th) by analyzing published articles in the Scopus database. Bibliometrics is a quantitative approach used to analyze and visualize the collective scientific knowledge and evolutionary trends within established domains. This technique involves systematically processing and interpreting large amounts of unstructured data in a rigorous manner (Donthu et al., 2021). By using this methodology, scholars can gain a deeper understanding of certain areas of study by assessing the productivity, patterns, trends, and influence of scholarly literature, notable authors, institutions, publishers, and countries, and identifying prospective research deficiencies (Van and Waltman, 2014; Yuan and Basha, 2023).

Data for this study were gathered from Elsevier's Scopus database. Scopus is considered to be the most suitable database for doing bibliometric analysis because of its ability to mitigate biases, hazards, and possible omissions that may arise from relying on a restricted selection of publications (Donthu et al., 2021; Wahyuningrum et al., 2023). Due to the abundance of high-quality components, it includes, e.g., 87 million documents, 1.8 billion cited references and 335 thousand books. Starting with the first publication on NEE that was indexed in the Scopus database, all subsequent publications pertaining to the topic of EE and nature were considered for inclusion in this research, up to its completion on October 16, 2023.

The primary objective of this study is to investigate the correlation and clusters of interconnected research on nature and EE. Therefore, queries were used to explore the article title, abstract, and keywords: “TITLE-ABS-KEY (("environmental education" AND "nature") OR "naturalist environmental education" OR "nature education")”. In all, 2344 documents were discovered in the preliminary search. The following discusses the subsequent application of the exclusion criteria.

The bibliometric evaluation was carried out based on the analysis of publications on the subject, following the methodological process of the sequence presented in the flowchart of Figure 1.

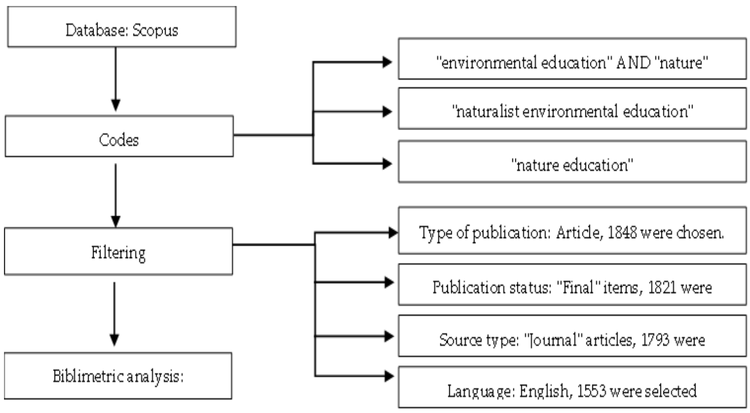


Figure 1. Flowchart of the methodological steps used to collect bibliometric data (Source: Own editing)

To begin, a filter was used to only employ "Article" documents, and from those, 1848 were chosen. Second, a filter based on article publication status was used, and 1821 "Final" items were selected. Third, we applied the source type filter, narrowing the selection to only "Journal" articles (1,793). Fourth, a language filter is implemented, with a total of 1553 articles selected from those authored in the "English" language. A dataset of 1553 articles was obtained in comma-separated value (CSV) format. The dataset included abstracts, keywords, bibliographical information, citation information, and reference information for each item. Data were compatible with VOSviewer for analysis (Van Eck and Waltman, 2010). VOS Viewer stands as a bibliometric mapping tool, facilitating the visualization of substantial volumes of bibliometric data through comprehensible and user-friendly two-dimensional maps. This software affords an impartial and methodical depiction of extensive scholarly records, ensuring that intricate details are not sacrificed in the process. Hitherto, VOS Viewer has garnered notable prominence across diverse academic disciplines, being applied to scrutinize scientific research within various domains across the sciences (Perianes-Rodriguez et al., 2016).

RESULTS AND DISCUSSION

Results

This section discusses a finding of the NEE character research that has been carried out by previous researchers. It is based on the year of publication, discipline distribution, journal titles, the citation of the article and keywords as well as the authors.

Publication trend

Figure 2 illustrates the chronological progression of publishing trends from the first essay titled "Nature, Education, and Freedom." according to the publication of Jean-Jacques Rousseau in 1937, as composed by Allan D.J. (Allan, 1937).

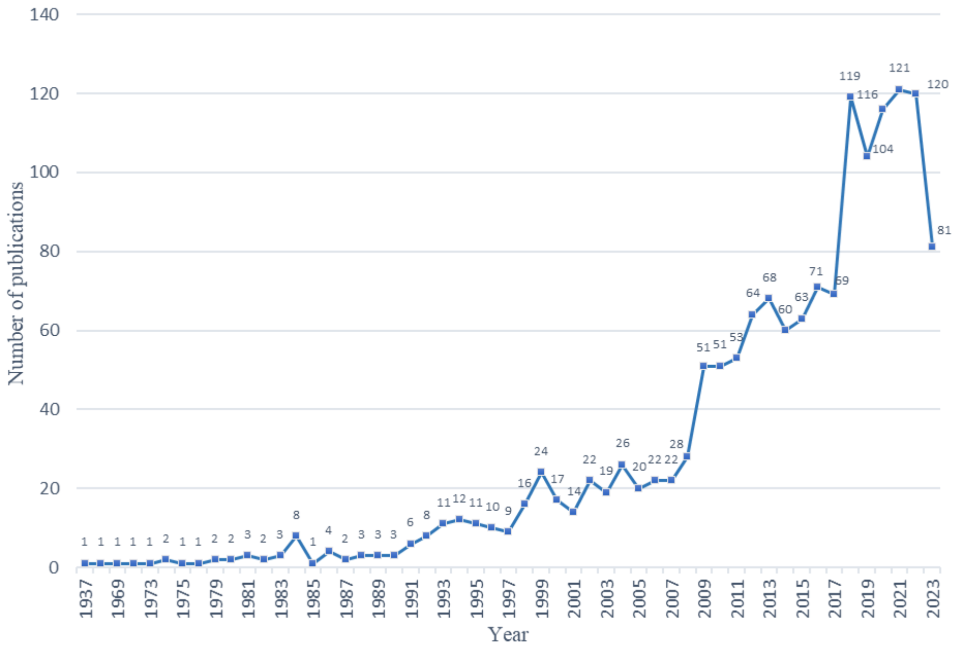


Figure 2. Document by year (Source: Own editing)

The publication trend can be seen in four stages in terms of productivity as seen in Table 1. For the first stage (1937-1992) which laid the groundwork for the more structured and intentional programs that exist today, a maximum of ten documents were released annually. 59 publications (3.79%) in total were produced throughout this period. During the second stage, spanning from 1993 to 2008, a consistent pattern of development became evident. This can be connected to the United Nations Conference on Environment and Development (UNCED) that took place in Rio de Janeiro, Brazil, on 3–14 June 1992 (Madeley, 1992). Yearly publications ranged from 11 to 28. In all, a sum of 283 publications, accounting for 18.22% of the total, were generated. Starting from 2009, the third stage (2009-2017), a threshold of a minimum of 50 articles was achieved every year, Overall, 550 publications (35.42%) were produced. One notable milestone during this period is the UN Conference on Sustainable Development Rio+20. The aforementioned event resulted in the establishment of the Paris Agreement on climate change in 2015, whereby efforts to mitigate greenhouse gas emissions by the year 2020 were reinforced (Díaz-López et al., 2023). The fourth stage covers the past six years (2018-2023), productivity increased.

Table 1. Publication trend (Source: Own editing and calculation)

Year	Number of Publication	Cited publication	Proportion	Total Citations
1937	1	1	100%	1
1948	1	0	0%	0
1969	1	1	100%	2
1970	1	1	100%	2
1973	1	0	0%	0
1974	2	1	50%	3
1975	1	0	0%	0
1977	1	1	100%	1
1979	2	1	50%	2
1980	2	1	50%	1
1981	3	1	33%	13
1982	2	2	100%	4
1983	3	2	67%	4
1984	8	6	75%	52
1985	1	0	0%	0
1986	4	3	75%	12
1987	2	2	100%	4
1988	3	2	67%	3
1989	3	2	67%	19
1990	3	1	33%	8

1991	6	5	83%	122
1992	8	5	63%	73
1993	11	9	82%	148
1994	12	12	100%	248
1995	11	10	91%	217
1996	10	9	90%	103
1997	9	8	89%	153
1998	16	15	94%	392
1999	24	23	96%	755
2000	17	15	88%	436
2001	14	14	100%	525
2002	22	20	91%	1073
2003	19	16	84%	758
2004	26	24	92%	667
2005	20	20	100%	650
2006	22	20	91%	466
2007	22	20	91%	715
2008	28	27	96%	1306
2009	51	47	92%	1345
2010	51	47	92%	2120
2011	53	49	92%	1628
2012	64	61	95%	1724
2013	68	63	93%	2264
2014	60	53	88%	1415
2015	63	55	87%	938
2016	71	64	90%	1145
2017	69	62	90%	1620
2018	119	110	92%	1786
2019	104	91	88%	1292
2020	116	102	88%	967
2021	121	102	84%	710
2022	120	78	65%	247
2023	81	32	40%	79
Total	**1553**	**1316**		**28218**

The number of articles in the previous six years accounted for 42.56% of the total publications, demonstrating that themes on NEE disclosures are expanding in prominence in academia. Despite a clear decline in the number of publications in 2019, the lower bond for annual publications in this phase climbed to 110 from the previous level of 19, with the exception of 2023, when the number of publications dropped to 81 after just three-quarters of the year had passed. The upward trend continues. Studies on this area will continue to develop in the forthcoming years.

It is evident that not all research publications have been cited. Excepted for the first stage, the proportions of cited publications reached 100% in 1994, 2001, 2005. Overall, the average proportion was 77%. There was a significant variation seen in the quantity of citations received. Publications that were published in the year 2013 seem to have garnered significant influence, as seen by their very high citation count of 2264.

Subject Area

A total of 1553 papers included 25 distinct study fields. The distribution of the top ten topic areas relevant to NEE is illustrated in Table 2. Most articles (38.15%) are applicable to the field of "Social Sciences" (1046 publications), followed in relevance by “Environmental Science” (747 publications), “Agricultural and Biological Sciences” (205 publications), “Energy” (101 publications), “Arts and Humanities” (87 publications) and “Earth and Planetary Sciences” (78 publications).

Table 2. Top ten subject area (Source: Own editing and calculation)

Subject Area	Total Publications	Percentage (%)
Social Sciences	1046	38.15%
Environmental Science	747	27.24%
Agricultural and Biological Sciences	205	7.48%
Energy	101	3.68%
Arts and Humanities	87	3.17%
Earth and Planetary Sciences	78	2.84%
Psychology	76	2.77%
Engineering	72	2.63%
Business, Management and Accounting	69	2.52%
Computer Science	62	2.26%

Journal Titles

Research on the NEE is documented across 570 publication sources, each contributing a minimum of one publication. Table 3 presents a comprehensive compilation of the top fifteen journals in terms of productivity. The most prominent journal is Environmental Education Research, which published 167 articles (10.75%). The primary objective of this journal is to promote the advancement of research-based and academic knowledge in the field of environmental and sustainability education. Followed by the Journal of Sustainability (Switzerland) (66 articles, 4.25%). This journal is dedicated to the comprehensive examination of environmental and socio-economic subjects related to sustainable development. As a result, it has gained significant recognition and serves as a suitable platform for academics specializing in this area. Australian Journal of Environmental Education ranked third, with 61 articles accounting for 3.93% of its content, serves as a platform for the dissemination of information and the presentation of arguments that aim to foster discourse around educational approaches that effectively cultivate awareness, comprehension, and proactive engagement in matters pertaining to environmental and social justice. These prestigious publications share a commitment to sustainable development in their respective areas.

Table 3. Most active journal title (Source: Own editing and calculation)

Rank	Source Title	Total Publications	Percentage (%)
1	Environmental Education Research	167	10.75%
2	Sustainability (Switzerland)	66	4.25%
3	Australian Journal of Environmental Education	61	3.93%
4	Journal of Environmental Education	60	3.86%
5	International Research in Geographical and Environmental Education	27	1.74%
6	Journal of Environmental Protection and Ecology	23	1.48%
7	Journal of Environmental Studies and Sciences	21	1.35%
8	International Journal of Science Education	17	1.09%
9	Applied Environmental Education and Communication	16	1.03%
10	Environmental Conservation	15	0.97%
11	International Journal of Environmental and Science Education	15	0.97%
12	International Journal of Environmental Research and Public Health	15	0.97%
13	Frontiers in Psychology	13	0.84%
14	Journal of Outdoor and Environmental Education	12	0.77%
15	Urban Forestry and Urban Greening	12	0.77%
16	Others	1013	65.23%

Author Keywords

Facilitating comprehension of the distribution and connections among primary research themes related to NEE was achieved through the application of co-occurrence analysis. This analytical method allows for the exploration of internal relationships within a specific academic subject (Gao et al., 2020).

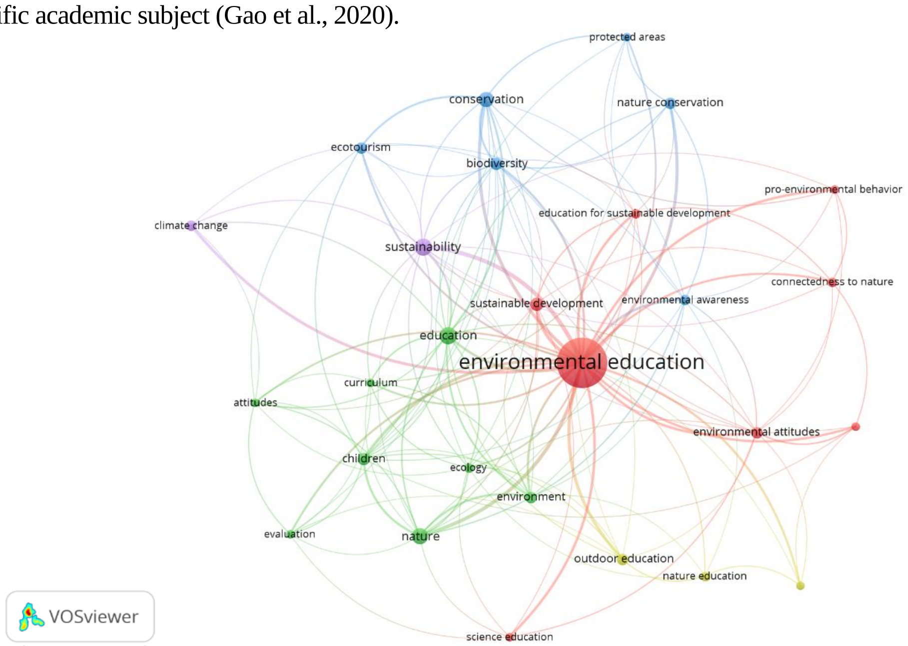


Figure 3. Co-occurrence network by author keywords– colored based on clusters (Source: Own editing with VOSviewer)

By establishing a minimum occurrence threshold of 15, a total of 3821 keywords were detected, out of which 27 managed to meet the established minimum requirement. The result created a graph with 5 clusters, each with a different focus (Figure 3). Cluster 1(red) focuses on EE attitudes, knowledge, behavior for sustainable development, and connectedness to nature. Cluster 2 (green) emphasizes education curriculum with nature and evaluation. Cluster 3 (blue) highlights the conservation and biodiversity. Cluster 4 (yellow) emphasizes outdoor education and Cluster 5 (purple) focuses on sustainability. Cluster 2's overall link strength of 271 indicates that it contains the most frequent phrases on the theme of natural connections. The keyword "environmental education" appears more frequently and has a stronger overall link strength than any other produced term, making it the dominant term in Cluster 1. Cluster 5 is connected to Cluster 3 in some way and focus on conservation and protecting nature, which are the results and aim of NEE. With the lowest total link strength of 55 among all five clusters, outdoor education, and nature education are the two topics majority covered under Cluster 4. Table 4 presents a comprehensive listing of all keywords derived from associated publications, presented in a clustered view. All clusters contain keywords relating to both education literacy (e.g., “environmental knowledge”, “environmental awareness”, “attitudes”, “behavior”) and sustainable development (e.g., “ecology”, “biodiversity”, “nature conservation”, “climate change”). The top ten keywords that are most often used are environmental education, education, sustainability, nature, conservation, sustainable development, biodiversity, children, outdoor education, and nature conservation. However, only the second cluster specifically concerns about population (children).

Table 4. Keywords by clusters (Source: Own editing and calculation)

Cluster	Keywords	Occurrences	Total Link Strength
Cluster1 (red）	connectedness to nature	21	17
	education for sustainable development	21	24
	environmental attitudes	28	29
	environmental education	528	309
	environmental knowledge	17	19
	pro-environmental behavior	18	18
	science education	15	18
	sustainable development	41	33
Cluster2 （green）	attitudes	16	18
	children	32	40
	curriculum	15	22
	ecology	20	23
	education	66	60
	environment	28	32
	evaluation	16	17
	nature	54	59
Cluster3 (blue)	biodiversity	34	33
	conservation	48	51
	ecotourism	29	21
	environmental awareness	26	26
	nature conservation	30	27
	protected areas	17	13
Cluster4 (yellow)	environmental literacy	17	15
	nature education	20	10
	outdoor education	31	30
Cluster5 (purple)	climate change	25	21
	sustainability	61	57

Figure 4 shows the evolution of keyword trends in NEE from 2013 to 2023. Connectedness to nature, pro-environmental behavior, environmental attitudes, nature education, outdoor education, and climate change have become concerns in recent years.

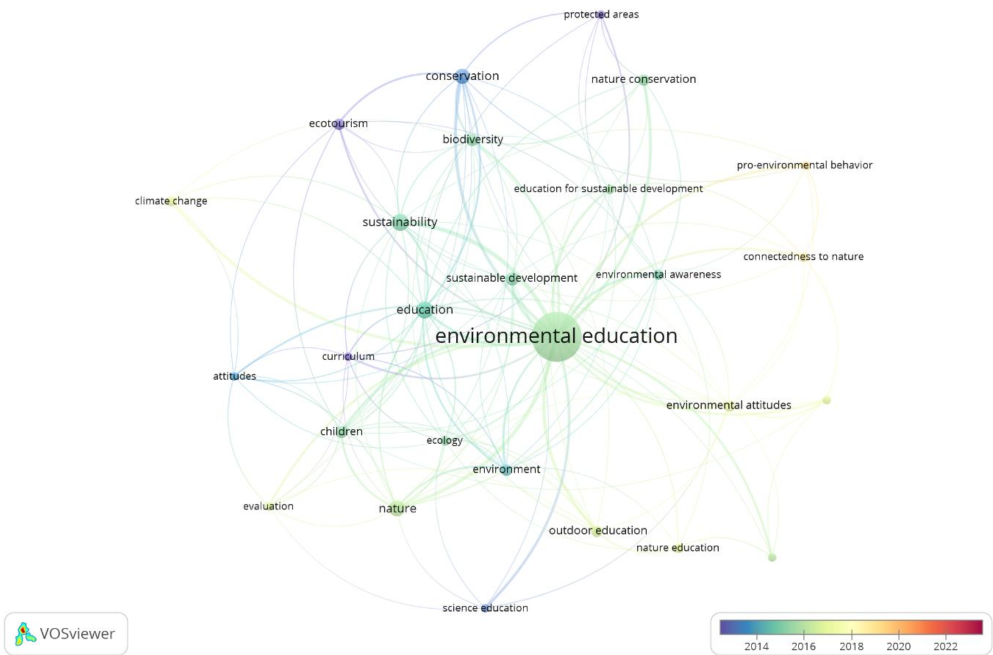


Figure 4. Co-occurrence network by author keywords–year of publication (Source: Own editing with VOSviewer)

Citation Analysis

Table 5 of the results presents the 10 most influential works on the subject of NEE, as assessed using citation analysis. The most-cited paper investigated the impact of EE on nature-relatedness and explored the relationship between varying degrees of nature-relatedness and levels of happiness (Nisbet et al., 2011). Since its publication in 2011, this article has garnered a total of 401 citations. The study with the second largest number of citations has introduced a nature index that assesses children's emotional attitude towards the natural world. This index has four dimensions, namely: (a) the pleasure of nature, (b) empathy towards creatures, (c) an awareness of oneness, and (d) a sense of responsibility (Cheng and Monroe, 2012). A total of 399 citations have been made to this article since it has been published in 2012. Globalizing influences, according to the third research, are having a profound effect on EE as seen by the push to transform it into education for sustainable development (Jickling and Wals, 2008). The fourth article posits that there is merit in advocating for the development of public initiatives aimed at generating databases, as they have the potential to significantly contribute to the field of conservation biogeography. Furthermore, these databases may play a crucial role in fostering the re-establishment of the bond between people and nature (Devictor et al., 2010).

The citations of articles from the third to the fifth are all greater than 300, of these, the fifth article, published in 2017, examines nature-based EE as a comprehensive approach to enhancing ecological behavior. This approach integrates the acquisition of environmental knowledge with the promotion of an intrinsic motivator, specifically the sense of connectedness to nature. Notably, This paper draws attention to a significant research void, whereby the specific nature-based EE approach that yields this benefit remains unclear (Otto and Pensini, 2017).

The top 10 most-cited articles center their research endeavors on the following four thematic pillars. Among others, four of these ten articles are centered around connectedness to nature and EE. Including the influence of EE on nature connectedness and well-being (Nisbet et al., 2011), environmental knowledge and connectedness to nature related to ecological behaviour (Otto and Pensini, 2017), connection to nature influences people’s intention to participate in NEE activities (Cheng and Monroe, 2012). Meanwhile, EE programs promoting connectedness with nature (Liefländer et al., 2013).

Two articles explore the impact of instructional formats and processes on learning outcomes associated with EE,one focuses on the relationship between nature experience type and learning outcomes (Duerden and Witt, 2010b), and the other incorporates the integration of citizen science serves to enhance biogeographical studies and contribute meaningfully to the establishment of large-scale conservation target-setting initiatives (Devictor et al., 2010).

Two papers examine the current state of EE, which is moving toward sustainable (Jickling and Wals, 2008) and global education (Cambray, 2003). The remaining articles examine environmental conceptualizations (Sadler et al., 2004) and the relationship between environmental awareness and environmental behaviour (Ramayah et al., 2012).

Table 5. Top ten cited articles (Source: Own editing and calculation)

Citations	Author(s)	Article Title	Year	Source Title	Methodology
401	Nisbet E.K.; Zelenski J.M.; Murphy S.A.	Happiness is in our Nature: Exploring Nature Relatedness as a Contributor to Subjective Well-Being	2011	Journal of Happiness Studies	Quantitative methodology (Multiple regression analyses)
399	Cheng J.C.-H.; Monroe M.C.	Connection to nature: Children's affective attitude toward nature	2012	Environment and Behavior	Quantitative methodology (Factor analyses and Path analysis)
384	Jickling B.; Wals A.E.J.	Globalization and environmental education: Looking beyond sustainable development	2008	Journal of Curriculum Studies	Qualitative methodology (Textual analysis)
356	Devictor V.; Whittaker R.J.; Beltrame C.	Beyond scarcity: Citizen science programs as useful tools for conservation biogeography	2010	Diversity and Distributions	Qualitative methodology (Textual analysis)
327	Otto S.; Pensini P.	Nature-based environmental education of children: Environmental knowledge and connectedness to nature, together, are related to ecological behavior	2017	Global Environmental Change	Quantitative methodology (Unconditional maximum likelihood method and Rasch models)
279	Sadler T.D.; Chambers F.W.; Zeidler D.L.	Student conceptualizations of the nature of science in response to a socioscientific issue	2004	International Journal of Science Education	Mixed methods (Inductive analysis and Path analysis)
277	Ramayah T.; Lee J.W.C.; Lim S.	Sustaining the environment through recycling: An empirical study	2012	Journal of Environmental Management	Quantitative methodology (Structural Equation Modelling)
253	Cambray J.A.	Impact on indigenous species biodiversity caused by the globalisation of alien recreational freshwater fisheries	2003	Hydrobiologia	Qualitative methodology (Textual analysis)
239	Liefländer A.K.; Fröhlich G.; Bogner F.X.; Schultz P.W.	Promoting connectedness with nature through environmental education	2013	Environmental Education Research	Quantitative methodology (Path analysis)
222	Duerden M.D.; Witt P.A.	The impact of direct and indirect experiences on the development of environmental knowledge, attitudes, and behavior	2010	Journal of Environmental Psychology	Mixed-methods (Grounded theory Zero-order correlation comparisons and hierarchical regressions)

Authorship

A collective of 1484 authors made contributions to the research on NEE. Table 6 presents a comprehensive overview of the 20 most productive and highly cited authors, with a specific focus on those who have collaborated on a minimum of three research articles. In terms of the most prominent authors, Bonnett M. from the UK is the most prolific author who also publishes the most cited papers with 7 publications and 506 citations. However, his C/P figure only ranked third. C/P value (Number of Citations/ Number of Publications) which calculates the average number of citations in a particular article. Meanwhile, although

Jickling B. and Liefländer A.K. are not ranked very high, they have the highest C/P, 147.33 and 103 respectively. Payne P. and Simmons D. ranked second and third, with a total of six articles published by them.

Table 6. Top 20 most productive authors (Source: Own editing and calculation)

Author	Publications	Citations	C/P	Countries
Bonnett M.	7	506	72.29	UK
Payne P.	6	168	28.00	Australia
Simmons D.	6	118	19.67	US
Gough N.	5	101	20.20	Australia
Liefländer A.K.	4	412	103.00	Germany
Ballantyne R.	4	236	59.00	Australia
Zimmerman H.T.; McClain L.R.	4	72	18.00	US
Connell S.	4	68	17.00	Australia
Hovardas T.	4	67	16.75	Greece
Kopnina H.	4	45	11.25	Netherlands
Wilson R.A.	4	40	10.00	US
Kleespies M.W.	4	35	8.75	Germany
Tsevreni I.	4	16	4.00	Greece
Beery T.	4	151	37.75	Sweden
Jickling B.	3	442	147.33	Canada
Ernst J.	3	202	67.33	US
Fletcher R.	3	153	51.00	Netherlands
Goldman D.	3	118	39.33	Israel
Dickinson E.	3	112	37.33	US
Bonnett M.	7	506	72.29	UK

Table 7. Top Ten Productive Countries (Source: Own editing and calculation)

Country	Number of Publications(P)	Citations(C)	C/P	Total Link Strength
United States	393	8349	21.24	60
United Kingdom	136	3933	28.92	49
Australia	124	2628	21.19	33
Canada	88	1789	20.33	25
Germany	75	2386	31.81	23
China	72	1176	16.33	27
Brazil	64	571	8.92	15
Turkey	60	449	7.48	5
Spain	56	761	13.59	25
Greece	41	473	11.54	7

Co-authorship research significantly contributes to the enhancement and enrichment of academic research endeavors within nations. By sharing their skills and experiences, such partnerships facilitate the generation of novel solutions to various difficulties and concerns (Montoya et al., 2018). The analysis of the international co-authorship network covered only nations with at least 20 total publications. Twenty-two nations out of a total of 120 met the requirements. Table 7 is a compilation of the 10 most productive countries, consisting of five European nations, three American nations, one Asian nation, and one Oceanian nation. The United States, the United Kingdom, and Australia are the top three nations. Regarding publications, The United States demonstrates a comparative advantage over a number of other nations in the area of NEE. Despite having a smaller total number of publications, Germany and the United Kingdom rank well in this category according to the C/P value.

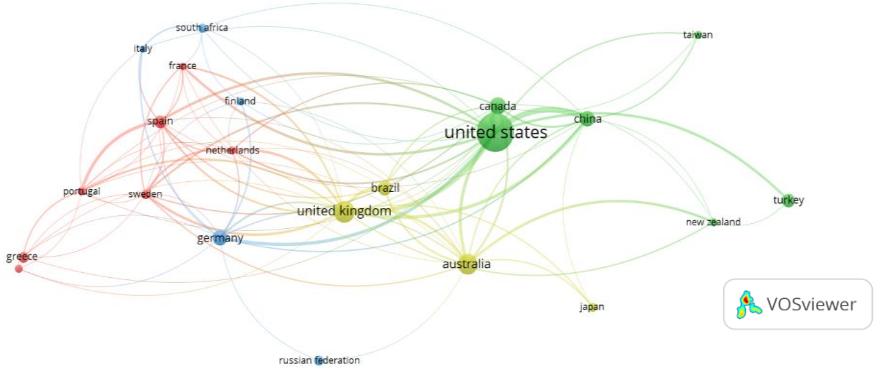


Figure 5. Co-Authorship analysis by countries. Source: own edition (Source: Own editing with VOSviewer)

Figure 5 illustrates the nationwide network. Utilizing clustering methods to categorize nations according to their co-authorship patterns may facilitate the identification of communities comprised of nations exhibiting comparable patterns of cooperation. The node's size increases proportionally with the number of articles produced inside a certain country, while the connections between nodes symbolize the degree of collaboration between two nations. A thicker line denotes a higher level of cooperation.

This network consists of 4 clusters and 91 links. A total of 197 link strength. The United States, the United Kingdom, Spain, and Germany each make substantial contributions to academic publications within their clusters. The United States, United Kingdom, and Australia have the highest overall link strengths among the 22 nations, with values of 60, 39, and 33 respectively. Consequently, these countries are characterized by robust interconnections. Besides, the United States, the United Kingdom, and China have a stronger collaborative links since the minimum link strength is no less than 6 between them. And, in terms of publications, the US, UK, Australia, Germany, and Canada rank top 5. However, the lack of extensive partnerships among authors and organizations prevented the possibility of co-authorship.

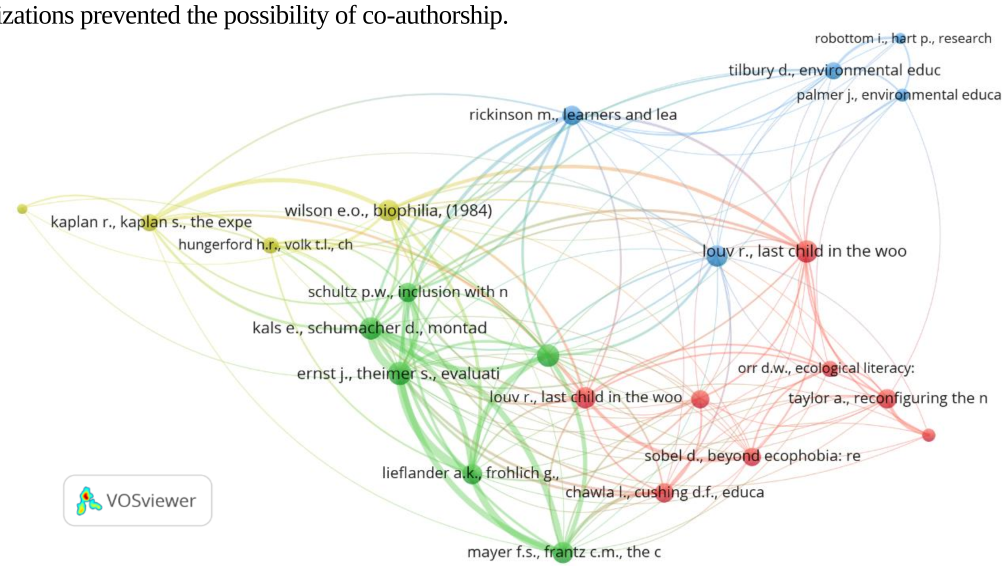


Figure 6. Co-cited reference (Source: Own editing with VOSviewer)

Co-citations

Co-citation occurs when two documents receive a citation from the same third document(Garfield, 1979). It measures how often two documents are cited together by other documents and is useful for grasping research trends and intellectual structure (Chen et al., 2001; White and Griffith, 1981).

A visualized bibliographic map is shown in Figure 6 consists of four main clusters resulting from the analysis of co-citation of references in NEE. All 60,792 citations were generated, and 23 of them met the minimal requirement of 14. Each node represents a single paper, and the connections between them show how those publications are related to one another. The overall connection strength increases as the circumference increases. The thicker the line, the closer the tie or proximity between articles.

Table 8 shows cluster 2(Green) has the most intellectual tie, receiving 293 link strength. It ranks second in the number of citations (137), given that both works involve striving for a better understanding of the concept and scope of the term "measure of feeling emotionally connected to nature". Followed by Cluster 1 (Red) with 167 total links cited 167 times. An important theme discussed in this cluster is the importance of childhood experiences in nature. Cluster 3(Blue) ranks third in terms of both links (88) and citations (93). Key topics deliberated in the cluster include the EE process, place-based approaches, and practices. Cluster 4 (yellow) focuses on EE behavior reports 86 links cited 79 times and ranks fourth. In addition, "Louv R., Last child in the woods: saving our children from nature-deficit disorder" appeared as highest link strength (64) followed by "Evaluating the effects of EE programming on connectedness to nature, EE research" and "Emotional affinity toward nature as a motivational basis to protect nature, environment and behavior", both have 59 and 56 link strength respectively.

Table 8. Overview of the four co-cited reference clusters (Source: Own editing and calculation)

Cluster	Cited Reference	Cita-tions	Total Link Strength
Cluster 1 (red)	Louv R., Last child in the woods: saving our children from nature-deficit disorder, (2005), (2008)	73	64
	Chawla L., Cushing D.F., Education for strategic environmental behavior, environmental education research, 13, 4, pp. 437-452, (2007)	15	26
	Taylor A., Reconfiguring the natures of childhood, (2013)	15	20
	Sobel D., Beyond ecophobia: reclaiming the heart in nature education, (1996)	15	17
	Chawla L., Life paths into effective environmental action, the journal of environmental education, 31,1,15-26, (1999)	18	16
	Orr D.W., Ecological literacy: education and the transition to a postmodern world, (1992)	17	13
	Barad K., Meeting the universe halfway: quantum physics and the entanglement of matter and meaning, (2007)	14	11
Cluster 2 (green)	Ernst J., Theimer S., Evaluating the effects of environmental education programming on connectedness to nature, environmental education research, 17, 5, pp. 577-598, (2011)	22	59
	Kals E., Schumacher D., Montada L., Emotional affinity toward nature as a motivational basis to protect nature, environment and behavior, 31, 2, pp. 178-202, (1999)	20	56
	Lieflander A.K., Frohlich G., Bogner F.X., Schultz P.W., Promoting connectedness with nature through environmental education, environmental education research, 19, 3, pp. 370-384, (2013)	20	52
	Mayer F.S., Frantz C.M., The connectedness to nature scale: a measure of individuals' feeling in community with nature, journal of environmental psychology, 24, 4, pp. 503-515, (2004)	17	46

	Lollmuss A., Agyeman J., Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior?, environmental education research, 8, 3, pp. 239-260, (2002)	39	43
	Schultz P.W., Inclusion with nature: the psychology of human-nature relations, psychology of sustainable development, pp. 61-78, (2002)	19	37
Cluster 3 (blue)	Rickinson M., Learners and learning in environmental education: a critical review of the evidence, environmental education research, 7, 3, pp. 207-320, (2001)	26	31
	Gruenewald D.A., The best of both worlds: a critical pedagogy of place, educational researcher, 32, 4, 3-12, (2003)	14	22
	Tilbury D., Environmental education for sustainability: defining the new focus of environmental education in the 1990s, environmental education research, 1, 2, pp. 195-212, (1995)	20	17
	Palmer J., Environmental education in the 21st century: theory, practice, progress and promise, (1998)	14	10
	Robottom I., Hart P., Research in environmental education: engaging the debate, (1993)	19	8
Cluster 4 yellow	Wilson E.O., Biophilia, (1984)	31	39
	Kaplan R., Kaplan S., The experience of nature: a psychological perspective, (1989)	16	24
	Hungerford H.R., Volk T.L., Changing learner behavior through environmental education, the journal of environmental education, 21, 3, pp. 8-21, (1990)	18	18
	Louv R., Last child in the woods, (2005)	14	5

DISCUSSION

Owing to the escalating global incidence of environmental crises and rapid urbanization, there has been a substantial and expeditious expansion of research in the domain of NEE. Nevertheless, the proliferation of scholarly papers pertaining to NEE has posed a considerable challenge for both academics and practitioners in attaining a comprehensive grasp of this subject matter. Therefore, drawing upon many research dimensions, this study presents a bibliometric analysis of research about NEE. The results for each of these categories are discussed as follows: NEE literature has seen a rising tide of publication since 2009, indicating growing interest in the field, which may be associated with a sequence of global environmental calamities (Ho et al., 2023). More significantly, the heightened rate of urbanization has given rise to an increasing disconnection between children and the natural environment, commonly referred to as nature-deficit disorder (Alvarez et al., 2022; Das et al., 2023). In light of the global concerns at hand, a considerable number of individuals within the academic, corporate, and governmental spheres see NEE as a potential avenue for addressing these societal issues (Sharma et al., 2023; Vieira et al., 2022).

NEE is a multidisciplinary area that incorporates elements from several disciplines (Ardoin et al., 2020b; Hens, 2004). According to an analysis of study topics by Scopus, the majority (65.39%) of current studies in the field of NEE fall into the categories of "Social Sciences" and "Environmental Science. "Furthermore, it is worth noting that a significant proportion, namely eight out of the top ten referenced publications, were centered on the field of behavioral psychology. Although there were references to information from many cross-disciplinary domains such as Agricultural and Biological Sciences, Energy, and Business, the frequencies of these references were rather low. This may be related to the inclusion of researchers from diverse academic fields in empirical projects introduces certain difficulties, such as effective communication across disciplinary and professional boundaries. Additionally, collaboration between researchers is infrequent in these cases (Hasan et al., 2023). However, scholars propose increased efforts to explore opportunities for addressing complex environmental issues by integrating various interdisciplinary theoretical and methodological approaches (Mattor et al., 2014).

Leveraging both keyword co-occurrence analysis and co-citation of references analysis, this study discerns hotspots, research trends, and thematic areas. The result of keywords shows that natural education-related terms appeared in all keyword clusters, such as “education attitudes”, “environmental knowledge”, “outdoor education”, “curriculum” and “sustainability”. This indicates that the main topics covered in NEE research are centred on enhancing nature sustainability through EE approaches. Conversely, only one cluster noted population, the keywords “children” just appeared one time, accounting for only 2.5 percent total.

Meanwhile, only one of four clusters of co-citation discussed the importance of childhood experiences in nature. None keywords or clusters mentioned adults, this may be related to the argument that age is closely related to the formation of environmental awareness and strengthening connectedness to nature is more sustainable before the age of 11 (Liefländer et al., 2013). A significant observation is that none of the top 20 most productive and highly cited authors come from developing countries. Meanwhile, co-authorship analysis indicates that international collaborations are predominantly concentrated in a select few European, American, Asian, and Oceanian countries. This may be related to the extent to which education focuses on sustainability issues (Zhang et al., 2022), educational inequality (Dietrichson et al., 2017), policies, and incomes (Ivanov and Zviagintsev, 2023). However, districts with little presence such as the Middle East and Africa are significant regions of NEE since they have gained global attention for their unique weather, natural and cultural resource abundance, and environmental vulnerability (Saud et al., 2023).In addition, according to keyword trends, connectedness to nature, nature education, outdoor education, and climate change have become concerns in recent years. Therefore, international cooperation should be strengthened to rationalize the development of regions that can provide educational resources for NEE.

CONCLUSION

To grasp the trends in research publication, subject areas, popular source titles, author keyword clusters, notable authors, co-authorship networks, and co-citation patterns, this study conducted bibliometric analyses on NEE research spanning from 1937 to October 16, 2023. By investigating the Scopus database for terms linked to NEE, the research performed all analyses using a dataset of 1553 documents using the VOSviewer program. Implications of the research are as following. This research is the first attempt to use bibliometric analysis as a means of offering a comprehensive overview of EE pertaining to natural occurrences. Findings provide quantitative data on fundamental knowledge, which may be employed to identify areas of research that need more investigation and to develop strategies for future research endeavors. Additionally, officials involved in EE may use the findings of this research to make better-informed decisions on resource allocation and spending priorities. Furthermore, the acquisition of knowledge from this research will contribute to the formulation of domestic and global approaches towards achieving sustainable development with NEE.

Some limitations exists in terms of the research. Firstly, because of variations in the bibliometric article samples, the bibliometric analysis may be constrained if it is based on combinations of search queries. Second, this study only considered the Scopus database. The inclusion of article samples from the Web of Sciences (WoS) database in conjunction with data extracted from many databases has the potential to enhance the comprehensiveness and depth of bibliometric studies in the future. Thirdly, the article sample was only selected from publications that were authored and published in the English language. It is encouraged to perform more inquiry into the global extent of English and non-English papers in this field to facilitate similar research endeavors. Finally, The VOSviewer program may provide inaccurate and convoluted results as a consequence of treating singular and plural variations of the same phrase as distinct words (e.g., "environmental attitudes" and "environmental attitude"). Hence, it would be advantageous for future studies to either enhance the existing VOSviewer program or include supplementary tools for network analysis and visualization. Additionally, this study demonstrates that the prevailing method for addressing NEE is by means of outdoor education, focusing on the cultivation of environmental literacy and nurturing a connection with nature. The primary target audience is primarily children, and the evaluation of EE is employed to advance sustainable development. Thus, future study directions might give more coping strategies at a time when mankind is facing an ecological crisis.

Author Contributions: Conceptualization, X. L.; methodology, X. L.; software, X L.; validation, X.L. and M.K.H. and M.S.B.M.; data curation, X.L.; writing - original draft preparation, X.L.; writing - review and editing, X.L.; visualization, X.L.; supervision, M.K.H. and M.S.B.M.; All authors have read and agreed to the published version of the manuscript.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: We would like to thank editor and reviewers for their constructive comments and feedback for the improvement this manuscript.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Allan, D.J. (1937). Nature, education and freedom according to Jean-Jacques Rousseau. *Philosophy*, *12*(46), 191–207. https://doi.org/10.1017/S0031819100010500

Alvarez, E.N., Garcia, A., & Le, P. (2022). A review of Nature Deficit Disorder (NDD) and its disproportionate impacts on Latinx populations. *Environmental Development*, *43*, 100732. https://doi.org/10.1016/j.envdev.2022.100732

An, D., & Ma, C. (2024). A Model of Factors Influencing Learning Outcomes Based on Artificial Intelligence: Perspectives of Chinese University Students. *Journal of Logistics, Informatics and Service Science*, *11*(1), 405–415. https://doi.org/10.33168/JLISS.2024.0126

Antunes, V., Gonçalves, G., & Estevão, C. (2022). (Re)thinking thermalism in europe from the strategic communication perspective: A theoretical reflection. *Geojournal of Tourism and Geosites*, *44*(4), 1200–1208. https://doi.org/10.30892/gtg.44403-935

Ardoin, N.M., & Bowers, A.W. (2020). Early childhood environmental education: A systematic review of the research literature. *Educational Research Review*, *31*, 100353. https://doi.org/10.1016/j.edurev.2020.100353

Ardoin, N.M., Bowers, A.W., & Gaillard, E. (2020a). Environmental education outcomes for conservation: A systematic review. *Biological Conservation*, *241*, 108224. https://doi.org/10.1016/j.biocon.2019.108224

Ardoin, N.M., Bowers, A.W., & Gaillard, E. (2020b). Environmental education outcomes for conservation: A systematic review. *Biological Conservation*, *241*(November 2019), 108224. https://doi.org/10.1016/j.biocon.2019.108224

Atikah, N., Pringgo Kusuma Dwi, N.Y.P., & Asep, K.S. (2022). The role of sea turtle conservation education for sustainable marine tourism based on bio-ecoregion (Case study in Bali, Indonesia). *GeoJournal of Tourism and Geosites*, *41*(2), 477–484. https://doi.org/10.30892/gtg.41219-853

Boarin, P., & Martinez-Molina, A. (2022). Integration of environmental sustainability considerations within architectural programmes in higher education: A review of teaching and implementation approaches. *Journal of Cleaner Production*, *342*, 130989. https://doi.org/10.1016/j.jclepro.2022.130989

Braun, T., & Dierkes, P. (2017). Connecting students to nature–how intensity of nature experience and student age influence the success of outdoor education programs. *Environmental Education Research*, *23*(7), 937–949. https://doi.org/10.1080/13504622.2016.1214866

Cambray, J.A. (2003). Impact on indigenous species biodiversity caused by the globalisation of alien recreational freshwater fisheries. *Hydrobiologia*, *500*(1–3), 217–230. https://doi.org/10.1023/A:1024648719995

Chawla, L., & Cushing, D.F. (2007). Education for strategic environmental behavior. *Environmental Education Research*, *13*(4), 437–452. https://doi.org/10.1080/13504620701581539

Chen, C., Paul, R.J., & O'Keefe, B. (2001). Fitting the jigsaw of citation: Information visualization in domain analysis. *Journal of the American Society for Information Science and Technology*, *52*(4), 315–330. https://doi.org/10.1002/1532-2890(2000)9999:9999<::AID-ASI1074>3.0.CO;2-2

Cheng, J. C.H., & Monroe, M.C. (2012). Connection to Nature. *Environment and Behavior*, *44*(1), 31–49. https://doi.org/10.1177/0013916510385082

Chu, E.W., & Karr, J.R. (2017). Environmental Impact: Concept, Consequences, Measurement. *Reference Module in Life Sciences*, 1–22. https://doi.org/10.1016/b978-0-12-809633-8.02380-3

Collado, S., Staats, H., & Corraliza, J.A. (2013). Experiencing nature in children's summer camps: Affective, cognitive and behavioural consequences. *Journal of Environmental Psychology*, *33*, 37–44. https://doi.org/10.1016/j.jenvp.2012.08.002

Dai, S., Duan, X., & Zhang, W. (2020). Knowledge map of environmental crisis management based on keywords network and co-word analysis, 2005–2018. *Journal of Cleaner Production*, *262*, 121168. https://doi.org/https://doi.org/10.1016/j.jclepro.2020.121168
Das, R.C., Chatterjee, T., & Ivaldi, E. (2023). Co-movements of income and urbanization through energy use and pollution: An investigation for world's leading polluting countries. *Ecological Indicators*, *153*, 110381. https://doi.org/10.1016/j.ecolind.2023.110381
Devictor, V., Whittaker, R.J., & Beltrame, C. (2010). Beyond scarcity: citizen science programmes as useful tools for conservation biogeography. *Diversity and Distributions*, *16*(3), 354–362. https://doi.org/10.1111/j.1472-4642.2009.00615.x
Díaz-López, C., Serrano-Jiménez, A., Chacartegui, R., Becerra-Villanueva, J.A., Molina-Huelva, M., & Barrios-Padura, Á. (2023). Sensitivity analysis of trends in environmental education in schools and its implications in the built environment. *Environmental Development*, *45*, 100795. https://doi.org/10.1016/j.envdev.2022.100795
Dietrichson, J., Bøg, M., Filges, T., & Klint Jørgensen, A.M. (2017). Academic interventions for elementary and middle school students with low socioeconomic status: A systematic review and meta-analysis. *Review of Educational Research*, *87*(2), 243–282. https://doi.org/10.3102/0034654316687036
Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W.M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, *133*, 285–296. https://doi.org/10.1016/j.jbusres.2021.04.070
Duerden, M.D., & Witt, P.A. (2010a). The impact of direct and indirect experiences on the development of environmental knowledge, attitudes, and behavior. *Journal of Environmental Psychology*, *30*(4), 379–392. https://doi.org/https://doi.org/10.1016/j.jenvp.2010.03.007
Duerden, M.D., & Witt, P.A. (2010b). The impact of direct and indirect experiences on the development of environmental knowledge, attitudes, and behavior. *Journal of Environmental Psychology*, *30*(4), 379–392. https://doi.org/10.1016/j.jenvp.2010.03.007
Ernst, J., & Theimer, S. (2011). Evaluating the effects of environmental education programming on connectedness to nature. *Environmental Education Research*, *17*(5), 577–598. https://doi.org/10.1080/13504622.2011.565119
França, L.C., de J., Júnior, F.W.A., Jarochinski e Silva, C.S., Monti, C.A.U., Ferreira, T.C., Santana, C.J., de O., & Gomide, L.R. (2022). Forest landscape planning and management: A state of the art review. *Trees, Forests and People*, *8*, 100275. https://doi.org/10.1016/j.tfp.2022.100275
Frantz, C.M.P., & Mayer, F.S. (2014). The importance of connection to nature in assessing environmental education programs. *Studies in Educational Evaluation*, *41*, 85–89. https://doi.org/10.1016/j.stueduc.2013.10.001
Gao, H., Ding, X.H., & Wu, S. (2020). Exploring the domain of open innovation: Bibliometric and content analyses. *Journal of Cleaner Production*, *275*, 122580. https://doi.org/10.1016/j.jclepro.2020.122580
Garfield, E. (1979). Is citation analysis a legitimate evaluation tool? *Scientometrics*, *1*, 359–375. https://doi.org/10.1007/BF02019306
Giusti, M., Svane, U., Raymond, C.M., & Beery, T.H. (2018). A framework to assess where and how children connect to nature. *Frontiers in Psychology*, *8*, 303174. https://doi.org/10.3389/fpsyg.2017.02283
Hall, B., & Clover, D. (1997). Nature as teacher in environmental adult popular education. *Futures*, *29*(8), 737–747. https://doi.org/10.1016/S0016-3287(97)00054-2
Hasan, M.N., Koksal, C., Montel, L., Le Gouais, A., Barnfield, A., Bates, G., & Kwon, H.R. (2023). Developing shared understanding through online interdisciplinary collaboration: Reflections from a research project on better integration of health outcomes in future urban development practice. *Futures*, *150*, 103176. https://doi.org/10.1016/j.futures.2023.103176
Hens, L. (2004). Concepts and trends in environmental education for sustainable development. *Studia Ecologiae et Bioethicae*, *2*(1), 561–573. https://doi.org/10.21697/seb.2004.2.1.33
Ho, T.L., Biondi, D., Batista, A.C., & Martini, A. (2023). Bibliometric review of the forest as a tool for environmental education. *Floresta*, *53*(2), 252–261. https://doi.org/10.5380/rf.v53 i2. 86838
Hojcska, Á.E., & Szabo, Z. (2021). Investigating natural treatment factors and inequalities of medicinal water institutions in the aspect of tourism in hungary. *Geojournal of Tourism and Geosites*, *36*(2), 555–562. https://doi.org/10.30892/GTG.362SPL01-683
Horlings, L.G., & Kanemasu, Y. (2015). Sustainable development and policies in rural regions; insights from the Shetland Islands. *Land Use Policy*, *49*, 310–321. https://doi.org/https://doi.org/10.1016/j.landusepol.2015.07.024
Huynh, C.B.D., Nguyen, A.H., Nguyen, T.H.T., & Le, A.H. (2023). Factors Affecting Students' Intention to Use Mobile Learning at Universities: An Empirical Study. *Journal of System and Management Sciences*, *13*(1), 281–304. https://doi.org/10.33168/JSMS.2023.0116
Inoue, M., Elliott, S., Mitsuhashi, M., & Kido, H. (2019). Nature-based early childhood activities as environmental education?: A review of Japanese and Australian perspectives. *Japanese Journal of Environmental Education*. 28(4), 4_21-28. https://doi.org/10.5647/jsoee.28.4_21
Ivanov, I., & Zviagintsev, R. (2023). Transformation of extracurricular education in post-Soviet countries: from universal access to inequality. *Children and Youth Services Review*, *155*, 107221. https://doi.org/https://doi.org/10.1016/j.childyouth.2023.107221
Ives, C.D., Abson, D.J., von Wehrden, H., Dorninger, C., Klaniecki, K., & Fischer, J. (2018). Reconnecting with nature for sustainability. *Sustainability Science*, *13*(5), 1389–1397. https://doi.org/10.1007/s11625-018-0542-9
Jickling, B., & Wals, A.E.J. (2008). Globalization and environmental education: Looking beyond sustainable development. *Journal of Curriculum Studies*, *40*(1), 1–21. https://doi.org/10.1080/00220270701684667
Kals, E., Schumacher, D., & Montada, L. (1999). Emotional affinity toward nature as a motivational basis to protect nature. *Environment and Behavior*, *31*(2), 178–202. https://doi.org/10.5647/jsoee.28.4_21
Karakus, M., Toprak, M., & Chen, J. (2024). Demystifying the impact of educational leadership on teachers' subjective well-being: A bibliometric analysis and literature review. *Educational Management Administration & Leadership*. https://doi.org/10.1177/17411432241242629
Krettenauer, T., Lefebvre, J.P., & Goddeeris, H. (2024). Pro-environmental behaviour, connectedness with nature, and the endorsement of pro-environmental norms in youth: Longitudinal relations. *Journal of Environmental Psychology*, *94*, 102256. https://doi.org/10.1016/j.jenvp.2024.102256
Kuo, M., Barnes, M., & Jordan, C. (2019). Do experiences with nature promote learning? Converging evidence of a cause-and-effect relationship. *Frontiers in Psychology*, *10*, 423551. https://doi.org/10.3389/fpsyg.2019.00305
Liefländer, A.K., Fröhlich, G., Bogner, F.X., & Schultz, P.W. (2013). Promoting connectedness with nature through environmental education. *Environmental Education Research*, *19*(3), 370–384. https://doi.org/10.1080/13504622.2012.697545
Liu, J., & Green, R.J. (2023). The effect of exposure to nature on children's psychological well-being: A systematic review of the literature. *Urban Forestry and Urban Greening*, *81*, 127846. https://doi.org/10.1016/j.ufug.2023.127846
Madeley, J. (1992). The United Nations Conference on Environment and Development (UNCED). *Land Use Policy*, *9*(4), 300–302. https://doi.org/10.1016/0264-8377(92)90006-I
Manongga, D., & Suharti, L. (2022). The Influence of Technology Support, Digital Literacy, Culture Intelligence, and Leadership on Virtual Collaboration in University Settings. *Journal of System and Management Sciences*, *12*(4), 324–346. https://doi.org/10.33168/JSMS.2022.0420
Mastrángelo, M.E., Pérez-Harguindeguy, N., Enrico, L., Bennett, E., et al. (2019). Key knowledge gaps to achieve global sustainability goals. *Nature Sustainability*, *2*(12), 1115–1121. https://doi.org/10.1038/s41893-019-0412-1
Mattor, K., Betsill, M., Huayhuaca, C., Huber-Stearns, H.,et al. (2014). Transdisciplinary research on environmental governance: A view from the inside. *Environmental Science and Policy*, *42*, 90–100. https://doi.org/10.1016/j.envsci.2014.06.002

Mayer, F.S., & Frantz, C.M. (2004). The connectedness to nature scale: A measure of individuals' feeling in community with nature. *Journal of Environmental Psychology*, *24*(4), 503–515. https://doi.org/https://doi.org/10.1016/j.jenvp.2004.10.001

Montoya, F.G., Alcayde, A., Baños, R., & Manzano-Agugliaro, F. (2018). A fast method for identifying worldwide scientific collaborations using the Scopus database. *Telematics and Informatics*, *35*(1), 168–185. https://doi.org/10.1016/j.tele.2017.10.010

Ng, S.T., Leung, A.K.Y., & Chan, S.H.M. (2023). Through the lens of a naturalist: How learning about nature promotes nature connectedness via awe. *Journal of Environmental Psychology*, *92*, 102069. https://doi.org/10.1016/j.jenvp.2023.102069

Nisbet, E.K., Zelenski, J.M., & Murphy, S.A. (2009). The nature relatedness scale: Linking individuals' connection with nature to environmental concern and behavior. *Environment and Behavior*, *41*(5), 715–740. https://doi.org/10.1177/0013916508318748

Nisbet, E.K., Zelenski, J.M., & Murphy, S.A. (2011). Happiness is in our Nature: Exploring Nature Relatedness as a Contributor to Subjective Well-Being. *Journal of Happiness Studies*, *12*(2), 303–322. https://doi.org/10.1007/s10902-010-9197-7

Otto, S., & Pensini, P. (2017). Nature-based environmental education of children: Environmental knowledge and connectedness to nature, together, are related to ecological behaviour. *Global Environmental Change*, *47*, 88–94. https://doi.org/10.1016/j.gloenvcha.2017.09.009

Perianes-Rodriguez, A., Waltman, L., & van Eck, N.J. (2016). Constructing bibliometric networks: A comparison between full and fractional counting. *Journal of Informetrics*, *10*(4), 1178–1195. https://doi.org/10.1016/j.joi.2016.10.006

Ramayah, T., Lee, J.W.C., & Lim, S. (2012). Sustaining the environment through recycling: An empirical study. *Journal of Environmental Management*, *102*, 141–147. https://doi.org/10.1016/j.jenvman.2012.02.025

Rosário, A.T., & Raimundo, R. (2024). Sustainable Entrepreneurship Education: A Systematic Bibliometric Literature Review. *Sustainability*, *16*(2), 784. https://doi.org/10.3390/su16020784

Sadler, T.D., Chambers, F.W., & Zeidler, D.L. (2004). Student conceptualizations of the nature of science in response to a socioscientific issue. *International Journal of Science Education*, *26*(4), 387–409. https://doi.org/10.1080/0950069032000119456

Sato, M., & Kitamura, Y. (2023). Current status of climate change education and suggestions for its integrative development in Japan. *IATSS Research*, *47*(2), 263–269. https://doi.org/10.1016/j.iatssr.2023.04.002

Saud, S., Haseeb, A., Zafar, M.W., & Li, H. (2023). Articulating natural resource abundance, economic complexity, education and environmental sustainability in MENA countries: Evidence from advanced panel estimation. *Resources Policy*, *80*, 103261. https://doi.org/https://doi.org/10.1016/j.resourpol.2022.103261

Sauvé, L. (1996). Environmental Education and Sustainable Development: A Further Appraisal. *Canadian Journal of Environmental Education (CJEE)*, *1*, 7–34.

Schultz, P.W., & Tabanico, J. (2007). Self, Identity, and the Natural Environment: Exploring Implicit Connections With Nature 1. *Journal of Applied Social Psychology*, *37*(6), 1219–1247. https://doi.org/10.1111/j.1559-1816.2007.00210.x

Şekercioĝlu, Ç.H. (2012). Promoting community-based bird monitoring in the tropics: Conservation, research, environmental education, capacity-building, and local incomes. *Biological Conservation*, *151*(1), 69–73. https://doi.org/10.1016/j.biocon.2011.10.024

Sellmann, D., & Bogner, F.X. (2013). Effects of a 1-day environmental education intervention on environmental attitudes and connectedness with nature. *European Journal of Psychology of Education*, *28*(3), 1077–1086. https://doi.org/10.1007/s10212-012-0155-0

Sharma, N., Paço, A., & Upadhyay, D. (2023). Option or necessity: Role of environmental education as transformative change agent. *Evaluation and Program Planning*, *97*, 102244. https://doi.org/https://doi.org/10.1016/j.evalprogplan.2023.102244

Stern, M.J., Powell, R.B., & Ardoin, N.M. (2008). What difference does it make? Assessing outcomes from participation in a residential environmental education program. *Journal of Environmental Education*, *39*(4), 31–43. https://doi.org/10.3200/JOEE.39.4.31-43

Tamblyn, A., Sun, Y., May, T., Evangelou, M., Godsman, N., Blewitt, C., & Skouteris, H. (2023). How do physical or sensory early childhood education and care environment factors affect children's social and emotional development? A systematic scoping review. *Educational Research Review*, *41*, 100555. https://doi.org/10.1016/j.edurev.2023.100555

Tiago, P., Leal, A.I., Rosário, I.T., & Chozas, S. (2024). Discovering urban nature: citizen science and biodiversity on a university campus. *Urban Ecosystems*. 1-13. https://doi.org/10.1007/s11252-024-01526-0

Tian, Y., Jin, Y., Zhao, Y., Du, Y., Shen, S., & An, J. (2024). Analysis of Knowledge Graph: Hotspots and Future Trends in Environmental Education Research. *Sustainability*, *16*(6), 2378. https://doi.org/10.3390/su16062378

Tienhaara, K. (2010). A tale of two crises: what the global financial crisis means for the global environmental crisis. *Environmental Policy and Governance*, *20*(3), 197–208. https://doi.org/10.1002/eet.537

Tilbury, D. (1995). Environmental Education for Sustainability: defining the new focus of environmental education in the 1990s. *Environmental Education Research*, *1*(2), 195–212. https://doi.org/10.1080/1350462950010206

Tregidga, H., & Laine, M. (2022). On crisis and emergency: Is it time to rethink long-term environmental accounting? *Critical Perspectives on Accounting*, *82*, 102311. https://doi.org/https://doi.org/10.1016/j.cpa.2021.102311

UNESCO. (1978). *Intergovernmental Conference on Environmental Education, Tbilisi, USSR, 14-26 October 1977: final report*.

Van Eck, N.J., & Waltman, L. (2014). Visualizing Bibliometric Networks. In Y. Ding, R. Rousseau, & D. Wolfram (Eds.), *Measuring Scholarly Impact*. Springer, Amsterdam, 285-320. https://doi.org/10.1007/978-3-319-10377-8_13

Varela-Candamio, L., Novo-Corti, I., & García-Álvarez, M.T. (2018). The importance of environmental education in the determinants of green behavior: A meta-analysis approach. *Journal of Cleaner Production*, *170*, 1565–1578. https://doi.org/10.1016/j.jclepro.2017.09.214

Vieira, C.L.Z., Rumenos, N.N., Gheler-Costa, et al. (2022). Environmental education in urban cities: Planet regeneration through ecologically educating children and communities. *International Journal of Educational Research Open*, *3*, 100208. https://doi.org/10.1016/j.ijedro.2022.100208

Wahyuningrum, I.F.S., Humaira, N.G., Budihardjo, M.A., et al. (2023). Environmental sustainability disclosure in Asian countries: Bibliometric and content analysis. *Journal of Cleaner Production*, *411*, 137195. https://doi.org/10.1016/j.jclepro.2023.137195

Whitburn, J., Abrahamse, W., & Linklater, W. (2023). Do environmental education fieldtrips strengthen children's connection to nature and promote environmental behaviour or wellbeing? *Current Research in Ecological and Social Psychology*, *5*, 100163. https://doi.org/10.1016/j.cresp.2023.100163

White, H.D., & Griffith, B.C. (1981). Author cocitation: A literature measure of intellectual structure. *Journal of the American Society for Information Science*, *32*(3), 163–171. https://doi.org/10.1002/asi.4630320302

Yuan, B., & Basha, N.K. (2023). A Bibliometric Analysis of Smart Home Acceptance by the Elderly (2004-2023). *International Journal of Advanced Computer Science and Applications*, *14*(9). https://doi.org/10.14569/IJACSA.2023.0140911

Zhang, C., Khan, I., Dagar, V., Saeed, A., & Zafar, M.W. (2022). Environmental impact of information and communication technology: Unveiling the role of education in developing countries. *Technological Forecasting and Social Change*, *178*, 121570. https://doi.org/https://doi.org/10.1016/j.techfore.2022.121570

Zwierzchowska, I., & Lupa, P. (2021). Providing contact with nature for young generation - A case study of preschools in the City of Poznań, Poland. *Urban Forestry & Urban Greening*, *65*, 127346. https://doi.org/https://doi.org/10.1016/j.ufug.2021.127346

Article history: Received: 06.03.2024 Revised: 05.06.2024 Accepted: 24.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.941-952
DOI 10.30892/gtg.542spl18-1269

EXPLORING HOW SUSTAINABLE DESTINATION PREFERENCE MEDIATES THE EFFECTS OF TOURISTS' MOTIVATION ON SATISFACTION

Hussein Gibreel MUSA*
University of Khartoum, Universitas Muhammadiyah Yogyakarta, and University of Geneina, Faculty of Communication Science, El Geneina, Sudan, e-mail: husseinmusa@umy.ac.id

Indah FATMAWATI
Universitas Muhammadiyah Yogyakarta, Management Doctoral Program, Yogyakarta, Indonesia, e-mail: indahfatmawati@umy.ac.id

NURYAKIN
Universitas Muhammadiyah Yogyakarta, Management Doctoral Program, Yogyakarta, Indonesia, e-mail: nuryakin@umy.ac.id

M. SUYANTO
Universitas Muhammadiyah Yogyakarta, Management Doctoral Program, Yogyakarta, Indonesia, e-mail: yanto@amikom.ac.id.

Citation: Musa, H.G., Fatmawati, I., Nuryakin, N., & Suyanto, M. (2024). EXPLORING HOW SUSTAINABLE DESTINATION PREFERENCE MEDIATES THE EFFECTS OF TOURISTS' MOTIVATION ON SATISFACTION. *Geojournal of Tourism and Geosites*, 54(2spl), 941–952. https://doi.org/10.30892/gtg.542spl18-1269

Abstract: This study investigates the effect of Sustainable Destination Preference (SDP) on the relationship between escapism motivation, affordability perception, and tourist satisfaction at UNESCO World Heritage Sites in Indonesia. A survey was conducted on 228 international tourists, and analyzed through Confirmatory Factor Analysis and Structural Equation Modeling. SDP significantly mediates the relationship between escapism motivation and tourist satisfaction, while affordability perception directly impacts tourist satisfaction but not SDP. The Sobel test validates SDP's mediating role. The findings underscore the importance of sustainability in enhancing tourist experiences, suggesting that tourists value both ethical and environmental aspects of travel, beyond just cost.

Keywords: Sustainable Destination Preference, Escapism Motivation, Affordability Perception, Tourist Satisfaction

* * * * * *

INTRODUCTION

In the contemporary global landscape, tourism stands as a pillar of cultural exchange and economic vitality. The allure of traversing new geographies, encountering diverse cultures, and collecting unique experiences has positioned tourism as a key player in the narrative of human curiosity and adventure (Stupariu et al., 2023). As the United Nations World Tourism Organization (UNWTO) underscores, tourism not only sparks economic growth but also encapsulates the social values of hospitality and mutual understanding. At its essence, tourism is the embodiment of exploration, the pursuit of leisure, and the satisfaction of our intrinsic wanderlust (Duc et al., 2022). However, the flourishing of this sector brings forth an imperative dialogue on sustainability. Sustainable tourism, as defined by the UNWTO, is a conscientious approach that takes full account of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities (Dwyer, 2023). It seeks to negotiate the delicate balance between satisfying human desire for exploration and preserving the integrity of natural and cultural environments. The sustainability of tourism destinations is not a mere amenity but a fundamental criterion for discerning travelers, increasingly aware of their ecological footprints and the longevity of the places they visit (Chakraborty, 2021; Duc et al., 2022).

Within this broader context, Sustainable Destination Preference (SDP) emerges as a crucial construct, highlighting the propensity of tourists to favor destinations that demonstrate environmental stewardship, cultural sensitivity, and socioeconomic responsibility (Grandi, 2023). As tourists navigate their travel options, they are often driven by a complex interplay of motivations. Among these, escapism the psychological desire to break away from the mundane or stressful aspects of daily life remains a potent force. Whether it is the tranquility of a secluded beach or the thrill of a bustling cityscape, the motivation to escape is a powerful determinant of destination choice (Kelly, 2022). Affordability perception also plays a pivotal role in this decision-making matrix. Tourists' perceptions of a destination's affordability can significantly influence their satisfaction and subsequent loyalty (Amissah et al., 2022; Bogale and Wondirad, 2019; Ramesh and Jaunky, 2021). While the search for cost-effective experiences is not new, what has evolved is the integration of affordability with sustainability, as travelers seek value not only in monetary terms but also in the ethical and environmental quality of their travel experiences (Rogerson and Rogerson, 2020). This research seeks to address a significant gap in the empirical understanding of how escapism motivations, affordability perception, and Sustainable

* Corresponding author

Destination Preference (SDP) coalesce to impact tourist satisfaction, particularly in culturally and environmentally rich heritage sites. Existing literature, while extensive, frequently glosses over the nuanced interdependencies that link tourists' motivations for escapism with their perceptions of value and the sustainable attributes of their chosen destinations.

Studies such as those by Dwyer et al. (2009) and Seeler et al. (2021) suggest that escapism is a significant determinant of destination preference, yet they do not fully capture the mediation effects of SDP, which is critical for aligning tourists' experiences with sustainable outcomes. Similarly, affordability's role in influencing tourist satisfaction is well-documented Kim and Thapa (2018); and Seo et al. (2023), but its complex relationship with sustainability preferences remain underexplored, Therefore the study objectives are fourfold: 1) to delineate the relationship between escapism motivations and SDP at these temple sites, 2) to assess how perceptions of affordability affect tourist dynamics within this context, 3) to explore SDP's mediating influence on the interconnections between escapism motivations, affordability perceptions, and tourist satisfaction, and 4) to provide pragmatic insights that promote sustainable tourism practices. This investigation will enrich the understanding of tourist behavior, advance discussions on sustainable tourism, and offer evidence-based strategies to safeguard the heritage and appeal of significant cultural landmarks.

MATERIALS AND METHODS

Literature Review

Escapism Motivation and Sustainable Destination Preference

In the exploration of the interplay between escapism motivation and sustainable destination preference (SDP), a wealth of empirical studies offers nuanced insights into how modern tourists' desires for detachment and meaningful experiences influence their attraction to sustainable travel destinations. This burgeoning field of research reveals a sophisticated relationship that not only underscores the evolving nature of tourist motivations but also highlights the increasing importance of sustainability in the global tourism landscape. One pivotal study by Orru et al. (2019) and Rehman et al. (2023) examined the motivations behind tourists' preferences for eco-friendly destinations, finding that escapism played a significant role in driving interest toward locations that offered immersive natural experiences alongside sustainable practices. Rehman et al. (2023) research suggested that the psychological need for escape could be effectively met by destinations that prioritize environmental conservation, thereby aligning tourists' desires for both novelty and sustainability. Further, in a study focusing on the role of cultural experiences in sustainable tourism, Kim et al. (2021) and Streimikiene et al. (2021) discovered that tourists seeking cultural escapism were particularly drawn to destinations that preserved and promoted their heritage in sustainable ways. This preference was linked to the desire for authentic experiences that provide a deeper understanding of the destination's cultural context, emphasizing the importance of integrating sustainability into cultural tourism practices.

Moreover, the relationship between escapism and SDP has been elaborated in the context of urban tourism by Zhou et al. (2024) and Gajić et al. (2023), who identified a growing trend among city travelers toward selecting destinations that offer sustainable urban experiences (Zhou et al., 2024). Their study highlighted how escapism motivations extend beyond natural and cultural settings to include urban environments where sustainability practices contribute to the attractiveness of the city as a travel destination. Additionally, research by Mauricio et al. (2022) and Wu et al. (2022) on the mediating role of sustainability in adventure, tourism revealed that tourists engaging in escapism through adventure activities showed a strong preference for destinations that demonstrated environmental stewardship and responsible tourism practices. This finding illustrates the broad applicability of the escapism-SDP relationship across various tourism sectors, from cultural and natural to adventure tourism. This empirical evidence collectively emphasizes the critical role of escapism in shaping sustainable destination preferences among modern tourists.

H1: There is a positive relationship between escapism motivation and tourists' Sustainable Destination Preference.

Affordability Perception and Sustainable Destination Preference

The relationship between affordability perception and sustainable destination preference (SDP) is a complex and multifaceted area of inquiry within the realm of tourism research. This intersection explores how tourists' perceptions of cost and value influence their inclination toward destinations that prioritize sustainability. A series of empirical studies have shed light on this dynamic, revealing the nuanced ways in which economic considerations interact with environmental and social values in the context of travel decision-making. One key study by Chin et al. (2018) and Mikulić et al. (2021) explored the influence of perceived affordability on tourists' destination choices, highlighting that while cost is a significant factor, it does not necessarily deter interest in sustainable destinations. Instead, Hall (2021) found that many tourists are willing to pay a premium for experiences that align with their environmental and ethical values, suggesting that the perception of value plays a crucial role in reconciling affordability with sustainability preferences.

Further expanding on this notion, Saayman and Saayman (2017) MacKenzie and Gannon (2019) investigated the concept of value for money in the context of sustainable tourism. Their research indicated that tourists often perceive sustainable destinations as offering higher intrinsic value, due to the quality of the experience and the positive impact of their travel choices. This perception of enhanced value, they argue, can offset concerns about higher costs, thereby influencing tourists to favor sustainable destinations despite potential price premiums.

Moreover, in a study focusing on eco-tourism, Mazhenova et al. (2016) examined how affordability perceptions affect tourists' willingness to engage in environmentally responsible travel behaviors. They found that clear communication about the benefits of sustainable practices and how they contribute to the overall travel experience can significantly alter perceptions of affordability, making tourists more likely to choose eco-friendly options even when they are perceived as more expensive. Additionally, a recent study by Papagiannakis et al. (2018) and Kóródi et al. (2020) delved into the impact of socioeconomic factors on sustainable travel choices, revealing that affordability perception varies widely among different demographic groups. Their findings suggest that while some tourists view sustainability as a luxury they cannot afford, others see it as a priority worth investing in, highlighting the importance of targeted marketing and pricing strategies to appeal to a broad spectrum of travelers. These studies collectively illustrate that the perception of affordability is a critical factor in shaping tourists' preferences for sustainable destinations. They underscore the complexity of tourist decision-making, where economic considerations are weighed against the perceived value of sustainability attributes. This body of research contributes valuable insights for destination marketers and policymakers aiming to enhance the appeal of sustainable tourism offerings, suggesting that emphasizing the value and benefits of sustainable practices can mitigate concerns about cost and encourage broader engagement with sustainable travel options.

H2: There is a positive relationship between Affordability perception and tourists' Sustainable Destination Preference.

Escapism Motivation and Tourist Satisfaction

The connection between escapism motivation and tourist satisfaction is a pivotal aspect of tourism research, reflecting the intricate ways in which the psychological desire for escape influences the overall travel experience. Empirical evidence from various studies illustrates how escapism not only drives destination choice but also significantly impacts tourists' satisfaction levels. These studies delve into the nuances of escapism as a motivational factor, revealing its capacity to enhance the quality of the tourist experience and, consequently, satisfaction. A landmark study by Irimiás et al. (2021) established a foundational link between escapism and tourist satisfaction, arguing that the fulfillment Prebensen et al. (2010) of escapism desires is a key determinant of a positive travel experience. Their research demonstrated that destinations offering opportunities for detachment from everyday life and immersion in new experiences tend to elicit higher levels of satisfaction among tourists, underlining the importance of catering to escapism motivations in destination development and marketing. Building on this premise, Triantafillidou and Petala (2016) and Jin et al. (2019) explored the role of escapism in adventure tourism, finding that the thrill and novelty associated with adventure activities significantly contribute to overall satisfaction.

Various studies have delved into the dynamics of push and pull factors, uncovering their critical roles in shaping tourist preferences and behaviors. Suhartanto et al. (2020) highlighted the importance of experience quality, perceived value, satisfaction, and motivation in fostering tourist loyalty towards creative attractions, emphasizing that these elements are fundamental determinants of loyalty. Similarly, Fayed et al. (2016) established that tourists' motivations and perceptions significantly impact their satisfaction, willingness to return, and loyalty. Wang and Leou (2015) further contributed to this understanding by identifying three dimensions of perceived value in cultural and heritage tourism scenic, knowledge, and social value as essential predictors of destination loyalty. Leong et al. (2015) underscored the necessity of a comprehensive analysis of travel motives, demonstrating that a holistic view of push and pull motives more accurately predicts future visitation intentions. Acharya and Lilly (2021) explored the impact of these motivations on consumer satisfaction and loyalty towards agricultural fairs, affirming the pivotal role of push and pull factors in shaping visitor experiences and loyalty.

Contrasting perspectives, however, emerge in the work of Ermawati and Prihandono (2018), who found that while destination image, push motivation, and tourist satisfaction directly influence loyalty, pull motivation does not have a direct effect on loyalty. This finding is nuanced by the mediating role of tourist satisfaction in the relationship between destination image, push and pull motivations, and loyalty. Arissaputra and Sentika (2022) discovered that while pull motivations affected the loyalty of Jabodetabek tourists, push motivations did not. This debate is further complicated by Seyitoğlu and Davras (2021) and Carvache et al. (2022), who argue that the direct impact of push motivations, including escape, on tourist satisfaction and loyalty is minimal, and that motivations such as novelty and escape are not significant predictors of the intention to return and recommend a destination.

Their study highlighted that the extent to which tourists can achieve a sense of escape and adventure directly correlates with their satisfaction levels, emphasizing escapism as a crucial component of the adventure tourism experience. Further, in a comparative analysis of urban and rural destinations, Ponsignon et al. (2021) examined how escapism motivations influence tourist satisfaction in different settings. Their findings revealed that while escapism motivations are prevalent in both urban and rural contexts, the nature of the escapism sought by tourists and consequently their satisfaction varies significantly. In urban destinations, escapism related to cultural and entertainment experiences led to satisfaction, whereas in rural settings, the connection with nature and tranquility was the key driver of satisfaction.

H3: There is a positive relationship between escapism motivation and tourist satisfaction

Affordability perception and Tourist Satisfaction

The relationship between affordability perception and tourist satisfaction is a critical area of investigation within tourism research, illuminating how tourists' perceptions of value and cost influence their overall satisfaction with their travel experiences. This relationship is nuanced, as satisfaction does not solely hinge on low costs but on the perceived value received from the travel experience. Empirical studies in this domain have shed light on the complexity of how affordability perceptions affect satisfaction, indicating that tourists evaluate their satisfaction not just in terms of monetary expense but through the lens of value for money, quality of experience, and alignment with personal values and expectations.

A study by Huang (2023) Muskat et al. (2019) explored the direct impact of perceived affordability on tourist satisfaction in the context of budget travel. Their findings indicated that while affordability is a significant factor, overall satisfaction is more deeply influenced by the perceived value of the quality of services and experiences received relative to the cost. This suggests that tourists are seeking not just low-cost options but also those that offer a meaningful return on investment, highlighting the importance of perceived value in the satisfaction equation. Further research by Hung et al.

(2021) Lo and Yeung (2020) delved into the luxury segment of the tourism market, revealing that even among tourists who are less sensitive to costs, the perception of affordability in terms of fairness and value for money plays a crucial role in determining satisfaction. This study underscores that satisfaction stems from a complex evaluation of cost, value, and personal fulfillment across different market segments. Moreover, in a comparative analysis focusing on eco-tourism, Hao et al. (2014); Muskat et al. (2019) examined how affordability perceptions impact satisfaction with sustainable tourism experiences. They found that tourists who perceive eco-tourism experiences as affordable, considering the environmental and social benefits these offer, report higher levels of satisfaction. This relationship highlights the role of ethical and environmental considerations in shaping perceptions of value and satisfaction.

H4: There is a positive relationship between Affordability perception and tourist satisfaction

Sustainable Destination Preference and Tourist Satisfaction

The linkage between Sustainable Destination Preference (SDP) and tourist satisfaction is a burgeoning area of inquiry within the field of tourism studies, emphasizing how preferences for sustainable travel options impact the overall satisfaction of tourists. This relationship is pivotal in understanding the dynamics of contemporary tourism, where an increasing number of travelers prioritize environmental conservation, social responsibility, and economic sustainability in their destination choices. Empirical evidence from various studies underscores the complexity of this relationship, revealing that sustainable practices not only influence destination choice but also play a crucial role in shaping tourist satisfaction. A seminal study by Grilli et al. (2021) examined tourists' preferences for sustainable destinations and their subsequent satisfaction levels, revealing a positive correlation between the two. The study found that tourists who chose destinations known for their sustainable practices reported higher levels of satisfaction, attributing this to the quality of the environment, the authenticity of the cultural experiences, and the perception of contributing positively to the host community. This research highlights the importance of sustainability in enhancing the overall travel experience, suggesting that SDP can be a significant predictor of tourist satisfaction. Further exploring this relationship, Kokkhangplu et al. (2023) focused on the role of eco-friendly accommodation in tourist satisfaction. Their study demonstrated that tourists who prioritize sustainability in their accommodation choices tend to report higher satisfaction levels with their stay, driven by the alignment of their values with the operational practices of the accommodations. This alignment, they argue, enhances the perceived value of the experience, thereby increasing satisfaction.

In a more recent study, Asmelash and Kumar (2019) investigated the impact of sustainable practices at cultural heritage sites on tourist satisfaction. Their findings indicate that sustainable management practices that preserve the site's integrity while facilitating tourist engagement led to higher satisfaction levels among visitors. This satisfaction stems from the enhanced quality of the experience and the knowledge that their visit contributes to the conservation of the site, reinforcing the link between SDP and satisfaction. Moreover, an analysis by Font et al. (2023); Huete et al. (2019) across several sustainable destinations highlighted the role of sustainable tourism certifications in shaping tourist satisfaction. They found that destinations with recognized sustainability certifications often meet or exceed tourists' expectations, resulting in higher satisfaction levels. This effect is attributed to the trust and credibility that certifications confer, assuring tourists of the destination's commitment to sustainability.

H5: There is a positive relationship between Sustainable Destination Preference and tourist satisfaction

Sustainable Destination Preference as Mediator

The exploration of Sustainable Destination Preference (SDP) as a mediator in the relationship between escapism motivations, affordability perception, and tourist satisfaction offers a nuanced understanding of how these interconnected factors influence the tourism experience. This mediation analysis is crucial for comprehensively understanding the dynamics at play in tourist behavior and satisfaction, especially in the context of the growing importance of sustainability in the travel industry. Empirical studies in this area reveal the complex ways in which SDP can serve as a bridge, transforming initial motivations and perceptions into lasting satisfaction. Escapism motivations, characterized by the desire to seek relief from daily stress or routine through travel, significantly influence destination choice. Tourists driven by escapism often seek unique and immersive experiences, which sustainable destinations uniquely provide through their emphasis on authentic cultural encounters, environmental conservation, and community engagement. A study by Font et al. (2023) found that tourists' escapism motivations positively correlate with their preference for sustainable destinations, as these locations offer the meaningful and distinct experiences they seek. SDP, in this context, mediates the relationship by translating the desire for escapism into a preference for destinations that can fulfill this desire sustainably, ultimately enhancing tourist satisfaction. Affordability perception plays a pivotal role in destination choice and satisfaction.

It encompasses tourists' evaluations of the cost-value ratio of their travel experiences. The perception of a destination as affordable yet offering high value, particularly in terms of sustainable practices can significantly influence satisfaction. The work of Monaco and Sacchi (2023) illustrates that tourists' perceptions of affordability are intricately linked to their sustainability preferences. Sustainable destinations often provide not just environmental benefits but also cultural richness and social value, which can enhance the perceived value of the travel experience. SDP mediates this relationship by aligning tourists' cost-value considerations with sustainable offerings, thereby impacting their overall satisfaction.

H6: There is a positive relationship between escapism motivations and tourist satisfaction, mediated by Sustainable Destination Preference (SDP).

H7: There is a positive relationship between affordability perception and tourist satisfaction, mediated by Sustainable Destination Preference (SDP).

RESEARCH DESIGN AND MEASURES

Figure 1 illustrates that this study utilized a quantitative research design to investigate the proposed relationships between escapism motivations, affordability perception, SDP, and tourist satisfaction.

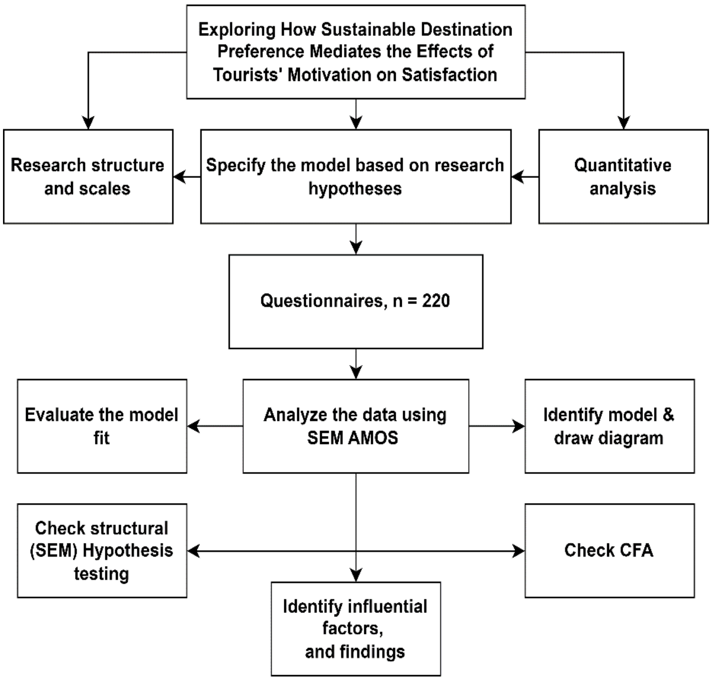


Figure 1. Methodology flowchart (Source: Authors, 2024)

The constructs were operationalized using multiple items on a 7-point Likert-type scale, with the following specifics as demonstrated in Figure 2 Escapism Motivation: Measured by 6 items, divided into 2 items each for Desire for Novelty, breaking a Routine, and Need for Relaxation, based on (Fodness, 1994; Frochot and Lenglet, 2023). Affordability Perception: Assessed through 6 items, comprising 2 items for transportation costs, 2 for accommodation charges, and 2 for entrance fees, following (Merciu et al., 2021; Kamau et al., 2015). Sustainable Destination Preference (SDP): Evaluated via 6 items across 3 dimensions: Sustainable Transportation Use, Eco-Friendly Accommodation, and Cultural Heritage Preservation, with 2 items each (Herbold et al., 2020). Tourist Satisfaction: Measured using 6 items focusing on Overall Satisfaction, Comparison with Expectations, and Comparison with Ideal, as suggested by (Hui et al., 2007). Face validity of the questionnaire and indicators was established through feedback from four tourism and management scholars based on Focus Group Discussions (FGD), confirming the appropriateness of the developed model.

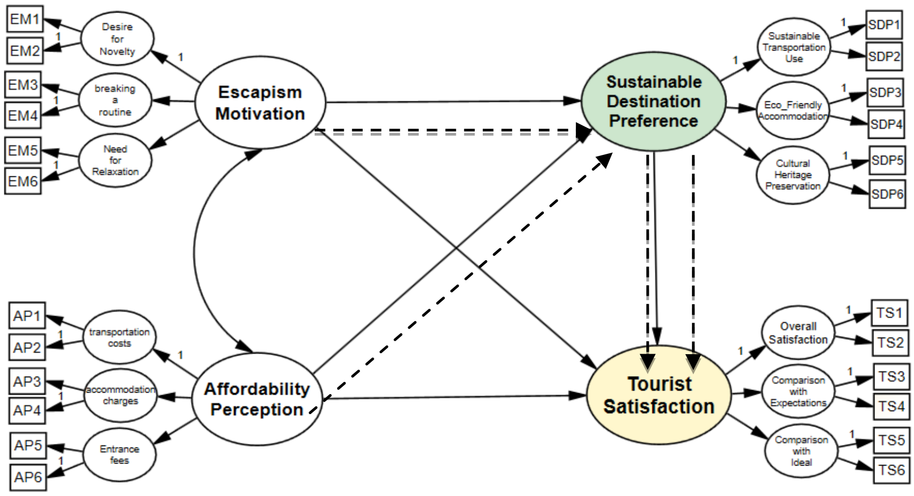


Figure 2. Research Model (Source: Developed by authors, 2024)

Sample and Data Collection

Data were collected from international tourists at the Borobudur and Prambanan temple destinations using a structured questionnaire distributed via Google Forms, accessible through QR codes. A purposive sampling method was employed, yielding 220 valid responses out of 231 approached respondents. A pretest was conducted with 10 international tourists to ensure the clarity and comprehensibility of the questionnaire items (Al-Tahat, 2020). The feedback indicated that the questionnaire was well-understood, and no modifications were made.

Analytical Approach

The study adopted (Anderson and Gerbing, 1988) two-step approach: Measurement Model Assessment: Conducted through Confirmatory Factor Analysis (CFA) to evaluate composite reliability and construct validity of the measurement model. Structural Model Testing: Utilized Structural Equation Modeling (SEM) to examine the proposed relationships and to test the hypotheses. The Sobel Test was applied to assess the mediating effect of SDP (Hermanto et al., 2023).

The Statistical Package for the Social Sciences (SPSS) and Analysis of Moment Structures (AMOS) software were used for data analysis. Before analysis, data screening was performed to check for violations of assumptions, and the normal distribution assumption was verified as the maximum likelihood method was employed for estimating both the measurement and structural models (Cunha et al., 2023). Additionally. This methodological framework provides a robust basis for exploring how SDP mediates the relationship between escapism motivations, affordability perception, and tourist satisfaction, contributing valuable insights to the field of sustainable tourism research.

RESULTS AND DISCUSSION

Demographic findings

Table 1 illustrates the characteristics of international tourists to the Borobudur and Prambanan temples, data was collected from a total of 220 respondents. The demographic composition revealed a slight male predominance, with males making up 54.8% and females 45.1% of the participants. The age distribution highlighted a youthful bias, with the 18 - 28-year age bracket comprising 35.5% of respondents, making it the most represented group. This was followed by those aged 29 - 39, who accounted for 25.4%. Representation decreased with increasing age, with the 62 and above category being the smallest at 10.5%. In terms of visit frequency, a majority (63.1%) of participants reported visiting the temples only once. Those visiting between 2 to 5 times made up 25%, and a minority (11.8%) had visited more than five times. From a geographical perspective, visitors predominantly came from the Asia-Pacific region, representing 49.5% of the total. Other regions, including the Americas, Europe, Africa, and the Middle East, contributed 17.9%, 14.0%, 9.6%, and 8.7% of respondents, respectively.

Table 1. Demographic findings Source: authors, 2024

No	Respondent Characteristics		Total	Percentage (%)
1.	Gender	Male	121	54.8%
		Female	99	45.1%
2.	Age Group	18 - 28	80	35.5%
		29 - 39	57	25.4%
		40 - 50	37	17.1%
		51 - 61	24	11.4%
		62 and above	22	10.5%
3.	Visiting Frequency	Once	142	63.1%
		2-5 times	54	25%
		More than 5 times	24	11.8%
4.	Region	Asia-Pacific	111	49.5%
		Middle East	19	8.7%
		Americas	38	17.9%
		Africa	21	9.6%
		Europe	31	14.0%

Measurement Model with Confirmatory Factor Analysis (CFA)

The results of the Confirmatory Factor Analysis calculation for the research model, using the AMOS version 22 program can be seen in Figure 2 below.

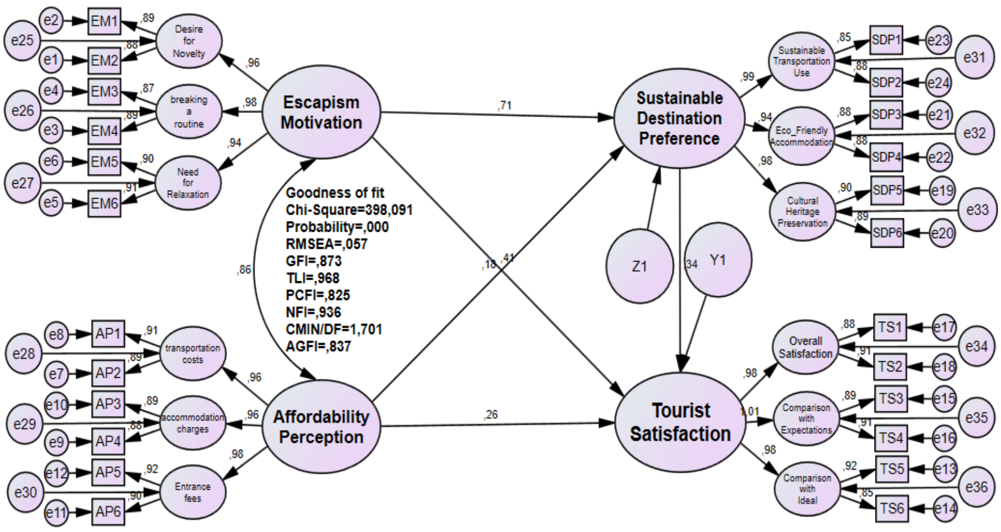


Figure 3. CFA of research model (Source: processed primary data, 2024)

Table 2 and Figure 3 show that goodness-of-fit analysis for the research model, utilizes several indices to assess the model's compatibility with the observed data. The Chi-Square statistic, with a value of 398.091 for 12 degrees of freedom and associated with a significance probability of 0.000, indicates a poor fit according to this strict test. However, the sensitivity of the Chi-Square test to sample size is well-documented, and it often suggests a poor fit for large samples or complex models. The Root Mean Square Error of Approximation (RMSEA) presents a value of 0.057, which falls below the threshold of 0.08, signaling a reasonable fit and thus partially redeeming the model's overall fit assessment. The Goodness of Fit Index (GFI) at 0.873 is marginally below the recommended level of 0.90, which suggests that some discrepancies exist between the predicted and observed data. The Tucker-Lewis Index (TLI) and Normed Fit Index (NFI) both exceed their respective thresholds of 0.90, with values of 0.968 and 0.936, indicating a good fit from these perspectives. However, the Comparative Fit Index (CFI) stands at 0.825, which does not meet the ideal criterion of 0.95, highlighting areas within the model that could be improved.

Table 2. Goodness-of-fit for the research model

GOODNESS OF FIT INDEX	CUT-OFF VALUE	CALCULATION RESULTS	STATEMENT
X^2 CHI-SQUARE (DF = 12 P = 0.05)	Expected small or < Chi-Square tables	398.091	poor fit
SIGNIFICANCE PROBABILITY	≥ 0,05	0.000	poor fit
DF	≥ 0	1.701	fit
RMSEA	≤ 0,08	0.057	fit
GFI	≥ 0,90	0.873	Marginal fit
TLI	≥ 0,90	0.968	fit
CFI	≥ 0,95	0.825	Marginal fit
NFI	≥ 0,90	0.936	fit

Table 3. Validity and Reliability Test Results (Source: Authors, 2024)

Variable	Items	Loading Factor	CR	AVE
Escapism Motivation (EM)	EM2	0.88	0.90	0.61
	EM1	0.89		
	EM4	0.88		
	EM3	0.87		
	EM6	0.91		
	EM5	0.90		
Affordability Perception (AP)	AP1	0.89	0.89	0.59
	AP2	0.90		
	AP3	0.87		
	AP4	0.89		
	AP5	0.89		
	AP6	0.91		
Sustainable Destination Preference (SDP)	SDP5	0.89	0.89	0.58
	SDP6	0.89		
	SDP3	0.88		
	SDP4	0.88		
	SDP1	0.85		
	SDP2	0.88		
Tourist Satisfaction (TS)	TS5	0.92	0.90	0.61
	TS6	0.84		
	TS3	0.89		
	TS4	0.90		
	TS1	0.87		
	TS2	0.90		

Table 3 demonstrates the results of a validity and reliability test for four constructs: Escapism Motivation (EM), Affordability Perception (AP), Sustainable Destination Preference (SDP), and Tourist Satisfaction (TS). Each construct is assessed through several items, with their respective loading factors provided. For the Escapism Motivation construct, six items (EM2 through EM6) are reported with loading factors ranging from 0.87 to 0.91, indicating that each item is a good indicator of the construct. This construct demonstrates adequate reliability with a Composite Reliability (CR) score of 0.90 and an Average Variance Extracted (AVE) score of 0.61, both of which exceed the commonly accepted thresholds of 0.7 for CR and 0.5 for AVE, suggesting that the construct is reliably measured and has good convergent validity. Affordability Perception is measured through six items (AP1 through AP6) with loading factors between 0.89 and 0.91. The CR of 0.89 and AVE of 0.59 for this construct also indicate satisfactory reliability and convergent validity. Sustainable Destination Preference is evaluated using six items (SDP3 through SDP6, and SDP1 and SDP2) with loading factors from 0.85 to 0.89. The CR and AVE for SDP are 0.89 and 0.58, respectively, which again are within acceptable ranges for reliability and convergent validity. Lastly, the Tourist Satisfaction construct is assessed by five items (TS1 through TS5) with loading factors from 0.87 to 0.92. The CR for TS is 0.90 and the AVE is 0.61, indicating robust reliability and convergent validity. Overall, all four constructs show high loading factors, and the CR and AVE values indicate that the constructs are reliable and valid for the sample tested. This suggests that the measurement model has good internal consistency, reliability, and validity, supporting its use in further research. The source of the data is credited to the authors of the study.

Table 4. Result of a measurement model (Source: Authors, 2024)

Measurement Results				Standardized Estimate	S. E	CR	P-value	Result
H1:	EM	→	TS	0.44	0.09	4.69	***	Supported
H2:	AP	→	TS	0.25	0.06	4.01	***	Supported
H3:	EM	→	SDP	0.74	0.11	6.70	***	Supported
H4:	AP	→	SDP	0.17	,092	1.89	0.05	Not Supported
H5:	SDP	→	TS	0.35	,070	5.04	***	Supported
H6:	EM → SDP	→	TS	The Sobel test statistic is 4.02775263 with a p-value of 0.00005631				Supported
H7:	AP → SDP	→	TS	The Sobel test statistic is 3.14928215 with a p-value of 0.00163672				Supported

Table 4 shows the results from the measurement model presenting empirical support for the hypothesized relationships between escapism motivation (EM), affordability perception (AP), sustainable destination preference (SDP), and tourist satisfaction (TS).

H1: Escapism Motivation to Tourist Satisfaction: The hypothesis that escapism motivation positively influences tourist satisfaction is supported, with a strong standardized estimate of 0.44, a standard error (S.E.) of 0.09, a critical ratio (CR) of 4.69, and a highly significant p-value ($p < .001$).

H2: Affordability Perception to Tourist Satisfaction: The hypothesis that affordability perception has a positive effect on tourist satisfaction is also supported, as indicated by a standardized estimate of 0.25, an S.E. of 0.06, a CR of 4.01, and a significant p-value ($p < .001$).

H3: Escapism Motivation to Sustainable Destination Preference: The positive relationship between escapism motivation and sustainable destination preference is supported by a robust standardized estimate of 0.74, an S.E. of 0.11, a CR of 6.70, and a highly significant p-value ($p < .001$).

H4: Affordability Perception to Sustainable Destination Preference: This relationship is supported, by a standardized estimate of 0.17 and a p-value at the threshold of 0.05. Despite the CR being slightly below the typical threshold of significance (CR = 1.89), the p-value indicates marginal support for the hypothesis.

H5: Sustainable Destination Preference to Tourist Satisfaction: The hypothesis that sustainable destination preference positively impacts tourist satisfaction is supported, evidenced by a standardized estimate of 0.35, an S.E. of 0.070, a CR of 5.04, and a highly significant p-value ($p < .001$).

Additionally, the Sobel Test results support the mediating role of sustainable destination preference in the relationship between escapism motivation and tourist satisfaction **(H6)** and between affordability perception and tourist satisfaction **(H7**). The triple asterisks (***), typically denote a p-value of less than 0.001, signifying a very strong level of statistical significance. Overall, the results indicate that all hypotheses are supported, with escapism motivation and affordability perception being significant predictors of both SDP and TS and with SDP acting as a significant mediator in these relationships.

Mediating Effect Test Results

1. The effect of EM on TS mediated by SDP

Figure 4 manifest the results from the Sobel test indicate a significant mediating effect of Sustainable Destination Preference (SDP) on the relationship between Escapism Motivation (EM) and Tourist Satisfaction (TS). In this mediation analysis, the path from EM to SDP is denoted as 'a' with a value of 0.743, and the path from SDP to TS is denoted as 'b' with a value of 0.353. The standard errors for these paths are 0.111 and 0.070, respectively. The Sobel test statistic, which is used to determine the significance of the mediation effect, is 4.02775623 with a standard error of 0.06511795 and yields a highly significant p-value of 0.00005631. This indicates that the mediating role of SDP is statistically significant. Additionally, the Aroian test statistic of 3.99938221 with a p-value of 0.00006351 and the Goodman test statistic of 4.05673551 with a p-value of 0.00004976 further confirm the significance of the mediation.

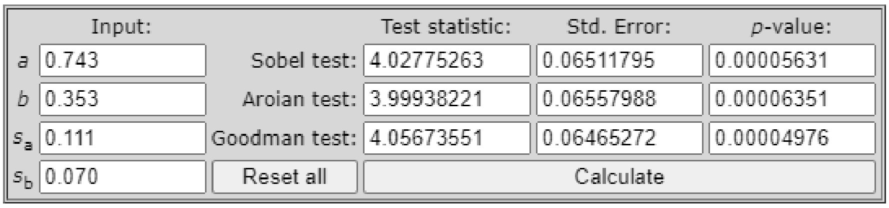


Figure 4. Sobel test Result for EM on TS mediated by SDP (Source: Authors, 2024)

2. The effect of AP on TS mediated by SDP

Figure 4 reveals the Sobel test results of Sustainable Destination Preference (SDP) acts as a mediator in the relationship between Affordability Perception (AP) and Tourist Satisfaction (TS). The input 'a', representing the path from AP to SDP, has a value of 0.250, while 'b', representing the path from SDP to TS, has a value of 0.353. The standard errors for these paths are 0.062 and 0.070, respectively. The Sobel test statistic is 3.14928215 with a standard error of 0.02802226, resulting in a p-value of 0.00163672, which indicates a statistically significant mediation effect. The Aroian test yields a statistic of 3.11217767 with a standard error of 0.02836535 and a p-value of 0.00185713, while the Goodman test statistic is 3.1877462 with a standard error of 0.02768414 and a p-value of 0.00143386.

Input:			Test statistic:	Std. Error:	*p*-value:
a	0.250	Sobel test:	3.14928215	0.02802226	0.00163672
b	0.353	Aroian test:	3.11217767	0.02835635	0.00185713
s_a	0.062	Goodman test:	3.1877462	0.02768414	0.00143386
s_b	0.070	Reset all	Calculate		

Figure 5. Sobel test Result for AP on TS mediated by SDP (Source: Authors, 2024)

DISCUSSION

The findings of this study contribute substantially to the field of tourism research, particularly in elucidating the interplay between escapism motivation (EM), affordability perception (AP), and tourist satisfaction (TS), with the mediation of sustainable destination preference (SDP). The supported hypothesis (H1) that EM positively influences TS reaffirms previous literature that identifies escapism as a pivotal element of the tourism experience. This aligns with Correia et al. (2013), and Song et al. (2015) who found that the pursuit of novel experiences away from daily routines significantly boosts tourist satisfaction. However, while this study underscores the importance of escapism, it contrasts with the findings by Wang et al. (2016), and Amoah et al. (2016) who suggest that the impact of escapism on satisfaction might be moderated by other factors such as tourist expectations and destination image.

The confirmation of the hypothesis (H2) that AP positively affects TS supports the consumer behavior theory which posits that value perceptions, which include affordability, are crucial in influencing satisfaction as mentioned by Seo et al. (2023). This suggests that tourists' perceptions of getting good value for money not only in monetary terms but also considering ethical and environmental implications enhance satisfaction levels (Kim and Thapa, 2018).

This is consistent with the findings of Lee and Jan (2019); Jeong and Kim (2020), who indicated that value perceptions directly impact tourist satisfaction. However, this study provides a nuanced view by linking affordability not just to cost but also to ethical dimensions, a linkage less explored in earlier studies.

Interestingly, the hypothesis (H4) concerning the direct relationship between AP and SDP did not meet conventional levels of significance, suggesting a complex or absent link between affordability and sustainable preferences. This indicates that while tourists appreciate affordability, this does not necessarily translate into a preference for sustainability Hall (2021), possibly due to perceived trade-offs between cost and sustainable practices or a lack of awareness about the economic benefits of sustainable tourism (Yachin and Ioannides, 2020). This finding invites a reconsideration of the simplistic linkage assumed in some studies, such as those by Jurado and Sánchez (2019), Ezennia and Hoskara (2019) who argued for a direct positive relationship between affordability and sustainable preferences. The strong influence of EM on SDP (H3) underscores the role of escapism as a significant driver for preferring sustainable destinations, likely because such destinations are perceived to offer more authentic and enriching experiences that meet tourists' escape needs (Dwyer et al., 2009; Seeler et al., 2021; Beall et al., 2021; Deb et al., 2023). This insight is crucial for destination marketers and policymakers as it highlights the importance of promoting the unique and sustainable qualities of a destination to attract tourists.

The mediation analyses (H6 and H7), substantiated by Sobel test results, reveal that SDP significantly mediates the relationships between EM, AP, and TS. This underlines that sustainable preferences are central to transforming initial motivations and perceptions into satisfying tourism experiences, corroborating the findings of Solís-Radilla et al. (2019), and Rivza et al. (2022) who emphasized the importance of sustainability attributes in enhancing tourist satisfaction.

The lack of support for the direct effect of AP on SDP, juxtaposed with the significant mediating role of SDP, suggests a more intricate decision-making process where other factors, perhaps personal values or socio-demographic characteristics, might influence sustainability preferences (Ajibade and Boateng, 2021). It also implies that, although tourists are cost-conscious, their satisfaction derives significantly from the sustainability of the travel experiences (Rahman, 2019). These observations call for further research to untangle these complex relationships and to understand better how personal and contextual factors might affect the interrelations among EM, AP, SDP, and TS in the tourism sector.

CONCLUSION

In synthesizing the research findings, the conclusion of this study significantly advances the discourse on tourist behavior by elucidating the mediating role of Sustainable Destination Preference (SDP) within the tourism industry. The study's rigorous empirical analysis offers robust support for the proposition that escapism motivation (EM) and affordability perception (AP) are critical determinants of tourist satisfaction (TS), with SDP serving as a pivotal intermediary mechanism. The robust relationship between EM and TS, alongside the substantiated mediating influence of SDP, underscores the psychological underpinnings of tourism. The study reinforces the notion that tourists are not merely passive recipients of travel experiences but are actively seeking fulfillment of deeper psychological needs.

The desire for escape is pivotal, driving tourists towards destinations that not only provide a respite from the ordinary but also resonate with broader values of sustainability. This desire, when satisfied, translates into heightened levels of satisfaction, suggesting that the fulfillment of escapism motivations is a significant contributor to the tourism experience's overall quality. Concurrently, the significant direct relationship between AP and TS affirms the enduring relevance of economic considerations in tourist behavior. The findings confirm that tourists' perceptions of value and affordability are crucial in shaping their satisfaction. However, the nuanced non-significant direct effect of AP on SDP indicates that tourists' cost considerations do not straightforwardly predict a preference for sustainable destinations. This complexity presents a valuable insight for the industry, suggesting that while tourists are cost-conscious, their preferences for sustainability may be influenced by additional factors beyond mere affordability.

The mediating role of SDP adds a new dimension to our understanding of the tourism market. The significant mediation effects suggest that sustainability preferences can transform initial motivations and perceptions into a satisfying experience, highlighting the strategic importance of sustainability in destination marketing and management. This mediation is not just a theoretical construct but a reflection of evolving tourist values, where sustainability has become integral to the travel decision-making process. This study's findings hold critical implications for tourism practitioners. Firstly, they suggest that tapping into escapism motivations by promoting unique and authentic sustainable experiences can be a powerful marketing strategy. Secondly, they highlight the need to communicate the value proposition of sustainability more effectively, aligning it with both escapism desires and affordability considerations. Thirdly, they underscore the necessity for tourism businesses to integrate sustainability into their core offerings, not as an optional extra but as a fundamental component of the product that can drive satisfaction and loyalty. For policymakers, the results advocate for the development and promotion of sustainable tourism practices. Policymakers should encourage and facilitate the adoption of sustainable practices in tourism businesses, not only as a response to tourist demand but also as a proactive step towards ensuring the long-term viability of tourism destinations. Future research should explore the complex interplay between affordability and sustainability preferences in greater depth, potentially examining the moderating effects of demographic factors or the role of cultural differences. Additionally, longitudinal studies could provide insight into how these relationships evolve, particularly in response to global sustainability trends and economic fluctuations.

Author Contributions: Conceptualization, H.G.M and I.F; methodology, H.G.M; I.F; N; and M.S; software, H.G.M; I.F and N; validation, H.G.M; and I.F.; formal analysis, H.G.M, and I.F; investigation, H.G.M and I.F; data curation, H.G.M; I.F; writing - original draft preparation, H.G.M; writing - review and editing, H.G.M; visualization, H.G.M and I.F; supervision, I.F; N; and M.S; project administration, I.F. All authors have read and agreed to the published version of the manuscript.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Acharya, R.N., & Lillywhite, J. (2021). The role of push and pull motivations on satisfaction and consumer loyalty to agricultural fairs. *Agriculture*, *11*(10), 923. https://doi.org/10.3390/agriculture11100923

Ajibade, I., & Boateng, G.O. (2021). Predicting why people engage in pro-sustainable behaviors in Portland Oregon: The role of environmental self-identity, personal norm, and socio-demographics. *Journal of Environmental Management*, *289*, 112538. https://doi.org/10.1016/j.jenvman.2021.112538

Al-Tahat, K.S. (2020). An Arabic adaptation of the usability metric for user experience (UMUX). *International Journal of Human–Computer Interaction*, *36*(11), 1050-1055. https://doi.org/10.1080/10447318.2019.1709332

Amissah, E.F., Addison-Akotoye, E., & Blankson-Stiles-Ocran, S. (2022). Service quality, tourist satisfaction, and destination loyalty in emerging economies. *Marketing tourist destinations in emerging economies: Towards competitive and sustainable emerging tourist destinations*, 121-147. https://doi.org/10.1007/978-3-030-83711-2_6

Amoah, F., Radder, L., & van Eyk, M. (2016). Perceived experience value, satisfaction and behavioural intentions: A guesthouse experience. *African Journal of Economic and Management Studies*, *7*(3), 419-433. https://doi.org/10.1108/AJEMS-10-2015-0121

Anderson, J.C., & Gerbing, D.W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411. https://doi.org/10.1037/0033-2909.103.3.411

Arissaputra, R., & Sentika, S. (2022). Determinant factor analysis of traveler loyalty by push and pull motivation. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, *5*(1), 3277-3288. https://doi.org/10.33258/birci.v5i1.3985

Asmelash, A.G., & Kumar, S. (2019). The structural relationship between tourist satisfaction and sustainable heritage tourism development in Tigrai, Ethiopia. *Heliyon*, *5*(3). https://doi.org/10.1016/j.heliyon.2019.e01335

Beall, J.M., Boley, B.B., Landon, A.C., & Woosnam, K.M. (2021). What drives ecotourism: environmental values or symbolic conspicuous consumption? *Journal of Sustainable Tourism*, *29*(8), 1215-1234. https://doi.org/10.1080/09669582.2020.1825458

Bogale, D., & Wondirad, A. (2019). Determinant factors of tourist satisfaction in Arbaminch City and its vicinity, Southern Ethiopia. *International Journal of Tourism Policy*, *9*(4), 320-348. https://doi.org/10.1504/IJTP.2019.105487

Carvache-Franco, M., Alvarez-Risco, A., Carvache-Franco, W., Carvache-Franco, O., Del-Aguila-Arcentales, S., & Estrada-Merino, A. (2022). Push and pull motivations as predictors of satisfaction and loyalty in coastal cities: a study in Lima, Peru. *Journal of Policy Research in Tourism, Leisure and Events*. https://doi.org/10.1080/19407963.2022.2043881

Carvache-Franco, M., Contreras-Moscol, D., Orden-Mejía, M., Carvache-Franco, W., Vera-Holguin, H., & Carvache-Franco, O. (2022). Motivations and loyalty of the demand for adventure tourism as sustainable travel. *Sustainability*, *14*(14), 8472. https://doi.org/10.3390/su14148472

Chakraborty, A. (2021). Can tourism contribute to environmentally sustainable development? Arguments from an ecological limits perspective. *Environment, Development and Sustainability*, *23*(6), 8130-8146. https://doi.org/10.1007/s10668-020-00987-5

Chin, C.H., Law, F.Y., Lo, M.C., & Ramayah, T. (2018). The impact of accessibility quality and accommodation quality on tourists' satisfaction and revisit intention to rural tourism destination in sarawak: the moderating role of local communities' attitude. *Global Business and Management Research*, *10*(2), 115-127. https://doi.org/10.7790/su14146.

Correia, A., Kozak, M., & Ferradeira, J. (2013). From tourist motivations to tourist satisfaction. *International Journal of Culture, Tourism and Hospitality Research*, *7*(4), 411-424. https://doi.org/10.1108/IJCTHR-05-2012-0022

Cunha, M., Figueiredo, J., Oliveira, I., Cardoso, A., & Pereira, M. (2023). Exploring The Portuguese Tourist Profile During War. *Geojournal Of Tourism And Geosites*, *51*, 1796-1802. https://doi.org/10.30892/gtg.514spl20-1175

Deb, S.K., Das, M.K., Voumik, L.C., Nafi, S.M., Rashid, M., & Esquivias, M.A. (2023). The Environmental Effects Of Tourism: Analyzing The Impact Of Tourism, Global Trade, Consumption Expenditure, Electricity, And Population On Environment In Leading Global Tourist Destinations. *Geojournal of Tourism & Geosites*, *51*. https://doi.org/10.30892/gtg.514spl11-1166

Duc, P.M., Nam, D.T., & Anh, D.N. (2022). Integrated marketing communications for Fintech products: Empirical study on Agribank eMobile banking by VNPAY. *Journal of System and Management Sciences*, *12*(4), 147-174. https://doi.org/10.7390/su1414899.

Dwyer, L. (2023). Tourism development and sustainable well-being: A Beyond GDP perspective. *Journal of Sustainable Tourism*, *31*(10), 2399-2416. https://doi.org/10.1080/09669582.2020.1825457

Ermawati, F., & Prihandono, D. (2018). The influence of destination image, push and pull travel motivation towards tourist loyalty through tourist satisfaction. *Management Analysis Journal*, *7*(4), 414-425. https://doi.org/10.15294/maj.v7i4.23554

Ezennia, I.S., & Hoskara, S.O. (2019). Exploring the severity of factors influencing sustainable affordable housing choice: evidence from Abuja, Nigeria. *Sustainability*, *11*(20), 5792. https://doi.org/10.3390/su11205792

Fayed, H.A.K., Wafik, G.M., & Gerges, N.W. (2016). The impact of motivations, perceptions and satisfaction on tourists loyalty. *International Journal of Hospitality and Tourism Systems*, *9*(2), 14.

Fodness, D. (1994). Measuring tourist motivation. *Annals of Tourism Research*, *21*(3), 555-581. https://doi.org/10.1080/09669582.2021.1910281

Font, X., Torres-Delgado, A., Crabolu, G., Palomo Martinez, J., Kantenbacher, J., & Miller, G. (2023). The impact of sustainable tourism indicators on destination competitiveness: The European Tourism Indicator System. *Journal of Sustainable Tourism*, *31*(7), 1608-1630. https://doi.org/10.1080/09669582.2021.1910281

Frochot, I., & Lenglet, F. (2023). Getting Away From It All: Development of a Scale to Measure Escapism. *Journal of Travel Research*, 00472875231218641. https://doi.org/10.1177/00472875231218641

Gajić, T., Minasyan, L.A., Petrović, M.D., Bakhtin, V.A., Kaneeva, A.V., & Wiegel, N.L. (2023). Travelers'(in) Resilience to Environmental Risks Emphasized in the Media and Their Redirecting to Medical Destinations: Enhancing Sustainability. *Sustainability*, *15*(21), 15297. https://doi.org/10.3390/su152115297

Grandi, L.K. (2023). Branding, Diplomacy, and Inclusion: The Role of Migrant Cuisines in Cities' Local and International Action. *Societies*, *13*(7), 151. https://doi.org/10.3390/soc13070151

Grilli, G., Tyllianakis, E., Luisetti, T., Ferrini, S., & Turner, R.K. (2021). Prospective tourist preferences for sustainable tourism development in Small Island Developing States. *Tourism Management*, *82*, 104178. https://doi.org/10.1016/j.tourman.2020.104178

Hall, C.M. (2021). Constructing sustainable tourism development: The 2030 agenda and the managerial ecology of sustainable tourism. In *Activating critical thinking to advance the sustainable development goals in tourism systems*, 198-214, Routledge. https://doi.org/10.4324/9781003140542-12

Hao, H., Long, P., & Hoggard, W. (2014). Comparing property owners' perceptions of sustainable tourism in a coastal resort county. *Journal of Policy Research in Tourism, Leisure and Events*, *6*(1), 31-51. https://doi.org/10.1080/19407963.2013.823975

Herbold, V., Thees, H., & Philipp, J. (2020). The host community and its role in sports tourism—Exploring an emerging research field. *Sustainability*, *12*(24), 10488. https://doi.org/10.3390/su122410488

Hermanto, B., Suryanto, S., & Tahir, R. (2023). Exploring the Drivers of Tourists'revisit Intention: Does Digital Payment Adoption and Tour Guide Performance Matters? *Geo Journal of Tourism And Geosites*, *46*(1), 124-134. https://doi.org/10.30892/Gtg.46114-1008

Huete-Alcocer, N., López-Ruiz, V.R., & Grigorescu, A. (2019). Measurement of satisfaction in sustainable tourism: A cultural heritage site in Spain. *Sustainability*, *11*(23), 6774 https://doi.org/10.3390/su11236774.

Hui, T.K., Wan, D., & Ho, A. (2007). Tourists' satisfaction, recommendation and revisiting Singapore. *Tourism Management*, *28*(4), 965-975. https://doi.org/10.1016/j.tourman.2006.08.008

Hung, K., Ren, L., & Qiu, H. (2021). Luxury shopping abroad: What do Chinese tourists look for? *Tourism Management*, *82*, 104182. https://doi.org/10.1016/j.tourman.2020.104182

Huang, Y.C. 2023). Low-Cost Airlines Not So Low-Cost–Exploring the Relationships (among Travel Motivation, Service Quality and Satisfaction: The Moderating Roles of Perceived Value. *Research in Transportation Business & Management*, *49*, 101008. https://doi.org/10.1016/j.rtbm.2023.101008

Irimiás, A., Mitev, A.Z., & Michalkó, G. (2021). Narrative transportation and travel: The mediating role of escapism and immersion. *Tourism Management Perspectives*, *38*, 100793. https://doi.org/10.1016/j.tmp.2021.100793

Jeong, Y., & Kim, S. (2020). A study of event quality, destination image, perceived value, tourist satisfaction, and destination loyalty among sport tourists. *Asia Pacific Journal of Marketing and Logistics*, *32*(4), 940-960. https://doi.org/10.1108/APJML-02-2019-0101

Jin, X., Xiang, Y., Weber, K., & Liu, Y. (2019). Motivation and involvement in adventure tourism activities: a Chinese tourists' perspective. *Asia Pacific Journal of Tourism Research*, *24*(11), 1066-1078. https://doi.org/10.1080/10941665.2019.1666152

Jurado, R., & Sánchez, R. (2019). Willingness to Pay for More Sustainable Tourism Destinations in World Heritage Cities: The Case of Caceres, Spain. Sustainability, 11(21). https://doi.org/10.3390/su11215880

Kamau, F., Waweru, F., Lewa, P., & Misiko, A. (2015). The effects of the marketing mix on choice of tourist accommodation by domestic tourists in Kenya. *International Journal of Novel Research in Marketing Management and Economics*, *2*(2), 25-34.

Kelly, C. (2022). Beyond 'a trip to the seaside': Exploring emotions and family tourism experiences. *Tourism Geographies*, *24*(2-3), 284-305. https://doi.org/10.1080/14616688.2020.1795711

Kim, M., & Thapa, B. (2018). Perceived value and flow experience: Application in a nature-based tourism context. *Journal of Destination Marketing & Management*, *8*, 373-384. https://doi.org/10.4324/9781003130253-4

Kim, S., Whitford, M., & Arcodia, C. (2021). Development of intangible cultural heritage as a sustainable tourism resource: The intangible cultural heritage practitioners' perspectives. In *Authenticity and Authentication of Heritage*, 34-47, Routledge. https://doi.org/10.4324/9781003130253-4

Kokkhangplu, A., Onlamai, W., Chokpreedapanich, T., & Phikul, K. (2023). What Predicts Behavioral Intention in Eco-Friendly Hotels? The Roles of Tourist's Perceived Value and Satisfaction: A Case Study of Thailand. *Sustainability*, *15*(4), 3219. https://doi.org/10.3390/su15043219

Kóródi, M., Mondok, A., Dávid, L.D., & Szabó, A. (2020). Motivations And Experiences Concepts In The Travel Decisions Of Domestic Tourists Of The „Hungarian Great Plain. *Geo Journal of Tourism And Geosites*, *32*(4), 1347-1354. https://doi.org/10.30892/gtg.32423-579
Lee, T.H., & Jan, F.H. (2019). Can community-based tourism contribute to sustainable development? Evidence from residents' perceptions of the sustainability. T*ourism Managemen*t, 70, 368-380. https://doi.org/10.1016/j.tourman.2018.09.003
Leong, A.M.W., Yeh, S.S., Hsiao, Y.C., & Huan, T.C.T. (2015). Nostalgia as travel motivation and its impact on tourists' loyalty. *Journal of Business Research*, *68*(1), 81-86. https://doi.org/10.1016/j.jbusres.2014.05.003
Lo, A., & Yeung, M.A. (2020). Brand prestige and affordable luxury: The role of hotel guest experiences. *Journal of Vacation Marketing*, *26*(2), 247-267. https://doi.org/10.1177/1356766719880251
MacKenzie, N., & Gannon, M.J. (2019). Exploring the antecedents of sustainable tourism development. *International Journal of Contemporary Hospitality Management*, *31*(6), 2411-2427. https://doi.org/10.1108/IJCHM-05-2018-0384
Mazhenova, S., Choi, J.G., & Chung, J. (2016). International tourists' awareness and attitude about environmental responsibility and sustainable practices. *Global Business & Finance Review (GBFR)*, *21*(2), 132-146. https://doi.org/10.17549/gbfr.2016.21.2.132
Merciu, F.C., Petrişor, A.I., & Merciu, G.L. (2021). Economic Valuation of Cultural Heritage Using the Travel Cost Method: The Historical Centre of the Municipality of Bucharest as a Case Study. *Heritage*, 4(3), 2356-2376. https://doi.org/10.3390/heritage4030133
Mikulić, J., Vizek, M., Stojčić, N., Payne, J.E., Časni, A.Č., & Barbić, T. (2021). The effect of tourism activity on housing affordability. *Annals of Tourism Research*, *90*, 103264. https://doi.org/10.1016/j.annals.2021.103264
Monaco, S., & Sacchi, G. (2023). Travelling the metaverse: potential benefits and main challenges for tourism sectors and research applications. *Sustainability*, *15*(4), 3348. https://doi.org/10.3390/su15043348
Muskat, B., Hörtnagl, T., Prayag, G., & Wagner, S. (2019). Perceived quality, authenticity, and price in tourists' dining experiences: Testing competing models of satisfaction and behavioral intentions. *Journal of Vacation Marketing*, *25*(4), 480-498. https://doi.org/10.1177/1356766718822675
Orru, K., Kask, S., & Nordlund, A. (2019). Satisfaction with virtual nature tour: The roles of the need for emotional arousal and pro-ecological motivations. *Journal of Ecotourism*, *18*(3), 221-242. https://doi.org/10.1080/14724049.2018.1526290
Papagiannakis, A., Baraklianos, I., & Spyridonidou, A. (2018). Urban travel behaviour and household income in times of economic crisis: Challenges and perspectives for sustainable mobility. *Transport policy*, *65*, 51-60. https://doi.org/10.1016/j.tranpol.2016.12.006
Ponsignon, F., Lunardo, R., & Michrafy, M. (2021). Why are international visitors more satisfied with the tourism experience? The role of hedonic value, escapism, and psychic distance. *Journal of Travel Research*, *60*(8), 1771-1786. https://doi.org/10.1177/0047287520961175
Prebensen, N., Skallerud, K., & Chen, J.S. (2010). Tourist motivation with sun and sand destinations: Satisfaction and the wom-effect. *Journal of Travel & Tourism Marketing*, *27*(8), 858-873. https://doi.org/10.1080/10548408.2010.527253
Rahman, M.K. (2019). Medical tourism: tourists' perceived services and satisfaction lessons from Malaysian hospitals. *Tourism Review*, *74*(3), 739-758. https://doi.org/10.1108/TR-01-2018-0006
Ramesh, V., & Jaunky, V.C. (2021). The tourist experience: Modelling the relationship between tourist satisfaction and destination loyalty. *Materials Today: Proceedings*, *37*, 2284-2289.
Rehman, A.U., Abbas, M., Abbasi, F.A., & Khan, S. (2023). How tourist experience quality, perceived price reasonableness and regenerative tourism involvement influence tourist satisfaction: A study of Ha'il Region, Saudi Arabia. *Sustainability*, *15*(2), 1340. https://doi.org/10.1016/j.matpr.2020.07.723
Rivza, B., Foris, D., Foris, T., Privitera, D., Uljanova, E., & Rivza, P. (2022). Gastronomic heritage: A contributor to sustainable local tourism development. *Geojournal of Tourism and Geosites*, *44*(4), 1326-1334. https://doi.org/10.30892/gtg.44418-950
Rogerson, C.M., & Rogerson, J.M. (2020). COVID-19 tourism impacts in South Africa: Government and industry responses. *Geo Journal of Tourism and Geosites*, *31*(3), 1083-1091. https://doi.org/10.30892/gtg.31321-544
Saayman, M., & Saayman, A. (2017). Is the rhino worth saving? A sustainable tourism perspective. *Journal of Sustainable Tourism*, *25*(2), 251-264. https://doi.org/10.1080/15022250.2021.1974541
Seeler, S., Schänzel, H., & Lück, M. (2021). Sustainable travel through experienced tourists' desire for eudaemonia and immersion. *Scandinavian Journal of Hospitality and Tourism*, *21*(5), 494-513. https://doi.org/10.1080/15022250.2021.1974541
Seo, S., Kim, K., & Im, S.Y. (2023). Determinants of satisfaction with imported Asian pears in the US: moderating role of Korea's country image. I*nternational Journal of Emerging Markets*, 18(12), 5861-5879. https://doi.org/10.1108/ijoem-09-2021-1394
Seyitoğlu, F., & Davras, Ö. (2021). Determinants and implications of travel motivations: international travellers visiting Cappadocia. *International Journal of Tourism Cities*, *8*(2), 311-326. https://doi.org/10.1108/ijtc-01-2021-0006
Solís-Radilla, M.M., Hernández-Lobato, L., Callarisa-Fiol, L.J., & Pastor-Durán, H.T. (2019). The Importance of Sustainability in the Loyalty to a Tourist Destination through the Management of Expectations and Experiences. *Sustainability*, 11(15). https://doi.org/10.3390/su11154132
Song, H.J., Lee, C.K., Park, J.A., Hwang, Y.H., & Reisinger, Y. (2015). The influence of tourist experience on perceived value and satisfaction with temple stays: The experience economy theory. *Journal of Travel & Tourism Marketing*, *32*(4), 401-415. https://doi.org/10.1080/10548408.2014.898606
Streimikiene, D., Svagzdiene, B., Jasinskas, E., & Simanavicius, A. (2021). Sustainable tourism development and competitiveness: The systematic literature review. *Sustainable Development*, *29*(1), 259-271. https://doi.org/10.1002/sd.2133
Stupariu, M.I., Josan, I., Gozner, M., Stașac, M.S., Hassan, T.H., & Almakhayitah, M.Y. (2023). The Geostatistical Dimension Of Tourist Flows Generated By Foreign Tourists In Romania. *Geojournal of Tourism & Geosites*, *50*(4). https://doi.org/10.30892/gtg.50432-1150
Suhartanto, D., Brien, A., Primiana, I., Wibisono, N., & Triyuni, N.N. (2020). Tourist loyalty in creative tourism: the role of experience quality, value, satisfaction, and motivation. *Current Issues in Tourism*, *23*(7), 867-879. https://doi.org/10.1080/13683500.2019.1568400
Triantafillidou, A., & Petala, Z. (2016). The role of sea-based adventure experiences in tourists' satisfaction and behavioral intentions. *Journal of Travel & Tourism Marketing*, *33*(sup1), 67-87. https://doi.org/10.1080/10548408.2015.1008667
Wang, X., & Leou, C.H. (2015). A study of tourism motivation, perceived value and destination loyalty for Macao cultural and heritage tourists. *International journal of marketing studies*, *7*(6), 83-91. https://doi.org/10.5539/ijms.v7n6p83
Wu, D., Li, K., Ma, J., Wang, E., & Zhu, Y. (2022). How does tourist experience affect environmentally responsible behavior? *Sustainability*, *14*(2), 924. https://doi.org/10.3390/su14020924
Yachin, J.M., & Ioannides, D. (2020). "Making do" in rural tourism: the resourcing behavior of tourism micro-firms. *Journal of Sustainable Tourism*, *28*(7), 1003-1021. https://doi.org/10.1080/09669582.2020.1715993
Zhou, H., Chi, X., Norman, R., Zhang, Y., & Song, C. (2024). Tourists' urban travel modes: Choices for enhanced transport and environmental sustainability. *Transportation Research Part D: Transport and Environment*, *129*, 104144. https://doi.org/10.1016/j.trd.2024.104144.

Article history: Received: 07.03.2024 Revised: 06.06.2024 Accepted: 25.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198
Year XVII, vol. 54, no. 2spl, 2024, p.953-966
DOI 10.30892/gtg.542spl19-1270

ECOTOURISM, SUSTAINABLE TOURISM AND NATURE BASED TOURISM: AN ANALYSIS OF EMERGING FIELDS IN TOURISM SCIENTIFIC LITERATURE

Rosse Marie ESPARZA-HUAMANCHUMO
Universidad San Ignacio de Loyola, Faculty of Hotel Management, Tourism, and Gastronomy,
Lima, Peru, e-mail: resparza@usil.edu.pe

Iuliana BOTEZAN*
Universidad Complutense de Madrid, Faculty of Library and Information Science, Library and Information Science Department,
Madrid, Spain, e-mail: ibotezan@ucm.es

Rodrigo SANCHEZ-JIMENEZ
Universidad Complutense de Madrid, Library and Information Science Department, Madrid, Spain, e-mail: rodsanch@ucm.es

Klinge Orlando VILLALBA-CONDORI
Universidad Católica de Santa María, Vicerrectorado de Investigación, Arequipa, Perú, e-mail: kvillalba@ucsm.edu.pe

Citation: Esparza-Huamanchumo, R.M., Botezan, I., Sánchez-Jiménez, R., & Villalba-Condori, K.O. (2024). ECOTOURISM, SUSTAINABLE TOURISM AND NATURE BASED TOURISM: AN ANALYSIS OF EMERGING FIELDS IN TOURISM SCIENTIFIC LITERATURE. *Geojournal of Tourism and Geosites*, 54(2spl), 953–966. https://doi.org/10.30892/gtg.542spl19-1270

Abstract: The emergence and rapid growth of tourism paradigms such as ecotourism, sustainable tourism, and nature-based tourism signify a shift towards more environmentally and culturally conscious forms of tourism. We conduct a comparative analysis of these emerging fields with the aim of providing insights to the field and inform future research directions in this dynamic area of study. Our investigation spans diverse geographical regions over an extended period (1986-2022) to provide a comprehensive understanding of the global landscape of alternative tourism. The study utilizes descriptive bibliometrics and scientific mapping techniques using data derived from Scopus to depict changes and contributions over time and identify thematic structures and their evolution. Along with more established regional actors such as the US and European contributors, China and Latin America appear as emergent participants. The analyzed fields seem more prone to interdisciplinary approaches and more impactful than the average Tourism research. Also, international collaboration seems to have played a crucial role in advancing research in these topics. Overall, the study reveals a vibrant field with outstanding features in the context of general Tourism scientific area.

Keywords: Ecotourism, Sustainable Tourism, Nature Based Tourism, Bibliometric Analysis, Science Mapping

* * * * * *

INTRODUCTION

Tourism before the COVID-19 pandemic had sustained growth, according to the Barometer of the World Tourism Organization (UNWTO) in 2019, 1.5 billion international tourist arrivals were registered worldwide, maintaining for the tenth consecutive year growth in the world (UNWTO, 2021). Likewise, this organization defines tourism as a social, cultural, and economic phenomenon, which involves people who move to countries or places outside their usual environment for personal, professional, or business reasons (UNWTO, 2023).

Over the years, the tourism industry has undergone constant evolution, being today one of the most important economic activities worldwide and recognized as a factor of progress (Statista, 2020). Nevertheless, Tourism can pose a risk in some scenarios, creating economic vulnerability (Wang et al., 2022; Baloch et al., 2023), and thus, researchers and stakeholders have been compelled to look beyond GDP and develop a well-being lens (Dwyer, 2023). In the 21st century, alternative tourism appears as a response to mass tourism as part of the global trend to promote sustainability in all socioeconomic activities (Esparza et al., 2020).

The pandemic has increased interest in seeking new experiences in nature and outdoors. In this sense, interest is positioned for more authentic experiences that include greater interaction with local communities, their culture, and local production, with a more ecological approach, increasing opportunities for economic, social, and environmental development in rural territories (UNWTO, 2021). Likewise, travelers express greater interest in developing forms of responsible tourism, benefiting care for the environment (Skift, 2019). With this premise, various forms of tourism are developed that prioritize the conservation of tourist destinations, which are characterized by generating experiences based on promoting the sustainable use of the natural and cultural wealth of the communities, while contributing to the conservation of the biodiversity of the territory and the development of local populations (Stronza et al., 2019). This type of tourism has shown rapid growth, increasing the gross domestic product (GDP), generating tax revenue and

* Corresponding author

foreign exchange, contributing to local populations, and raising funds for nature conservation (Bhammar et al., 2021). Within this type of tourism, ecotourism, sustainable tourism, and nature-based tourism emerge, related terms that focus on environmental conservation and the promotion of sustainable development in the tourism field, however, each one being similar typologies that has its own characteristics. Ecotourism has become one of the most important and fastest growing segments in the global alternative tourism industry (Stronza et al., 2019). Likewise, the concept of ecotourism emerges and gains popularity as a concept that provides economic development, decreasing the negative impact on biodiversity while fostering local identity and cultural values of local communities (Honey, 2008; Jaya, 2024; Kropinova, 2023). The Québec Declaration on ecotourism defines Sustainable Tourism as an "activity that motivates tourists in order to observe and appreciate nature, as well as traditional cultures, contributing to conservation and seeking optimization of resources" (UNWTO, 2002:3). Likewise, sustainable tourism is that type of tourism that seeks the integral satisfaction of local communities, tourists, the tourism industry and future generations.

Sustainable tourism becomes important because it is focused on the rational management of natural resources, biodiversity, landscape resources, biological diversity and all life support systems on our planet (Bello et al., 2016). Nature-based tourism was born as an alternative to cultural tourism; it has been related to the growing demand for various forms of recreation, relaxation and entertainment in natural environments such as national parks, nature reserves or protected areas (Olafsdottir, 2013). Bird watching, hiking, fishing, and walking on the beach are examples of nature-based tourism. The fields of sustainable tourism, nature-based tourism and ecotourism have seen a growing number of research studies applying bibliometric analysis methods to gain insights into various aspects of sustainability and tourism marketing. Prior reviews have examined the literature trends providing a comprehensive understanding of the field's evolution over time. These reviews have been organized around different dimensions, capturing the diversity of approaches (Yoopetch and Nimsai, 2019). Bibliometric analysis is a systematic quantitative method used to measure scientific progress by analyzing academic literature. It helps researchers identify emerging topic clusters, track the evolution of research in a field, and analyze the geographic dispersion of studies.

This type of analysis is particularly valuable in a dynamic field like sustainable tourism, where understanding the research output and its impact is relevant for further advancements. Bibliometric studies provide key indicators of research output and allow scholars to study the field of sustainable tourism as a knowledge creation system.

By analyzing the universe of literature, bibliometric studies in tourism offer valuable insights into the research landscape and identify areas of consistent interest, understanding the trends and patterns within this field and informing future research directions. The importance and proliferation of sustainable tourism research cannot be denied, yet there have been limited rigorous bibliometric analyses conducted in this area (Ruhanen et al., 2015). Moreover, in most of the cases approaches have been very narrow, which has impeded the possibility of considering the integration of similar but not identical research subjects, as we will try to make clear below.

There has been an evolution in sustainable tourism, ecotourism, and nature-based tourism research, both in the theoretical and methodological approaches, as well as in the themes favored by this sub-field. The research has moved away from definitional and conceptual reviews to a more empirical frame. Some themes have remained constant, while others have emerged or declined over time. Ecotourism and environmental aspects have remained a constant feature of the subfield (Ruhanen et al., 2015) while other new topics have arisen that will predictably remain a focus of interest in the future, such as climate change. Fang et al. (2018) revise precisely that topic and find that it has grown fast and drawn attention from an array of multidisciplinary scholars. Multidisciplinarity is precisely highlighted by Diéguez-Castrillón et al. (2022), which concluded that collaboration had sprawled from social sciences to involve environmental science and other technological areas, although their work was restricted to a narrow subset of the literature that studied sustainability indicators for tourism destinations. This aspect has been approached several times in the literature (Liu, 2020; Zhang et al., 2022; Mihalic et al., 2021), but never covering the whole range of publications in the sub-field.

The rapid growth of sustainable tourism and ecotourism literature is also a common finding in bibliometric studies (Niñerola et al., 2019; Garrigos-Simon et al., 2018). Liu and Li (2020) probably offer the clearest depiction of this phenomenon, although they analyze the literature published until 2016, and focus on the ecotourism perspective.

Traditional main scientific producers include Australia, USA, Canada, China and several European countries, although Hasana et al. (2022) already see the important ascend of South Africa, which was detected even before by Liu and Li (2020). This implies a certain change in terms of major scientific producers in the sub-field, an aspect that we think is worth analyzing. It's also important to note that specialized sector leaders can be found, such as Romanian sustainable mountain tourism (Zeng et al. 2022). Regarding nature-based tourism, to give a more general example, we can observe the increase in scientific production from Latin American countries (Rivero-Guerra, 2021).

Collaboration networks have been studied, which led to the identification of countries acting as main hubs, such as the US and Australia (Singh et al., 2021). Fang et al. (2018) also cite these countries as the most prominent members of the network and include a reference to a sub-network of dense collaboration among European countries, although their work is restricted to climate change and tourism. Bashir et al. (2022) detect a very high level of collaboration in tourism policy, and Dinç et al. (2023) include a third main hub of collaboration (China) in a wider set of literature that reflects research in Ecotourism.

Much of the literature on sustainable tourism, ecotourism, and nature-based tourism examines relevant scientific literature using a fragmented approach. This fragmentation arises from the focus on specific publications, specific research topics or short time periods. Our hypothesis is that the three fundamental concepts within what we might broadly term "alternative tourism" should be studied together. In doing so, the resulting picture of scientific activity will not only be broader but also inherently different, and relevant insights on scientific production and its distinctive features will arise.

MATERIALS AND METHODS

Although nowadays several interesting options exist regarding bibliometric information, Scopus and Web of Science are still currently widely preferred for scientometric/bibliometric studies. We have chosen Scopus as the main source of information because we had the intuition that a significant share of the literature on the topic of ESN tourism would be produced and published in South America, and possibly in Spanish. Scopus is a well suited option when these aspects are a source of concern, as it has a better coverage of both social sciences, non-English literature and countries of the Global South, although we are aware that its coverage is still far from ideal (Tennant, 2020). To define the corpus of literature that would best represent the research on eco/sustainable/nature-based tourism (ESN tourism for short), we conducted several queries on the Scopus database. As there is not a single list of journals, terms or other filtering options that might enable us to delimit the scope of our analysis, we devised a feedback mechanism by which successive queries were submitted and then revised and enriched with new terms from the literature. The original query included only the term Ecotourism, but several others emerged during the relevance feedback cycle, which eventually resulted in the following query:

(TITLE-ABS-KEY("sustainable tourism") OR TITLE-ABS-KEY("eco-tourism*") OR TITLE-ABS-KEY(ecotourism) OR TITLE-ABS-KEY("nature-based tourism")) AND (EXCLUDE(PUBYEAR,2024) OR EXCLUDE (PUBYEAR,2023))

This election does leave aside terms that are clearly related to the topic, such as "Geotourism", "Agrotourism" or "Community-based Tourism", but they were not deemed as directly conveying the core meaning of the subject. They do portray relevant aspects that are to be found along the main literature that we were trying to delimit, and thus will emerge naturally in thematic analysis, as will be seen below. In short, we followed the advice to employ highly precise terms, even if it may result in the loss of some related works in the search results, to ensure a comprehensive description of what truly matters, the intellectual framework of the field and its evolution (Vargas-Quesada et al., 2017).

Scientific cartography was conceptualized through the lens of the overlay maps technique (Rafols et al., 2010). Initially, a foundational map is selected to encompass the entire literature to be analyzed. Subsequently, partial versions are generated and superimposed to examine salient aspects. VOSViewer has been utilized to generate the science maps, and full maps are available in the Zenodo repository, although for the sake of brevity, only snapshots are included in this manuscript. The terms that co-occur 10 or more times within the corpus are selectively identified, encompassing both authors' keywords and database keywords. This judicious selection serves to reduce the number of nodes from 39,158 to 1,963. After this initial selection, the first 1000 terms were normalized according with the following criteria: plurals and singulars where unified and the most commonly used form was chosen; forms with hyphens where also normalized using the same procedure; acronyms were spelled out in full but unnecessary explanations (e.g., Poland [Central Europe]) where removed, replacing the original label with a simplified one. The network was then reconstructed using co-occurrences of 10 or more keywords and clusters with at least 10 elements.

RESULTS AND DISCUSSION

Although there are several published bibliometric analysis on the matter, we have tried to produce a piece of work that simultaneously is wide in spectrum (encompassing the main thematic themes on ESN) and provides multiple perspectives on the literature with the aim of providing details to support our main hypothesis that ESN Tourism is a distinctive field of study with particular characteristics that set it apart from the rest of the Tourism literature. To achieve this, we have analyzed general features of the selected literature and put them in context. We have reviewed the evolution, formal characteristics, and thematic approaches, as well as a geographic, institutional and editorial perspective. We have detailed analysis on the three classical bibliometric approaches to literature analysis, which include production, collaboration, and impact in several of the mentioned dimensions.

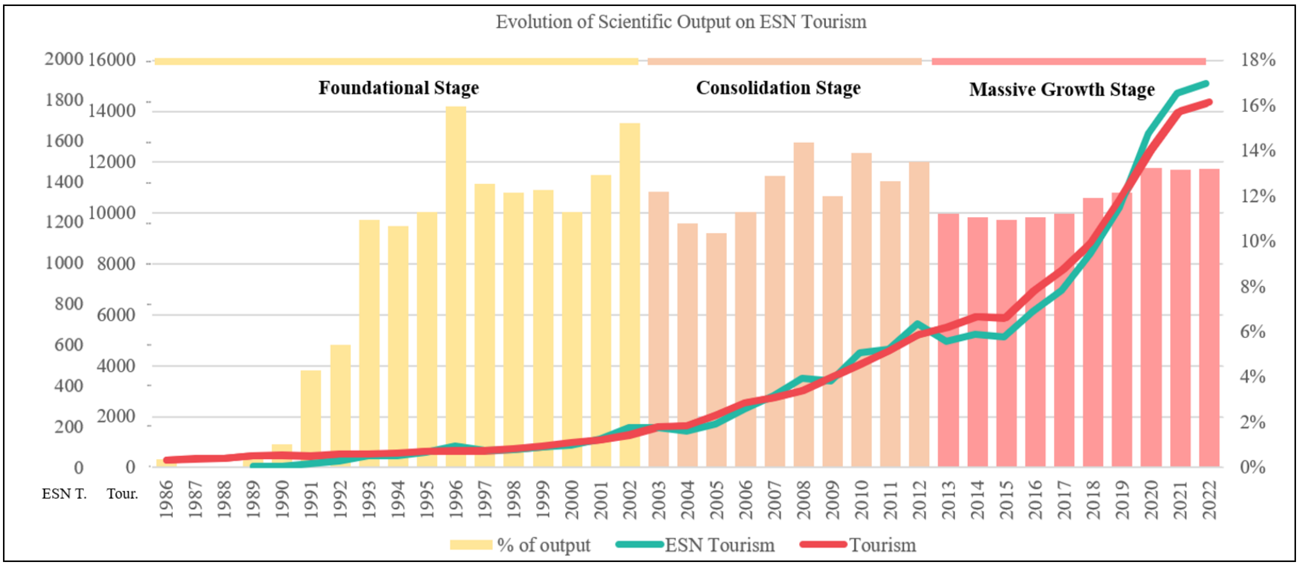


Figure 1. Evolution of Scientific output (as number of published documents) on
Tourism and ESN Tourism, and relative importance of ESN Tourism scientific production (Source: Scopus)

Evolution of scientific production

ESN tourism has evolved pairwise to Tourism for a long time. Since the first papers on the subject during the 1980's a steady flow of literature on the topic has followed. If we look at the evolution of Tourism and ESN tourism (Figure 1) we can find three stages that would describe a foundational period, a consolidation one and a more mature phase that arrives to 2022.

Bars show the percentage of ESN tourism papers in comparison with Tourism as a full. The first years are clearly more unstable in terms of the share of papers that take an interest in the subject, but the other two stages seem to stabilize rates at roughly a 12% of the whole. The last two phases seem to fit nicely to an exponential growth pattern, with a R2 coefficient of 0.97 (2003 to 2012) and 0.96 (2013 to 2022). The first phase (1986-2002) does also show an exponential growth, although less decisively, with somewhat poorer fit (R^2 = 0.85). The three phases and the complete period as a whole (R^2 = 0.97) fit nicely into an exponential curve, or even better into a sigmoid curve with saturation phases, which is the expected behavior (Solla-Price, 1969). We have used the most evident saturation points to help defining the three phases.

Formal characteristics

There are visible differences regarding the formal aspects of both Tourism and ESN Tourism literature, although they are not very big. Overall, ESN Tourism seems more in line with mainstream trends in scientific publication, when one looks into formal features such as document types, open access print, the countries where they were edited or the language in which they were published (Figure 2).

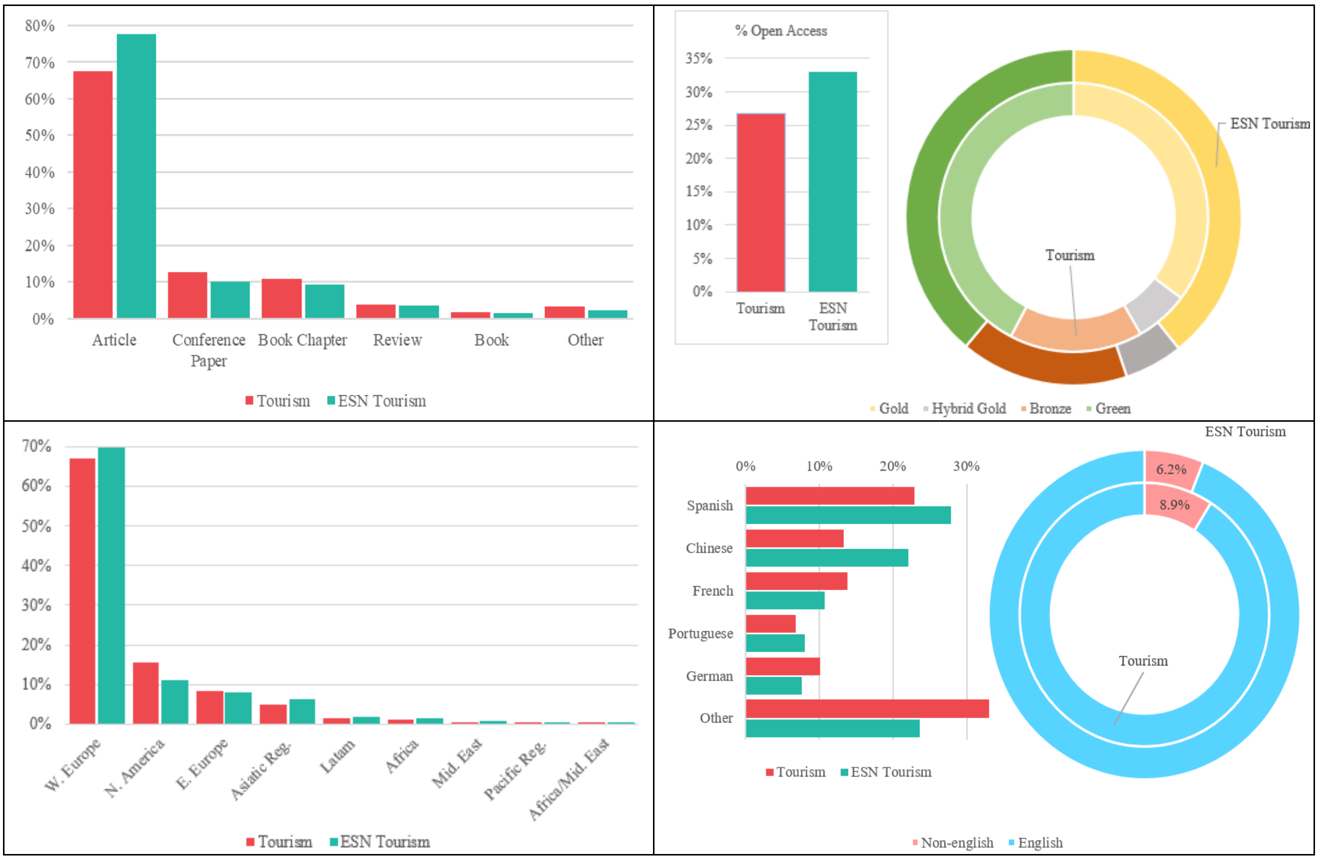


Figure 2. Formal aspects of scientific output: document types, open access, geographic origin of journals, and scientific output language based on the number of published documents (Source: Scopus, 1986-2022)

Literature on ESN tourism is slightly more prone to be published in articles than the Tourism literature (78% vs 67%), and also significantly more prone to be distributed on Open Access terms (33% vs 27%), with a modest difference in its preference for Gold OA over Green. As we have previously referred, we were expecting a greater amount of literature published in non english journals, with a greater emphasis on the participation of "global south" academics in publishing on ESN subjects. Journals that publish ESN Tourism literature are more likely to be geographically distributed over Latin America than Tourism literature (1.8% vs 1.6%), and the same goes to the Asiatic Region (6.3% vs 4.8%), the Middle East (0.8% vs 0.6%) or Africa (1.5% vs 1.2%), although the amount of literature published in those regions is very modest in relation to what is published in Europe and North America. Lastly ESN Tourism literature tends to be slightly more prone to be published in English than Tourism literature, although the difference is not great. Spanish and Chinese are the clear second language options for ESN papers, while French is somewhat more relevant in the case of Tourism than it is for the other case.

Subject areas, interdisciplinarity and publication venues

Scopus assigns papers the subject area or subject category of the journal, conference paper (or whatever publication venue) in which they are published. We can aggregate this information to describe thematic bearings of the literature, but is also useful to associate it with other dimensions, such as impact or multidisciplinarity. It's important to bear in mind that the same journal can be assigned to more than one subject area, which implies that percentages refer to the number of documents which have been assigned to each area in relation to the total number of papers. In other words, percentages represent the spread of subject areas over the literature in the two scenarios that we are analyzing.

There are significant differences between the literature published in ESN Tourism and the Tourism literature in general when referring to the scientific areas in which they are classified. Although both contexts delve deeply into the Social Sciences (50% vs 47%) and Business, Management & Accounting (38% vs 41%), other main areas are quite different. ESN tourism is highly connected to Enviromental Science (41%) which is the second greatest subject area, while it's much more moderately present in Tourism literature (23%). The same goes for Agricultural and Biological Scieces (16% vs 7%) or Energy (9% vs 4%). The distribution of literature along scientific areas does also provide clues on other dimensions. A common way of measuring interdisciplinarity is accounting for the subject areas or subject categories assigned to the published literature. As mentioned before, specific papers get classified according to the sources/publication venues in which they have been published, and thus, examining the number of categories in which these journals, conference proceedings and specific papers have been assigned allows us to obtain a rough but telling estimate of the interdisciplinarity of both Tourism and ESN Tourism. In general, we can see that ESN Tourism literature gets classified simultaneously in more scientific areas than Tourism literature as a whole.

Table 1. Top subject areas where the literature on tourism and ESN tourism is classified (Source: Scopus, 1986-2022)

SUBJECT AREA	ESN T.	% Tour.	% ESN T.	Cites/doc 3y	FWCI (2022)
Social Sciences	8060	47%	50%	2.43	1.41
Environmental Science	6637	23%	41%	4.77	1.15
Business, Management and Accounting	6160	41%	38%	4.7	1.5
Agricultural and Biological Sciences	2588	7%	16%	3.49	1.17
Earth and Planetary Sciences	2096	12%	13%	2.88	0.89
Economics, Econometrics and Finance	1581	11%	10%	3.13	1.3
Energy	1411	4%	9%	5.65	1.13
Engineering	1304	10%	8%	4	0.95
Computer Science	947	10%	6%	3.68	0.91
Arts and Humanities	531	7%	3%	1.24	1.52

Adding the percentages of Table 1 would yield a significant difference between the two, although the information provided by the table is only representative of 90% of the papers (Tourism) and 90% of the papers (ESN Tourism). Adding the total number of area assignments and dividing it by the number of published documents yields a 1.89 assignments per paper for Tourism literature and a 2.02 for ESN literature, which is not great, but is significant, nevertheless.

ESN tourism literature gets more cited on average than tourism literature as a whole (19.4 cites per doc vs 16.7 cites per doc) in our literature set. This might be connected to the citation rates of the main areas in which works get published. As shown on Table 1, literature on Environmental Science and Energy gets significantly more cited (on average) than other areas, and ESN tourism is more tightly concentrated around it than the general Tourism literature is. The same goes for Agricultural and Biological Sciences, although the effect would necessarily be more modest.

Table 2. Best quartiles of journals that publish literature on ESNT and Tourism
(Data published by Scimago Journal & Country Rank, 2022 version)

SJR Best Quartile	Tourism	ESNT	Tourism	ESN Tourism
Q1	49482	6926	51.2%	54.6%
Q2	17391	1866	18.0%	14.7%
Q3	15487	1962	16.0%	15.5%
Q4	10559	1325	10.9%	10.4%
-	3781	614	3.9%	4.8%

Table 2 shows another angle of analysis, as journals in which the literature gets published do not only get classified in different areas with different citation averages, but also get ranked in different positions according to relevant impact metrics, in this case, SJR. This analysis does only cover the literature that gets published in journals (roughly 70% and 80% respectively), though. Given the fact that quartiles do not depend on the categories we could add another factor to explain why the literature on ESN Tourism gets cited more often than general Tourism literature. We can see a slight advantage in terms of Q1 publishing for ESN Tourism literature. That is, its published in journals that overall get more citations within their subject, having more relative scientific relevance as measured by their relative SJR score. Nevertheless, both tables 1 and 2 are based on the latest information available and do not strictly reflect the state of fields and journals over the whole period. This data is used to elaborate on the idea that the higher impact of ESN tourism is a multi-cause phenomenon, but a finer-grained and thorough analysis should be made to obtain conclusive evidence in this regard.

Top producing publication venues for ESN Tourism show a mix of low impact per document and high (or very high) cites per document journals. Table 3 shows only venues that have published 100 or more papers on the topic, and includes a mixture of conferences and regular journals, in which the later clearly tend to produce more impact per document.

Table 3. top journals in the ESN T sub-field according to their output in the subject.
Only journals with more than 100 documents are included (Source: Scopus, 1986-2022)

Main publishing sources	Citations	Output	Cites/Doc
Journal of Sustainable Tourism	58439	1045	55.92
Sustainability (Switzerland)	12833	834	15.39
IOP C:S.: Earth and Environmental Science	595	411	1.45
Journal of Ecotourism	7718	341	22.63
Tourism Management	26416	285	92.69
Current Issues in Tourism	7143	189	37.79
WIT Transactions on Ecology and the Environment	369	182	2.03
Annals of Tourism Research	13784	160	86.15
Geojournal of Tourism and Geosites	822	143	5.75
African Journal of Hospitality, Tourism and Leisure	476	132	3.61
Tourism Recreation Research	1914	126	15.19
Tourism Geographies	5901	114	51.76
Worldwide Hospitality and Tourism Themes	664	113	5.88
Asia Pacific Journal of Tourism Research	2478	111	22.32
E3S Web of Conferences	195	106	1.84
Journal of Environmental Management and Tourism	283	101	2.80

Table 4. highest raw-impact journals with significant ESN Tourism publishing
Only venues with more than 2000 cites are included (Source: Scopus, 1986-2022)

Main sources of impact	Citations	Output	Cites/Doc
Journal of Sustainable Tourism	58439	1045	55.92
Tourism Management	26416	285	92.69
Annals of Tourism Research	13784	160	86.15
Sustainability (Switzerland)	12833	834	15.39
Journal of Ecotourism	7718	341	22.63
Current Issues in Tourism	7143	189	37.79
Journal of Travel Research	5999	87	68.95
Tourism Geographies	5901	114	51.76
Biological Conservation *	5310	80	66.38
Journal of Cleaner Production *	3732	71	52.56
Tourism Management Perspectives	3601	91	39.57
Ecological Economics *	3505	47	74.57
Journal of Environmental Management *	3309	68	48.66
Environmental Conservation *	2881	44	65.48
Conservation Biology *	2619	38	68.92
Ocean and Coastal Management *	2525	95	26.58
Asia Pacific Journal of Tourism Research	2478	111	22.32
Environmental Management *	2447	56	43.70
Biodiversity and Conservation *	2258	46	49.09

Table 4 offers a different view of the issue in which the journals that are generating a greater raw impact are shown. In this case, each of the top impact generating venues are journals, although some have not produced a great amount of literature and could be (in that regard) considered to be out of the core of the subject. They boast very high citations per document, which implies a well-developed efficiency in disseminating knowledge on ESN tourism. Thus, they are not core journals, but they are extremely influential from a scientific perspective. There is also an important feature of the list of the journals in Table 4, as it includes 9 journals (out of 19) that are classified outside the Social Science or Business, Management and Accounting areas that can be considered the core of the literature and are associated with Environmental Science and to a lesser extent, Energy and Agricultural and Biological Sciences. In this sense, journals from other disciplines are providing a sizeable share of the impact of the whole domain.

Key players and scientific collaboration

The top 25 countries contribute to roughly the 78% of the whole literature on ESN tourism, which is a very similar ratio to the production of the top 25 countries for Tourism (77% for the same period). There is though, a relevant difference when examining the list of top producers, as positions in the rank vary significantly, and four of the top producers in Tourism (Russian Federation, Hong Kong, South Korea and Greece) are out of the top 25 for ESN Tourism, as shown in Table 5.

As stated before, traditional main scientific producers in the various research areas around ESN Tourism included the US, UK, China, Canada or Australia. Over the last years some new regional actors have appeared, and some regions have grown substantially, which induces us to think that they will be playing an important role in the future. In the Asiatic region, both Malaysia and specially Indonesia have produced a very significant output. Both countries are also relevant producers of tourism literature in the world scenario (8th and 12th main producers), but share a more acute interest in ESN literature, as suggested by the fact that they rank significantly higher when considering this type of production (5th and 9th).

African countries have also made relevant progress in terms of ESN literature, but only South Africa (a well-studied case) has made it to the top positions, both in terms of the general subject (16th) and specially in terms of both Ecotourism and Sustainable Tourism, and to a lesser extent, nature-based tourism. As this has already been described in the literature and also marks starkly the local development of this specialized production, we have moved our attention to the case of the Latin American region. Both México and Brazil have developed relevant outputs in the last years, but in the whole region a specific interest in this kind of studies seems to have emerged, although it's still incipient. Of the ten regional producers that generate a significant output in both Tourism and ESN Tourism (100/10 papers), only Argentina and Jamaica rank lower in ESN Tourism than they do on Tourism as a whole. African countries also seem prone to ESN Tourism, but with countries outranking their global positions in Tourism being proportionally lower (8/14 for the countries with comparable outputs).

Table 5. Top producers of ESN Tourism literature (Source: Scopus, 1986-2022)

Country	Region	Tourism	ESN Tourism	Diff (rank)	
United States	Northern America	18399	2288	0	
China	Asiatic Region	14169	1483	0	
Australia	Pacific Region	9712	1467	1	
United Kingdom	Western Europe	12913	1378	-1	
Indonesia	Asiatic Region	4223	914	3	
Spain	Western Europe	8367	832	-1	
Canada	Northern America	4435	689	0	
South Africa	Africa	3097	672	8	
Malaysia	Asiatic Region	3398	647	3	
Italy	Western Europe	5206	630	-4	
India	Asiatic Region	3669	487	-2	
New Zealand	Pacific Region	3166	406	1	
Portugal	Western Europe	3514	358	-3	
Germany	Western Europe	3480	354	-3	
Brazil	Latin America	1954	323	10	
Taiwan	Asiatic Region	2789	317	1	
Turkey	Middle East	3152	298	-3	
Sweden	Western Europe	1694	283	9	
Poland	Eastern Europe	2504	263	0	
France	Western Europe	3118	262	-5	
Netherlands	Western Europe	2173	262	2	
Mexico	Latin America	1285	262	14	
Norway	Western Europe	1433	260	7	
Japan	Asiatic Region	2336	257	-4	
Thailand	Asiatic Region	1828	253	1	

Main hubs of scientific collaboration have also been studied, although a comprehensive picture of the global framework has not been created yet (to the best of our knowledge). In order to do so we have used Social Network Analysis techniques and software such as VOSViewer (Van Eck and Waltman, 2010) and Gephi (Bastian et al., 2009). Visualization software and techniques are extremely useful to create representations that can help us identify main actors, collaborations and sub-structures in the literature. Scientific collaboration seems to be increasingly beneficial when the participants part away from local or national cooperation and delve into international collaboration (Guerrero-Bote et al., 2013). This is why we have focused our analysis on the international collaboration and have not dealt with interinstitutional or interpersonal collaboration, which would also require a much more fine-grained approach, on the other hand. Also, we think that it would be interesting to bear in mind that international collaboration appears to bring even more benefits to developing countries (Onyancha and Maluleka, 2011), and that developing countries are precisely very well represented in Table 5. To consider but a list of what could be considered "developing countries", we could use Australia's Foreign Affairs Minister list (2023). According to this inventory, 10 of the 25 biggest scientific producers on ESN Tourism literature can be classified as developing countries.

In this sense, studying patterns of collaboration and regional structures might provide an interesting insight into the inner mechanisms of the sub-field. In order to try to unveil this we have produced a network based on co-authorship of authors affiliated with institutions based in a number of countries (109) that had produced a minimum of 10 papers on the subject over the years using VOSViewer. We have then organized it using a ForceAtlas 2 layout algorithm, which as a Force-directed layout "produces visual densities that denote structural densities" (Jacomy et al., 2014).

The nodes repulse each other, and the edges attract the connected nodes proportionally to their weight, so that heavily collaborating countries are displayed together, and unconnected countries are set apart. In this representation, betweenness centrality (Freeman, 1979) is associated with both the size and tone of the nodes, so actors that play a pivotal role as hubs in the global structure can be clearly identified (Abbasi et al., 2011).

As we can see in Figure 3, there are two very distinctive hubs in terms of scientific collaboration, United States and the United Kingdom. These are on the other hand well known and have been reported in the literature, along with several European countries. Our representation shows they are much more prominent than stated before (Fang et al., 2018) and new regional leaders have ascended to the position of world collaboration hubs when looking at the whole picture.

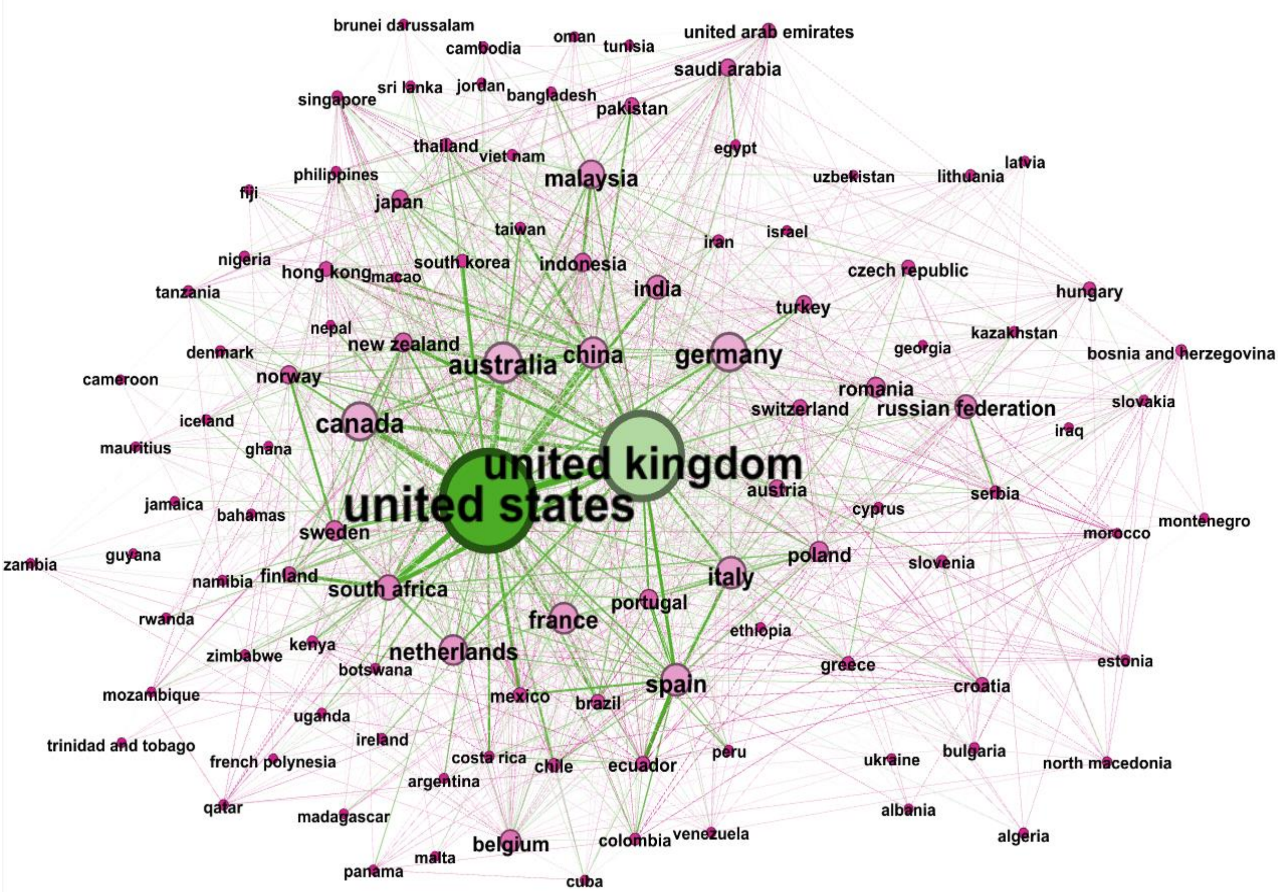


Figure 3. International collaboration network in ESN Tourism literature (Created with Gephi using Scopus data: 1986-2022)

Countries with very prominent BC scores (green, but also light pink) include South Africa (104), Malaysia (125), China (145) and Spain (153), seem to be brokering local substructures, respectively connecting African, Asian and Latin American research to the world network in a great deal. Netherlands, France, Italy, Germany and Australia are also integrated into other sub-networks (and have very prominent BC) but seem to have a less clear role in connecting them to the rest of the countries that produce science on ESN Tourism. Many of the countries in the center of Figure 3 form part of the core radial structure that is typical of scientific collaboration (Gazni et al., 2012; Guerrero-Bote et al., 2013) and represent a great deal of the total interaction between countries, but a relevant part of the outer radial structure is connected via local hubs in both Africa, Asia and Latin America.

Science maps

Scientific cartography or "scientography" has been used for years as a tool to discover and display structural features regarding the thematic distribution of scientific literature, or more simply put, its intellectual structure. This type of procedure has been used very widely because of its inherent value, as it "facilitates the analysis of domains by showing the structure and relations of the inherent elements represented" (Moya-Anegón et al., 2007).

The maps that we have created intend to reflect the intellectual structure of the literature on Ecotourism, Sustainable Tourism and Nature Based Tourism based on co-word analysis. In order to do so, we adopt the overlay map technique (Rafols et al., 2010) that has been very successful in mapping scientific outputs.

The base map (Figure 4) represents the literature for the whole period (1986/2022) as a co-word network. Co-word analysis is a well-known technique (Callon et al., 1983) and has been widely used in scientometric studies (Callon et al., 1991; Cobo et al., 2011; Peters and van Raan, 1993; Tseng et al., 2007) for studying the thematic distribution, structure, and evolution of scientific fields. Words cooccurring in 10 or more documents were selected for both the layout of the networks and the detection of clusters of keywords in the literature. Fractional counting was used to build up the networks, as opposed to whole counting approach, as it was reported to provide better results in the literature (Perianes-Rodriguez et al., 2016; Vargas-Quesada et al., 2017). Only the top 1000 terms were selected in order to produce a more manageable network, although we think that the level of detail is quite high. The six clusters are identified by using the modularity-based clustering algorithm implemented in VOSViewer (Waltman et al., 2010). Standard settings were applied, although small clusters were dissuaded by setting the minimum size to 50. A total of 6 clusters resulted from the clustering procedure, ranging from 285 members (cluster 1, red) to 69 members (cluster 6, light blue), which discards smaller and more cohesive clusters but results in more balanced clusters in terms of their relative importance. Figure 4 shows the base map that was used as the background layer for the rest of the maps, that are subsequently overlayed on top to appreciate the differences and contributions of the different chronological or geographic slices of the literature.

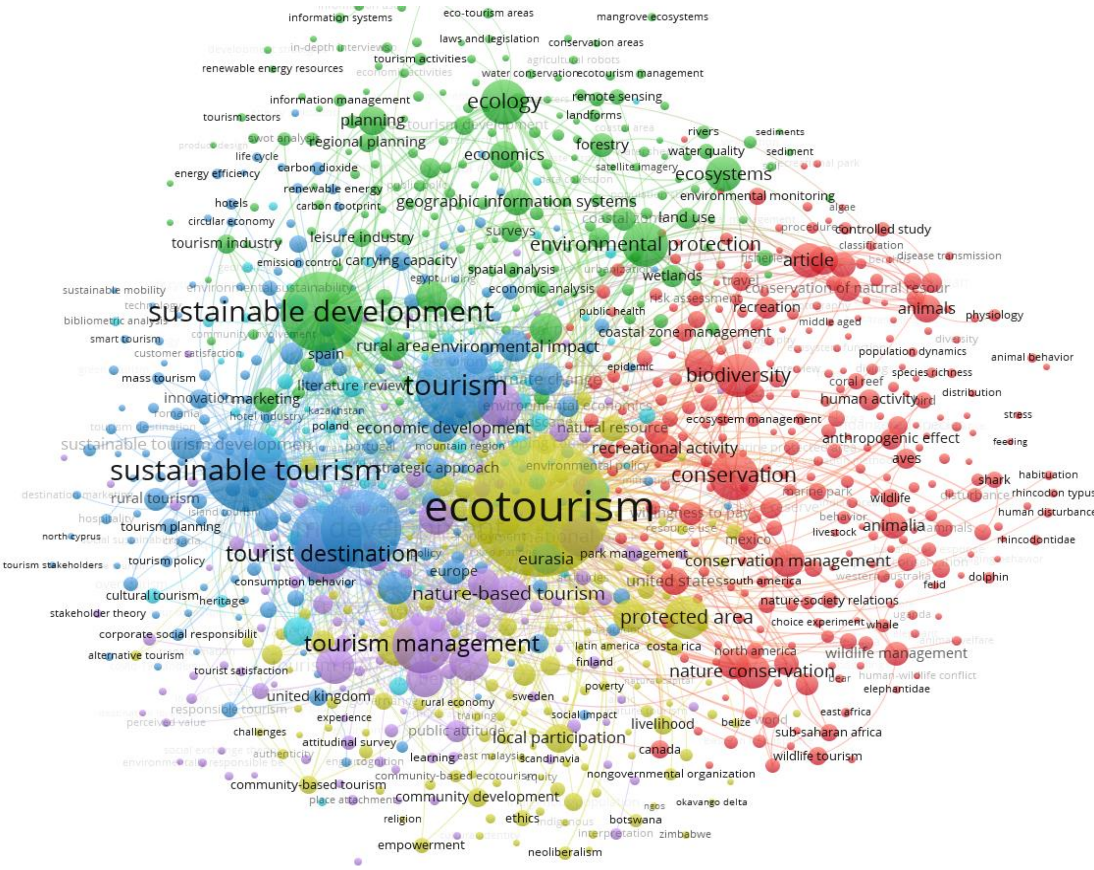


Figure 4. Base outline of the co-word analysis network. Full network available online at Zenodo: https://zenodo.org/doi/10.5281/zenodo.11401067 (Created with VOSviewer using Scopus data 1986-2022)

The resulting six clusters depict a landscape in which the original concepts of the query combine and unfold to offer a complex and highly interrelated intellectual structure. By utilizing the information from Table 6 regarding the foundational co-occurrence structure of words, we can delineate the different clusters based on their core semantic fields.

Table 6. Intellectual structure of ESN Tourism research, worldwide, whole period (Source: Scopus, 1986-2022)

Cluster 1 Red (285)	**Cluster 2 Green (183)**	**Cluster 3 Blue (179)**	**Cluster 4 Yellow (159)**	**Cluster 5 Purple (125)**	**Cluster 6 Light blue (69)**
Label (freq.)	**Label (freq.)**	**Label (freq.)**	**Label (freq.)**	**Label (freq.)**	**Label (freq.)**
conservation (911)	sustainable development (2573)	sustainable tourism (2710)	ecotourism (7554)	tourism management (1306)	eurasia (394)
biodiversity (751)	ecology (830)	tourism (2461)	protected area (764)	tourist destination (1260)	heritage tourism (337)
article (486)	environmental protection (801)	tourism development (2444)	stakeholder (581)	china (737)	cultural heritage (318)
nature conservation (477)	ecosystems (498)	Sustainability (1972)	protected areas (435)	national park (624)	asia (232)
conservation management (421)	environmental management (414)	tourism economics (449)	local participation (344)	perception (596)	literature review (181)
australia (371)	decision making (373)	climate change (426)	natural resource (266)	nature-based tourism (576)	education (174)
human (346)	rural area (341)	environmental impact (416)	indonesia (224)	tourism market (554)	geotourism (167)
animals (318)	planning (332)	sust.tourism development (374)	development (214)	tourist behavior (529)	landscape (144)
ecosystem service (316)	economics (325)	economic develop. (286)	malaysia (201)	tourist attraction (491)	world heritage site (138)
recreational activity (312)	geographic information systems (304)	europe (264)	local community (200)	questionnaire survey (372)	far east (109)
united states (309)	marketing (261)	Spain (244)	governance approach (192)	public attitude (192)	comparative study (107)
animalia (279)	forestry (243)	Environment (225)	developing countries (177)	environmental education (180)	heritage conservation (101)
conservation nat. resources (271)	coastal zone (212)	covid-19 (209)	rural development (169)	spatiotemporal analysis (154)	assessment method (98)

The first cluster (red) brings together keywords related to nature conservation and natural resources in their various facets, encompassing concerns for biodiversity, management activities, and, to a much lesser extent, the provision of these resources for recreational activities. This is the biggest cluster in terms of the number of keywords (285) but is also the most prominent in terms of the aggregated frequency of those keywords (21,244 occurrences in the corpus). The second cluster (green) is smaller (183 keywords) but also substantially less conspicuous than the first, as its keywords are mentioned a bit over 15,000 times. It has a very prominent keyword, "sustainable development", followed by keywords that could be grouped around ecology and ecosystems, and their management.

The third cluster (blue) is actually almost as relevant as the first one in terms of occurrences (21,219), which are concentrated around a small set of keywords related to sustainable tourism, sustainability and development. In general, tourism, the economic aspects and environmental concerns dominate this cluster. The fourth cluster (yellow) has a similar density of concepts than the third one, although in this case, the core of the semantic space is clearly defined by the keyword "ecotourism", which accounts for 40% of the total occurrences. Several significantly less important themes are connected to this central idea and can be grouped around concepts such as protected areas, local development, and stakeholders. The fifth cluster (purple) has much more homogeneous keywords, although tourism management and destinations seem to point to a direction in which common research topics are pinpointed (tourist perceptions, attraction, behavior). A sub-topic regarding nature-based tourism, natural parks and environmental culture can also be detected.

This brings up the possibility of suggesting a hypothesis (that unfortunately we cannot test) by linking methodological and research-intensive literature to the nature-based tourism topic. Lastly, the sixth cluster (light blue) is substantially smaller than the rest, and more homogeneous in the occurrences of the diverse keywords. It's clearly netted around the ideas of cultural heritage and tourism expressed in several different but similar keywords.

Foundational stage (86-02)	Consolidation stage (03-12)	Massive growth (13-22)

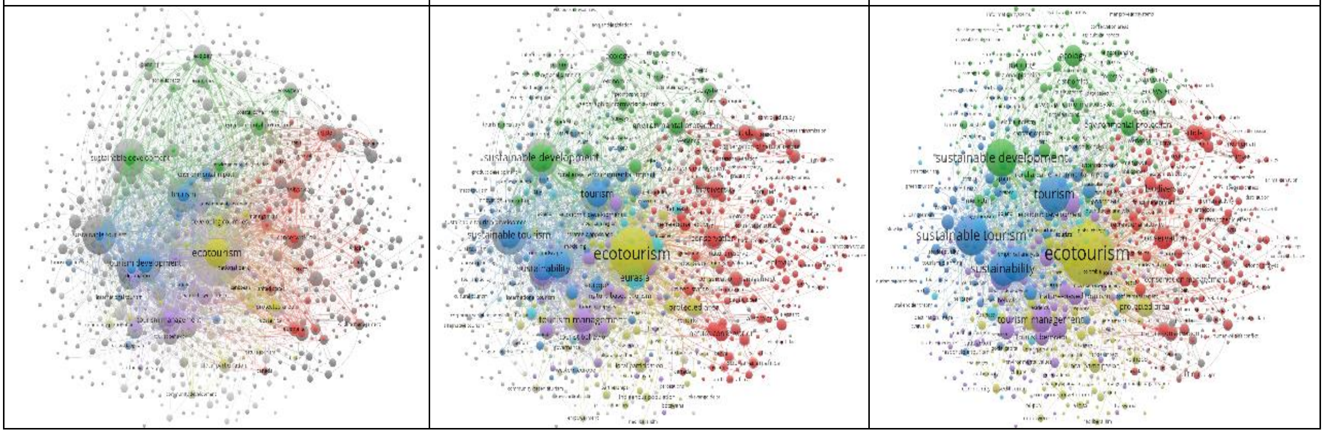


Figure 5. Overlay maps depicting the evolution of areas of interest over time. Overlays available online at Zenodo: https://zenodo.org/doi/10.5281/zenodo.11401198 (Created with VOSviewer using Scopus data 1986-2022)

The first and most evident difference between the overlays in figure 5 is their size, as they represent periods with important production differences. Apart from this, more nuanced differences emerge, as will be shown below.

In the first stage, the foundational stage that runs from 1986 to 2002, only 90 of the 1000 keywords occurred enough (10 or more times) to be displayed in the corresponding scientogram. That's not surprising, as the literature on ESN Tourism has had an accelerated growth. Of the 6 clusters identified in the base map, one of them, the sixth, did not even exist during the first years. The rest of the clusters contained between 8% and 12% of their keywords during the first analyzed period and represented from 2.2% to 4.8% of the total occurrences. This can be clearly appreciated graphically in figure 5a, as many of the background nodes are basically empty.

The second period, which we have characterized as a consolidation phase, spans from 2003 to 2012. It's much shorter than the first one, and obviously more similar to the base map. There are some singularities to highlight, though, as clusters behave differently during the period. The first cluster (red), which contained keywords on nature conservation, natural resources and management (see above for a more refined description) was already mature during the period, and contained around 72% of the keywords present in the base map.

For comparison, the rest of the clusters span from 42% to 50% of the total keywords. Also, it represents 33% of the occurrences, while rest of the clusters do only account for a range between 20% and 24%. Cluster 6 is of course an exception, as it was created during the second period. These details can be found in Table 7.

During the last period, cluster 1 does not incorporate many more keywords (some 7% difference with the consolidation stage) while the rest of the clusters show differences from 32% to 50%. They evolve very significantly both in terms of the number of different keywords and the total number of occurrences of those keywords. Cluster 5 (pruple, on tourism management, and nature-based tourism) seems the one that has evolved more significantly during the last period. The % of keywords that can be found during this the previous period rises from 50% to 97%, and the occurrences compared to the base map rise from 21.6% to a 72%. Also, VOSviewer provides an average of the years of the occurrence of the terms, and cluster 5 shows a significant difference with regards to the rest of the clusters.

Table 7. basic statistics for the temporal layouts. Number of keywords (KW), Occurrences (Occ.), Average Occurrences (Av. Oc.), % Key words (%KW) and % Occurrences (%Occ.) (Source: Scopus, 1986-2022)

	Cluster 1 – avg. year 2013.6				Cluster 2 – avg. year 2015.6				Cluster 3 – avg. year 2015.9			
	Base	86-02	03-12	13-22	Base	86-02	03-12	13-22	Base	86-02	03-12	13-22
KW	285	32	205	226	183	14	77	169	179	14	84	169
Occ.	21,144	671	7,142	11,674	15,724	516	3,149	11,059	21,219	703	4,503	15,259
Av. Oc.	74.2	21	35	52	85.9	37	41	65	118.5	50	54	90
Var. C.	1.3	0.7	1.1	1.3	2.5	0.9	1.9	2.4	3.0	1.1	2.1	2.9
% KW		11%	72%	79%		8%	42%	92%		8%	47%	94%
% Occ.		3.2%	33.8%	55.2%		3.3%	20.0%	70.3%		3.3%	21.2%	71.9%
	Cluster 4 – avg. year 2014.5				Cluster 5 – avg. year 2016.1				Cluster 6 – avg. year2015.6			
	Base	86-02	03-12	13-22	Base	86-02	03-12	13-22	Base	86-02	03-12	13-22
KW	159	19	90	141	125	11	62	121	69		32	61
Occ.	18,605	899	4,567	12,243	13,354	288	2,878	9,682	4,605		1,398	2,842
Av. Oc.	117.0	47	51	87	106.8	26	46	80	66.7		44	47
Var. C.	5.1	2.2	4.2	4.8	1.9	1.3	1.5	1.7	1.1		1.6	1.0
% KW		12%	57%	89%		9%	50%	97%		0%	46%	88%
% Occ.		4.8%	24.5%	65.8%		2.2%	21.6%	72.5%		0.0%	30.4%	61.7%
				41%				51%				31%

Another perspective of the base map can be scanned if we study the distribution of co-word clusters over relevant world regions (Figure 6). This has been attempted for a limited number of regions and countries that we believe are most interesting for understanding the inner characteristics of the sub-field, but we acknowledge that this could also have been applied to other environments. Europe and United States are clearly the two most prominent scenarios that we would be looking at, but there are also others that we thought worth analyzing.

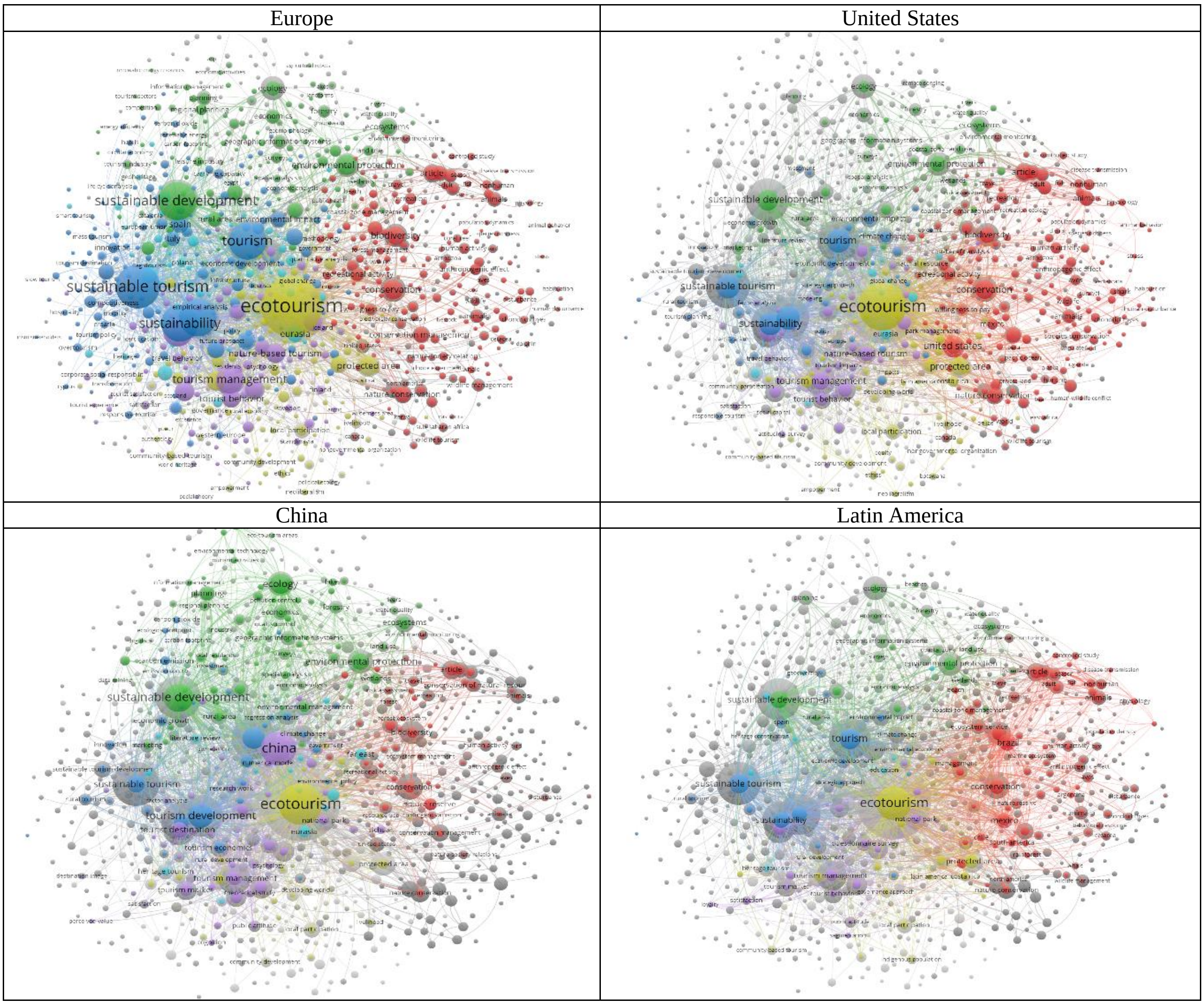


Figure 6. Overlay maps comparing the focus of output from Europe (28), United States, China and Latin America. Overlays available online at Zenodo: https://doi.org/10.5281/zenodo.11401126 (Created with VOSviewer using Scopus data 1986-2022)

China is a prominent local hub as well as a very relevant global actor that has not received as much attention as it would seem to deserve, and we have already described what we think is a promising actor for the ESN Tourism literature, the Latin American region. These four geographical entities have been analyzed separately in order to show their differences. A specific scientogram has been created for each of them and it has been overlayed on top of the base map in Figure 6.

The distribution of clusters, and thus thematic emphasis on research over the four regions is quite different. The European region is by far the biggest producer of ESN Tourism literature, and is quite prominent in the first cluster (red), being very much the world leader around the nature conservation/natural resources group of topics. Surprisingly, its contribution to the third cluster (blue - sustainable tourism, economic aspects and environmental concerns) it's even bigger, being 5, 6 and 12 times bigger (in terms of word occurrences) than the US, China or Latam region.

It' also very prominently the most clearly represented region in the sixth cluster (light blue –cultural heritage), although the reader is advised to use the full size image that can be found online to appreciate this particular aspect of the scientogram. The US in turn has a global sum of word occurrences of over 4,500 in the second cluster (sustainable development, ecology and ecosystems), significantly lower than the European space, but representing a greater proportion of the topics that characterize American research.

The Latam space, which is well connected to the US, is also most prevalent in this cluster, having disproportional presence in the area when compared to other very significant regions, such as China, which has almost double the global occurrences in the network, but roughly a 40% less number of occurrences in this cluster. China in exchange seems to have developed a specialization in the fifth cluster (purple - tourism management, destinations, nature-based tourism).

CONCLUSIONS

Although many approaches can be taken to study a developing field of study, bibliometrics offers some key advantages that can contribute significantly to understanding the dynamics and features of emerging scientific research fields. Ecotourism, Sustainable Tourism, and Nature-Based Tourism (ESN) has undergone significant evolution over the years, paralleling the development of the broader tourism field. Three distinct stages—foundational, consolidation, and maturity—have been identified, indicating a consistent growth pattern over time. The exponential growth observed in ESN tourism literature, particularly during the consolidation and mature phases, suggests increasing interest and engagement with the topic within the academic community.

While there are some differences in formal characteristics between ESN tourism and general tourism literature, such as document types and open access publishing, overall, ESN tourism aligns with mainstream trends in scientific publication. ESN tourism literature tends to be slightly more prone to be published in English, with notable contributions from Spanish and Chinese publications, indicating a global interest and participation in the dissemination of ESN-related research.

ESN tourism literature exhibits significant differences in subject areas compared to general tourism literature, with a stronger emphasis on environmental science, agriculture, and biological sciences. The interdisciplinary nature of ESN tourism is evident, with papers being classified in a greater number of scientific areas compared to general tourism literature. This is probably a relevant factor in explaining why ESN tourism literature tends to receive more citations on average, also suggesting its perceived importance within the academic community.

The distribution of scientific production in ESN tourism is globally dispersed, with significant contributions from both traditional and emerging research hubs. International collaboration plays a crucial role in advancing ESN tourism research, with notable contributions from developing countries, indicating a growing interest and participation from diverse regions. The case of Malaysia, Indonesia and the Latin American region is showcasing this trend.

The scientific maps presented in this study offer a comprehensive depiction of the intellectual landscape within the ESN literature domain. Utilizing co-word analysis and overlay mapping techniques, the study delineates six distinct thematic clusters, each representing a unique area of research focus within the ESN tourism domain. These clusters encompass diverse topics such as nature conservation, sustainable development, ecotourism, tourism management or cultural heritage. By identifying clusters based on core semantic fields and analyzing their co-occurrence structures, the study provides insights into the complex interrelationships and thematic evolution within the ESN tourism literature. Temporal analysis reveals significant shifts in thematic emphasis and research focus over different time periods. The study identifies a foundational stage (1986-2002) characterized by rapid growth in ESN tourism literature, followed by a consolidation phase (2003-2012) where certain clusters matured while others emerged. Notably, a distinctive structure depicting cultural heritage and tourism literature only emerged during the consolidation phase, indicating dynamic changes in research priorities and thematic composition over time. Furthermore, the study observes substantial evolution in thematic clusters during the last period, indicating ongoing development and diversification within the ESN tourism literature domain.

Geographical analysis highlights regional variations in thematic emphasis and research contributions. Europe emerges as a prominent producer of ESN tourism literature, particularly in topics related to nature conservation and sustainable tourism. The United States exhibits a strong focus on sustainable development and ecology-related topics, while China demonstrates specialization in tourism management and nature-based tourism. Latin America, closely connected to the US, shows significant presence in sustainable development topics. These regional differences underscore the global diversity and interconnectedness of research efforts within the ESN tourism domain, offering valuable insights for future collaboration and interdisciplinary research endeavors.

Author Contributions: Conceptualization, K.V.C. and R.M.E.H. and I.B.; methodology, I.B. and R.S.J.; software, R.S.J.; validation, K.V.C. and R.M.E.H.; formal analysis, R.S.J.; investigation, R.M.E.H. and I.B. and R.S.J.; data curation,

I.B. and R.S.J.; writing - original draft preparation, I.B. and R.S.J.; writing - review and editing, I.B. and R.S.J. and K.V.C. and R.M.E.H.; visualization, R.S.J.; supervision, K.V.C. and R.M.E.H.; project administration, K.V.C. and I.B. All authors have read and agreed to the published version of the manuscript.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Abbasi, A., Altmann, J., & Hossain, L. (2011). Identifying the effects of co-authorship networks on the performance of scholars: A correlation and regression analysis of performance measures and social network analysis measures. *Journal of Informetrics*, 5(4), 594-607. https://doi.org/10.1016/j.joi.2011.05.007

Australia's Foreign Affairs Minister. (2023). List of developing countries as declared by the Minister for Foreign Affairs. https://www.dfat.gov.au/sites/default/files/list-developing-countries.pdf Last retrieved: 26-10-23.

Baloch, Q.B., Shah, S.N., Iqbal, N., Sheeraz, M., Asadullah, M., Mahar, S., & Khan, A.U. (2023). Impact of tourism development upon environmental sustainability: a suggested framework for sustainable ecotourism. *Environmental Science and Pollution Research*, 30, 5917–5930. https://doi.org/10.1007/s11356-022-22496-w

Bastian, M., Heymann, S., & Jacomy, M. (2009). Gephi: An Open Source Software for Exploring and Manipulating Networks. *Proceedings of the International AAAI Conference on Web and Social Media*, 3(1), 361-362. https://doi.org/10.1609/icwsm.v3i1.13937

Bello, F.G., Carr, N., & Lovelock, B. (2016). Community participation framework for protected area-based tourism planning. *Tourism Planning & Development*, 13(4), 469–485. https://doi.org/10.1080/21568316.2015.1136838

Bashir, A., Singh, R., & Mishra, A. (2022). Mapping the research trends in International Journal of Tourism Policy: A bibliometric analysis and visualization. *International Journal of Tourism Policy*, 12 (3), 273-292. https://doi.org/10.1504/IJTP.2022.126627

Bhammar, H., Li, W., Molina, C.M.M., Hickey, V., Pendry, J., & Narain, U. (2021). Framework for Sustainable Recovery of Tourism in Protected Areas. *Sustainability*, 13(5), 2798. https://doi.org/10.3390/su13052798

Callon, M., Courtial, J., & Laville, F. (1991). Co-Word Analysis as a Tool for Describing the Network of Interactions Between Basic and Technological Research—The Case of Polymer Chemistry. *Scientometrics*, 22(1), 155-205. https://doi.org/10.1007/BF02019280

Callon, M., Courtial, J., Turner, W., & Bauin, S. (1983). From Translations to Problematic Networks - An Introduction to Co-Word Analysis. *Social Science Information Sur Les Sciences Sociales*, 22(2), 191-235. https://doi.org/10.1177/053901883022002003

Cobo, M.J., López-Herrera, A.G., Herrera-Viedma, E., & Herrera, F. (2011). An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the Fuzzy Sets Theory field. *Journal of Informetrics*, 5(1), 146-166. https://doi.org/10.1016/j.joi.2010.10.002

Diéguez-Castrillón, M.I., Gueimonde-Canto, A., & Rodríguez-López, N. (2022). Sustainability indicators for tourism destinations: bibliometric analysis and proposed research agenda. *Environment, Development and Sustainability*, 24 (10), 11548-11575. https://doi.org/10.1007/s10668-021-01951-7

Dinç, A., Bahar, M., & Topsakal, Y. (2023). Ecotourism research: a bibliometric review. *Tourism and Management Studies*, 19 (1), 29-40. https://doi.org/10.18089/tms.2023.1901

Dwyer, L. (2023). Tourism development and sustainable well-being: a Beyond GDP perspective. *Journal of Sustainable Tourism*, 31(10), 2399–2416. https://doi.org/10.1080/09669582.2020.1825457

Esparza, R.M., Gamarra, C.E., & Ángeles, D. (2020). El ecoturismo como reactivador de los emprendimientos locales en áreas naturales protegidas [Ecotourism as a catalyst for local entrepreneurship in protected natural areas]. *Revista Universidad y Sociedad*, 12(4), 436-443 (In Spanish). https://rus.ucf.edu.cu/index.php/rus/article/view/1666

Fang, Y., Yin, J., & Wu, B. (2018). Climate change and tourism: a scientometric analysis using CiteSpace. *Journal of Sustainable Tourism*, 26(1), 108-126. https://doi.org/10.1080/09669582.2017.1329310

Freeman, L. (1979). Centrality in social networks: conceptual clarification. *Social networks*, 1(3), 215-239. https://doi.org/10.1016/0378-8733(78)90021-7

Garrigos-Simon, F.J., Narangajavana-Kaosiri, Y., & Lengua-Lengua, I. (2018). Tourism and sustainability: A bibliometric and visualization analysis. *Sustainability*, 10(6), 1976. https://doi.org/10.3390/su10061976

Gazni, A., Sugimoto, C.R., & Didegah, F. (2012). Mapping world scientific collaboration: Authors, institutions, and countries. *Journal of the American Society for Information Science and Technology*, 63(2), 323-335. https://doi.org/10.1002/asi.21688

Guerrero-Bote, Vicente, P., Olmeda-Gómez, C., & Moya-Anegón, F. (2013). Quantifying the benefits of international scientific collaboration. *Journal of the American Society for Information Science and Technology*, 64(2), 392-404. https://doi.org/10.1002/asi.22754

Hasana, U., Swain, S.K., & George, B. (2022). A bibliometric analysis of ecotourism: A safeguard strategy in protected areas. *Regional Sustainability*, 3 (1), 27-40. https://doi.org/10.1016/j.regsus.2022.03.001

Honey, M. (2008). *Ecotourism and Sustainable Development: Who Owns Paradise?* Island Press, United States.

Jacomy, M., Venturini, T., Heymann, S., & Bastian, M. (2014). ForceAtlas2, a Continuous Graph Layout Algorithm for Handy Network Visualization Designed for the Gephi Software. *PLoS ONE*, 9(6), e98679. https://doi.org/10.1371/journal.pone.0098679

Jaya, P.H.I., Izudin, A., & Aditya, R. (2024). The role of ecotourism in developing local communities in Indonesia. *Journal of Ecotourism*, 23(1), 20–37. https://doi.org/10.1080/14724049.2022.2117368

Kropinova, E.G., Anokhin, A.Y., & Primak, T.K. (2023). Ecotourism - A 21st Century necessity or responding to consumer demand? *GeoJournal of Tourism and Geosites*, 46(1), 37–45. https://doi.org/10.30892/gtg.46104-998

Liu, S., & Li, W.Y. (2020). Ecotourism Research Progress: A Bibliometric Analysis During 1990–2016. *SAGE Open*, 10(2), 1-12. https://doi.org/10.1177/2158244020924052

Moya-Anegón, F., Vargas-Quesada, B., Chinchilla-Rodríguez, Z., Corera-Álvarez, E., Munoz-Fernández, F.J., & Herrero-Solana, V. (2007). Visualizing the marrow of science. *Journal of the American Society for Information Science and Technology*, 58(14), 2167-2179. https://doi.org/10.1002/asi.20683

Mihalic, T., Mohamadi, S., Abbasi, A., & Dávid, L.D. (2021). Mapping a Sustainable and Responsible Tourism Paradigm: A Bibliometric and Citation Network Analysis. *Sustainability*, 13(2), 853. https://doi.org/10.3390/su13020853

Niñerola, A., Sánchez-Rebull, M.V., & Hernández-Lara, A.B. (2019). Tourism research on sustainability: A bibliometric analysis. *Sustainability*, 11(5), 1377. https://doi.org/10.3390/su11051377

Olafsdottir, G. (2013). On nature-based tourism. *Tourist Studies*, 13(2), 127–138. https://doi.org/10.1177/1468797613490370

Onyancha, O.B., & Maluleka, J.R. (2011). Knowledge production through collaborative research in sub-Saharan Africa: how much do countries contribute to each other's knowledge output and citation impact? *Scientometrics*, 87(2), 315-336. https://doi.org/10.1007/s11192-010-0330-5

Perianes-Rodriguez, A., Waltman, L., & van Eck, N.J. (2016). Constructing bibliometric networks: A comparison between full and fractional counting. *Journal of Informetrics*, 10(4), 1178-1195. https://doi.org/10.1016/j.joi.2016.10.006

Peters, H.P.F., & van Raan, A.F.J. (1993). Co-word-based science maps of chemical engineering. Part I: Representations by direct multidimensional scaling. *Research Policy*, 22(1), 23-45. https://doi.org/10.1016/0048-7333(93)90031-C

Rafols, I., Porter, A.L., & Leydesdorff, L. (2010). Science overlay maps: A new tool for research policy and library management. *Journal of the American Society for Information Science and Technology*, 61(9), 1871-1887. https://doi.org/10.1002/asi.21368

Rivero-Guerra, A.O. (2021). La producción científica de turismo basado en la naturaleza: análisis bibliométrico de las bases de datos de Clarivate Analytics [The Scientific Production of Nature-Based Tourism: Bibliometric Analysis of the Clarivate Analytics Databases]. *Revista General de Informacion y Documentacion*, 31(1), 461-493 (In Spanish). https://doi.org/10.5209/rgid.76973

Ruhanen, L., Weiler, B., Moyle, B.D., & McLennan, C.L.J. (2015). Trends and patterns in sustainable tourism research: a 25-year bibliometric analysis. *Journal of Sustainable Tourism*, 23(4), 517-535. https://doi.org/10.1080/09669582.2014.978790

Singh, R., Sibi, P.S., & Sharma, P. (2022). Journal of ecotourism: a bibliometric analysis. *Journal of Ecotourism*, 21(1), 37-53. https://doi.org/10.1080/14724049.2021.1916509

Skift. (2019). Megatrends 2019. Retrieved from: https://skift.com/megatrends-2019/ Last visit: 27-10-2023.

Solla-Price, D.J. (1969). Measuring the size of science. *Proceedings of the Israel Academy of Sciences and Humanities*, 4 (6, 1969) 98–111.

Statista. (2020). Evolución de la aportación del sector turístico al PIB en el mundo de 2013 a 2020 [Evolution of the contribution of the tourism sector to the GDP worldwide from 2013 to 2020]. https://es.statista.com/estadisticas/640133/aportacion-del-sector-turistico-al-pib-mundial/ Last visit: 09-01-2024.

Stronza, A.L., Hunt, C.A., & Fitzgerald, L.A. (2019). Ecotourism for conservation? *Annual Review of Environment and Resources*, 44(1), 229-253. https://doi.org/10.1146/annurev-environ-101718-033046.

Tennant, J.P. (2020). Web of Science and Scopus are not global databases of knowledge. *European Science Editing*, 46, e51987.

Tseng, Y.H., Lin, C.J., & Lin, Y.I. (2007). Text mining techniques for patent analysis. Information Processing & Management, 43(5), 1216-1247. https://doi.org/10.1016/j.ipm.2006.11.011

Vargas-Quesada, B., Chinchilla-Rodríguez, Z., & Rodriguez, N. (2017). Identification and Visualization of the Intellectual Structure in Graphene Research. *Frontiers in Research Metrics and Analytics*, 2, 7.https://doi.org/10.3389/frma.2017.00007

Van Eck, N.J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84(2), 523–538. https://doi.org/10.1007/s11192-009-0146-3

Waltman, L., van Eck, N.J., & Noyons, E.C.M. (2010). A unified approach to mapping and clustering of bibliometric networks. *Journal of Informetrics*, 4(4), 629-635. https://doi.org/10.1016/j.joi.2010.07.002

Wang, Y., Han, L., & Ma, X. (2022). International tourism and economic vulnerability.

Annals of Tourism Research, 94, 103388. https://doi.org/10.1016/j.annals.2022.103388.

World Tourism Organization (2002). Québec Declaration on Ecotourism. *UNWTO Declarations*, 12(2), 1-26. unwtodeclarations.2002.12.02

World Tourism Organization (2021). COVID 19 y el sector turístico 2020 [COVID-19 and the tourism sector in 2020]. (In Spanish). Last visited: 27-10-2023. https://www.unwto.org/es/covid-19-y-sector-turistico-2020

World Tourism Organization (2023). Glossary of tourism terms. https://www.unwto.org/glossary-tourism-terms. Last visited: 09-05-2024.

Yoopetch, C., & Nimsai, S. (2019). Science mapping the knowledge base on sustainable tourism development, 1990– 2018. *Sustainability*, 11(13), 3631. https://doi.org/10.3390/su11133631

Zeng, L., Li, R.Y.M., Nuttapong, J., Sun, J., & Mao, Y. (2022). Economic Development and Mountain Tourism Research from 2010 to 2020: Bibliometric Analysis and Science Mapping Approach. *Sustainability*, 14 (1), 562. https://doi.org/10.3390/su14010562

Zhang, J., Xiong, K., & Liu, Z. (2022). Research progress and knowledge system of world heritage tourism: a bibliometric analysis. *Heritage Science*, 10, art. 42. https://doi.org/10.1186/s40494-022-00654-0

Article history: Received: 03.04.2024 Revised: 07.06.2024 Accepted: 25.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.967-976
DOI 10.30892/gtg.542spl20-1271

ASSESSMENT OF THE READINESS OF THE TOURISM INDUSTRY IN THE PAVLODAR REGION FOR THE IMPLEMENTATION OF SUSTAINABLE TOURISM

Dinara YESSIMOVA
Toraighyrov University, Department of Geography and Tourism, Pavlodar, Republic of Kazakhstan, e-mail: dika-73@mail.ru

Alina FAURAT
Toraighyrov University, Department of Geography and Tourism, Pavlodar, Republic of Kazakhstan, e-mail: faurat.aa@teachers.tou.edu.kz

Alexandr BELYY
Toraighyrov University, Department of Geography and Tourism, Pavlodar, Republic of Kazakhstan, e-mail: belyi.a@teachers.tou.edu.kz

Ayana YESSIM
L.N. Gumilyov Eurasian National University, Department of Tourism, Astana, Republic of Kazakhstan, e-mail: ayana_esimova99@mail.ru

Aleksandra NOVIKOVA
Institute for Climate Protection, Energy and Mobility (IKEM), Berlin, Germany, e-mail: aleksandra.novikova@ikem.de

Marina OLSHANSKAYA
AvantGarde Group, Bratislava, Slovakia, e-mail: marina@avantgarde-group.eu

Ruslan SAFAROV[*]
L.N. Gumilyov Eurasian National University, Faculty of Natural Sciences, Astana, Republic of Kazakhstan, e-mail: safarov_rz@enu.kz

Bahadur BILALOV
Azerbaijan Tourism and Management University, Tourism and Hospitality Faculty, Baku, Azerbajan, e-mail: b.bilalov@atmu.edu.az

Silviu-Vasile BUMBAK
Babeș-Bolyai University, Faculty of Geography, Sighetu Marmației Extention, Sighetu Marmației, Romania, e-mail: silviu.bumbak@ubbcluj.ro

Citation: Yessimova, D., Faurat, A., Belyy, A., Yessim, A., Novikova, A., Olshanskaya, M., Safarov, R., Bilalov, B., & Bumbak, S.V. (2024). ASSESSMENT OF THE READINESS OF THE TOURISM INDUSTRY IN THE PAVLODAR REGION FOR THE IMPLEMENTATION OF SUSTAINABLE TOURISM. *Geojournal of Tourism and Geosites*, 54(2spl), 967–976. https://doi.org/10.30892/gtg.542spl20-1271

Abstract: Prior to the integration of sustainable development principles into the tourism industry of Pavlodar region, it is essential to assess the current situation and the readiness of the sector participants to implement them. This requires exploring international standards of sustainable tourism and adapting them for evaluation by managers, entrepreneurs, local communities and tourists. For this purpose, questionnaires were developed based on the sustainability criteria approved by the Global Sustainable Tourism Council (GSTC), including the assessment of sustainable management, social and environmental sustainability. The questionnaire results informed SWOT analysis that identified lack of awareness and motivation among industry participants to implement sustainable tourism due to additional costs, climate constraints and lack of government support. The environmentalism of the destinations and the government's investment policy were identified among the strengths.

Keywords: sustainable tourism, sustainable development, tourism industry, Pavlodar region

* * * * * *

INTRODUCTION

Sustainable development is a cross-cutting concept that encompasses various aspects such as environmental protection, economic growth and social well-being (Sabau, 2020). The concept of sustainable tourism is of utmost importance and is considered to be an effective way to promote global economic development and increase overall social employment. Sustainable development implemented in different sectors of the economy is crucial for achieving long-term environmental, social and economic goals. Thus, businesses seek to incorporate the key principles of sustainable development into their operations to boost competitiveness, gain recognition internationally, and improve the quality of products and services (Liao et al., 2022; Abubakr et al., 2020). The implementation of sustainable practices in tourism involves various strategies, as evidenced by a variety of studies in the field (Cheung and Li, 2019; León-Gómez et al., 2021; Garrigos-Simon et al., 2018; Sharpley, 2020; Yoopetch and Nimsai, 2019). The development and operationalization

[*] Corresponding author

of such sustainable tourism practices and policies provide an effective response to global environmental and sustainable development challenges (Guo et al., 2019; McIntyre, 1993; Manaliyo, 2023).

Furthermore, many studies argue that the implementation of sustainable tourism contributes to the competitiveness and growth of tourism by balancing economic development with environmental sustainability in tourist destinations (Cheung and Li, 2019). Green economy and social tourism initiatives also play a role in fostering social solidarity and promoting sustainable tourism. Thus, we can say that the implementation of sustainable development principles in the tourism industry contributes to economic growth and employment reducing harm to local communities and nature, while having positive impacts on the environment, society and the economy (Manzoor et al., 2019). What is sustainable tourism? Sustainable tourism involves a holistic approach to tourism development that seeks to balance economic growth with environmental and social responsibility, while safeguarding cultural heritage and resources for future generations. The concept of sustainable tourism is deeply intertwined with the broader principles of sustainable development reflecting the nexus between the economic, environmental and social aspects of tourism practices (Streimikiene et al., 2021).

According to literature research on sustainable tourism, the concept has become of particular interest since 2005 (Garrigos-Simon et al., 2018). Many academic publications have been researching sustainable tourism and its benefits (Sharpley, 2020). Undoubtedly, the key advantage of sustainable tourism is the environmentally friendly development of tourism in line with the laws of nature, minimizing the impact and damage to the environment, and maximizing the benefits of natural sites for destination development (Cheung and Li, 2019; Bachri et al., 2024; Handiman et al., 2024).

Economic growth is another positive aspect associated with sustainable tourism (Garrigos-Simon et al., 2018; Sharpley, 2020). The relevance of sustainable tourism is determined by an increase in tourism revenues (Soh et al., 2023), as well as high local employment (Streimikiene et al., 2021). Sustainable development of tourism is critical to ensuring the long-term viability of destinations and the well-being of local communities (Khalid, 2021). In addition, sustainable tourism development management is emphasized as a means to ensure high levels of tourist satisfaction (Streimikiene et al., 2021), i.e. improving the quality of services provided by the sector's actors: tour operators, travel agents, restaurateurs, hoteliers, and administration. Thus, all sectors that used to enjoy relatively independence must integrate and share principles and operating guidelines to achieve a common goal when implementing the sustainable development principles.

The implementation of sustainable tourism faces various challenges and obstacles. These obstacles include lack of coordination among bureaucracies, limited awareness, insufficient stakeholder support, competing economic priorities and lack of political will, which results in inefficient use of resources (Midgett et al., 2019). Absence of comprehensive tourism planning is considered a major barrier to the adoption of sustainable tourism practices (Yadav et al., 2018).

Awareness and behavior of industry participants are essential in shaping sustainable tourism practices (Khalid Aqsa, 2023). Various studies prove the importance of tourism industry participants focusing on sustainable development. The importance of consumer awareness of sustainability issues is noted by Soh et al., 2023; Mohd Shariff, 2022; Gonda and Rátz, 2023 the role of lifestyle entrepreneurship in promoting sustainable practices in the industry is explored in the works by Ndegwa, 2022; Mihalič, 2022; Le et al., 2023; Ivancsóné et al., 2023.

The research by (Sabau, 2020) promotes the idea that the current poor progress in implementing the sustainable development goals is due to the limited understanding by individuals, firms, states and political parties of the values that underpin sustainable development. Thus, stakeholder engagement and strategic approaches are critical for achieving sustainable tourism goals, which highlights the importance of involving diverse actors in decision-making processes. Cooperation among all stakeholders and the integration of their actions are considered essential for the successful implementation of sustainable development measures in the tourism industry (Brătucu et al., 2017). Sustainable tourism can only be achieved through an inclusive and collaborative approach involving all stakeholders, including people with disabilities, to create solutions and opportunities (Sica et al., 2020; Makhanova et al., 2022). Achieving the value of sustainable development requires a balanced integration of all four types of values in all discussions of socio-economic activities.

According to some studies, for tourism participants, sustainable tourism is environmentally friendly (Sharpley, 2020; Mihalič, 2022; Fahmawee and Jawabreh, 2023), however, this does not render the full picture. There are several views on sustainable tourism development; according to one of them, the application of sustainable tourism approaches in practice revealed that in this case economic development is put above the well-being of local residents and nature conservation. Alternatively, some approaches are based on green growth strategies, which emphasize the need to distinguish between economic growth and the state of the environment. Our study supports the view that sustainable tourism development focuses on accelerating economic growth while enhancing the sustainability of nature. Another approach exists that focuses on social sustainability, and qualitative changes such as quality of life and well-being of residents and tourists, however, economic growth is not crucial. The approach of slowing down economic growth supports local communities, resisting excessive tourism to reduce the intensity of the impact of tourists on their habitat. A different approach is the transition to the circular economy of tourism. This approach is rather about reducing resource consumption, emissions and waste than stabilizing or slowing the growth of tourism activities or economic benefits.

Thus, there is a need to identify the level of awareness of tourism sector actors about sustainable tourism by proposing specific criteria applicable to each actor in the industry. Specific criteria should be identified to judge whether the industry has sustainable tourism attributes, and specific recommendations and measures should be provided to further embed the principles of sustainable development in the activities of entrepreneurs. Furthermore, the need for reliable measurements to assess tourism sustainability among different groups and levels of stakeholders for effective implementation of sustainable tourism principles is emphasized (Marchi et al., 2022).

The Global Sustainable Tourism Council (GSTC) plays a critical role in promoting sustainable practices in the tourism industry. The Council defined criteria for sustainable development to ensure sustainable development in various areas (Bozhinova and Georgieva, 2023; Wu et al., 2022). The GSTC criteria, which include effective sustainable management, maximizing economic benefits to the host community and minimizing negative impacts, have been used as a basis for assessing the sustainability of tourist destinations (Modica et al., 2018; Huda et al., 2022). In addition, the GSTC criteria have been integrated into the assessment of sustainable practices in the hotel industry in accordance with the sustainability indicators and sustainability framework of the European Union (Alipour et al., 2019). The Global Sustainable Tourism Council criteria are widely used around the world. Huda et al., 2022 have assessed the sustainability of a tourism destination using the GSTC criteria and demonstrating the practical application of the criteria in assessing sustainability. Kruczek and Szromek, 2020 reiterated the importance of the GSTC criteria in determining the value proposition of tourism enterprise business models, particularly in addressing the problem of overtourism. Moreover, Bricker et al., 2022 provided a framework for sustainable tourism development in and around national parks in accordance with the principles and criteria set by the GSTC.

The research was conducted in Pavlodar region located in the north-east of the Republic of Kazakhstan (Figure 1). The region is one of the leaders in the country's mining and commodity complex, while its historical heritage is also remarkable.

Figure 1. Pavlodar region on the map of Kazakhstan

However, a study of current economic trends in the tourism sector of Pavlodar region confirms that the tourism industry as a whole is at the initial stage of development (Yessim et al., 2023), and it is subject to the influence of production sector (Azhayev et al., 2020; Seidaliyeva et al., 2024) and climate features (Pashkov et al., 2020).

The study of current economic trends in the tourism industry of Pavlodar region reveals the need to introduce the principles of sustainable development. The development of national criteria and adaptation of international criteria to local conditions will help to ensure sustainable development of the tourism industry in the region. This is particularly relevant given the environmental impact of the industrial and climatic characteristics of Pavlodar region on tourism. Adapting international criteria of sustainable development to local conditions will promote the emergence of more effective and realistic strategies for tourism development in Pavlodar region. It will, in turn, help to balance the economic, social and environmental aspects of tourism development in Pavlodar region. It is also important to engage tourism industry actors in the discussion and definition of sustainable development principles as their opinion will be helpful in addressing the specifics and needs of the local market, which contributes to more successful implementation of sustainable practices in tourism.

Thus, the research should define the concept of sustainable tourism (1), analyze the existing indicators for measuring tourism sustainability (2), and identify, based on a survey, the status of awareness of the basics of sustainable tourism development among the different groups involved in the tourism sector (3).

MATERIALS AND METHODS

Study area

The research was conducted in Pavlodar region (Figure 1). The analysis of tourist and leisure resources of Pavlodar region revealed that ecological tourism is the backbone of tourism in the region. The natural tourist attractions of Pavlodar region include Bayanaul State National Natural Park; Kyzyltau National Wildlife Refuge; National Natural Forest Reserve Yertis Ormany; Paleontological Natural Monument of National Importance Goose Flight; and National Natural Reserve Irtysh River Floodplain (Alkeyev et al., 2014). According to the assessment of tourist and leisure resources and based on the data from literature, we selected representative study sites among the resources of the administrative districts of the region:

- with the most attractive natural landscapes - Bayanaul District (Bayanaul State National Natural Park);

- moderately attractive but highly rated (according to our survey) – Shcherbakty District (National Natural Forest Reserve Yertis Ormany, Shalday branch).

The surveys on the development and implementation of sustainable tourism identified pilot businesses in the tourism sector: Birch Grove Recreation Center, Yelkonys Recreation Center, Karagai Alany Guest House (Yertis Ormany), and Mixtour tour operator, which will be involved in further research activities.

Sustainable tourism criteria

Sustainable tourism development criteria have been defined based on the Sustainable Development Goals (SDGs), international experience, as well as materials of the Global Sustainable Tourism Council. The GSTC criteria are based on years of previous work and experience around the world and incorporate numerous sustainable tourism recommendations and standards from all continents and contain various indicators. They reflect certification standards, indicators, criteria and best practices from different cultural and geopolitical contexts worldwide in tourism and other sectors where applicable. Potential indicators have been tested for relevance and practicality, as well as for their applicability to a wide range of destinations within Pavlodar region. According to the materials provided by the Global Sustainable Tourism Council, the criteria should be divided according to the research object. Thus, this study has identified the following research objects: tourist destinations, accommodation service providers, and other actors of the tourism industry. For each of these facilities, we have adapted objectives/indicators that feature interdisciplinary, holistic and integrative approach:

- demonstration of sustainable management of a destination, accommodation enterprise, tour operator;
- maximizing social and economic benefits for local communities and minimizing negative impacts;
- maximizing benefits for local communities, visitors and cultural heritage sites while minimizing impact;
- maximizing environmental benefits and minimizing negative impacts (https://www.gstcouncil.org/).

Criteria (indicators) considered in this study are as follows (adapted by us based on the GSTC system):

1) sustainable management: management structure and framework, stakeholder participation, workload and change management. The destination applies a system to monitor and respond to socioeconomic, cultural and environmental issues and impacts caused by tourism activities. Stakeholder participation: the destination informs touristic businesses about sustainability issues and encourages them to adopt relevant practices. A monitoring system is implemented to assess visitor satisfaction with the quality and sustainability of tourism. Promotional and awareness raising materials about the destination accurately reflect tourism products, services and sustainability statements;

2) social sustainability: social well-being and its impact. Main indicators of the section: the destination enables the active participation of all stakeholders in the process of development and implementation of the principles of sustainable tourism. Tourism planning and development respects the rights and needs of all users, including people with disabilities. We also address the carbon footprint of the tourism sector as part of our research.

Criteria related to economic, environmental and cultural sustainability are the subjects of future research.

Survey and interview procedures

Based on the above criteria, questionnaires were compiled to assess the current state of the tourism industry in Pavlodar region, awareness of the principles of sustainable tourism, sustainable development goals and obstacles to its achievement. The questionnaires are presented in two versions: extended version and short version adapted for entrepreneurs. Questionnaires have been developed for the administration of tourist destination, tourism organizers, restaurants, hotels, environmental organizations, local residents, and tourists (Figure 2). The main data collection consisted of anonymous surveys via links to Google forms on questionnaires. Questionnaires were sent to state and local institutions of the Pavlodar region, groups on social networks, and among tourism workers. Conversations and consultations took place with organizations working in the field of sustainable development in Kazakhstan, such as UNDP: projects in the field of biodiversity, the Association of Environmental Organizations of Kazakhstan, JSC National Company Kazakh Tourism. Sustainable development experts shared their experience of working with tourist destinations (conducting surveys, processing results, etc.), and materials from previous studies in protected areas (methodological recommendations on recreational load standards, eco-standards for eco-tourism).

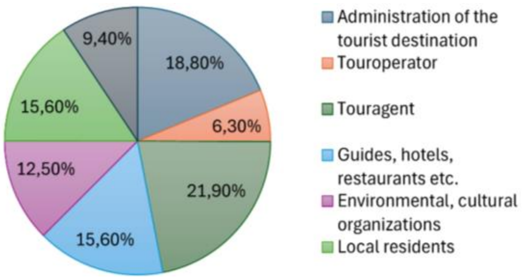


Figure 2. Respondents and focus groups participating in the survey

The interviewed participants included those directly involved in and influencing tourism development in the destination under study, such as administrations of protected areas, private tourism and non-tourism entrepreneurs, as well as relevant public, environmental, and cultural organizations. The interviewees were selected based on a preliminary matching of relevant respondents using materials provided by the Tourism and Entrepreneurship Department of Pavlodar city, the administration of the natural park, the reserve, business directories and internet searches. Further, as the initial interviewing progressed, the range of participants was expanded. Meetings on sustainable tourism development were held with local businesses interested in the research project. Stakeholders with relevant and innovative ideas in the context of the nature park were also involved. During meetings that were held at the businesses/institutions the research team of the project discussed the activities of the entrepreneurs and their ideas regarding the prospects for tourism development in the protected natural area. The composition of the group of interviewees made it possible to obtain information from different types of participants, which are considered to be the most relevant to the research topic.

Table 1. Interviewees in the case study

Interviewee	Representatives of organizations and enterprises
1-3	Bayanaul district governor’s office- 3 representatives
4	State Institution Department of Physical Culture, Sports and Tourism of Bayanaul District
5	Yelkonys Recreation Center
6	Birch Grove Recreation center
7	Karagai Alany Guest House (Yertis Ormany)
8	Mixtour tour operator
9-10	Travel agents – 2 representatives
11-17	Private entrepreneurs: IP *Abiyev*, IP *Azmakan*, IP *Aityshev Nursultan*, LLP *Akzhanym*, IP *Zinnat*, IP *Kashkeyeva*, IP *Naurazbayeva*

Table 2. Examples of survey questions grouped according to the criteria of sustainable management of a tourist destination

Criterion	Examples of focus group questions
Focus group: administration of the tourist destination	
Are there specialized departments or staff responsible for a coordinated approach to sustainable tourism (Aa1)	Does the organization take into account the principles of sustainable tourism (social, economic, cultural and environmental management)? How?
Is the tourism destination guided by a developed strategy and development plan based on the principles of sustainability? Was this plan developed in collaboration with cultural and environmental organizations (Aa2)	Does the organization have a tourism development strategy or plan? What is included in this plan (if there is a published version, please attach a link)? What stakeholders have concurred this strategy?
Is there a monitoring system in place to trace the promotion of sustainable tourism (Aa3)	How is the achievement of the goals specified in the tourism development plan/strategy monitored? How often are progress reports generated and where are they published?
Focus group: administration of the tourist destination, stakeholders (guides, hotels, restaurants, tourists, local residents, etc.)	
Does the destination promote the idea of environmental certification for enterprises in the tourism industry (Ab4)	Are tourism-related enterprises informed about sustainability issues (media, meetings, direct contacts, etc.)? If yes, list the activities?
Focus group: local residents	
Does the destination ensure public participation in sustainable planning and management (Ab5)	Is the public involved in the planning/management of the destination? How? Provide examples of actions taken in response to resident feedback.
Focus group: tourists	
Does the destination receive feedback from tourists on their satisfaction with the quality of services and their participation in planning and management (Ab6)?	Are there surveys or feedback channels for visitors (customers)? How are they arranged? Provide examples of actions taken in response to resident feedback.
Focus group: administration, tourists, local communities, environmental, cultural organizations	
Do tourist information materials reflect the features of the destination, as well as their environmental and environmental activities (Ab7)	Please provide links to advertising and tourism information materials about the destination (tourist enterprise), if available. Were these materials produced with input from local communities and environmental and cultural organizations?
Focus group: administration, public and stakeholders	
Does the destination have a system for monitoring recreational load, as well as managing tourists (Ac8)	Is there a plan that accounts for seasonality? Are there operational mechanisms in place for the enterprise to address seasonality? Which ones?
Focus group: administration, local residents	
Does the destination take into account environmental policy guidelines for conducting environmental impact assessments, including those affecting local residents (Ac9)	Are there guidelines for conducting environmental, economic and sociocultural impact assessments, land use, design, construction and demolition? Which ones? Is the local community taken into account in the development of tourism in their territory?
Focus group: administration, public and stakeholders	
Is the destination guided by a strategy to reduce its carbon footprint to mitigate climate change? Does the destination communicate this impact to the public and stakeholders? (Ac10)	Does the destination (tourism business) identify the risks and opportunities associated with climate change? Is information on projected climate change and related risks made available to residents, businesses and visitors?
Focus group: administration	
Does the destination have risk management (Ac11)	Does the destination have a risk reduction, crisis management and emergency response plan, including natural disasters, terrorism, health, resource depletion and other risks?

The interviews and questionnaire responses provided insight into how stakeholders are involved in tourism development, and what views they have on sustainable tourism. The interview style was structured but open to include new topics in an unstructured manner. The topics of the interviews and discussions at the tourism development meetings revolved around the businesses' perceptions of the principles of sustainable tourism development in destinations as an alternative to the strategies currently in use. We discussed what the respondents perceived as something that should be maintained (e.g. nature or socio-cultural context) and what should be developed, and how the actors see the fulfillment of their own interests in connection with this context. Thus, the initial interviews focused on exploring the personal perspectives and approaches of the participants with further refinement on the identified concepts and approaches of sustainable tourism development. A total of 32 respondents participated in the survey.

RESULTS AND DISCUSSION

Questionnaire analysis

This study used criteria for sustainable tourism development, which relate to the sustainable management (A) and social well-being (B) of a tourist destination. In this section, the majority questions were addressed to the administration of tourist destinations, Bayanaul and Shcherbakty districts. As part of the survey under the sustainable management section (A), the following questions were considered (Table 2). In the first subsection (Aa), respondents were asked questions about the availability of established management structure, documented procedures and monitoring of the implementation of sustainable tourism. Section B represents the criteria that address the comfort of the destination for tourists and, especially, the local community (Table 3). The extent to which the local population is involved in the development of sustainable tourism, how the rights of tourists and the community are taken into account, how the public safety is ensured and how the accessibility of tourist facilities at the destination is ensured. The data obtained after the survey and interviews were processed by content analysis. Interviews and survey results were subjected to thematic analysis, taking into account the internal process of data collection, data analysis. The analysis revealed certain patterns and perspectives in the understanding of the current state of tourism development and the respondents' awareness of the principles of sustainable tourism and the willingness to implement these principles in their activities.

Table 3. Examples of survey questions grouped according to the criteria of social well-being

Criterion	Examples of focus group questions
Focus group: administration, tourists, local communities, tourism enterprises	
Does the destination practice collaborative support among tourists, local community and the destination in the field of sustainable tourism development (Bb1)	Is support for local community and sustainability initiatives by local tourism businesses encouraged and facilitated? How?
Does the destination comply with and practice international human rights standards (Bb2)	Does the destination (tourist enterprise) support international human rights standards? How are they applied at the enterprise?
Focus group: administration, local residents	
Are the rights of the local communities respected at the tourist destination (Bb3)	How are the rights of communities and indigenous peoples respected? Are public consultations organized, is resettlement compensation available?
Focus group: administration, tourists, tourism enterprises	
Does the destination have well-functioning security services that meet the required standards (Bb4)	Does the destination have a system for monitoring, prevention, public alert and response to crime, security and health threats that meets the needs of both visitors and residents? How is it implemented?
Focus group: administration, tourists	
Are the facilities and areas in the destination accessible to persons with disabilities, what methods are used to address these issues while preserving the integrity of cultural, historical, natural sites? (Bb5)	Are areas, facilities and services, including those of natural or cultural significance, publicly accessible, including to persons with disabilities and those who, due to other special needs, require special conditions? How is information on such accessibility provided?

Interview results

Criterion Aa1. Tourism departments function within the administration of special protected natural territories and their activities are combined with the implementation of environmental education programs. This means that tourism development is aimed at organizing environmental education of the population, while secondary focus is on tourism development. The departments mainly deal with cultural and environmental issues, while social and economic aspects receive less attention. All economic aspects such as investments and subsidies are controlled by the government. Activities related to tourism development in protected areas are characterized by transparency both in terms of processes and contracting. Unlike public structures, private entrepreneurs in tourism often lack a specialized team responsible for sustainable tourism development. Their approach to tourism activities is limited, but they have business knowledge that traditionally focuses on profit maximization.

Criterion Aa2. The destination has its own development plan based on the Pavlodar Oblast Tourism Development Plan as well as the Concept of Tourism Development in the Republic of Kazakhstan. The development strategy does include evaluation of tourism assets and considers socio-economic, cultural and environmental issues and risks. However, the destination lacks specific sustainable development goals and objectives. The local community is not involved in the plan development, moreover, the plan is not available on the destination website. Small tourism enterprises do not have a clear development plan; traditional business-oriented activities, including proper market analysis and marketing, are rarely in focus.

Criterion Aa3. Achievements related to tourism development in the destination are reflected in quarterly and annual reports. Some destinations include the following parameters: recreation area attendance, accommodation records, sanitation and hygiene work, landscape design, road infrastructure, tourist information center and safety of holidaymakers, communal property, investment projects, and environmental issues. The activities are displayed very extensively in the news feed on the destination's website. However, no final report is available on the website.

Criterion Ab4. Destination activities largely focus on providing environmental education and encouraging tourism activity, but they fail to adequately address the need for partnerships, collaboration and support for local entrepreneurs and tourism workers. Business sustainability remains an underrepresented practice, as local ventures tend to focus on social sustainability, which emphasizes ensuring their own social well-being and the well-being of others through the provision of natural experiences. Government agencies and organizations also see it as their mission to make nature accessible and bring knowledge and values to the community. Smaller conservation organizations and actors generally do not own or have full control over land resources. For some, their limited access to natural resources creates difficulties in ensuring economic sustainability.

Criterion Ab5. All respondents note that they maintain regular interactions with the local population: they involve residents in work processes, discuss issues related to the life of the local community, etc. However, there is no data confirming public participation in destination planning and management. Local residents themselves believe that their interests are not adequately addressed, and they are not invited to become suppliers of goods or services.

Criterion Ab6. Entrepreneurs build robust interaction with tourists. All comments and suggestions are mainly related to improving the quality of services to increase profits rather than sustainable tourism. The official website of the destination has a Feedback section, but the site itself is not popular among visitors.

Criterion Ab7. The destination provides information on environmental sustainability and conservation of local natural resources mainly by means of information stands. Promotional and awareness-raising materials about the destination are drafted with the participation of environmental and cultural organizations, but they do not always fully reflect the destination's values and approaches to sustainable development. These materials usually convey information about the rules of behavior in protected areas and provide an introduction to local communities and the principles of respect for nature.

Criterion Ac8, criterion Ac9. Destinations that represent special protected areas, in general, respect the pressures and the state of the environment. They follow the requirements for environmental impact assessment, economic and social culture, land use, design, construction and demolition. However, the responses lack information on climate change risks. The negative aspect noted by business representatives is underdeveloped infrastructure, outdated accommodation infrastructure, transport, etc., which prevents the introduction of resource-saving technologies without retrofits.

Small entities apply entrepreneurial approaches aimed at promoting environmental sustainability and protecting local natural resources. Some businesses support nature rehabilitation, e.g. landscaping, limiting interventions to give visitors better access to nature. Some small private businesses and voluntary organizations recognize that visitor activities can lead to changes and impacts on nature. However, in turn, they do not support restricting the flow of people to protect certain intact areas of the site. For the administration of specially protected areas, nature is an important resource for education and enlightenment that needs to be studied and considered, but at the same time left untouched. At the same time, for some tourists, nature must be accessible while understanding that they can have minimal impact on the environment. Entrepreneurs see nature as an infrastructure for various types of activities, which helps improve the quality of life and the services offered.

Criterion Ac10, criterion Bb4. Destinations raise awareness among residents and tourists about eco-tourism by providing information on natural resources, sustainability, wildfires and more. However, no information is available on other aspects of sustainable tourism, such as social sustainability and sustainable management. Similarly, destinations fail to provide information on the environmental impact of tourism, including the consumption of electricity, heat and other resources, i.e. carbon footprint. Tourists lack relevant insights on this as well.

Criterion Ac11. Inspection personnel is available to ensure the regime of special protection of the territory, the plan of engaging forces and means to extinguish fires in the national park located on the lands of Bayanaul district has been approved (one of the answers). Thus, a unified crisis management system operated by a specialized governmental unit is available in the destinations.

Criterion Bb1, Bb3. The rights of indigenous residents are respected in accordance with the legislation of the Republic of Kazakhstan. Round tables are regularly held with the local residents, and their feedback and suggestions are taken into account.

Criterion Bb2. In terms of social well-being, the destinations generally meet the requirements of international standards in the field of human rights, labor code, etc. These requirements are fixed in legislation, labor code and are complied with by all actors of the tourism industry.

Criterion Bb5.Natural tourist sites are accessible, tourist routes, trails are posted at the information centers of the destinations. However, they are not designed for individuals with disabilities. The offices of some businesses are equipped with ramps.

Thus, we see that special protected areas tend to adopt an environmental stance, while businesses focus on economic benefits, although both sides agree that reducing the adverse impact on the environment can bring greater benefits. In general, the respondents' views on sustainable tourism are presented as environmentally friendly activities, without considering economic, social, cultural sustainability. The representatives of the tourism industry are not eager or motivated to explore and implement the principles of sustainable tourism in their activities, as this would entail additional costs, limited economic benefits due to climatic features, as well as the lack of governmental leverage and support.

Our data confirms many studies based on surveying the tourism sector players. The study by Miller et al., 2010 shows low levels of awareness of the impact of the tourism industry and the respective response options. Greater awareness is generally observed regarding tangible impacts (e.g., litter); awareness is lower in relation to intangible impacts (e.g., climate change). In addition, a sense of powerlessness and reluctance to make significant changes in current tourist behavior was noted Miller et al., 2010. A survey of tourism office executives and professionals in a study by Nicholls, 2021 revealed limited and controversial understanding of the key underlying characteristics of sustainability among these two critical stakeholder groups, both of which are crucial to tourism planning, development, marketing and management. Other studies have also highlighted the lack of awareness of the principles of sustainable tourism (Timur and Getz, 2008; Gurung and Seeland, 2011).

Based on the data obtained, a SWOT analysis was conducted on the state of the tourism industry and its readiness to implement the principles of sustainable tourism in Pavlodar region.

Table 4. SWOT-analysis of the state of tourism in Pavlodar region for the purposes of implementation of the sustainable tourism framework in the destination

Strengths: Tourism development in Pavlodar region is in its early stages, which implies less obstacles to the introduction of new practices and strategies. The government's strong investment policy, including that in tourism, can help attract resources and develop infrastructure for sustainable tourism. Special protected natural areas show environmental stance and commitment to conserve natural resources, which contributes to environmental sustainability.	**Opportunities:** Development of partnerships among destinations, businesses and local communities can contribute to the wider adoption of sustainable practices and better interaction in the tourism industry. Training and awareness-raising of the tourism industry actors on the principles of sustainable development can underpin a change in their approaches to more sustainable operations.
Weaknesses: Lack of due attention to the social and economic aspects of tourism development in special protected areas may lead to insufficient accounting basis for the implementation of sustainable practices. Lack of due consideration of the need to establish partnerships with local entrepreneurs and tourism employees may hinder the development of sustainable tourism. The ambiguous attitude of entrepreneurs to restricting the flow of tourists to protect pristine areas of the territory may cause challenges to the conservation of natural resources in the long term. Underdeveloped infrastructure and outdated means of accommodation and transportation prevent the introduction of resource- and energy-saving technologies without retrofitting.	**Threats:** Limited access to natural resources for some local environmental organizations and actors may pose challenges to achieving economic sustainability and implementing sustainable practices. Lack of information about the risks associated with climate change can reduce a destination's readiness to adapt to possible environmental changes. Limited understanding and motivation of the tourism industry actors to implement sustainable practices may become an obstacle to the development of sustainable tourism in the region. The lack of government leverage and support can reduce the motivation of entrepreneurs and administration to implement sustainable practices.

CONCLUSIONS

The survey and interviews among the actors of the tourism industry of Pavlodar region revealed that, in general, the participants are aware of the need to undertake environmental protection activities and consider the interests of communities and tourists. However, there is no defined structure and strategy that could be applied by all actors, except for the state requirements and standards. There is no monitoring system for the implementation of activities, feedback from the public, tourists and local residents. Lack of transparency in the implementation of tourism development tasks, scarce communication to stakeholders about the work done by the destination and planned activities. This issue can be resolved by expanding the use of internet resources, social media, regular and frequent publication of reports on the activities of the destination. No mechanisms are in place to encourage the introduction of sustainable tourism principles, certification and popularization among the residents. Implementing monetary and non-monetary incentives for organizations complying with tourism development standards will help promote the sustainability of the industry.

In general, the tourism sector representatives are not willing or motivated to explore as well as implement the sustainable tourism framework in their activities. The following arrangements can encourage greater interest: educational programs and workshops for the development of the tourism industry based on the principles and benefits of tourism; development of a plan to encourage and support businesses in the implementation of sustainable practices in tourism; and building networks for experience sharing and knowledge transfer among tourism industry players regarding the practical aspects of tourism. The SWOT analysis of the tourism industry in Pavlodar region suggests the following key findings:

The tourism industry in the region is in its nascent stage, which provides excellent opportunities to introduce new practices and strategies without significant obstacles. Strong government investment policies, including those related to tourism, provide a framework for resource mobilization and infrastructure development that can contribute to the sustainable development of the industry. Lack of adequate attention to the social and economic aspects of tourism development in protected areas may disrupt the base for the implementation of sustainable practices. This points to the need to better analyze and consider these aspects when developing the tourism development strategy. Fostering partnerships among destinations, entrepreneurs and local communities, as well as educating tourism industry stakeholders on the principles of sustainable development, can drive successful implementation of sustainable practices and raise awareness in this area. Poor infrastructure and outdated accommodation and transportation facilities can hinder the adoption of resource- and energy-efficient technologies. Therefore, infrastructure needs to be upgraded to facilitate sustainable tourism development.

The findings suggest the need for continued efforts to translate the vast amount of research on sustainable tourism into terms and formats more comprehensible to industry professionals, as well as for unlocking opportunities for local organizations to take the lead in bringing together various stakeholders to place a greater emphasis on sustainability in their communities. Thus, the next objective of our research will be to educate stakeholders and present scientific evidence in a more practical form, thereby enhancing consumers' motivation for sustainable tourism services and changing their behaviors towards more sustainable ones. The research on the development of an action plan to improve the sustainable management of tourism activities will offer tools for decision-makers, researchers and enterprises involved in tourism in a specific destination. Recommendations for the development of tourism in sustainable forms based on local contexts and the interests of local communities will be elaborated in the dimension of socio-economic sustainability. Within the framework of economic sustainability, a range of measures will be proposed to mitigate the demand seasonality, to extend the tourist season, to distribute tourist flows, and to attract graduated specialists to the industry. The contribution of the tourism sector of Pavlodar region to climate change through the assessment of carbon footprint will be used to develop measures for its reduction to mitigate the impact of the tourism sector on the environment, as well as to obtain additional benefits for entrepreneurs from the introduction of energy- and resource-saving approaches and technologies.

Author Contributions: Conceptualization, D.Y; methodology, A.N. and M.O; software, A.F; validation, D.Y. and A.F.; formal analysis, A.B.; investigation, A.F. and A.Y.; data curation, A.F. and A.B.; writing - original draft preparation, D.Y. and A.F.; writing - review and editing, R.S., B.B. and S.V.B.; visualization, A.Y.; supervision, D.Y. and R.S.; project administration, D.Y. All authors have read and agreed to the published version of the manuscript.

Funding: This research is funded by the Committee of Science of the Ministry of Science and Higher Education of the Republic of Kazakhstan (Grant No. BR19676336).

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgements: The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Abubakr, M., Abbas, A.T., Tomaz, I., Soliman, M.S., Luqman, M., & Hegab, H. (2020). Sustainable and Smart Manufacturing: An Integrated Approach. *Sustainability*, 12(6), 2280. https://doi.org/10.3390/su12062280

Alipour, H., Safaeimanesh, F., & Soosan, A. (2019). Investigating sustainable practices in hotel industry-from employees' perspective: evidence from a mediterranean island. *Sustainability*, 11(23), 6556. https://doi.org/10.3390/su11236556

Alkeyev, M.A., Tsaregorodtseva, A.G., & Bazarbayeva, T.A. (2014). Recreational zoning in the degree of attractiveness of natural landscapes on the example of the Pavlodar region of Kazakhstan. *World Applied Sciences Journal*, 29(1), 68–76. https://doi.org/10.5829/idosi.wasj.2014.29.01.13825

Azhayev, G., Esimova, D., Sonko, S.M., Safarov, R., Shomanova, Z., & Sambou, A. (2020). Geoecological environmental evaluation of Pavlodar region of the Republic of Kazakhstan as a factor of perspectives for touristic activity. *GeoJournal of Tourism and Geosites*, 28(1), 104–113. https://doi.org/10.30892/gtg.28108-455

Bachri, S., Mutia, P., Sholeha, A.W., Rahmasyah, P.I., & Shrestha, R.P. (2024). Mangrove forest management strategy in Bedul, Banyuwangi: collaboration between community and alas Purwo national park for sustainable ecotourism development. *GeoJournal of Tourism and Geosites*, 52(1), 85–97. https://doi.org/10.30892/gtg.52108-1185

Bozhinova, M., & Georgieva, K. (2023). Sustainable development of destination bulgaria through alternative forms of tourism. *IOP Conference Series: Earth and Environmental Science*, 1126(1), 012033. https://doi.org/10.1088/1755-1315/1126/1/012033

Brătucu, G., Băltescu, C.A., Neacșu, N.A., Boșcor, D., Țierean, O.M., & Madar, A. (2017). Approaching the Sustainable Development Practices in Mountain Tourism in the Romanian Carpathians. *Sustainability*, 9(11), 2051. https://doi.org/10.3390/su9112051

Bricker, K.S., Lackey, N.Q., & Joyner, L. (2022). A framework for sustainable tourism development in and around national parks. *Journal of Park and Recreation Administration*. https://doi.org/10.18666/jpra-2021-11113

Cheung, K.S., & Li, L. (2019). Understanding visitor–resident relations in overtourism: developing resilience for sustainable tourism. *Journal of Sustainable Tourism*, 27:8, 1197-1216. https://doi.org/10.1080/09669582.2019.1606815

Fahmawee, A.l., & Jawabreh, O. (2023). Sustainability of green tourism by international tourists and its impact on green environmental achievement: Petra heritage, Jordan. *GeoJournal of Tourism and Geosites*, 46(1), 27–36. https://doi.org/10.30892/gtg.46103-997

Garrigos-Simon, F.J., Narangajavana-Kaosiri, Y., & Lengua-Lengua, I. (2018). Tourism and Sustainability: A Bibliometric and Visualization Analysis. *Sustainability*, 10(6), 1976. https://doi.org/10.3390/su10061976

Gonda, T., & Rátz, T. (2023). Attitudes and actions in responsible tourism – an analysis of generational differences. *GeoJournal of Tourism and Geosites*, 46(1), 234–242. https://doi.org/10.30892/gtg.46126-1020

Guo, Y., Jiang, J., & Li, S. (2019). A Sustainable Tourism Policy Research Review. *Sustainability*, 11(11), 3187. https://doi.org/10.3390/su11113187

Gurung, D.B., & Seeland, K. (2011). Ecotourism benefits and livelihood improvement for sustainable development in the nature conservation areas of Bhutan. *Sustainable Development*, 19(5), 348-358. https://doi.org/10.1002/sd.443

Handiman, U.T., Rachbini, D.J., Chan, S., & Riyanto, S. (2024). How to increase sustainable rural tourism performance? An empirical study in Indonesia. *GeoJournal of Tourism and Geosites*, 52(1), 150– 164. https://doi.org/10.30892/gtg.52114-1191

Huda, N.N., Kamlun, K.U., Rosmalina, A.R., & Jennifer, C.K.L. (2022). Sustainability assessment of mangrove forest as a tourist destination: a case study using GSTC criteria in Kota Belud, Sabah, Malaysia. *IOP Conference Series: Earth and Environmental Science*, 012028. https://doi.org/10.1088/1755-1315/1053/1/012028

Ivancsóné, H.Z., Kupi, M., & Happ, E. (2023). The role of tourism management for sustainable tourism development in nature reserves in Hungary. *GeoJournal of Tourism and Geosites*, 49(3), 893–900. https://doi.org/10.30892/gtg.49306-1090

Khalid, A.A. (2021). Conservation challenges and emerging trends of digital preservation for unesco architectural heritage, Pakistan. *Conservation*, 2(1), 26-37. https://doi.org/10.3390/conservation2010003

Khalid, Aqsa. (2023). *An Exploratory Study on Sustainable Tourism: Approaches and Its Impacts on the Economic Condition of the Nation.* SSRN, March 15. https://doi.org/10.2139/ssrn.4389783

Kruczek, Z., & Szromek, A.R. (2020). The identification of values in business models of tourism enterprises in the context of the phenomenon of overtourism. *Sustainability*, 12(4), 1457. https://doi.org/10.3390/su12041457

Le, T.A., Huyen, T.N.T., Hanh, Q.N.T., & Phuoc, K.C. (2023). Announcement of the sustainable development report of vietnamese hotel enterprises. *GeoJournal of Tourism and Geosites*, 49(3), 875– 884. https://doi.org/10.30892/gtg.49304-1088

León-Gómez, A., Ruiz-Palomo, D., Fernández-Gámez, M.A., & García-Revilla, M.R. (2021). Sustainable Tourism Development and Economic Growth: Bibliometric Review and Analysis. *Sustainability*, 13(4), 2270. https://doi.org/10.3390/su13042270

Liao, Y., Qiu, X., Wu, A., Sun, Q., Shen, H., & Li, P. (2022). Assessing the Impact of Green Innovation on Corporate Sustainable Development. *Front. Energy Res.*, 9 800848. https://doi.org/10.3389/fenrg.2021.800848

Makhanova, N., Berdenov, Z.G., Wendt, J.A., Sarsekova, D., Mursalimova, E., Sansyzbayeva, A., Nurtazina, N., & Safarov, R.Z. (2022). Biogeographic potential of the north Kazakh plain in the perspective of health tourism development. *GeoJournal of Tourism and Geosites*, 40(1), 253–258. https://doi.org/10.30892/gtg.40130-826

Manaliyo, J.C. (2023). Greenhouse gas emissions, inbound tourism demand, and information and communication technology: where is the link? *GeoJournal of Tourism and Geosites*, 51(4spl), 1655–1662. https://doi.org/10.30892/gtg.514spl07-1162

Manzoor, F., Wei, L., Asif, M., Haq, M.Z., & Rehman, H. (2019). The Contribution of Sustainable Tourism to Economic Growth and Employment in Pakistan. *International Journal of Environmental Research and Public Health*, 16(19), 3785. https://doi.org/10.3390/ijerph16193785

Marchi, D., Becarelli, R., & Sarli, L. (2022). Tourism sustainability index: measuring tourism sustainability based on the etis toolkit, by exploring tourist satisfaction via sentiment analysis. *Sustainability*, 14(13), 8049. https://doi.org/10.3390/su14138049

McIntyre, G. (1993). *Sustainable Tourism Development: Guide for Local Planners.* Spain: World Tourism Organization (WTO).

Midgett, C., Deale, C., Crawford, A., Weber, M., & Bendickson, J. (2019). A cross-case analysis of barriers to sustainability in small tourism accommodation enterprises in dare county, North Carolina. *Tourism and Hospitality Research*, 20(2), 144-156. https://doi.org/10.1177/1467358419831425

Mihalič, T. (2022). Sustainable and responsible tourism (srt). *Encyclopedia of Tourism Management and Marketing*, 312-314.: https://doi.org/10.4337/9781800377486

Miller, G., Rathouse, K., Scarles, C., Holmes, K., & Tribe, J. (2010). Public understanding of sustainable tourism. *Annals of Tourism Research*, 37(3), 627-645. https://doi.org/10.1016/j.annals.2009.12.002

Modica, P., Capocchi, A., Foroni, I., & Zenga, M. (2018). An Assessment of the Implementation of the European Tourism Indicator System for Sustainable Destinations in Italy. *Sustainability*, 10(9), 3160. https://doi.org/10.3390/su10093160

Mohd Shariff, N. (2022). Adaptation strategies for impacts of climate change on sustainable tourism in Malaysia. *GeoJournal of Tourism and Geosites*, 45(4spl), 1735–1743. https://doi.org/10.30892/gtg.454spl23-994

Ndegwa, G. (2022). Stakeholder networks in tour operators' sustainable environmental practices and visitor choice behavior in narok county, Kenya. *Journal of Hospitality and tourism Management*, 5(2), 41-58. https://doi.org/10.53819/81018102t4110

Nicholls, S. (2021). Embedding sustainability into the tourism planning process: evidence from Michigan. *International Journal of Sustainable Development and Plannin*, 16(1), 49-59. https://doi.org/10.18280/ijsdp.160105

Pashkov, S., Mazhitova, G., Sedelnikov, I., Ospan, G., & Sagatbayev, Y. (2023). Assessment of tourism and climate potential of territories of Northern Kazakhstan. *GeoJournal of Tourism and Geosites*, 48(2spl), 725–732. https://doi.org/10.30892/gtg.482spl06-1072

Sabau, G. (2020). The Political Economy of Sustainability. *Sustainability*, 1537. https://doi.org/10.3390/su12041537

Seidaliyeva, A., Kabdushev, S., Baipakbayeva, S., Kopishev, E., & Suleimenov, I. (2024). The diversification of energy sources in Kazakhstan as a way to dampen the consequences of a predicted crisis. *Polityka Energetyczna*, 27(1), 173–188. https://doi.org/10.33223/epj/171442

Sharpley, R. (2020). Tourism, sustainable development and the theoretical divide: 20 years on. *Journal of Sustainable Tourism*, 28:11, 1932-1946. https://doi.org/10.1080/09669582.2020.1779732

Sica, E., Sisto, R., Bianchi, P., & Cappelletti, G. (2020). Inclusivity and responsible tourism: designing a trademark for a national park area. *Sustainability*, 13(1), 13. https://doi.org/10.3390/su13010013

Soh, A.N., Puah, C.H., Arip, M.A. (2023). Tourism sustainable competitiveness indicator for ASEAN bloc: A random forest approach. *International Journal of Applied Economics, Finance and Accounting*, 16(1), 33–42. https://doi.org/10.33094/ijaefa.v16i1.882

Streimikiene, D., Svagzdiene, B., Jasinskas, E., & Simanavicius, A. (2021). Sustainable tourism development and competitiveness: The systematic literature review. *Sustainable Development*, 29, 259–271. https://doi.org/10.1002/sd.2133

Timur, S., & Getz, D. (2008). Sustainable tourism development: how do destination stakeholders perceive sustainable urban tourism? *Sustainable Development*, 17(4), 220-232. https://doi.org/10.1002/sd.384

Wu, H., Chen, Z., Yan, J., Tang X. (2022). Problems of China's global demonstration tourism cities: Case Study of Liyang, China. *PREPRINT (Version 1) available at Research Square*. https://doi.org/10.21203/rs.3.rs-1803447/v1

Yadav, N., Sahu, N., Sahoo, D., & Yadav, D. (2018). Analysis of barriers to sustainable tourism management in a protected area. *Benchmarking an International Journal*, 25(6), 1956-1976. https://doi.org/10.1108/bij-09-2016-0149

Yessim, A., Shokhan, R., Yessimova, D., Faurat, A., Safarov, R., & Sonko, S.M. (2023). Analysis of the economic state of the tourist industry in the Pavlodar region (Kazakhstan). *GeoJournal of Tourism and Geosites*, 47(2), 596–604. https://doi.org/10.30892/gtg.47227-1059

Yoopetch, C., & Nimsai, S. (2019). Science mapping the knowledge base on sustainable tourism development, 1990–2018. *Sustainability*, 11(13), 3631. https://doi.org/10.3390/su11133631

Article history: Received: 29.03.2024 Revised: 10.06.2024 Accepted: 26.06.2024 Available online: 28.06.2024

Geojournal of Tourism and Geosites
ISSN 2065-0817, E-ISSN 2065-1198

Year XVII, vol. 54, no. 2spl, 2024, p.977-987
DOI 10.30892/gtg.542spl21-1272

REVEALING THE ULTIMATE TRAVEL DESTINATIONS: AN IN-DEPTH EXPLORATION OF CULTURE, NATURAL BEAUTY, AND SERVICE EXCELLENCE

Bashar Alhaj MOHAMMAD*

Department of Management and Marketing, Tourism and Hotel Management Program, Jazan University, Jazan, Kingdom of Saudi Arabia, e-mail: bmohammad@jazanu.edu.sa

Citation: Mohammad, B.A. (2024). REVEALING THE ULTIMATE TRAVEL DESTINATIONS: AN IN-DEPTH EXPLORATION OF CULTURE, NATURAL BEAUTY, AND SERVICE EXCELLENCE. *Geojournal of Tourism and Geosites*, 54(2spl), 977–987. https://doi.org/10.30892/gtg.542spl21-1272

Abstract: Underling the key motivational factors of tourists are very significant in tourism destination marketing. The current study aimed to introduce a new insight in destination management through exploring the main motivational factors behind foreign tourists to visit Saudi. Self administrative questionnaire was distributed among a random sample of tourists visited Saudi. Structural Equation Modeling (SEM-PLS) was applied to analysis the data. The results indicated that five motivational factors influence on behavior intention to visit Saudi. However, the model applied in the study has the potential to be used in similar studies conducted in various destinations worldwide.

Keywords: destination, travel, motivation, international tourists, Arabia Saudi

* * * * * *

INTRODUCTION

The Western theories on motivation are vast and diverse, making it challenging to establish a precise definition of this concept, as noted by McReynolds (1991). Generally, motivation is understood to be a psychological state in which an individual is driven towards achieving a sense of fulfillment (Zhang and Peng, 2014; Bromley, 1990). Moutinho (2000) describes motivation as a state of need or condition that propels individuals towards certain actions that are expected to bring satisfaction. Similarly, Mook (1996) defines motivation as the underlying cause of human behavior, although some argue that the decision to satisfy needs may also be influenced by other psychological factors (Wang et al., 2018; Crompton, 1979). Moreover, the exploration incentive has been an important subject in the field of tourism research due to its role as the primary aspect that drives all tourist actions and is essential to the advancement of tourism (Crompton, 1979; Dann, 1981; Pearce, 1995). Travel motivation has been a significant topic in tourism studies because it is the key factor underlying all tourist behavior and is fundamental to tourism development (Crompton, 1979; Dann, 1981).

The study of travel motivation has attracted the attention of researchers from various disciplines, including sociology, anthropology, and psychology (Cohen, 1972; Dann, 1977; Crompton, 1979; Gnoth, 1997). One of the most widely applied theories in the tourism literature is Maslow's hierarchical theory of motivation (1973). This theory conceptualizes motivation as a pyramid, with physiological needs forming the base, followed by higher-level psychological needs and the ultimate need for self-actualization. Numerous scholars in the field of tourism have sought to empirically modify this model, with Pearce (1982) achieving notable success by proposing a tourism motivation model that aligns with Maslow's framework but eliminates the assumption of prepotency.

In conclusion, motivation serves as a compelling force that drives individuals to take action in order to fulfill their needs and desires (Hanqin and Lam, 1999). Since travel motivation pertains to a collection of desires that drive individuals towards engaging in tourism-related activities (Lee et al., 2015). It holds significant prominence within the realm of tourism research. Subsequently, in light of this, travelers have altered their travel habits with the intention of satisfying their requirements, with their travel choices being contingent upon the characteristics inherent to the destination (Buckley et al., 2014; Wong et al., 2013). Within the realm of tourist motivation research, scholars aim to understand the reasons behind people's travel choices and their intentions for their holidays. The concept of motivation is multifaceted and has been defined in various ways, with scholars highlighting its role as a psychological state and the cause of human behavior. The study of travel motivation has attracted researchers from diverse disciplines, and Maslow's hierarchical theory of motivation has been particularly influential in the tourism literature, although modifications have been proposed to better suit the context of tourism (Alhaj Mohammad, 2021).

Understanding the motivation behind travel is an essential requirement for fully grasping the selection of tourist destinations and the entire decision-making process associated with it. In addition, conducting research on travel motivation can prove to be beneficial for tourism sites in terms of understanding how they can enhance their offerings in order to effectively cater to the satisfaction of tourists (Coban, 2012; Baniya and Paudel, 2016; Hakim and Mulia, 2019). The motivations that drive individuals to embark on trips have a significant impact on their cognitive perception of the destinations they visit, and this perception, in turn, interacts with their emotional perception to shape their expectations

* Corresponding author

regarding travel locations (Wang et al., 2016). Consequently, comprehending the underlying factors that influence travel motivation can enable tourism sites to strategically align their products and services in a manner that aligns with the desires and expectations of potential tourists. Furthermore, by gaining a deeper understanding of travel motivations, tourism sites can also identify opportunities for innovation and improvement, thereby enhancing their competitive advantage in the market. Ultimately, this knowledge can contribute to the overall growth and success of the tourism industry as a whole.

Therefore, the present study aims to ascertain the various motivation factors that drive foreign tourists to visit the mesmerizing city of Jazan, as these factors manifest in diverse behavioral domains. It is of paramount significance to acknowledge the fact that comprehending the importance of both intrinsic and extrinsic motivators can assist destinations in effectively catering to the unique needs and desires of individual travelers hailing from diverse market segments. Furthermore, it is crucial to note that gaining an understanding of the motivational factors that influence travelers is indispensable in accurately predicting future travel patterns and trends. As such, this research endeavor delves into the intricate interplay between motivation and tourism, shedding light on the underlying drivers and their profound implications for the marketing strategies of the country.

LITERATURE REVIEW

The term of motivation defined by Schiffman and Kanuk (2004), is the driving force that compels individuals to take action in order to fulfill their needs and desires. This concept has been extensively studied in the field of tourist motivation, with many researchers exploring the influence of motivation on specific behaviors (Dann, 1981; Pearce, 1982). In the realm of human research, the focus of tourist motivation studies is to understand why people choose to travel and what they hope to accomplish during their holidays. Many scholars have reached the consensus that in order to gain a comprehensive understanding of the factors influencing tourists' decision-making process, it is imperative to delve into their underlying motivations (Oliveira et al., 2020; Park et al., 2020; Pappas, 2019; Njagi et al., 2017; Mannell and Iso-Ahola, 1987). By examining the fundamental drivers that propel individuals to embark on journeys, we can unravel the intricate web of forces that shape their travel experiences. When individuals exhibit a high level of motivation to explore new horizons, they are more inclined to actively immerse themselves in their chosen destinations, seek knowledge about the places they aspire to visit, and meticulously plan their itineraries. Conversely, without any intrinsic desire to engage in travel, the tourism industry as we know it would cease to exist, highlighting the indispensability of motivation in this sector (Carvache et al., 2022; Carvache et al., 2018; Lee et al., 2015, Merwe et al., 2011). It is worth noting that journey motivation represents a pivotal stage occurring prior to the commencement of the actual travel, further underscoring its significance. Furthermore, scholars have contended that a robust correlation exists between individuals' motivation levels and the destinations they ultimately select (Wang et al., 2013).

Numerous theories have been formulated in relation to the motivation behind travel, including the travel career ladder (TCL) approach proposed by Pearce (1988), the optimal arousal theory put forth by Iso-Ahola (1982), and the leisure motivation approach presented by Beard and Ragheb (1983). It is worth noting that the push and pull motivation theory has emerged as the most significant and widely utilized in the field of tourism through the lens of tourist motivation, as highlighted by Dann (1977) and Huang and Hsu (2009). Within this conceptual framework, push factors pertain to the determinants that prompt an individual to travel outside their usual place of residence, while pull factors encompass the influencers that guide an individual's destination selection once the decision to travel has been made, as elucidated by Klenosky (2002).

There have been various established theories and studies that have been put forth in order to provide guidance for empirical research pertaining to travel motivation. These theories and studies, such as the push and pull factors, have been extensively explored by researchers like Wen et al. (2019), Li et al. (2016), Kim et al. (2015), and Dann (1977). The majority of previous studies have asserted that the investigation of tourist motivation is an incredibly intricate endeavor primarily due to its intimate connection with the complex nature of human beings, as stated by Li et al (2018). As a result, researchers have diligently worked towards the development of empirical studies focused on the measurement scales of tourist motivations, as highlighted by Wen et al. (2019) they presented observational proof on the relationships between cultural principles and tourists' motivations. Recently, Push–pull approaches remain widely used in studies of tourist behaviour (Prayag et al., 2024; Michael et al., 2022; Zhou et al., 2021). Moreover, Prayag et al. (2024) discovered that travel impetus markedly impacts psychological robustness, travel welfare, and tourist activity selection. Among international visitors, various travel rationales can affect activity decisions as delineated in established tourism motivation frameworks (Lewis et al., 2021). Meanwhile, travel motivation has also been associated with wellbeing (Roy and Sharma, 2021), with research indicating the impact of personal and societal factors on this relationship (Yu et al., 2021). For example, Zhou et al. (2021) revealed that individuals can attain both pleasure-based and purpose-based welfare when their participation in activities is driven by fulfilled motives. Valencia et al. (2022) found that there is relationship between activities of tourists and the motivations. In this regard, Abernethy et al. (2022) examine the travel behaviors and travel motivations. The resrults indicated seven seven pull factors consisting of climate, trail conditions, natural setting, information sources, trail features, tourism infrastructure, and entertainment options. While push factors refers to comprised of stimulus avoidance, adventure experiences, novelty, competency-mastery, and social encounters.

Soldatenko et al. (2023) developed a tourists' pre-trip motivational model using the push-pull theory, providing insights into the key influential factors in travelers' decision-making process. In adition, Gürer and Kural (2023) two main themes push and pull motivation for and adventure tourism. They determined that spiritual regeneration and then socialization were the most important motivations for choosing a sport destination. From leisure perspective, participating in the tourists activities one of the motivational factors for golfers (Eskelinen et al., 2023). Similarity, Madkhali et al. (2023) found that social norms and cultures of surveillance for Saudi tourists, alongside social obligations, act as push factors, decreasing the appeal of domestic tourism. Moreover, travel motivation framework translates into an empirical strategy.

Conceptual framework of study

A visitor's emotional arousal and storytelling that create relaxation intents are positively impacted by a more difficult tourism activity, respectively. The influence of tourism activity type on storytelling intentions is completely mediated by emotional arousal. The association between the type of tourist activity and emotional arousal was shown to be moderated by whether or not a travel partner was present. When traveling with a friend, a demanding tourist activity has a higher beneficial impact on arousal (Su et al., 2020; Khan et al., 2019; Chen et al., 2014; Merwe et al., 2011).

Culture has historically been widely regarded within academic discourse as a highly significant and influential factor that possesses the potential to effectively forecast and determine the selection of destinations by tourists (Wen et al., 2019; Saeedi and Hanzaee, 2018; Buckley et al., 2014; Kim et al., 2007; Kim et al., 2007; Yoon and Uysal, 2005; Kacen and Lee, 2002). It is undeniably true that variances in cultural attributes and characteristics have been posited as a plausible explanation for the divergent choices made by tourists in different nations (Alhaj Mohammad, 2021, Ying et al., 2018). This suggests that the cultural milieu in which individuals are situated has a profound impact on their decision-making processes, thereby necessitating a comprehensive understanding of the intricate interplay between culture and tourism in order to comprehensively analyze and interpret consumer behavior and managerial practices across diverse socio-cultural contexts.

The wildlife resources, safety and security are considered to be the most crucial factors that contribute to the attractiveness of tourist destinations. These elements play a pivotal role in captivating the interest and fascination of travelers, as they seek to immerse themselves in the natural wonders and diverse fauna that a particular location has to offer. Moreover, it is imperative to acknowledge that the quality of the infrastructure also holds significant weight in determining the allure of a destination. The accessibility and overall condition of the infrastructure greatly influence the decision-making process of tourists, as they strive to select a location that provides them with seamless transportation options and a comfortable travel experience. Moreover, Natural tourist attractions hold a significant position and exert a substantial impact on the triumphant progression of tourism, thereby contributing significantly to the overall growth and prosperity of the tourism industry as a whole (Chen and Wu, 2021). Underscoring the importance of improving the natural resources, accessibility and enhancing the quality of the infrastructure to cater to the evolving needs and preferences of tourists, thereby ensuring that they have a wide array of choices when it comes to selecting their desired destination (Muhammad et al., 2020; Ariya et al., 2017; Hsu et al., 2009; Jang and Wu, 2006; Hanqin and Lam, 1999). Moreover, another factor that affects destination choice for travelers is service quality. It has been investigated by many researchers such as (Hanqin and Lam, 1999).

RESEARCH METHODOLOGY

1. Sampling

The study aimed to investigate foreign visitors who expressed an interest in exploring Jazan as a tourist destination in the Southern region of the Kingdom of Saudi Arabia. To gain insight into the perceptions of travel experiences among tourists, Personal interviews were conducted with anexperts, including travel agency managers, tour managers, directors of cultural heritage organizations, and university colleagues who experts in the field of tourism and traveling, between September and March 2023. Following the acquisition of authoritative perspectives, a preliminary questionnaire was crafted and subsequently evaluated for its validity. The survey itself was administered during September and October in June 2023.

The inclusion criteria for participants in this particular study were very specific, as only individuals who had intentions of visiting Jazan or who were physically present at the designated locations were considered. Consequently, the study population was exclusively comprised of tourists who were foreign tourists who visited the country and domestic tourists. Furthermore, this study focused on tourists who were either currently visiting a destination site. To ensure methodological rigor and align with the existing body of literature, the researcher decided to adhere to the established standards set by previous studies, such as those conducted by Alcocer and Ruiz, (2020) and Azeez (2023). Accordingly, more than 600 questionnaires were distributed, and 537 were returned and 342 questionnaires could be utilized for analysis and interpretation.

2. The survey instrument

The questionnaire was comprised of three distinctive and integral sections which served as the foundation for gathering pertinent data. The initial section of the questionnaire was specifically focused on analyzing and understanding the behavior of tourists in the destination. In this section, the researchers aimed to investigate the various aspects of tourists' behavior ranging from their preferences and choices to their activities and engagement in the destination. By delving deep into these behavioral patterns, the researchers sought to gain a comprehensive understanding of how tourists interacted with the destination and what factors influenced their decisions. Moving on to the second section, it was strategically designed to encompass an array of thought-provoking inquiries with the explicit purpose of effectively identifying individuals who could be classified as motivations' tourists. This segment of the questionnaire aimed to delve into the respondents' perception and understanding of the cultural and historical aspects of various travel destinations. By examining their level of identification and embracement of these aspects, the researchers sought to gain insights into the extent to which respondents connected with specific sites in this study. Also, it describes the perception of respondents loyalty to visit of destination, such as "I always visit new destinations other than those that I previously visited". Furthermore, this section aimed to unravel the underlying factors that influenced tourists' inclination towards these particular locales.

By exploring the respondents' perceptions and attitudes towards motivations, the researcher intended to shed light on the reasons behind their travel preferences and choices such as "Affordable tourist facilities". The researcher aimed to understand whether it was the allure main motivation or other factors that drove tourists to select specific destinations. This exploration would provide valuable insights for destination management and marketing professionals, enabling them to tailor their strategies and offerings to meet the preferences and desires of tourists' motivations.

Lastly, the last section of the questionnaire focused on collecting information about the characteristics and profiles of the respondents. This collection of data would prove to be useful for market segmentation and travel pattern analysis in the future. By understanding the demographic and psychographic profiles of the respondents, destination management and marketing professionals would be able to segment the market effectively and tailor their offerings to different target groups. Additionally, this information would be instrumental in shaping future marketing strategies and enhancing the overall destination management and marketing relationship. During the review of the literature on travel motivation measurement, all statements used in previous studies were recorded and grouped into a ‘main list’ of attributes. Before setting up data collection, the Pilot study was conducted to develop specific characteristics of the study questionnaire to ensure avoiding and eliminating redundancies and to add any missing items. A total of 26 items related to the core of the study were measured by five point Likert scale: 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; and 5 = Strongly Agree.

DATA ANALYSIS AND RESULTS

In light of the characteristics of this study, which involves predictive analysis based on a specific sample, it has opted for the utilization of the partial least squares (PLS) estimation method for the assessment of both measurement and structural models. This choice is informed by several advantages associated with PLS in comparison to alternative analytical techniques. First, PLS does not necessitate the assumption of a normal distribution of data, as highlighted by Chin (1998). Second, PLS is particularly well-suited for investigations about theoretical development, as emphasized by Hair et al. (2011). Consequently, to perform the PLS estimation, we have employed Smart PLS 3 as our analytical tool of choice.

1. Participant characteristics

Table 1 presents the results of tourists’ characteristics, it shows that 52% of respondents were male and 51.6% of them between ages group 20 – 30 years old. Generally, most of respondents educated a Bachelor degree 53.1%, and more than half of the respondents 58.8% in income range $ USD1001 - 2000. More than half of the respondents were married 56.9% and the majority of them visit destination with family and relatives 81.2%. More than half of visitors used airplanes for transportation 61.5%, stayed more than one week 54.1%, and they visited their destination for the first time 61.6%. Moreover, 49.1% of the respondents get their information about the destination from their relatives and friends.

Table 1 Tourists’ characteristics

Variables	Percentage	Variables	Percentage
Gender		**Age**	
Male	52 %	below20 years	17.9 %
Female	48 %	20 – 25	26.4 %
Marital Status		26 – 30	25.2 %
Single	28.9 %	31 – 35	15 %
Married	56.9 %	36 – 40	7.9 %
Widowed	6.7 %	41 - 45	4.1%
Separate	2.9%	More than 45years	3.5%
Other	4.7.%		
The main purpose of your visit		**Income**	
Leisure	15.7%	Less than $ 1000	27.6%
Business	22.5%	$ 1001 - 2000	58.8%
Visiting friends and relatives	43.8%	$ 2001 - 3000	7.7%
Others	17.9%	$ 3001 - 4000	2.1%
		More than $ 4000	3.9%
Education		**Number of visits to the destination**	
Secondary school or less	10.9%	First time	61.6%
Diploma	18.9 %	Second times	29.8%
Bachelor	53.1 %	Third times	6.5%
Postgraduate	15.9 %	More than three times	2.1%
Information source of a destination		**Accommodation**	
Words of mouth	30.1%	Four – five stars hotel	23.7%
Relatives and friends	49.1%	Three stars hotel	29.8%
Internet/ social media	10.2%	One - two stars hotel	9.9%
Previous trip	5.8%	Apartments	14.6%
Travel agent	2.3%	Relatives or colleagues	18.7%
Others	2.3%	Others	3.2%
Travel companions		**Number of nights in destination**	
Alone	10.8 %	One – three nights	11.5%
With family	45.3 %	Four – six nights	34.4 %
With friends/ relatives	34.9 %	More than one week	54.1%
Others	9.1%		
Transportation			
Air plane	61.5%		
Roads	34%		
Sea	4.4$		

2. Descriptive statistics of the latent constructs

The mean values of the six latent variables in our study exhibit a range between 3.093 and 3.396 on a five-point Likert scale, with corresponding standard deviations spanning from 0.576 to 0.878 (see Table 2). Importantly, all mean values surpass the midpoint of 2.50, implying a general inclination towards higher levels on the Likert scale for all variables. Specifically, the latent variable "Relaxing" attained the highest mean value, registering at 3.396, while "Natural Resources" demonstrated the lowest mean value, standing at 3.093.

Examination of dispersion, as indicated by the standard deviations, reveals that "Relaxing" displayed the greatest variability with a standard deviation of 0.878, while "Culture" exhibited the least variability with a standard deviation of 0.576. These descriptive statistics provide an overview of the dataset's central tendencies and dispersions.

Table 2. The results of descriptive analysis

Construct	No of Items	Mean	Std. deviation
Relaxing	4	3.396	0.878
Culture	6	3.312	0.576
Natural Resources	5	3.093	0.656
Accessibility	5	3.234	0.710
Service quality	5	3.168	0.622
Visit destination	5	3.206	0.748

3. Measurement model

In the assessment of the measurement model, our primary objective was to ascertain construct validity, with a focus on ensuring the appropriate utilization of psychological instruments encompassing reliability and discriminant validity. Indicators loading were evaluated using Smart PLS, and the results are presented in Table 3. It is noteworthy that 27 items exhibited loading values surpassing the established threshold of 0.6. However, it is important to highlight that specific items, namely "culture1," "Accessibility2," and "visit2," displayed factor loadings below the 0.6 threshold.

Consequently, these particular indicators were omitted from subsequent Partial Least Squares (PLS) analysis within the scope of this research inquiry. This outcome serves as compelling evidence of the overall alignment of the constructs (Hair et al., 2011). In addition to construct validity, we conducted assessments of convergent validity by utilizing composite reliability and average variance extracted (AVE) measures. The AVE scores, as presented in Table 3, ranged from 0.509 to 0.696, all exceeding the established benchmark value of 0.5. Moreover, the composite reliability values fell within the range of 0.838 to 0.901, thereby meeting the recommended benchmark of 0.7.

Table 3. Results of the Confirmatory Factor Analysis

Constructs	Items	Loading	Composite Reliability	AVE
Accessibility	Accessibility1	0.618	0.867	0.624
	Accessibility3	0.869		
	Accessibility4	0.812		
	Accessibility5	0.837		
Culture	Culture2	0.565	0.866	0.567
	Culture3	0.802		
	Culture4	0.747		
	Culture5	0.818		
	Culture6	0.804		
Natural Resources	Natural1	0.646	0.853	0.539
	Natural2	0.747		
	Natural3	0.756		
	Natural4	0.759		
	Natural5	0.756		
Relaxing	Relax1	0.877	0.901	0.696
	Relax2	0.764		
	Relax3	0.835		
	Relax4	0.857		
Service quality	Servece1	0.609	0.853	0.539
	Service2	0.769		
	Service3	0.72		
	Service4	0.717		
	Service5	0.743		
Visit destination	Visit1	0.788	0.884	0.657
	Visit3	0.868		
	Visit4	0.879		
	Visit5	0.693		

Following the procedure outlined by Fornell and Larcker (1981), the study evaluated discriminant validity subsequent to assessing convergent validity. Discriminant validity was ascertained by examining the correlations between measures representing potentially overlapping constructs. Table 4 presents the findings, indicating that the square root of the

Average Variance Extracted (AVE) values consistently exceeded the off-diagonal elements within their respective rows and columns. These results confirm that the requisite level of discriminant validity has been established (Fornell and Larcker, 1981). Additionally, the study employed the Heterotrait-Monotrait Ratio (HTMT) as a measure of the correlation between constructs, with a threshold value of 0.90 serving as the criterion for acceptability. As detailed in Table 5, the analysis revealed no evidence of compromised discriminant validity, as all constructs met the established standards (Fornell and Larcker, 1981) and (Henseler et al., 2015). Regarding the evaluation of common method bias, the present study applied Harman's single-factor test, utilizing SPSS version 27 for analysis. Our findings indicate that the variance accounted for by the first factor is below 50%, aligning with the criteria established by Podsakoff et al. (2003), thereby suggesting the absence of common method bias. Turning our attention to the assessment of variance inflation factor (VIF) for the study's constructs, the analysis yielded VIF values ranging from 2.001 to 2.531. These values fall comfortably below the commonly accepted threshold of 5.0, in accordance with the guidelines outlined by Hair et al. (2014). Consequently, we can conclude that there are no issues of collinearity among the constructs under investigation. In summary, the measurement model demonstrates satisfactory levels of both convergent validity and discriminant validity.

Table 4. Fornell - Larcker Criterion

	Accessibility	Culture	Natural Resources	Relaxing	Service quality	Visit destination
Accessibility	0.790					
Culture	0.644	0.753				
Natural Resources	0.620	0.593	0.734			
Relaxing	0.632	0.614	0.532	0.834		
Service quality	0.672	0.537	0.625	0.583	0.714	
Visit destination	0.789	0.629	0.646	0.606	0.656	0.811

Table 5. Heterotrait-Monotrait Correlation Ratio

	Accessibility	Culture	Natural Resources	Relaxing	Service quality	Visit destination
Accessibility						
Culture	0.811					
Natural Resources	0.778	0.725				
Relaxing	0.758	0.743	0.639			
Service quality	0.873	0.691	0.822	0.725		
Visit destination	0.798	0.776	0.796	0.719	0.828	

4. Assessment of structural model

The principal criteria employed in evaluating the structural model's quality reside in the determination coefficient (R^2) and the significance level of the path coefficients, also known as beta values (Hair et al., 2011). In accordance with Figure 1, the R^2 value pertaining to the "Visit destination" variable is observed to be 0.705.

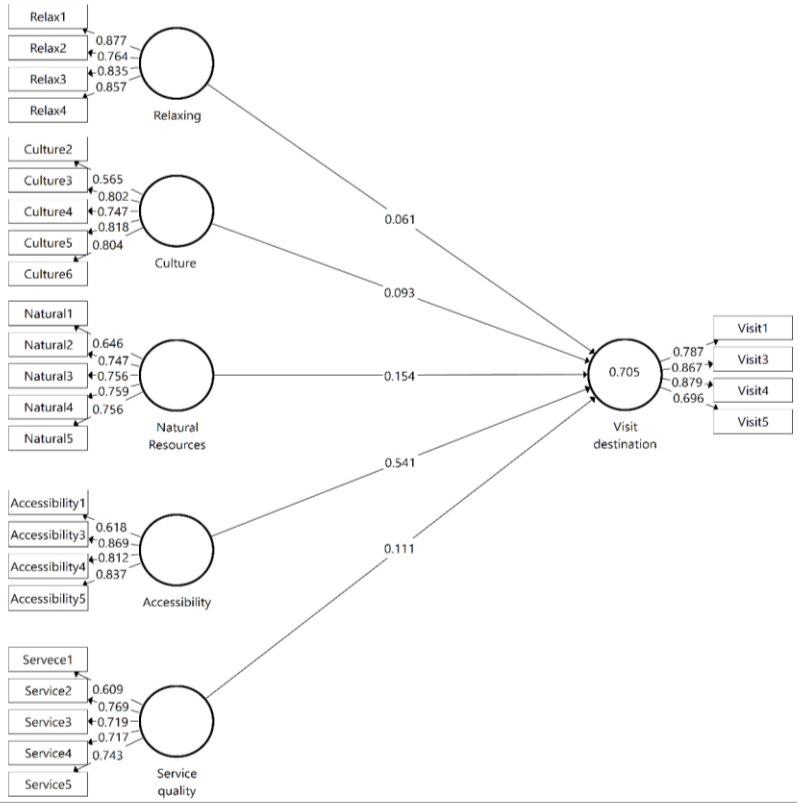


Figure 1. Measurement Model

It is imperative to note that a higher Adjusted R^2 value corresponds to an increased capacity for the exogenous variable to be expounded by the endogenous variables, thereby indicating a more robust structural equation. The Adjusted R^2 for the "Visit destination" variable is 0.705, signifying that 70.5% of the variance in the "Visit destination" can be accounted for by the variables encompassing "Relaxing," "Culture," "Natural Resources," "Accessibility," and "Service Quality," while the residual variance is attributed to factors external to the research model.

The path coefficients of the structural model have been measured and bootstrap analysis (resampling = 5000) was performed to assess the statistical significance of the path coefficients. Table 6 and Figure 2 present the outcomes of the direct hypothesis testing conducted in this study. Our analysis indicates that four out of the five research hypotheses tested were deemed acceptable based on the collected data. However, one hypothesis did not receive empirical support.

The first hypothesis (H1) posited that relaxation exerts an influence on the visit destination. However, the analysis of survey data yielded results that do not support this hypothesis. The obtained evidence indicates a statistically insignificant relationship between relaxation and destination choice, as reflected by the regression coefficient (ß = 0.061), t-statistic (t = 1.452), and the associated p-value ($P > 0.05$). For the second hypothesis (H2), the significant influence of Culture on visit destination was supported by the results (ß = 0.093, t=2.230, $p < 0.05$). Likewise, the third hypothesis (H3), which states that Natural Resources positively influences visit destination, was also supported by our survey data with values (ß = 0.154, t = 3.676, P-value< 0.05). Also, the fourth hypothesis (H4), which states that Accessibility positively influences visit destination, was supported by our survey data with values (ß = 0.541, t = 12.219, P-value< 0.05). Finally, for the fifth hypothesis (H5), the significant influence of Service quality on Visit destination was also supported by the results (ß = 0.111, t=2.575, $p < 0.05$).

Table 6. The results of structural model

Hypothesis	Beta	SE	T Value	P Values	Results
Relaxing -> Visit destination	0.061	0.042	1.452	0.147	Not Supported
Culture -> Visit destination	0.093	0.042	2.230	0.026	Supported
Natural Resources -> Visit destination	0.154	0.042	3.676	0.000	Supported
Accessibility -> Visit destination	0.541	0.044	12.219	0.000	Supported
Service quality -> Visit destination	0.111	0.043	2.575	0.010	Supported

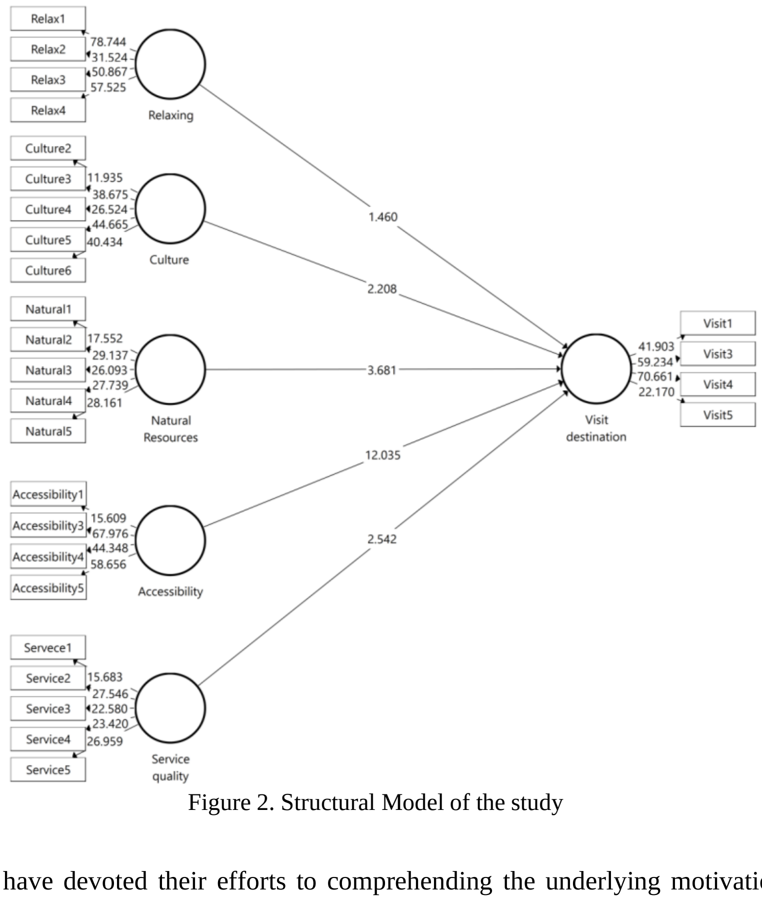


Figure 2. Structural Model of the study

DISCUSSION

Numerous researchers have devoted their efforts to comprehending the underlying motivations of tourists, exploring various facets of this complex phenomenon (Azeez, 2023; Alhaj Mohammad, 2021; Wen et al., 2019; Hakim and Mulia, 2019; Saeedi and Hanzaee, 2018; Baniya and Paudel, 2016). Nevertheless, a significant proportion of these scholars have concentrated on elucidating the principal factors that attract individuals to visit destinations. In this regards cultural attractions have assumed a pivotal role in the formation of the allure possessed by tourism destinations (Kim et al., 2007).

In contrast, the present investigation directs its attention towards ascertaining the motivational factors that prompt foreign tourists to choose Saudi Arabia as their destination. Within the confines of this study, five distinct motives were identified as the driving forces behind tourists' decision to visit this captivating country, namely: relaxation, cultural, natural resources, accessibility and quality of services provided. Moreover, regarding to the relaxation factors that identified in this study, this results similar with (Carchace et al., 2022; Hakim and Mulia, 2019; Zhang and Peng, 2014). This means that tourists travel for relaxation from original and local environment to have fun in destination. In term of culture motive, Sato et al. (2018) assert that culture tourism serves as one of the driving forces behind the travel decisions made by Japanese tourists in Niseko. Furthermore, the findings of this research study also acknowledge that culture plays a crucial role in attracting foreign tourists to visit Saudi. From a social standpoint, it can be argued that the motivation to interact with new individuals and gain a deeper understanding of different cultures greatly aids tourists in this aspect. Conversely, when examining the determinants that motivate individuals to travel to a specific destination, commonly referred to as destination attributes, it is imperative to consider the various characteristics of destinations. Buckly et al. (2014) reported that destination attributes encompass a multitude of factors encompassing a wide array of facets. In motivation dimension, regarding the relationship between push and pull motivations, it is widely acknowledged that push factors tend to precede pull factors. The rationale behind this assertion lies in the fact that pull factors only become relevant after the decision to travel has been made. These factors encompass aspects such as the desired destination, as well as the activities and sights one intends to engage in while there (Carchace et al., 2022; Sato et al., 2018; Dann, 1981). The result of this study indicated that natural resources one of the motives behind foreign tourists to visit Saudi. Moreover, the findings of this study are in line with previous studies, such as Ying et al. (2018), which indicated that natural resources are among the factors driving travel. Similarly, Kim et al. (2003) identified push and pull factors as significant motivators for people to visit Korean National parks.

The result of this study indicated that natural resourcesconsidered one of themotivational factors for tourists. In Recent decades, the relationship between visiting natural resources and motivation has been increased (Telbisz et al., 2023; Muhammad et al., 2020; Ariya et al., 2017; Ozdipciner et al., 2010; 2007). This indicates that natural resources have been playing important role for attracting tourists (Alhaj Mohammad, 2021). Tourists are motivated to do new activities and escaping from daily life, so natural sites are considering suitable places for that. Additionally, natural resources have becoming more important for economic and environmental sides (Jang and Wu, 2006). Beckman et al., 2017 studied the motivations of rafting on the Ocoee River in Tennessee, United States, and the results showed that emotion and nature motivations generated a positive affective response to practicing adventure activities. Sato et al. (2018) conducted an analysis on the travel motivations of Japanese tourists who engage in rafting activities in Niseko. Their study identified namely natural resources, one of the tourists’ motivations. The natural dimension emerged a most important factor, as it allows visitors to disengage from their daily busy routines and rejuvenate their mental well-being. Furthermore, Giddy and Webb (2018) investigated a spanning from Gansbaai to Tsitsikamma National Park in South Africa, which underscored the importance of push and pull factors in the context of adventure tourism. Service quality has been suggested as an intrinsic element in enhancing tourist satisfaction, thereby fostering a propensity to revisit and ultimately promoting long-term profitability within the tourism industry (Ismail et al., 2016). The several of destination attributes like service quality has been investigated from different variables, such as satisfaction (Alhaj Mohammad, 2021), and revisit intention (Yoon and Uysal, 2005). In this context, the result of this study is align with previous studies (Carvache et al., 2022; Sato et al., 2018; Kim et al., 2007; Kim et al., 2003). It is very important to analyze these aspects in destination facilities and activities to better understand tourists’ needs and wants for increasing destination loyalty. in this regard, destination attributes auch as quality of services in accommodation, infrastructure and public services were deemed consistent with previous studies (Carchace et al., 2018; Stylidis et al., 2017). Howeve, some previous studies have linked between quality of services and destination attributes as the loyalty indicators and image of destination (Stylidis et al., 2017; Stylos et al., 2016).

Major Findings of the Research

The main objective of this research is to get insight into the motivational elements that influence foreign tourists in selecting Saudi Arabia as their preferred travel destination. The study delineated five discrete factors influencing tourists' choices to visit Saudi Arabia: leisure, cultural experiences, natural assets, ease of access, and the caliber of services rendered. Relaxation: The study did not discover evidence to support the premise that relaxation has a substantial impact on the selection of a trip destination. The data revealed a statistically inconclusive correlation between relaxation and the selection of a location. Culture: The research findings provided support for the notion that culture has a substantial impact on the selection of a travel destination. A substantial statistical correlation was observed between culture and destination preference, suggesting that cultural attractions play a pivotal role in drawing international tourists to Saudi Arabia.

Natural Resource: The study revealed that natural resources had a beneficial impact on the selection of a holiday destination. A substantial statistical correlation was seen between the presence of natural resources and the selection of travel destinations, indicating that the availability of natural attractions serves as a motivating factor for travelers.

Accessibility: Findings from the research confirmed that the level of accessibility has a substantial impact on the selection of a tourist destination. A high statistical correlation was observed between accessibility and destination selection, suggesting that convenient access strongly influences tourists' choices. Service Quality: The research also discovered evidence supporting the concept that service quality has a substantial impact on the selection of a tourist destination. An evident correlation was found between service quality and destination selection, indicating that superior services offered in lodging, infrastructure, and public amenities have a role in recruiting tourists and improving their contentment. To summarize, the results highlight the importance of culture, natural resources, accessibility, and service quality in determining the selection of a trip location. Although relaxation is considered an important element of tourism, it did not play a large role in this particular situation. An in-depth comprehension of these motivating elements can assist in the promotion and administration of destinations, thereby enhancing the appeal of Saudi Arabia as a sought-after vacation destination.

CONCLUSION

The objective of the research was to comprehend the motivating factors and travel patterns of foreign tourists who visit Saudi Arabia. The investigation concentrated on the behavioral and motivational elements that influence foreign tourists to spend vacations. The survey questionnaire was divided into three sections, namely the demographic profile of the respondents, the motivational and behavioral aspects of foreign tourists, and the motivations and behaviors associated with inbound tourism in the country, and the last section consists of tourists' behavior in destination. The study encompassed a sample size of 342 foreign tourists, who were chosen through the application of a Simple Random Sampling technique.

The data that was gathered from the survey was subjected to analysis employing the Structural Equation Model, in order to identify the primary determinants underlying the international tourists' decision to visit Saudi Arabia. Hence, tourism motivation is a key aspect in understanding the preferences and behaviors of tourists. In current study, relaxation, cultural, natural resources, accessibility and service quality were the most significant factors that drove foreign tourists to visit Saudi. It is important to consider these motivations and perceptions in the development of tourism strategies, ensuring sustainability and destination impact are taken into account. However, it is crucial for both tourism stakeholders and policymakers to allocate substantial attention and significance to the prioritization of the establishment and continuous maintenance of a comprehensive and resilient infrastructure that effectively caters to the diverse and varied needs and demands of the continuously evolving and discerning tourists, ultimately leading to the enhancement and amplification of the attractiveness, desirability, and appeal of a specific destination while concurrently promoting and advocating for the adoption and implementation of environmentally sound and ecologically sustainable tourism practices that aim to minimize adverse impacts and maximize positive outcomes for both the local communities and the natural environment.

Limitations and future researches

The research article acknowledges that the majority of tourists who visit Saudi Arabia possess a heightened level of environmental consciousness, motivational factors, and behavioral intentions. This recognition suggests that the study may not encompass the entire spectrum of potential outcomes for tourists with varying initial attitudes and intentions. The article primarily concentrates on the reasons and attributes of the journey, as well as the conduct of foreign visitors within the nation. However, it neglects to delve into other feasible factors, such as demographics or past travel experiences, which could conceivably influence these findings. The study lacks a comprehensive examination of the specific mechanisms through which motivations, trip attributes, and tourists' behavior impact the motivational factor in selecting a particular destination. Further research may be imperative to acquire a deeper comprehension of these relationships, assess the level of contentment, and execute a comparative analysis between first-time attendees and recurring visitors.

Author Contributions: Conceptualization, A.M.; methodology, A.M.; software, A.M.; validation, A.M. formal analysis A.M.; investigation, A.M.; data curation, A.M.; writing - original draft preparation, A.M.; writing - review and editing, A.M. visualization, A.M.; supervision, A.M.; project administration, A.M. The author has read and agreed to the published version of the manuscript.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgments: The research undertaken was made possible by the equal scientific involvement of all the authors concerned.

Conflicts of Interest: The authors declare no conflict of interest.

REFERENCES

Abernethy, E.P., Dixon, W.A., Holladay, J.P., & Koo, Y.W. (2022). Determinants of Canadian and US mountain bike tourists' site preferences: examining the push–pull relationship. *Journal of Sport and Tourism*, 26(3), 249–268. https://doi.org/10.1080/14775085.2022.2069147

Alcocer, H.N., & Ruiz, R.V. (2020). The role of destination image in tourist satisfaction: the case of a heritage site. *Economic Research-Ekonomska Istraživanja* 33(1):2444 - 2461. https://doi.org/10.1080/1331677X.2019.1654399

Alhaj Mohammad, A.B. (2021). The Effect of Personal Motivations on Segments Traveling Domestic Tourism in Saudi Arabia: Abha Destination. *International Journal of Hospitality & Tourism Systems*, 14(2). 106 – 115. http://www.publishingindia.com/ijhts/24/10921/2021/

Ariya, G., Wishitemi, B., & Sitati, N. (2017). Tourism Destination Attractiveness as Perceived by Tourists Visiting Lake Nakuru National Park, Kenya. *International Journal of Research in Tourism and Hospitality (IJRTH)*. 3(4), 1-13. https://doi.org/10.20431/2455-0043.0304001

Azeez, A.Z. (2023). Effects of Travel Motivation on Image Destination: Najaf City as a Case Study. *International Journal of Sustainable Development and Planning*, 17(1): 73 - 82. https://doi.org/10.18280/ijsdp.170107

Baniya, R., & Paudel, K. (2016). An analysis of push andpull travel motivations of domestic tourists in Nepal. *Journal of Management and Development Studies*, 27:16-30. https://doi.org/10.3126/jmds.v27i0.24945

Beard, J. & Raghob, M. (1983). Measuring leisure motivation. *Journal of Leisure Research*, 15(3), 219–228. https://doi.org/10.1080/00222216.1983.11969557

Beckman, E., Whaley, J.E., & Kim, Y.K. (2017). Motivations and experiences of whitewater rafting tourists on the Ocoee River, USA. *International Journal of Tourism Research*, 19(2): 257–267. https://doi.org/10.1002/jtr.2109

Bromley, D.B. (1990). *Behavioral gerontology: central issues in the psychology of ageing*. West Sussex, England., Wiley.

Buckley, R., McDonald, K., Duan, L., Sun, L., & Chen, L.X. (2014). Chinese model for mass adventure tourism. *Tourism Management*, 44: 5–13. doi.org/10.1016/j.tourman.2014.01.021

Carvache-Franco, M., Carvache-Franco, W., Macas, C., & Orden, M. (2018). Motivations, Valuation and Satisfaction of the Tourist in a destination of Sun and Beach of Ecuador. *Revista Espacios.* 39 (13), 4-16

Carchace, F.M., Moscol, C.D., Majia, O.M., Franco, C.W., Holguin, V.H., & Franco, C.O. (2022). Motivations and Loyalty of the Demand for Adventure Tourism as Sustainable Travel. *Sustainability*, 14, 8472. https://doi.org/10.3390/su14148472

Chen, G., Bao, J., & Huang, S.S. (2014). Segmenting Chinese Backpackers by Travel Motivations. *International Journal of Tourism Research*, 16: 355-367. https://doi.org/10.1002/jtr.1928

Chen, S.Y., & Wu, T.S. (2021). An exploration of actor-network theory and social affordance for the development of a tourist attraction: A case study of a Jimmy-related Theme park, Taiwan. *Tourism Management*, 82: 104206. https://doi.org/10.1016/j.tourman.2020.104206

Chin, W.W. (1998). The partial least squares approach to structural equation modeling. Modern methods for business research, 295(2), 295-336. this publication at: https://www.researchgate.net/publication/311766005

Coban, S. (2012). The effects of the image of destination on tourist satisfaction and loyalty: The case of Cappadocia. *European Journal of Social Sciences*, 29(2):222-232. http://www.europeanjournalofsocialsciences.com

Cohen, E. (1972). *Toward a Sociology of International Tourism*. Social Research 39: 164–89.

Crompton, J.L. (1979). Motivations for pleasure vacation. *Annals of Tourism Research*, 6(4): 408-424. https://doi.org/10.1016/0160-7383(79)90004-5

Dann, G. (1977). Anomie, ego-enhancement and tourism. *Annals of Tourism Research*, (4): 184-194. https://doi.org/10.1016/0160-7383(77)90037-8

Dann, G.M.S. (1981). Tourist motivation an appraisal. *Annals of Tourism Research,* 8(2): 187-219. https://doi.org/10.1016/0160-7383(81)90082-7

Eskelinen, O., Garrod, B., Sthapit, E., & Suni, J. (2023). Motivations for domestic overnight travel by Finnish disc golfers: a serious-leisure perspective. *Leisure Studies*. https://doi.org/10.1080/02614367.2023.2280029

Fornell, C., & Larcker, D.F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. In: Sage Publications Sage CA: Los Angeles, CA.

Giddy, J.K., & Webb, N.L. (2018). The influence of the environment on adventure tourism: From motivations to experiences. *Current Issues in Tourism*, 21: 2124–2138. doi.org/10.1080/13683500.2016.1245715

Gnoth, J. (1997). Tourism motivation and expectation formation. *Annals of Tourism Research*, 24(2): 283-304. https://doi.org/10.1016/S0160-7383(97)80002-3

Gürer, B., & Kural, B. (2023). Push and Pull Motivations of Sport Climbers Within the Scope of Outdoor and Adventure Tourism. *Journal of Quality Assurance in Hospitality & Tourism*. https://doi.org/10.1080/1528008X.2023.2211787

Hair, J.F., Ringle, C.M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing theory and Practice*, 19(2), 139-152. https://doi.org/10.2753/MTP1069-6679190202

Hair, F.Jr.J., Sarstedt, M., Hopkins, L., & Kuppelwieser, G.V. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review*, 26(2), 106-121. https://doi.org/10.1108/EBR-10-2013-0128

Hakim, D., & Mulia, D. (2019). The effect of tourism attractiveness, travel motivation, e-WOM on visit decision and satisfaction. *International Journal of Business and Management Invention*, 8(9): 23-29. https://api.semanticscholar.org/CorpusID:229183674

Hanqin, Z.Q., & Lam, T. (1999). An analysis of Mainland Chinese visitors' motivations to visit Hong Kong. *Tourism Management*, 20(5): 587-594. https://doi.org/10.1016/S0261-5177(99)00028-X

Henseler, J., Ringle, C.M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Huang, S., & Hsu, C.H.C. (2009). Travel motivation: linking theory to practice. *International Journal of Culture, Tourism and Hospitality Research*, 3(4), 287e295. https://doi.org/10.1108/17506180910994505

Hsu, T.K., Tsai, Y.F., & Wu, H.H. (2009). The preference analysis for tourist choice of destination: A case study of Taiwan. *Tourism Management*, 30(2), 288–297. https://doi.org/10.1016/j.tourman.2008.07.011

Ismail, M.N.I., Hanafiah, M.H., Aminuddin, N., & Mustafa, N. (2016). Community-based homestay service quality, visitor satisfaction, and behavioral intention. *Procedia-Social and Behavioral Sciences*, 222: 398-405. https://doi.org/10.1016/j.sbspro.2016.05.192

Iso-Ahola, S.E. (1982). Towards a social psychological theory of tourism motivation:a rejoinder. *Annals of Tourism Research*, 9(2): 256-262. https://doi.org/10.1016/0160-7383(82)90049-4

Jang, S.S., & Wu, C.E. (2006). Seniors' travel motivation and the influential factors: An examination of Taiwanese seniors. *Tourism Management*, 27(2): 306-316, doi.org/10.1016/j.tourman.2004.11.006

Kacen, J.J., & Lee, J.A. (2002). The influence of culture on consumer impulsive buying behavior. *Journal of Consumer Psychology*, 12(20): 163–176. https://doi.org/10.1207/S15327663JCP1202_08

Khan, M.J., Chelliah, S., & Ahmed, S. (2019). Intention to visit India among potential travellers: Role of travel motivation, perceived travel risks, and travel constraints. *Tourism and Hospitality Research*, 19(3) 351-367. https://doi.org/10.1177/1467358417751025

Kim, H., Cheng, C., & O'Leary, J.T. (2007). Understanding participation patterns and trends in tourism cultural attractions. *Tourism Management*, 28(5): 1366-1371. https://doi.org/10.1016/j.tourman.2006.09.023

Kim, H., Lee, S., Uysal, M., Kim, J., & Ahn, K. (2015). Nature-based tourism: Motivation and subjective well-being. *Journal of Travel and Tourism Marketing*, 32(1), 76–96. https://doi.org/10.1080/10548408.2014.997958

Kim, H., Cheng, C., & O'Leary, J.T. (2007). Understanding participation patterns and trends in tourism cultural attractions. *Tourism Management*, 28(5): 1366-1371.

Kim, S.S.L., Lee, C. K., & Klenosky, D.B. (2003). The influence of push and pull factors at Korean national parks. *Tourism Management*, 24(2): 169-180. https://doi.org/10.1016/S0261-5177(02)00059-6

Klenosky, D.B. (2002). The ‘pull’ of tourism destinations: a means-end investigation. *Journal of Travel Research*, 40(4): 385-395. https://doi.org/10.1177/004728750204000405

Lee, C.K., Reisinger, Y., & Lee, J. (2015). Examining visitor motivations for mega-events: Comparison between Shanghai Expo and Yeosu Expo. *International Journal of Tourism and Hospitality Research*, 29(10): 5-17. https://www.dbpia.co.kr/Journal/articleDetail?nodeId=NODE06643242

Li, M., Zhang, H., & Cai, L. (2016). A subcultural analysis of tourism motivations. *Journal of Hospitality and Tourism Research*, 40(1), 85–113. https://doi.org/10.1177/10963480134916

Li, F., Wen, J., & Ying, T. (2018). The influence of crisis on tourists' perceived destination image and revisit intention: An exploratory study of Chinese tourists to North Korea. *Journal of Destination Marketing and Management*, 9, 104–111.

Lewis, C., Prayag, G., & Pour, S. (2021). Linking travel motives to identity and travel behavior of the Australian LGBT market during COVID-19. *Journal of Travel and Tourism Marketing*, 38(7): 725–741. https://doi.org/10.1080/10548408. 2021.1985039

Madkhali, H., Lugosi, P., & Hawkins, R. (2023). Socio-cultural drivers of Saudi tourists’ outbound destination decisions. *Journal of Vacation Marketing*, 1 – 17. https://doi.org/10.1177/13567667231152937

Mannell, R.C., & Iso-Ahola, S.E. (1987). Psychological nature of leisure and tourism experience. *Annals of Tourism Research*, 14(3): 314-331. https://doi.org/10.1016/0160-7383(87)90105-8
Merwe, D.V.P., Slabbert, E., & Saayman, M. (2011). Travel motivations of tourists to select marine destinations. *International Journal of Tourism Research*, 13(5): 457 – 467. https://doi.org/10.1002/jtr.820
McReynolds, P. (1991). *Motives and metaphors: A study in scientific creativity*. In: D.E. Leary (ed.), Metaphors in the history of psychology, 133-172. Cambridge University Press: Cambridge, UK.
Michael, N., King, B., & Fotiadis, A. (2022). Escaping from cultural practices at home: an exploration of push and pull. *Tourism Culture and Communication*, 22(1): 13–29. https://doi.org/10.3727/109830421X16262461231774
Mook, D. G. (1996). *Motivation: the organization of action*. 2nd edition, W.W. Norton & Company: New York.
Moutinho, L. (2000). Consumer behavior in tourism. *European Journal of Marketing*, 21(10): 5-7.
Muhammad, F., Ullah, K., & Karim, R. (2020). Analysis of natural resources and environment, politico-economic conditions and their influences on tourist behavioural intentions in hunza: Mediating effect of tourist satisfaction. *Journal of Applied Economics and Business Studies*. 4(4): 55-74. https://doi.org/10.34260/jaebs.443
Njagi, W.C., Ndivo, M.R., & Manyara, G. (2017). Understanding the travel motivation among youth travelers in Kenya: the 'push' and 'pull' paradigm. *African Journal of Hospitality, Tourism and Leisure*, 6(1): 1-16, api.semanticscholar.org/CorpusID:148612990
Oliveira, T., Araujo, B., & Tam, C. (2020). Why do people share their travel experiences on social media? *Tourism Management*, 78:104041. http://www.elsevier.com/locate/tourman
Ozdipciner, N.S., Li, X., & Uysal, M. (2010). An Examination of purchase decision-making criteria: A case of Turkey as a destination. *Journal of Hospitality Marketing & Management*, 19: 514–527. https://doi.org/10.1080/19368623.2010.482850
Pappas, N. (2019). Uk outbound travel Brexit complexity. *Tourism Management*, 72: 12 – 22. doi.org/10.1016/j.tourman.2018.11.004
Park, B.S., Kim, J., Lee, K.Y., Michael, G.O. (2020). Visualizing theme park visitors' emotions using social media analytics and geospatial analytics. *Tourism Management*, 80: 104 – 127. https://doi.org/10.1016/j.tourman.2020.104127
Pearce, P.L. (1988). *The Ulysses factor: Evaluating visitors in tourist settings*. New York: Springer Verlag.
Pearce, P.L. (1995). *Pleasure travel motivation*. In R. W. McIntosh, C. R. Goeldner, & J.R. Brent Ritchie (Eds.), Tourism: Principles, practices, philosophies (7th ed.), 167- 190, New York: John Wiley.
Pearce, P.L. (1982). *The social psychology of tourist behaviour*. Oxford, UK: Pergamon.
Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., & Podsakoff, N.P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, *88*(5), 879-903.
Prayag, G., Lewis, C., & Pour, S. (2024). Travel in my life: queer identity, travel motivation, resilience, life-satisfaction and wellbeing. *Current Issue in Tourism*, 27:2: 323-340. https://doi.org/10.1080/13683500.2023.2189092
Roy, G., & Sharma, S. (2021). Analyzing one-day tour trends during COVID-19 disruption–applying push and pull theory and text mining approach. *Tourism Recreation Research*, 46(2): 288–303. https://doi.org/10.1080/02508281.2020.1858614
Saeedi, H., & Hanzaee, H.K. (2018). The effects of heritage image on destination branding: an Iranian perspective. *Journal of Heritage Tourism*, 13(2): 152-166. https://doi.org/10.1080/1743873X.2016.1264958
Schiffman, L.G., & Kanuk, L.L. (2004). *Consumer behavior*. Prentice Hall.
Sato, S., Kim, H., & Buning, R. (2018). Adventure tourism motivation and destination loyalty: A comparison of decision and non-decision makers. *Journal of Destination Marketing and Management*, 8: 74 – 81. https://doi.org/10.1016/j.jdmm.2016.12.003
Soldatenko, D., Elisa, Zentveld, E., & Morgan, D. (2023). An examination of tourists' pre-trip motivational model using push–pull theory: Melbourne as a case study. *International journal of tourism cities*, 9(3): 572-597. https://doi.org/ 10.1108/ijtc-03-2023-0036
Stylidis, D., Shani, A., & Belhassen, Y. (2017). Testing an integrated destination image model across residents and tourists. *Tourism Management*, 58: 184–195. https://doi.org/10.1016/j.tourman.2016.10.014
Stylos, N., Vassiliadis, C.A., Bellou, V., & Andronikidis, A. (2016). Destination images, holistic images and personal normative beliefs: Predictors of intention to revisit a destination. *Tourism Management*, 53: 40–60. https://doi.org/10.1016/j.tourman.2015.09.006
Su, L., Cheng, J., & Swanson, R.S. (2020). The impact of tourism activity type on emotion and storytelling: The moderating roles of travel companion presence and relative ability. *Tourism Management*, 81, 104134. https://doi.org/10.1016/j.tourman.2020.104138
Valencia, P.J., Cerio, T.C., & Biares, R.R. (2022). Tourists' motives and activity preferences to farm tourism sites in the Philippines: application of push and pull theory. *Cogent Social Sciences*, 8:1, 2104706. https://doi.org/ 10.1080/23311886.2022.2104706
Wang, W., Yi. L., Wu, M., Pearce, L.P., & Huang, S.S. (2018). Examining Chinese adult children's motivations for traveling with their parents. *Tourism Management*, 69: 422 – 433. https://doi.org/10.1016/j.tourman.2018.06.024
Wen, J., Huang, S.S., & Ying, T. (2019). Relationships between Chinese cultural values and tourist motivations: A study of Chinese tourists visiting Israel. *Journal of Destination Marketing and Management*, 14 Article 100367. https://doi.org/10.1016/j.jdmm.2019.100367
Wong, M.M.C., Cheung, R., & Wan, C. (2013). A study on traveler expectation, motivation and attitude. *Contemporary Management Research*, 9(2). https://doi.org/10.7903/cmr.11023
Wang, C., Qu, H., & Hsu, M.K. (2016). Toward an integrated model of tourist expectation formation and gender difference. *Tourism Management*, 54: 58 71. https://doi.org/10.1016/j.tourman.2015.10.009
Wen, J., Meng, F., Ying, T., Qi, H., & Belhassen, Y. (2019). A study of segmentation of cannabis-oriented tourists from China based on motivation. *Current Issues in Tourism*, 1–16. https://doi.org/10.1080/13683500.2019.1584608
Wong, M.M.C., Cheung, R., & Wan, C. (2013). A study on traveler expectation, motivation and attitude. Contemporary Management Research, 9(2). https://doi.org/10.7903/cmr.11023
Ying, T., Wei, W., Wen, J., Wang, L., & Ye, S. (2018). Chinese cigar tourists to Cuba: A motivation-based segmentation. Journal Destination Marketing Management., 10: 112-121. https://doi.org/10.1016/j.jdmm.2018.07.003
Yoon, Y., & Uysal, M. (2005). An examination of the effects of motivation and satisfaction on destination loyalty: a structural model. *Tourism Management*, 26(1): 45-56. https://doi.org/10.1016/j.tourman.2003.08.016
Yu, G.B., Sirgy, M.J., & Bosnjak, M. (2021). The effects of holiday leisure travel on subjective well-being: The moderating role of experience sharing. *Journal of Travel Research*, 60(8): 1677–1691. https://doi.org/10.1177/0047287520966381
Zhang, Y., & Peng, Y. (2014). Understanding travel motivations of Chinese tourists visiting Cairns, Australia, *Journal of Hospitality and Tourism Management*, 21, 44 – 53. https://doi.org/10.1016/j.jhtm.2014.07.001
Zhou, P.P., Wu, M.Y., Filep, S., & Weber, K. (2021). Exploring well-being outcomes at an iconic Chinese LGBT event: A PERMA model perspective. *Tourism Management Perspectives*, 40: 100905. https://doi.org/10.1016/j.tmp.2021.100905

Article history: Received: 22.03.2024 Revised: 11.06.2024 Accepted: 27.06.2024 Available online: 28.06.2024

GeoJournal of Tourism and Geosites

Year XVII, no. 2 supplement, vol. 54, 2024

ISSN 2065-1198
E-ISSN 2065-0817