

# Invitation to Review a Manuscript (ID 1015869)

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**Frontiers in  
Psychology** <psychology.editorial.office@frontiersin.org>

to me

Mon, Sep 5, 2022,  
3:15 PM

Dear Dr I Gusti Bagus Rai Utama,

I am writing to ask whether you would be able to review a manuscript submitted for consideration in Frontiers in Psychology, section Personality and Social Psychology:

"A study on  
the impact of official promotion short videos on tourists' destination decision-making in the post-epidemic era"  
by Jing Jiang, Yuxin Hong, Wenwen Li and Ding Li

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Frontiers in Psychology  
Editorial Office, Frontiers in Psychology  
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-----MANUSCRIPT DETAILS-----

Journal: Frontiers in Psychology, section Personality and Social Psychology  
Article type: Original Research  
Manuscript title: A study on  
the impact of official promotion short videos on tourists' destination decision-making in  
the post-epidemic era  
Manuscript ID: 1015869  
Authors: Jing Jiang, Yuxin Hong, Wenwen Li and Ding Li  
Submitted on: 10 Aug 2022  
Edited by: Frontiers in Psychology  
Research Topic: Social Psychology and Behavior Changes in the Uncertain Social  
Context

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Abstract: The COVID-19 pandemic has had an enormous impact on traditional tourism. Influenced by the uncertainties of the current epidemic, to revive the development of tourism and local economics, local governments have used short video accounts to release tourist promotion short videos for publicizing and marketing. This study takes official promotion short videos as the research object, establishes a structural equation model based on the SOR theory, and explores the influencing factors of official short videos on tourists' destination decisions through empirical analysis. It finds that the official promotion short videos can positively stimulate users' perception and sentiments significantly due to the three unique features of authority, interactivity and interest, thus influencing tourists' destination decision-making behavior. On this basis, this study proposes to improve the operation of an official short video from three aspects: enhancing the authority of official short video accounts, attaching importance to the interactive mechanism, and strengthening the creativity of short videos. It is hoped that the study may help enhance the influence of official promotion short videos and promote the high-quality development of local tourism.

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# Authors are awaiting your assessment of their Manuscript (ID 940345)

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**Jade Evans** <jade.evans@frontiersin.org>

Wed, Jul 13, 2022,  
8:51 PM

to me

Dear Dr Utama,

I hope this email finds you well.

This is a courtesy message regarding the following manuscript which you are currently reviewing for Frontiers in Psychology - Organizational Psychology.

**Survey on the Tourist Satisfaction of Rural Homestay Based on the Theory of IPA** [ID: 940345]  
Online Review Forum: <http://review.frontiersin.org/review/940345/0/0>

The Editorial office would like to inform you that the authors responded to your comments and submitted a revised manuscript within the review forum. I have attached the revised manuscript for your ease.

To enable the review process to advance to the next stage, please assess the author's responses and either leave the authors new comments in the review forum (if you think the manuscript requires further improvement) or finalize your review by endorsing or recommending rejection.

**Should you require an extension or require any assistance responding to the authors please inform the Editorial office at your earliest convenience.**

Kind Regards,

Jade Evans MSc  
Review Operations Specialist

Editorial Office - Collaborative Peer Review Team  
Review Operations Manager: Roman Fedorak

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# Invitation to Review a Manuscript (ID 1022421)

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to me

Wed, Oct 12, 2022,  
6:41 PM

Dear Dr I Gusti Bagus Rai Utama,

I am writing to ask whether you would be able to review a manuscript submitted for consideration in Frontiers in Psychology, section Organizational Psychology:

"Effects of Perceived Change of Urban Destination on Destination Attachment"  
by Mei Huang, Xiaojie Yang, Danping Liu and Hedan Fang

Please read below for details concerning the submission and inform us of your interest using the hyperlinks enclosed. In agreeing to review this manuscript, we trust that its subject matter falls within your area of expertise.

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With best regards,

Frontiers in Psychology  
Editorial Office, Frontiers in Psychology  
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-----MANUSCRIPT DETAILS-----

Journal: Frontiers in Psychology, section Organizational Psychology  
Article type: Original Research  
Manuscript  
title: Effects of Perceived Change of Urban Destination on Destination Attachment  
Manuscript ID: 1022421  
Authors: Mei Huang, Xiaojie Yang, Danping Liu and Hedan Fang  
Submitted on: 18 Aug 2022  
Edited by: Shuangyu Xu  
Research Topic: Consumer Psychology in Tourism and Hospitality

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Abstract: The impact of urbanization on tourism is a widespread macroeconomic concern. However, few studies have explored the impact of destination urbanization on such individual tourist behavior as destination attachment. By developing an urbanization perception scale and analyzing tourists' destination attachment, this study provides empirical evidence for the micro-impact of urbanization. A sample of 825 repeat visitors of Chengdu, China, was included in the partial least squares-based structural modeling. The results of several tests show that the environmental changes caused by green urbanization positively impact tourists' destination attachment. This study also examines the explanatory role of tourist experience satisfaction and behavior control in this relationship. The findings suggest that tourists' experience of urban change is critical for the sticky marketing of tourist destinations.

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8:50 PM

to me

Dear Dr I Gusti Bagus Rai Utama,

I am writing to ask whether you would be able to review a manuscript submitted for consideration in Frontiers in Sports and Active Living, section Sport, Leisure, Tourism, and Events:

"Portugal Nautical Stations: Strategic alliances for sport tourism and environmental sustainability "

by Elsa Sacramento Pereira, Rute Martins, João Marques, Adão Flores, Vahid Aghdash and Matgarida Mascarenhas

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With best regards,

Gayle McPherson  
Associate Editor, Frontiers in Sports and Active Living  
<https://www.frontiersin.org/>

-----MANUSCRIPT DETAILS-----

Journal: Frontiers in Sports and Active Living, section Sport, Leisure, Tourism, and Events

Article type: Original Research

Manuscript

title: Portugal Nautical Stations: Strategic alliances for sport tourism and environmental sustainability

Manuscript ID: 982691

Authors: Elsa Sacramento Pereira, Rute Martins, João Marques, Adão Flores, Vahid Aghdash and Matgarida Mascarenhas

Submitted on: 30 Jun 2022

Edited by: Gayle McPherson

Research Topic: Insights in Sport, Leisure and Tourism: 2021

Abstract: Nautical tourism is a tourist product with great development in the European space and a lot of potential to promote and develop tourist destinations. Considering the dynamics of nautical tourism management and the importance of meeting the specificities of this market niche, the objective of this study is to analyse the strategic alliances for the development of the offer of nautical tourism products, namely their strategic goals and sustainable environmental practices adopted by the actors which integrated the strategic alliances in order to certificate a plethora of nautical stations in Portugal.

Between September-December 2021, the application forms from 17 Portuguese nautical stations were collected. Content analysis using Nvivo software was the technique used for data analysis.

The results show a multiplicity of strategic objectives associated with the strategic alliance established between the nautical stations. The strategic vision of nautical stations for the development of strategic alliances is based, firstly, on the objective of structuring the tourism offer, followed by increasing governance and promoting and marketing nautical tourism using the image of the destination. Based on these results, it is possible to infer the importance of nautical stations in destination competitiveness and the role of strategic alliances in facilitating penetration in the nautical tourism market. The managers of nautical stations should consider the use of strategic alliances to make a cooperative marketing in order to improve the experience to the clients. Regarding environmental sustainability practices, the results show the prominence of environmental education actions in contrast to the reduced number of nautical stations that develop actions for the adoption of sustainable

transport.

This study contributes to a better understanding of nautical tourism and Portuguese nautical stations, a project of strategic investment in sport and tourism, inferring on the objectives underlying the formation of strategic alliances and on the adopted environmental sustainability practices. The conclusions of this study point to the need for future scientific research on the actual operationalization of the objectives underlying the formation of strategic alliances, as well as the environmental practices developed by nautical stations.

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# Invitation to Review a Manuscript (ID 1010589)

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to me

Tue, Sep 6, 2022,  
9:17 PM

Dear Dr I Gusti Bagus Rai Utama,

I am writing to ask whether you would be able to review a manuscript submitted for consideration in Frontiers in Psychology, section Organizational Psychology:

"The mechanism of body-mind integration in the formation of destination attachment: A comparison of first-time and repeat tourists"  
by Yinyin Dong and Yinyin Dong

Please read below for details concerning the submission and inform us of your interest using the hyperlinks enclosed. In agreeing to review this manuscript, we trust that its subject matter falls within your area of expertise.

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Editorial Office, Frontiers in Psychology  
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-----MANUSCRIPT DETAILS-----

Journal: Frontiers in Psychology, section Organizational Psychology

Article type: Original Research

Manuscript title: The mechanism of body-mind integration in the formation of destination attachment: A comparison of first-time and repeat tourists

Manuscript ID: 1010589

Authors: Yinyin Dong and Yinyin Dong

Submitted on: 03 Aug 2022

Edited by: Elizabeth Halpenny

Research Topic: Consumer Psychology in Tourism and Hospitality

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Abstract: By constructing a person-body-mind-place framework of destination attachment, this study explores the physical and mental formation mechanism of destination attachment and examines its dynamics between first-time and repeat tourists. The present study found that multisensory impressions can, directly and indirectly, affect destination attachment through emotional and cognitive psychological mediation. There are differences between first-time tourists and repeat tourists in terms of path. As the frequency of travel increases, the influence of multisensory impressions gradually increases. The formation of destination attachment is dominated by emotion for first-time tourists, whereas it is dominated by cognition for repeat tourists. Based on these findings, theoretical and practical implications are presented.

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Thu, Mar 24, 2022,  
11:48 PM

Dear Dr I Gusti Bagus Rai Utama,

I am writing to ask whether you would be able to review a manuscript submitted for consideration in Frontiers in Psychology, section Organizational Psychology:

"Understanding the reality of China's health tourism and consumer demand from the perspective of consumers: a cross-sectional study"  
by Yao Liu, Qian Lin and Dan Zhang

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Thank you for considering to review this manuscript.

With best regards,

Marko D. Petrovic  
Guest Associate Editor, Frontiers in Psychology  
<https://www.frontiersin.org/>

-----MANUSCRIPT DETAILS-----

Journal: Frontiers in Psychology, section Organizational Psychology  
Article type: Original Research  
Manuscript title: Understanding the reality of  
China's health tourism and consumer demand from the perspective of consumers:  
a cross-sectional study  
Manuscript ID: 824328  
Authors: Yao Liu, Qian Lin and Dan Zhang  
Submitted on: 29 Nov 2021  
Edited by: Marko D. Petrovic  
Research Topic: The Paradigm of Creating a New Environment for Travel  
Industry Consumers During the Crisis and Instability in the World

**Abstract:** Background: Travel for health reasons is booming around the world and in China. As a huge source and destination of health tourism, little is understood about the volume, characteristic, motivation, and preference of health travelers in China. This study provides details of China's health tourism reality and consumer demand of Chinese residents who did or will travel for health.

**Methods:** We established a questionnaire through literature analysis and focus group, then collected 695 responses based on an online random sampling design. Finally 629 questionnaires (effective recovery rate was 90%) were analyzed with statistical description, binary logistic regression and word frequency analysis to draw the reality of health tourism, explore the influential factors, and sort out suggestions.

**Results:** In this study, 387 respondents knew health tourism (61.53%), 446 reported interest (70.9%), and 234 had traveled for health reasons before (37.2%), with 329 occurring within China(91.4%) and the top three reasons were decompression and relaxation (116, 20%), physical examination (82, 14.1%) and health care (73, 12.6%). High costs (372, 16.3%), little disposable time (309, 13.5%) and lack of reliable professional institutions (289, 12.6%) were the mainly potential barriers for consumers. Professional level and quality of the institution, personal privacy, and service personnel's attitude were the most important concerns for consumers when arranging a certain health travel. Marital status (OR=0.209, 95% CI=0.085-0.514, P=0.001) and attitude to health tourism (OR=2.259, 95%CI=1.553-3.287, P<0.001) were factors for consumers' willingness to perform health tourism. "Propaganda" was proposed most frequently by participants, followed by service quality and price.

**Conclusions:** The popularity of health tourists is low while there is a huge market in China. Besides, there are also differences between willingness of previous and prospective customers with varying socio-demographic characteristics in this investigation. Overall, more diverse propaganda measures should be taken, and

government policies or legal documents ought to keep pace with it. Health tourism products promotion, as well as supporting measures and brand need to be emphasized.

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# I Gusti Bagus Rai Utama

Doctorate

Associate Professor  
Dhyana Pura University  
Mangupura, Indonesia

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## Survey on the tourist satisfaction of rural homestay based on the theory of importance-performance analysis (<https://www.frontiersin.org/article/940345>)

Xiaorui Zhou ([//loop.frontiersin.org/people/1940036/overview](https://loop.frontiersin.org/people/1940036/overview)) · Yanan Wang

([//loop.frontiersin.org/people/1806896/overview](https://loop.frontiersin.org/people/1806896/overview)) · Pingping Ma ([//loop.frontiersin.org/people/0/overview](https://loop.frontiersin.org/people/0/overview))

Frontiers in Psychology ([//www.frontiersin.org/journal/36](https://www.frontiersin.org/journal/36))  
Published on 11 Aug 2022

2,527 views | View impact (<http://loop-impact.frontiersin.org/impact/article/940345>)

## Understanding the Reality of China's Health Tourism and Consumer Demand From the Perspective of Consumers: A Cross-Sectional Study

(<https://www.frontiersin.org/article/824328>)

Yao Liu ([//loop.frontiersin.org/people/1560203/overview](https://loop.frontiersin.org/people/1560203/overview)) · Qian Lin

([//loop.frontiersin.org/people/1670582/overview](https://loop.frontiersin.org/people/1670582/overview)) · Dan Zhang ([//loop.frontiersin.org/people/0/overview](https://loop.frontiersin.org/people/0/overview))

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Published on 06 May 2022

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**A study on the impact of official promotion short videos on tourists' destination decision-making in the post-epidemic era (<https://www.frontiersin.org/article/1015869>)**

Jing Jiang ([//loop.frontiersin.org/people/1730175/overview](https://loop.frontiersin.org/people/1730175/overview)) · Yuxin Hong

([//loop.frontiersin.org/people/0/overview](https://loop.frontiersin.org/people/0/overview)) · Wenwen Li ([//loop.frontiersin.org/people/0/overview](https://loop.frontiersin.org/people/0/overview)) · Ding

Li ([//loop.frontiersin.org/people/1368349/overview](https://loop.frontiersin.org/people/1368349/overview))

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**How does social support influence tourist-oriented citizenship behavior? A self-determination theory perspective (<https://www.frontiersin.org/article/1043520>)**

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# A study on the impact of official promotion short videos on tourists' destination decision-making in the post-epidemic era

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The COVID-19 pandemic has had an enormous impact on traditional tourism. Influenced by the uncertainties of the current epidemic, to revive the development of tourism and local economics, local governments have used short video accounts to release tourist promotion short videos for publicizing and marketing. This study takes official promotion short videos as the research object, establishes a structural equation model based on the SOR theory, and explores the influencing factors of official short videos on tourists' destination decisions through empirical analysis. It finds that the official promotion short videos can positively stimulate users' perception and sentiments significantly due to the three unique features of authority, interactivity and interest, thus influencing tourists' destination decision-making behavior. On this basis, this study proposes to improve the operation of an official short video from three aspects: enhancing the authority of official short video accounts, attaching importance to the interactive mechanism, and strengthening the creativity of short videos. It is hoped that the study may help enhance the influence of official promotion short videos and promote the high-quality development of local tourism.

## KEYWORDS

uncertainties, official short videos, tourism promotion, travel destination decision, SOR theory

## Introduction

The Covid-19 epidemic spreading all over the world in 2020 not only significantly influences traditional service industries such as catering, accommodation, and tourism, but also changes consumers' consumption habits and psychology to some extent. Affected by the COVID-19 epidemic, the number of China's domestic tourists and tourism income both dropped sharply in 2020, and the loss of total tourism revenue was more than \$600 billion (Qiang, 2022). Rural tourism is one of the economic activities hardest hit by the pandemic (Eslami and Namdar, 2022). This is undoubtedly disastrous for local governments

that rely on tourism to eliminate poverty and develop their economies.

At present, the uncertainties of epidemic development make all industries in China take normalized epidemic prevention and control measures. Therefore, the traditional tourism publicity and promotion mode can no longer match the objectives of normalized epidemic prevention and control policy, and the tourism marketing problem has become prominent increasingly. On the other hand, after long-term home quarantine, residents may have some revenge spending, and there will be a great travel demand during the stable epidemic period. How to promote tourism through a brand-new model at a time of heightened uncertainties and risks and then revitalize the tourism industry and increase tourism revenue has become an urgent problem for local governments to solve.

Technological advances and the use of social media play an important role in driving economic development (Li et al., 2021). After the outbreak of the COVID-19 epidemic, the short video platform has become the main channel not only for the public to obtain information related to the epidemic, but also for the local governments to interact with the public. On the one hand, short videos in marketing reduces consumers' resistance to marketing and make the products more deeply rooted in people's hearts (Du and Lee, 2020). On the other hand, with the help of the short video platform accounts, local governments can create an "Internet celebrity city" with huge online traffic, which can attract tourists and promote the development of local tourism industry and the region. For instance, using the short video platforms, DING Zhen, a Tibetan boy from Litang County, Sichuan Province, became popular on the Internet. After his popularity, DING Zhen became the "image spokesperson of Litang" to help his hometown get rid of poverty. With his efforts, Litang County received more than 1,512 million tourists in 2020, achieving a tourism income of 1.66 billion yuan, an increase of 158.1% year on year, reaching a record high.

Live streaming, as a new feature of the short video platform, is of significance to the recovery of tourism (Liu et al., 2022). For example, LIU Hong, director of Sichuan Ganzi Culture and Tourism Bureau, HE Jiaolong, deputy director of Xinjiang Yili Culture and Tourism Bureau, and other local tourism department leaders walked into Douyin short video live streaming room to promote local tourism resources for Internet users with their government official identity.<sup>1</sup> The government's promoting tourism resources and publicizing travel destinations through short video platforms has become a new model to attract tourists and promote the development of local tourism under the current background of uncertain epidemic development.

1 [https://www.thepaper.cn/newsDetail\\_forward\\_12213569](https://www.thepaper.cn/newsDetail_forward_12213569) 贺娇龙、刘洪走红网络背后:基层文旅干部正寻找产业突围之路 (Behind the Internet fame of HE Jiaolong and LIU Hong: grassroots leaders in cultural and tourism departments are looking for a way to break through).

Therefore, this study aims to explore how to better use the official promotion short videos to promote tourism resources and effectively guide potential consumers' travel consumption under the background of the epidemic uncertainties. Based on the stimulus-organism-response (SOR) theory, this study constructs a structural equation model of the official promotion short videos' influence on tourists' destination decision-making behavior. With the online questionnaire data, the relationship between variables was tested by the structural equation model, and then the influencing factors of official promotion short video on tourist destination decision were analyzed. It is hoped that the present study may provide decision-making reference for promoting the development of local tourism.

## Literature review

### Tourist destination image and tourism promotion

The image of a tourist destination refers to the overall impression of a tourist destination interwoven with various tourism products and elements (Huang et al., 2002). In subsequent studies, this impression is further expanded into customer-based brand equity of tourist destinations, which increases the dimensions of perception, quality and loyalty of tourist destinations (Konečnik, 2010). The representative image that a destination tries to communicate with the tourists is called the projected image (Barich and Kotler, 1991), and this is the way a tourist destination gets itself known to more. And the emergence of popular attractions is the result of a synergy between the perceived and predicted images of the destination. Destination Management Organization (DMO), as the main body of image projection, needs to pay attention to the deviation between the official-projected image and the user-perceived image, and conduct management marketing based on the difference (Briciu et al., 2019). Since the projected image of a tourist destination is affected by the tourists' perceived image, it is necessary to build a good destination image through various promotion and marketing means, change the stereotyped cognition of tourists, and then affect their choice of destination (Kavaratzis and Ashworth, 2008).

### Factors influencing tourist destination decision

Tourists' destination decision-making behavior is influenced by many factors, including tourists' internal psychological quality and external social environment (Mayo and Jarvis, 1981). The tourists' perceived image of the destination before making the decision plays an important role in their decision, so it is necessary to focus on marketing the image of the tourist destination (Baloglu and McCleary, 1999). Under the circumstances of the current global outbreak, the main factor that affects tourists' destination

decision-making is the assessment of the visual attractiveness of the tour (Rogach et al., 2020). Therefore, the promotion and marketing of tourist destinations remain important in the post-pandemic era. More than that, safety should be one of the factors that influence tourists' decision. Studies have confirmed that travel safety and security (TSS) affect the travel destination image (TDI) in the early decision-making process. Therefore, the destination marketing organization (DMO) should develop appropriate tourism marketing and management strategies to improve destination attractiveness and competitiveness (Hsu et al., 2017). In addition, some scholars in China (e.g., Wang et al., 2007; Guo, 2009) have also found through research that personal perceived value also has an influence on tourists' destination decisions and purchase intentions.

## Tourism promotion and short video marketing

With the development of new media platforms, short videos have gradually become the main channel of constructing, publicizing, and marketing the image of tourist destinations in recent years. From the perspective of tourist perception, Xiao et al. (2020) found through empirical research that Tik-Tok can affect tourists' perception of destination image and travel intention, especially that interactive marketing plays a more significant role in the influence of short video marketing on image perception. Cao et al. (2021) also confirmed that short videos can be an effective marketing strategy for tourist destinations. On this basis, the government's local tourism departments have also gradually strengthened the construction of short video accounts, using the celebrity effect of "Internet celebrities" to stimulate the public's travel interest and promote the development of local tourism (Zhang and Huang, 2022).

To sum up, short video, an emerging media communication platform, has a significant impact on tourists' destination choice, and the official-projected image of local destination will also affect tourists' perception. However, few studies took the official short video account as the research object to discuss its impact on tourist destinations. In the post-epidemic era, China's tourism industry is also actively seeking for transformation and development and attracting consumers with new ways of travel. The government, as the regulator of the tourism industry, has the responsibility and obligation to promote the high-quality development of tourism while taking epidemic prevention and control measures and creating a safe consumption environment. Driven by the intelligent and digital transformation of the tourism industry, official promotion short videos become the first choice for the government to involve in tourist destination marketing and promotion. Through the planning and operation of official short video account and the shooting and release of official promotion short videos, the government can not only set up a good government image, but also promote the development of local economy, using government affairs new media to boost local

tourism industry. Under the background of uncertain epidemic development, it is of great significance to use the official short video account to publicize and market the development of local tourism. Therefore, this study uses empirical research methods to analyze the influencing factors of official short videos on tourists' destination decision-making. It is hoped that this study may provide a reference for local governments to use short video platforms efficiently to attract tourists, publicize tourism resources, and promote the development of local tourism.

## Theoretical framework and research design

### Theoretical framework

Mehrabian and Russell (1974) proposed the famous stimulation-response model on the basis of environmental psychology, which pointed out that the external environment has an impact on the cognitive and emotional state of individuals, and thus has an impact on individual behavior. Stimulation is a factor that influences the body's internal and external situation. It can affect the psychological state or cognitive status of an organism (Lin and Lo, 2016), and then through a series of psychological or cognitive activities, organisms will take an inner and outer reaction to stimuli. The internal reaction is shown by individual attitude, and the external reaction embodied in individual behavior (Lorenzo-Romero et al., 2016). The SOR model is the stimulus-organism-response model. SOR theory, as an important theoretical framework to analyze the response of external stimuli to individual psychology and behavior, constructs the relationship between external environment, individual psychology and behavior. Donovan et al. (1994) applied their improved SOR model to the shopping scene, which promoted the study of SOR model in consumers' purchase intention and purchase behavior in the Internet era (Djafarova and Bowes, 2021; Shang et al., 2022). In the context of new network media, the "stimulus" in SOR theory is no longer the intuitive objects in the external environment, but through pictures, videos and online interaction to stimulate the user's consumption psychology, and then produce the consumption impulse and desire that is transferred into actual consumption behavior. Therefore, this study attempts to extend the application of SOR theory to the study of short videos affecting tourist destination decisions.

Specifically, the official promotion short videos' production quality and the image of tourist destinations they construct will affect the psychological reaction of tourists who then make consumption decisions. When consumers, driven by certain travel purchase motives, purchase tourism products and produce a series of post-purchase behaviors in order to meet certain travel needs, it is a complete travel purchase decision. Therefore, this paper takes the official short videos as the research object and discusses the influence of its stimulus on tourists' destination decision-making combined with the SOR model.

## Research hypothesis and model construction

Based on the SOR theory, this paper constructs a structural equation model of the influence of official promotion short videos on tourists' destination decision-making behavior (Figure 1).

The characteristics of official short video accounts and those of short video platforms jointly determine the characteristics of official promotion short videos. In terms of official short video accounts, they have an official background. The government authorizes the official accounts to produce and release official promotion short videos (Yu, 2020). Thus, the information content has official authority and credibility. This is the most distinctive feature that distinguishes official promotion short videos from other short videos. Therefore, we made the hypothesis that the official short video is authoritative. For short video platforms, on the one hand, as a kind of social media, they should meet the users' interaction and social needs. On the other hand, their operation and development should also meet the entertainment needs of the user group, especially the young group. Hence, the video content should be creative and interesting to make users feel it enjoyable and generate the interest of continuous use after use. Therefore, we made another hypothesis that the official promotion short video is interesting and interactive. To sum up, we hypothesized that official promotion short videos are authoritative, interactive and interesting.

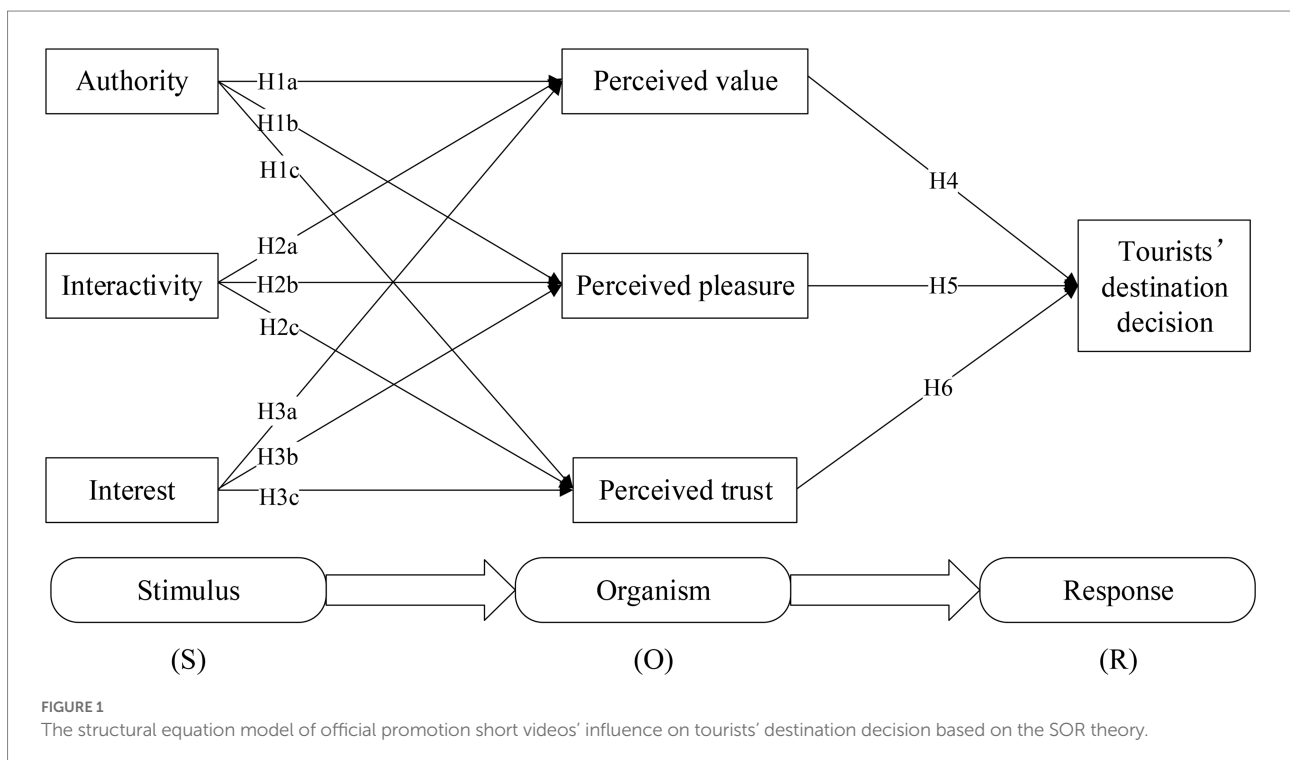
Combined with the SOR model, the official promotion short video, with its special communication mechanism, will be used as an external stimulus to affect the perception or sentiment of

potential consumers in the process of watching and then make them produce the decision-making behavior reaction of tendency or avoidance. Taking this model mechanism as a reference, according to the existing research literature results, this study proposes the hypothesis that tourists, as potential consumers, can get stimulation from watching official promotion short videos, which are characteristic of authority, interactivity and interest. After obtaining such an external stimulus, the tourist organism will generate the cognitive reaction of obtaining perceived value, producing perceived pleasure and perceived trust. After the perception reaction is generated, it will further influence the final decision of tourists as potential consumers to accept or reject the destination (i.e., the response). This study verifies and analyzes the above hypotheses based on the questionnaire data.

### The hypothesis that the official promotion short videos stimulate users

#### Authority

Foucault discussed the relationship between discourse and power in *The Order of Discourse*. In any society, once discourse comes into being, it is immediately controlled, screened, organized, and redistributed by power, and discourse serves power (Grudin, 1996). The important difference between the official promotion short video and the short video released from the we-media or other institutional media lies in the official identity of the account. The new media of the CPC (Communist Party of China) and government organizations that released the





official information has high prestige in the public mind. For example, “China Chang’an Net” is the Douyin account of the Political and Judiciary Commission under the Central Committee of the Communist Party of China. As the first political and legal government affairs account on the Douyin platform, it has nearly 40 million fans and popular videos with nearly 8 million likes. It fully reflects the influence and authority of the official mainstream media. The credibility of the information source is the factor with the largest weight in the dimension of communication system, which can affect the perceived risk of users (Tang and Lai, 2021). However, watching the official promotion short videos can have a positive impact on the potential consumers’ impression of the travel destination (Shani et al., 2010). Based on this, this paper puts forward the following hypotheses:

- H1a*: Authority positively affects consumers’ perceived value significantly;
- H1b*: Authority positively affects consumers’ perceived pleasure significantly;
- H1c*: Authority positively affects consumers’ perceived trust significantly.

### Interactivity

The short video breaks the dimension limitation of time and space, has multiple communication channels, and thus highly fits the factors needed for interaction. Interactivity is one of the distinctive features of short video as a new media platform. Users can give likes, favorites, and comments to express their sentiments while watching the short videos. It is worth mentioning that the official short video account can thus have a quick and effective dialogue with users, respond to questions raised by users, enable users to fully understand the destinations, and facilitate tourists’ decision-making to a certain extent. The content of the videos also spreads further through the recognition and sharing between users. Previous studies have shown that when the travel destination has a crisis of trust due to the epidemic, the destination can respond to the negative comments on the network platform in time through the media, strengthen interaction and communication, and use crisis marketing to effectively resolve the crisis and create opportunities for development (Aktan et al., 2022). Based on this, this paper puts forward the following hypotheses:

- H2a*: Interactivity positively affects consumers’ perceived value significantly;
- H2b*: Interactivity positively affects consumers’ perceived pleasure significantly;
- H2c*: Interactivity positively affects consumers’ perceived trust significantly.

### Interest

The reason why the official short video platform is welcomed by the public is that compared with the traditional

official media content, the short videos released by it no longer use serious and formal official words but adopt humanized narrative techniques to share vivid and relaxing stories through short videos. When making official short videos, some creative clips, interesting scripts, pictures, and sound effects are usually used to produce unique sensory effects to attract users to watch and enjoy. Most of the works tend to be colloquial and fast-paced and often use online buzzwords, which cater to the audience’s mentality of pursuing novelty and interest and further narrow the distance between the government and the public (Jia and He, 2019). Therefore, it makes official information communication more relaxing and popularized so that the public can better accept it. The usefulness, interest, resonance and other characteristics of short video content determine that short video content is easier to spread and enhance user stickiness (Fei and Koo, 2020). Based on this, this paper puts forward the following hypotheses:

- H3a*: Interest positively affects consumers’ perceived value significantly;
- H3b*: Interest positively affects consumers’ perceived pleasure significantly;
- H3c*: Interest positively affects consumers’ perceived trust significantly.

## Hypothesis about the user response to the official promotion short video stimulus

### Perceived value

After studying the influence of the perceived value of mobile short video on consumers’ purchase intention, scholars have found that consumers’ perceived value of mobile video is an important factor affecting purchase intention, which can have a positive impact on users’ participation behavior (Wan et al., 2014). Especially in the current context of the uncertain epidemic situation, tourists cannot experience tourism resources offline and thus need to make decisions after weighing the perceived value. In the face of short video advertising and marketing, users do not blindly follow but actively choose. The core competitiveness and brand personality of short video account have a significant impact on users’ perceived value (Zeng, 2021). Only when tourists perceive that the consumption behavior is meaningful and valuable can they turn their potential purchase intention into practical actions. The purpose of tourist decision-making is to maximize tourism utility. Before making a destination decision, consumers’ perceived value evaluation and psychological feelings in destination promotion videos may affect consumers’ final consumption behavior. Consumers’ perceived value has a positive impact on consumer happiness and stickiness (Ren et al., 2021). Based on this, this paper puts forward the following hypothesis:

- H4*: Perceived value has a positive and significant impact on tourists’ destination decisions.

### Perceived pleasure

Individuals' sentimental energy will be generated in an interactive ceremony, which is deep and strong, and will affect users' next behavior. Studies have shown that sentimental response and product purchase intention also have a significant positive impact (Li, 2019). In the process of watching the official promotion short videos, the users, as potential consumers, may be stimulated by the audio-visual effects of the videos and then gain inner pleasure, thus generating yearning for destinations and affecting their decision-making of the destinations. Based on this, this paper puts forward the following hypothesis:

*H5: Perceived pleasure has a significant positive impact on tourists' destination decisions.*

### Perceived trust

The COVID-19 pandemic has seriously affected people's willingness to travel (Hao et al., 2021). After the outbreak of the pandemic, Chinese nationals reduced their preferences in all travel modes and most of the travel forms (Huang et al., 2021). Influenced by the uncertainties in the current epidemic situation, the coronavirus has not been thoroughly controlled, so the risk of coronavirus contagion in tourist destinations will increase due to the gathering of people. Therefore, tourists are worried and uneasy about travel universally, and will be more anxious in the absence of official authoritative information. COVID-19 was shown to negatively affect the travel intention (Cho, 2021). Tourists' travel decisions are largely based on their own risk assessment and safety perception of the epidemic situation. Destination crisis marketing should provide positive information about destinations to ease their risk perception and enhance their trust. At this point, the government's emergency management department should use various media to intensify epidemic information release and publicize the epidemic prevention and control measures in the tourist destinations. These measures may give tourists the right to know, eliminate their tension and anxiety caused by the information asymmetries. In this way, the government can reduce tourists' perception of the risk and enhance their trust in government's authority. Previous studies (e.g., Avraham, 2015; Assaker and O'Connor, 2020) have shown that when a destination is hit by a crisis such as a terrorist attack or a natural disaster, the emergency management department (DEM) can reduce tourists' risk perception and generate a sense of trust. Based on this, this paper puts forward the following hypothesis:

*H6: Perceived trust has a significant positive impact on tourists' destination decisions.*

## Data collection and analysis

### Variable measure

Based on the existing research results, this paper designed a variable measurement scale and then designed a questionnaire

according to the items of each variable and the theme of this study. All the measures in the questionnaire adopted the five-level Likert scale. Seven variables were selected in this study. The basis for variable selection and questionnaire design items are shown in Table 1.

### Sample descriptive statistics

We distributed a total of 435 questionnaires to Chinese Internet users *via* an online questionnaire platform in China. Among them, the questionnaires that said they had not watched the official promotion videos, that had identical answer options throughout, and that were completed in less than 1 min were deleted. The remaining valid questionnaires were 397, with an effective rate of 91.3%. It indicates that these respondents all have had the real experience of watching official promotion short videos before they participated in the survey. 51% of the respondents were female, and 49% were male. The education level is concentrated in junior college to an undergraduate degree, accounting for 77.7%. The age is concentrated in 21–40 years old, accounting for 70.2%. Among the ways to get information about the destination, social media and asking relatives and friends are the most popular ways. In the past 3 years, about 85% of the respondents have traveled during the epidemic situation, indicating that all the respondents have certain travel experiences during the epidemic situation.

### Reliability and validity test

Through SPSS25 data processing and reliability analysis, the overall standardized Cronbach  $\alpha$  coefficient of the questionnaire is 0.963, which shows that the questionnaire has good internal consistency and stability. The standard loads are all greater than 0.7, which shows that the observed variables explain the latent variables well. KMO = 0.974, indicating that the correlation between variables is strong and suitable for factor analysis. The combined reliability of Cronbach  $\alpha$  and CR of each latent variable is greater than 0.7, which shows that the internal consistency is good and it has good reliability and reliability.

The validity test is to verify the validity of the questionnaire, which is divided into aggregation validity and discriminant validity. Aggregation validity is measured by the AVE value. When AVE is greater than 0.5, the aggregation validity of the scale is good, and all latent variables AVE of this questionnaire are greater than 0.5. Discriminant validity is measured by comparing the square root of latent variable AVE with the correlation coefficient between variables. As shown in Table 2, the diagonal is the square root of each latent variable AVE, and the rest is the correlation coefficient. The square root of each latent variable AVE in the table is greater than the correlation coefficient, which shows that the sample has good discrimination validity.



TABLE 1 Variable screening and basis.

Variable	Number	Item	Source of reference
Authority	Q9	Compared with other accounts, the official account is a highly professional expert.	Zhang et al. (2010),
	Q10	Compared with other accounts, the official account is certified and verifiable by the platform.	Guo et al. (2019)
	Q11	Compared with other accounts, the official account is reliable and trustworthy.	
	Q12	Compared with other accounts, the official account is generally recognized by the public.	
Interactivity	Q13	Through the official account, I can search, consult, comment, share and collect all kinds of travel information.	Coursaris et al. (2012), Yuan and Wang (2015)
	Q14	Through the official account, I can communicate with the tourism authorities and make suggestions.	
	Q15	Through the official account, my questions can be answered in time.	
	Q16	Through the official account, I like to participate in the interactive communication of the official promotion short videos.	
Interest	Q17	I think the official promotion short videos are interesting	Jin (2015),
	Q18	The interesting content is an important reason why I pay attention to this kind of short video.	Shen and Zhao (2018)
	Q19	Whether the official video is wonderful and interesting will affect my subsequent decision.	
Perceived value	Q20	By watching the official promotion short video of the travel destinations, I can know the tourism resources of the destinations.	Sweeney and Soutar (2001), Wang et al. (2004)
	Q21	By watching the official promotion short video of the travel destination, I can judge whether it can meet my travel needs.	
	Q22	The travel information provided in the official promotion short video was helpful to me.	
Perceived pleasure	Q23	It was enjoyable to watch the official promotion short video	Hassanein and Head (2007)
	Q24	After watching the official short video, I feel relaxed.	
	Q25	After watching the official short video, I feel happy.	
Perceived trust	Q26	After watching the official short video, it will be safer to travel to the destination.	Stone and Grønhaug (1993),
	Q27	After watching the official short video, it will not make me nervous if I travel to the destination.	Han (2005)
	Q28	After watching the official short video, it will not make me worried if I travel to the destination.	
Tourist destination decision-making	Q29	Before the actual travel, I will search the official promotion short video for reference.	Bansal and Voyer (2000),
	Q30	The travel information in the official promotion short video has changed my attitude and opinion towards a certain travel destination.	Park et al. (2007)
	Q31	The travel information in the official promotion short video will have a direct impact on my decision on a travel destination.	
	Q32	The travel information in the official promotion short video will help me make the decision about the destination.	

TABLE 2 Analysis of the model fitting degree.

Indicators	$X^2/df$	NFI	RFI	IFI	CFI	RMSEA
Value	2.802	0.981	0.965	0.988	0.988	0.064
Reference range	<3	>0.8	>0.8	>0.8	>0.8	<0.08

## Hypothesis testing

According to the hypothesis of this research model, the structural equation model is constructed by AMOS24 software, and six adaptation indexes,  $\chi^2/df$ , NFI, RFI, IFI, CFI, and RMSEA, are selected to evaluate the fitting degree of the structural equation. It is generally believed that when the ratio of chi-square degrees of freedom is <3, GFI, NFI, and IFI are close to 1, and RMSEA is <0.08, the fitting degree of the model is better (Table 2).

The significance level of each variable was calculated by Boot Strapping, and the stability of data results was ensured by 2000 samples. When  $T > 1.96$ , it means reaching a significant level of

0.05; when  $T > 2.58$ , it means that it reaches the significant level of 0.01; when  $T > 3.29$ , it means that it reaches a significant level of 0.001. Path analysis and significance level are shown in the figure.  $R^2$  represents the degree to which the explanatory variable explains the explained variable. The analysis results are shown in Figure 2 and Table 3.

## Results

### Official short video stimulates the user significantly and gets a positive response

Authority positively affects perceived value, perceived pleasure, and perceived trust significantly. Official short video media has strong authority because of its position of official certification, providing authentic and reliable information, owning complete and efficient internal resources, and ensuring the rapidity and credibility of its information to a certain extent (Yu,

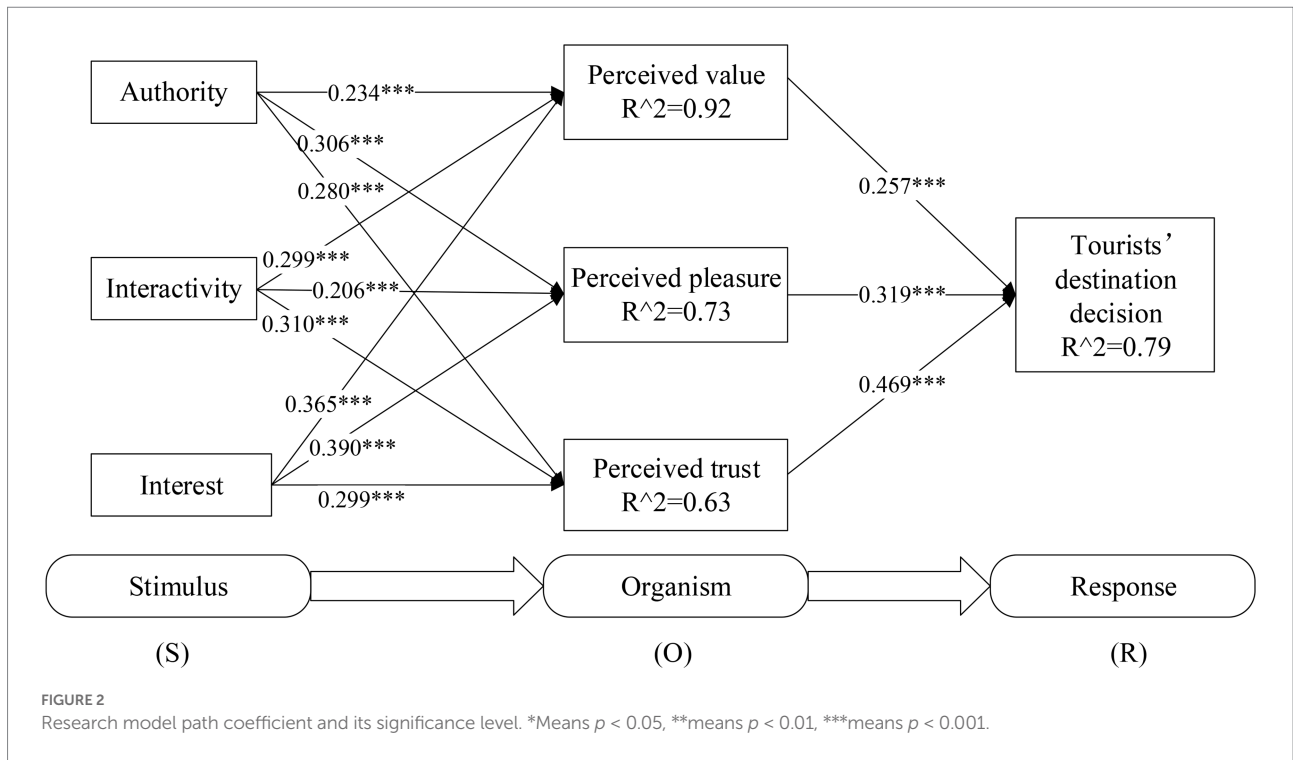


TABLE 3 Research results.

Research hypothesis	Path correlation	Path coefficient	T value	Significance level	Hypothesis test results
H1a	Authority → Perceived value	0.234	5.226	***	Support
H1b	Authority → Perceived pleasure	0.306	6.913	***	Support
H1c	Authority → Perceived trust	0.280	6.084	***	Support
H2a	Interactivity → Perceived value	0.299	6.478	***	Support
H2b	Interactivity → Perceived pleasure	0.206	4.525	***	Support
H2c	Interactivity → Perceived trust	0.310	6.550	***	Support
H3a	Interest → Perceived value	0.365	7.073	***	Support
H3b	Interest → Perceived pleasure	0.390	7.633	***	Support
H3c	Interest → Perceived trust	0.299	5.620	***	Support
H4	Perceived value → Tourists' destination decision	0.257	5.887	***	Support
H5	Perceived pleasure → Tourists' destination decision	0.319	7.160	***	Support
H6	Perceived trust → Tourists' destination decision	0.469	10.856	***	Support

2020). In the process of searching for and receiving information, users tend to prefer credible information sources, so the authority can enhance users' value perception and reduce risk perception (Tang and Lai, 2021). Therefore, when watching the official promotion short videos, the public often has a high acceptance of the image of tourist destinations and tourism resources displayed, which stimulates their perception and sentimental response positively. At the same time, high-quality information and publicity ability, linked with offline tourism work, enable users to give feedback and enhance the authority of the government after getting a good travel experience.

Interaction positively affects perceived value, perceived pleasure, and perceived trust significantly. The interactive

mechanism of official promotion short videos includes one-way behaviors such as users' likes, comments, and sharing and two-way behaviors such as answering questions in private letters. Interactive behavior can generate group recognition (Liu, 2021) and improve perception and sentimental stimulation in recognition. The more frequent and extensive the interaction covers, the more complete the destination image can be shaped. At the same time, the recommendation mechanism of the platform will also generate feedback and achieve positive growth—bring perceived value, gain perceived pleasure and enhance perceived trust in the interaction. The interaction will also deepen users' cognitive impression of concerns, form a cognitive network of tourist destination image, and shape a good perception of urban tourism image.

Interest affects perceived value, perceived pleasure, and perceived trust significantly. The reason why short videos can get great attention and online traffic in the new Internet era cannot be separated from their own interesting and entertaining characteristics. Interesting and creative short videos can catch users' eyes in a short time and bring high-quality perception enjoyment to users, so that they can fully understand relevant information and generate positive sentiments in just a few tens of seconds. Interesting videos can highlight marketing priorities and deepen users' perceptions. Short videos of "magic brainwashing" are more likely to occupy users' minds. The more interesting they are, the easier for tourists to obtain an immersive experience and relaxed and pleasant mood, so as to meet their various needs for the destination, eliminate their anxiety, and generate consumption impulses or plans.

### User's reaction positively affects their destination decision-making behavior significantly

Perceived value has a significant positive impact on tourists' destination decision-making. In the process of watching the official promotion short videos, users can get to know the tourism resources, policies, epidemic prevention and control measures and other conditions in this area, get stimulated by the information obtained and compare the requirements of travel destinations accordingly. If they meet the needs, the users will have travel willingness and their online purchase decision will further be influenced by the reference price and online comments (Li et al., 2017).

Perceived pleasure has a significant positive impact on tourists' destination decision-making. When watching the official promotion short videos, if the users obtain a relaxed and pleasant sentimental reaction, it can not only improve their good feelings towards the tourist destination and the expectation of the destination tourism resources, but also stimulate them to respond positively, thus generating a strong willingness and desire to travel. Especially in the livestreaming e-commerce platform, consumers' perceived pleasure and perceived trust together significantly affect their purchasing behavior (Liu et al., 2020).

Perceived trust has a significant positive impact on tourists' destination decision-making. Under the background of the normalization of epidemic prevention and control in China, users are eager to travel on the one hand and worried and nervous about potential safety risks in the process of travel on the other hand, thus affecting their travel decisions. Consumer's trust is the first key factor affecting their behavior choice (Yang et al., 2016). By releasing the official promotion short videos, local governments publicize reliable information about tourism resources and display with the authoritative and official image the real situation of epidemic prevention and control in the travel destination. It can dispel users' worries and anxiety and alleviate their risk perception of the place to a certain extent, thereby increasing their willingness

to travel and influencing their subsequent decision-making behavior.

## Discussion

Based on the above research results, the study holds that official promotion short videos can significantly influence tourists' destination decisions. Accordingly, the following three aspects can be used to enhance the publicity and promotion capacity of local governments' official short videos.

Firstly, improve the authority of official short videos and strengthen the credibility of the official account. Authority is one of the remarkable features that differentiate the official promotion short video from other tourism promotion short videos, and it is also one of the important ways to enhance users' perceived trust. Due to the uncertainties of COVID-19 epidemic development, in order to enhance users' perception and trust, it is necessary to strengthen the credibility of the official short video account. The production and expression of official short videos should be normative, and a balance should be sought between official discourse and mass media, and the essential characteristics of seriousness and authority should not be lost in catering to netizens blindly. In the production and release of official short videos, it is necessary to ensure the authenticity and reliability of the information, edit and proofread the video carefully, and avoid false publicity and exaggerated marketing. Keep the quality while obtaining online traffic, so as to create a long-term reputation and good positive feedback. Therefore, the local government should strengthen the guidance, supervision, and content review of the official short video content, prevent the dissemination of vulgar content or that worsens the image of tourist destinations. Meanwhile, prevent it from being blindly casual, pay attention to balancing publicity and entertainment, create a healthy publicity environment, and maintain the credibility of the government media account.

Secondly, strengthen the official short video interaction mechanism and expand the influence of the official account. For short video marketing, interactive mode is an important strategy of short video marketing, which forms a cycle from watching video to paying attention to anchors to shopping through the interaction between people and commodities (Qian, 2021). For the official government affairs account, interaction is an important means of communication between the government and the public. The benign interaction mechanism through likes, comments, sharing and other behaviors can not only stimulate the interactive users' perception, sentiment and trust, but also bring exposure and communication power to the account, so as to improve the efficiency of publicity. The official promotion short video subjects should further strengthen the interactive mechanism, build a bridge of communication between the official and netizens, shorten the psychological distance between each other, enhance tourists' recognition, develop through real-time responses and convenient services high-quality interactive channels for the

public, and shape a good government image. Specifically, we can make full use of the special communication mechanism of the short video platform—theme posting online—to set agenda topics actively. That is, the official account can launch topic labeling under characteristic scenic spots or activities, actively guide tourists to post and record the travel experience online, and invite influential network key opinion leaders to experience personally. In this way, it may help generate perceptual interaction, gain sensory experience and obtain emotional resonance, and create attractive “online celebrity scenic spots” or “online celebrity projects.” In addition, tourists’ feedback and personal evaluation are also important factors in improving the image of tourist destinations. Paying attention to positive and satisfactory feedback and understanding and responding to negative feedback can better dispel tourists’ negative sentiments and improve the good feelings and trust of other tourists.

At last, stimulate the creativity of official short video content and enhance the enjoyment of the official short videos. The rapid popularity of short videos on the Internet platform is due to their eye-catching creativity and funny entertainment creation forms. With entertaining and creative language and content, the official short video improves the original blunt way of communication and makes users feel the kindness and interest of the official media. On the one hand, local governments should strengthen the top-level design, rely on the overall development strategy of the city, and sort its overall atmosphere, traditional culture, public resources, scenic spots, etc. That is, they should clarify the advantages of the tourism resources, position the characteristics of the city accurately, and enhance the users’ experience of watching the promotion short videos. On the other hand, official accounts should also pay attention to the shooting quality and editing level of short videos, deeply explore local characteristics, create original videos, adopt diversified content production methods, strengthen brand communication and brand image, and improve users’ perceived value (Cui et al., 2019). The official accounts can use the popular narrative method preferred by the public to provide them with an immersive experience that delivers the sense of presence (Cao et al., 2021). The local governments can also develop and integrate their own traditional food, entertainment activities, civil life, urban music, and other elements and realize the value and moral guidance through short videos, so as to highlight a good city image and stimulate tourists’ desire to travel.

## Conclusion

Based on the SOR theory and structural equation model, this study used a questionnaire as an empirical analysis method to explore the influence factors of official promotion short videos on tourists’ destination decisions in the post-epidemic era. The research results show that the tourism promotion short videos released by government departments’ official accounts on Douyin

short video platform have three characteristics: authoritative, interactive, and interesting. Furthermore, based on the tourists’ trust in the government, they are significantly stimulated after watching the official promotion short videos, which positively affect their destination decision-making behavior. Theoretically, the study contributes to expand the application scope of SOR theory from traditional consumer purchasing behavior to tourist destination decisions, which not only enriches the application scope of the theory, but also provides a new theoretical perspective for the research of tourist destination decision. Given the uncertain situation of the epidemic, this study has a positive meaning for local governments to use new media platforms to publicize and promote tourism resources and restore tourism and the local economy.

The limitation of this study is mainly reflected in the quantity of questionnaire data which is still insufficient, and the model’s validity needs to be further tested. To solve this problem, the researchers plan to conduct field investigations in selected places that benefit from the official promotion short videos, and obtain first-hand data by interviewing tourists who have watched the promotion short videos and travel to the destinations, so as to improve the effectiveness of the model.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Author contributions

JJ: propose the topic and research design and paper revision, YH: write the first draft of the paper and participate in the revision of the paper. WL: participated in the design of the questionnaire and analyzed the questionnaire data. DL: participate in paper revision. All authors contributed to the article and approved the submitted version.

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The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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# Effects of perceived change of urban destination on destination attachment

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The impact of urbanization on tourism is a widespread macroeconomic concern. However, few studies have explored the impact of destination urbanization on such individual tourist behavior as destination attachment. By developing an urbanization perception scale and analyzing tourists' destination attachment, this study provides empirical evidence for the micro-impact of urbanization. A sample of 825 repeat visitors of Chengdu, China, was included in the partial least squares-based structural modeling. The results of several tests show that the environmental changes caused by green urbanization positively impact tourists' destination attachment. This study also examines the explanatory role of tourist experience satisfaction and behavior control in this relationship. The findings suggest that tourists' experience of urban change is critical for the sticky marketing of tourist destinations.

## KEYWORDS

perceived change, destination attachment, travel experience satisfaction, perceived behavioral control, urbanization of tourist destination

## Introduction

For historical tourism destinations, change is a dilemma. With any environmental change, novelty and expectation occur alongside uncertainty and dilutions of historical imprint (Singh, 2008). Recently, along with a national development strategy driven by innovation, significant changes have occurred in most urban cities in China. These historical cities employ tourism to ensure continued economic growth; therefore, creating a sticky tourist market is essential to secure a competitive advantage. Moreover, cultivating tourists' destination attachment plays a vital role in garnering loyalty behavior (Yuksel et al., 2010; Patwardhan et al., 2019), supporting the development of tourism (Kang and Lee, 2018), protecting the destination's environment (Tonge et al., 2014), and promoting the city (Zhang and Xu, 2019). However, how tourists' destination attachment is affected when the city changes is rarely discussed by researchers, which is a true critical issue for destination marketers.

In psychology, destination attachment often describes the emotional bond between self and place (Gross and Brown, 2008; Patwardhan et al., 2019). Prior researchers concur that the emotional bond is an underlying premise that the process of attachment requires a long-term

and continuous emotional interaction between the individual and the place, as well as the individual's positive emotional expression of the place (Williams and Vaske, 2003; Hammit et al., 2006; Lewicka, 2011; Chen et al., 2014; Cao et al., 2021). However, most researchers have examined the causes of destination attachment from a static perspective (Cao et al., 2021) and largely ignored the impacts of the dynamic characteristics.

Some studies ascribe destination image, destination attractiveness, and accumulated satisfactory travel experiences as requisite antecedents to establishing destination attachment (Lee and Shen, 2013; Lee et al., 2015; Tan and Chang, 2015; Xu and Zhang, 2015; Reitsamer et al., 2016; Kim et al., 2018). However, when the environment of the tourist destination changes (i.e., urbanization), tourists' destination attachment may change due to the re-understanding and reconstruction of the image and attractiveness. Moreover, there are conflicting results on the impact of destination changes on tourism. For example, research by Luo et al. (2015) shows that in provincial Chinese cities, urbanization has a significant positive impact on the development of tourism. In contrast, Cao et al. (2019) believe that when tourists enter an unfamiliar destination, they will reduce their perception of behavior control because of uncertainty, negatively impacting travel intention. Thus, the impact of a change of destination on tourists' behavior has not yet manifested.

Given the above research gaps, this study aims to explore the impact of the change of urban destination on tourists' destination attachment, as well as the underlining mechanism. In the past decades of rapid development, compared with the rural areas, China's cities are also undergoing significant degree of urbanization changes. Meanwhile, as well-known tourist cities can get more repetitive tourists than rural areas, there are also stronger emotional bonds between tourists and the destination. Taking urban destination with stronger market stickiness as the research object, it is more convenient for us to observe the impact of urbanization on destination attachment. This inquiry uses Chengdu, a famous historical and cultural tourist city in China, to explore the impact of urbanization on tourist behavior typical in China and other developing countries. The influence of this perception on destination attachment is analyzed by measuring tourists' perceptions of urbanization in tourist destinations. In addition, this study verifies the explanatory role of behavioral control perception and travel experience in this relationship. Given the ubiquity of the acceleration of global urbanization, understanding the impact of this change on destination attachment can help marketers develop better strategies and determine whether they are feasible in specific tourism markets.

## Literature review

### The change of tourism cities – Urbanization

Urbanization has been a defining global phenomenon and a key driving force for social and economic development during the

past century (Liu et al., 2014; Cai et al., 2020). The economic and policy research literature defines urbanization as the process of transferring people and their ability to work from rural areas to urban areas, accompanied by a national transition from an economy dominated by agriculture to one dominated by secondary and tertiary industries (Deng et al., 2018; Cai et al., 2020). This process requires massive infrastructure investments, such as roads, water, electricity, gas, and communication networks (Chen et al., 2019). Hence, urbanization concentrates industries and populations in and around cities, facilitating the development of economies of scale (Li, 2017). Meanwhile, it brings benefits such as improved employment opportunities, sanitation, income, and access to infrastructure services (Liang and Yang, 2019).

In tourism literature, the urbanization concept is further extended to big cities' economic structural optimization strategies and infrastructure upgrading to enhance cities' status in the urban system (Xu and Yeh, 2005; Luo et al., 2015). Leading literature has researched the cultural impact of urbanization on the destination and the tourism industry and the effect of this change on tourist behavior. For example, Loeb and Paredes' (1991) case study of the Valle de Bravo marketplace in Mexico found that the construction of regional modernization has increased the number of tourists but changed the original environment of the destination and weakened its traditional function. Similarly, Singh (2008) example of Manali in Himachal, Himalaya, is an illustration that the lifestyle convenience brought about by urbanization increased the destination's attractiveness. However, it inevitably encroached on the original tourism resources and desolated the traditional cultural milieu, thus threatening the sustainable development of tourism.

Luo et al. (2015) analyzed the impact of urbanization on tourism destinations from the development dimension of the tourism economy. This study measured urbanization through macroeconomic indicators such as population, the proportion of service industry, the area of gardens and green, and the length of highways, and analyzed its impact on the income of the regional tourism industry. The results showed that in provincial cities, various indicators positively impact tourism income (Luo et al., 2015).

Prior research concludes: that (1) China's urbanization represents rapid economic development, reflecting the wider tourism industry (Zhang et al., 2013; Luo et al., 2015), and (2) Dramatic changes over the last decade in population and geographic scope, as well as transportation and other infrastructure, occurred in major Chinese cities (Xiang et al., 2011; Liang and Yang, 2019). However, as the research on urbanization is mainly macroeconomic, it fails to deeply understand micro consumption behavior and its psychological mechanism.

### Destination attachment

Attachment theory initially described the mother-child attachment (Bowlby, 1969; Ainsworth and Bell, 1970; Bowlby, 1971). Scholars extended the notion of attachment to various



spatial levels – the actual shape and the specific context of time and space (Hidalgo and Hernández, 2001; Scannell and Gifford, 2010). Subsequent tourism research generally relies on place attachment as an alternative (Cao et al., 2021). However, as place attachment relates to the degree and mode of residents' social participation and integration into the community (McCool and Martin, 1994), long-term interaction and community attachment do not apply to tourists' attachment to the destination (Cao et al., 2021).

In tourism literature, Yuksel et al. (2010) consider destination attachment a critical part of the self and investigate the influence of destination attachment on emotions and behavior. Cao et al. (2021) suggest that destination attachment can encapsulate the emotional connection between individuals and specific places (Yuksel et al., 2010; Veasna et al., 2013; Chubchuwong et al., 2015; Sohn and Yoon, 2016; Japutra, 2020; Wang et al., 2020), which will change dynamically with developments before, during and after travel (Cao et al., 2021).

From research on both place attachment and destination attachment, we can see that the degree of visitor attachment is closely related to the physical environment and the interaction between the visitor and the environment (Hammit et al., 2006; Cao et al., 2021), which infers the impact of environmental changes on destination attachment. In the visitor-destination interaction process, destination image, destination attractiveness, visitor involvement, as well as accumulated satisfactory tourism experiences are important antecedents for establishing such emotional connections (Lee and Shen, 2013; Lee et al., 2015; Tan and Chang, 2015; Xu and Zhang, 2015; Reitsamer et al., 2016; Kim et al., 2018). Meanwhile, the nature of traveling motivation, where travelers seek a degree of change, novelty, escape, exploration, sensation, and variety in unfamiliar or less familiar environments (Wymer et al., 2010; Assker and Hallak, 2013; Fuchs, 2013), also suggests that the changes of destination may positively impact destination attachment. In addition, Luo et al. (2015) show that urbanization has a significant positive impact on tourism development in provincial Chinese areas.

However, some studies have shown that changes in the tourism environment may adversely affect destinations, especially historical and cultural cities. For example, Singh (2008) proposed that the process of urbanization would encroach on the original location of tourism resources and weaken the traditional cultural atmosphere, thus threatening the development of the tourism industry. Related studies on the preference of repeat tourism show that repeat tourists strongly desire to enjoy the same experience and activities as previous tourism trips (Crouch et al., 2014). Furthermore, Cao et al. (2019) and Yang et al. (2022) found that when tourists enter an unfamiliar environment, their perceptions of behavioral control diminish due to uncertainty, negatively impacting their willingness to travel.

Overall, recent research suggests that destination attachment should link to the dynamic nature of a destination. Changes in a destination's environment can influence destination attachment. This is because the dynamic change of destination will reflect tourists' perception of this change and the interaction experience

with the destination, thus affecting the destination attachment (Cao et al., 2021).

## Hypothesis development

Changes in the appearance of Chinese cities caused by urbanization mainly manifested as population growth, the expansion of geographical scope, and large-scale investment in infrastructure (Cai et al., 2020). In addition, since 2012, China has begun to emphasize the concept of green development (Yang, 2013). Urban development now integrates green and sustainable goals to solve the environmental pollution caused by rapid urbanization and begin achieving results (Yao et al., 2021).

Considering the changes brought by green urbanization to Chinese cities in the past 10 years, the experience of tourists mainly reflects the optimization of the environment, the facilitation of infrastructure, and the intelligent convenience assessments of services. Reitsamer et al. (2016) observed that because consumers form cognitive assessments of their experiences based on their response to the environment, these perceptions are stored as psychological representations and retrieved to form attachments to the environment. Moreover, Reitsamer demonstrated that accessibility and amenities can help tourists form a positive attitude toward the destination, thereby strengthening their destination attachment. Therefore, when tourists perceive the changes in the destination in the above aspects, it can be inferred that their destination attachment will be stronger due to the better experience gained during the interaction with the city. Hence, the following hypothesis is proposed:

*H1: The stronger the tourists' perceived changes of the destination, the stronger their positive attachment to it.*

Under the influence of urban changes, on the one hand, the construction of a transportation network would improve the accessibility of the destination. At the same time, the increase in amenities and high-quality services provided by urbanization indicates the increase in the ability of destinations to meet the needs of tourists (Vengesai, 2003). These changes are important conditions to support tourists' unforgettable destination experience and form the attraction of the destination (Cracolici and Nikamp, 2008; Reitsamer et al., 2016). On the other hand, the application of new information and intelligent technologies in urban infrastructure and services also indicates the changes in the quality of the tourist experience (Pai et al., 2020). Pai et al. (2020) show that the smartness of tourism infrastructure will help to provide tourists with satisfaction in the tourism experience so that tourists can obtain happiness during the traveling process. Therefore, the satisfaction of the tourism experience can explain the positive impact of urban change perception on destination attachment:

*H2: Tourist experience satisfaction plays a mediating role in the relation between the destination change perception and*

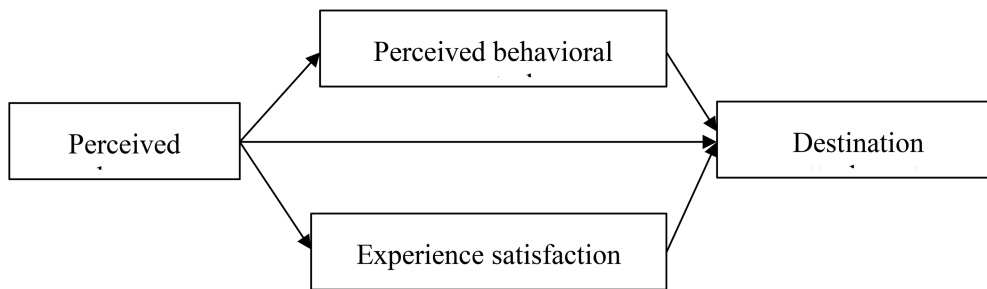


FIGURE 1  
Conceptual framework for perceived change and destination attachment.

destination attachment. Specifically, destination change perception will positively affect tourists' satisfaction of experience, thus positively impacting destination attachment.

Another alternative explanation is that when the appearance of the destination changes, resulting in the individual's cognition of the destination no longer familiar, it will weaken the safe and stable psychology conducive to the formation of destination attachment (Bott et al., 2003). In other words, the change of destination will cause tourists to perceive that the destination is inconsistent with their previous experience. Furthermore, expanding the geographical scope of the destination will increase the difficulty of travel, which will cause individuals to form factors that hinder their travel activities and reduce the level of behavior control (Lee and Tussyadiah, 2012). Han et al. (2011) and Quintal et al. (2010) showed that a low level of perceived behavior control would lead to the formation of low travel intention. Cao et al. (2019) showed that a low level of perceived behavior control would weaken the level of destination attachment. Therefore, perceived changes in the urban destination may harm destination attachment by reducing tourists' perceived behavior control.

*H3: Perceived behavior control mediates the relationship between urban change perception and destination attachment. Specifically, urban change negatively affects the level of perceived behavior control, thus negatively impacting destination attachment.*

Figure 1 demonstrates the conceptual framework covering the three research hypotheses discussed in this section.

## Research methodology

### City selection

Undoubtedly, Chengdu, the capital of Sichuan province, is one of the most changed cities in China. The administrative area of Chengdu gradually expanded after the founding of New China.

From 1990 to 2020, Chengdu has changed from seven districts to a city governing 12 districts and eight counties. Populations have grown from 91.95 million to 151.97 million from 1990 to 2020. The land area has grown from 12,121 square kilometers to 14,335 square kilometers.

In the past decade, great changes have taken place in Chengdu city. Tianfu's new area was established in 2010 and approved as a national new area in 2014, marking the urban pattern of Chengdu from "single core driven" to "dual core co-prosperity." In 2012, the grand goal of Chengdu's "hundred-mile city axis" was put forward, and a "giant dragon" connecting the Chengdu Plain Economic Zone for nearly a hundred miles was impressively displayed on the big "picture" of Chengdu. In 2017, the scope of Chengdu's five major sub-districts, namely, "East expansion, South expansion, West control, North reconstruction, and middle optimization," was delimited, starting with the millennium change of the urban pattern from "two mountains and one city" to "one mountain and two wings." In the same year, the Chengdu municipal government approved the request for instructions on naming the ring road by the Municipal Civil Affairs Bureau, and Chengdu became the second city with the Sixth Ring Road in China. In just 20 years, Chengdu has developed from an "inner city" to a super city.

Meanwhile, Chengdu is also a famous historical and cultural city in China and the capital of gastronomy in the world, with rich tourism resources, such as Dujiangyan, Wuhou Temple, Du Fu Thatched Cottage, and other places of interest. As one of the leading tourist cities in China, Chengdu is a highly attractive and popular tourist destination where destination attachment strength is particularly robust. According to the statistical yearbook of Chengdu City in 2021, under the pressure of COVID-19, the total tourism income of Chengdu City reached over \$45 billion, the number of domestic tourists reached 203.95 million, and international tourists exceeded 191.9 million. In short, Chengdu fits the research context and is a representative tourism destination for investigating tourists' perceptions of change and destination attachment, with indicative implications for numerous tourism destinations worldwide.

## Measurement

Items were developed for the change perception of the destination based on the measures of urbanization in the research of Luo et al. (2015), which includes GDP *per capita*, non-agricultural population proportion, hospital beds, and amount of garden and green space. Considering the indicators that tourists can involve at the perception level, the change in perception of the destination includes seven items, changes in the overall environment, changes in geographical scope, changes in population, intelligent tourism services, and facilitation of transportation networks, the integrity of infrastructure, and the informatization of infrastructure. The four dimensions of destination attachment measure (Kyle et al., 2005; Chen et al., 2014) have repeatedly been proven to have high reliability and validity in different studies (Morhart et al., 2009; Chen and Dwyer, 2017) and were applied in this study. The scale of travel experience satisfaction from Yuksel et al. (2010) and the four items of behavioral control perception from Cao et al. (2019) and Pangaribuan et al. (2021) were adopted in this study. The questionnaire consisted of 27 items measured on a 7-point Likert scale.

## Sampling

Xu and Zhang (2015) show that foreign tourists visiting China are weaker than domestic tourists in terms of destination attachment. In addition, there are obvious differences in urban live and consumption between China and the other countries. Many foreign tourists who only travel for a short time may not fully experience the upgrading of infrastructure in Chinese cities, such as transportation systems, payment system and other software. Therefore, this study intends to determine the impact of urbanization changes in tourist destinations on tourists with profound experience through a questionnaire survey of domestic tourists.

An online survey *via* Credamo – an online research platform in China<sup>1</sup>—was carried out between July and August 2022. All the respondents are non-residents and visited the city at least twice from 2012 to 2022. Therefore, we set the IP of the participants out of Sichuan Province, and asked the total visit times since 2012 in the questionnaire in order to screen the respondents. In total, 1,186 questionnaires were randomly collected. Among them, due to 76 respondents are residents, 283 respondents visited the destination less than 2 times, and 2 respondents failed to pass the attention check, these 361 respondents were excluded from the data set. Of which 825 questionnaires were valid for the data analysis (valid rate of 65.56%).

<sup>1</sup> [www.credamo.com](http://www.credamo.com)

TABLE 1 Descriptive statistics.

Sample size ( <i>n</i> )	825
	Mean (SD)
Age	29.1 (8.42)
Visits to Chengdu	4.71 (4.32)
Gender	%
Male	34.3
Female	65.4
Education	%
Graduate degree or higher	13.45
Bachelor's degree	69
Junior college	11.4
High school or less	5.94
Permanent residence	%
Northeast China	4.72
Northwest China	5.81
Southwest China	5.09
Central China	16.46
East China	37.41
North China	15.62

## Procedure

This study applied partial least squares (PLS)-based structural equation modeling (SEM) approach to test the research model and hypotheses. PLS is acknowledged for its ability to process complex models with a limited sample size (Henseler et al., 2009; Hair et al., 2012). Since the full structural model in this study encompassed 49 paths with eight latent variables (including 1 s-order construct) on a sample size of 825, PLS-SEM was deemed appropriate. This study used Smart PLS 3.0 and performed a standard PLS algorithm (1,000 iterations and a stop of criterion of 10<sup>-7</sup>), and assessed the significance level of the estimates based on 5,000 bootstraps. The sample statistics were considered significant if they were significant above the 95% confidence level (Perezgonzalez, 2015; Jung et al., 2019).

## Descriptive analysis

The demographics of the sample are illustrated in Table 1. Of the 825 survey participants, 65.4% were female, with an average age of 29.1, (standard deviation is 8.42), and more than half had a university-level education. Additionally, 37.41% of the participants lived in east China. On average, each respondent visited Chengdu 4.71 times (standard deviation is 4.32) in the last 10 years.

## Exploratory factor analysis for perceived change

From the data of the seven items of perceived change, it can be seen that except for changes in geographic scope (mean = 4.42, *sd* = 1.46), it can be generally felt the significant

TABLE 2 Exploratory factor analysis results of perceived change items.

Perceived change item	Mean	SD	Cronbach's $\alpha$	Factor 1	Factor 2
PC1			0.773		
CTS – The degree of tourism service intellectualization	5.72	0.99		0.713	
CTr – The convenience of transportation network	5.91	0.96		0.769	
CF – The completeness of infrastructure and facilities	5.72	0.93		0.724	
CI – The degree of informatization of infrastructure and facilities	5.79	0.95		0.743	
CT – Overall environmental change	5.41	1.03		0.489	
PC2			0.657		
CG – Geographical range of the city	4.42	1.46			0.858
CP – Population	5.17	1.2			0.808

changes in Chengdu's environment (mean > 5). To check the validity of the perceived change scales, exploratory factor analysis (EFA) was conducted in this research. The appropriateness of factor analysis on perceived change items (KMO = 0.823, Bartlett's test of sphericity = 1437.14,  $df = 21$ ,  $p < 0.001$ ) showed that the use of EFA was suitable (Hair et al., 1998). The pattern matrix from the EFA for the perceived change items indicated a two-factor solution (Table 2). However, the Cronbach's alpha of the second factor was less than 0.7, which indicates a low degree of internal consistency of the items. Furthermore, factor loadings on both factors of total environmental change are all less than 0.5, and only factor 1 was retained at the end.

## Confirmatory factor analysis

CFA was conducted *via* a structural model in AMOS to further validate and refine the factors. Items with low factor loadings (using the cut-off values above 0.6) were first deleted from the model. Then, for the variables with AVE < 0.5 or CR < 0.7, the items with lower coefficient were gradually removed until the AVE reach above 0.5 and the CR reach above 0.7. According to the results of CFA (Table 3), all AVEs were above 0.50, CR was between 0.711 and 0.897, and the correlation coefficient among each latent variable was less than the square root of the corresponding AVE (Table 4; Fornell and Larcker, 1981), indicating convergent validity and discrimination validity of the constructs (Hair et al., 1998).

## Results of PLS-SEM

The four destination attachment dimensions and each category of perceived change, travel experience, and behavioral control were placed into separate structural models to verify the effects of perceived change of destination. Table 5 summarizes the path coefficients of the relationships in the tested inner models. Significance levels are calculated on a 5,000-time bootstrapping (Hair et al., 2014). Figure 2 shows the path coefficients and  $R^2$  values. The SRMR values from the four

models are between 0.061 and 0.070, indicating an acceptable model fit.

For the direct effects of perceived change of the destination, place identity ( $\beta = 0.282$ ,  $p < 0.001$ ), place dependence ( $\beta = 0.216$ ,  $p < 0.001$ ), social bonding ( $\beta = 0.220$ ,  $p < 0.001$ ), and affective attachment ( $\beta = 0.186$ ,  $p < 0.001$ ) were significantly positively affected. Therefore, Hypothesis 1 is supported.

For the perceived travel experience satisfaction, perceived change also had a significant positive impact ( $\beta = 0.401$ ,  $p < 0.001$ ). However, although perceived change showed a negative effect on perceived behavioral control ( $\beta = -0.066$ ,  $p > 0.05$ ), it turned out to be insignificant. As a result, the indirect effects of the perceived change *via* travel experience satisfaction on the four dimensions of destination attachment were significant, while the indirect effects *via* perceived behavioral control were insignificant. Hence, Hypothesis 2 is supported, while Hypothesis 3 is rejected.

## Discussion

This research provided crucial insight into the relationship between a perceived change of destination and destination attachment. To answer the research question, this research provides two explanations. One is that urbanization may lead to tourists' perception of the risk of losing control of behavior, thus reducing tourists' destination attachment. The second is that urbanization can provide a more convenient and satisfying travel experience, thereby increasing tourists' destination attachment.

In this study, destination attachment is divided into four dimensions, and the three hypotheses are verified by testing the impact of destination change perception on these four dimensions. First, consistent with Hypothesis 1, the results provide evidence that a perceived change of destination has a positive impact on destination attachment. The items of perceived change reflect changes in environmental factors, such as the completeness and informatization of the infrastructure and facilities, rather than tourism resource factors. Therefore, this result indicates that changes in the destination's environment, such as the improvement of urban infrastructure in the process of urbanization, have a positive effect on tourists' destination attachment.

TABLE 3 Results of CFA.

Measurement items	Mean	SD	Standardized $\beta$ coefficient (for full items)	AVE, CR (for full items)	Standardized $\beta$ coefficient (for remaining items)	AVE, CR (for remaining items)
Perceived Change – PC1				0.416, 0.779		0.552, 0.711
CTS – The degree of tourism service intellectualization*	5.72	0.99	0.579			
CTr – The convenience of transportation network*	5.91	0.96	0.629			
CF – The completeness of infrastructure and facilities	5.72	0.93	0.720		0.738	
CI – The degree of informatization of infrastructure and facilities	5.79	0.95	0.704		0.748	
CT – Overall environmental change*	5.41	1.03	0.577			
Perceived change – PC2*				0.490, 0.665		
CG – Geographical range of the city*	4.42	1.46	0.717			
CP – Population*	5.17	1.2	0.695			
Place identity – PI				0.514, 0.760		0.515, 0.761
PI1 – I feel visiting Chengdu is part of my life	4.32	1.41	0.732		0.747	
PI2 – I identify strongly with Chengdu	5.71	1.05	0.698		0.702	
PI3 – Visiting Chengdu has a special meaning in my life	5.31	1.25	0.719		0.702	
Place dependence – PD				0.509, 0.804		0.561, 0.792
PD1 – I like visiting Chengdu more than any other city	5.42	1.16	0.750		0.744	
PD2 – For me, Chengdu cannot be substituted by other urban destinations*	5.33	1.27	0.625			
PD3 – Chengdu can meet my needs more than other cities	4.93	1.11	0.792		0.799	
PD4 – For the activities that I enjoy most, the settings and facilities provided by Chengdu are the best	4.68	1.24	0.675		0.700	
Affective Attachment – AA				0.648, 0.846		0.707, 0.828
AA1 – Chengdu means a lot to me*	5.15	1.29	0.772			
AA2 – I am very attached to Chengdu	4.89	1.40	0.827		0.846	
AA3 – I have a strong sense of belonging for Chengdu	4.65	1.45	0.814		0.835	
Social bonding – SB				0.524, 0.763		0.524, 0.763
SB1 – I have some connection with the local residents of Chengdu	4.79	1.60	0.557		0.555	
SB2 – I feel like the employees and local residents, which greatly enhanced my experience	4.57	1.38	0.775		0.780	
SB3 – I have a special connection with those people who like visiting Chengdu	4.68	1.45	0.813		0.810	
Perceived behavioral control – BC				0.445, 0.710		0.815, 0.897
CON – The degree of control over tourism activities in Chengdu*	4.67	1.31	0.126			
CHA – The challenge level of tourism activities in Chengdu*	3.99	1.43	0.423			
ANXI – The anxiety of tourism activities in Chengdu	2.56	1.38	0.894		0.794	
RESTL – The restlessness of tourism activities in Chengdu	2.44	1.34	0.886		1.000	
Travel experience Satisfaction – TE				0.486, 0.739		0.571, 0.727
COM – The comfortableness of the tourism environment in Chengdu	5.74	1.00	0.682		0.751	
SAT – The satisfaction of tourism experience in Chengdu	6.04	0.87	0.700		0.760	
PLE – The pleasantness about the trip in Chengdu*	5.83	1.05	0.708			

\*Item deleted in PLS because of a low factor loading or with multiple intra-item correlations. CR and AVE for each variable were calculated based on the remaining items.

Specifically, the positive impact of perceived change on place identity shows that urbanization can increase tourists' sense of identity with the destination, enhance the value and significance of the destination to tourists. The positive impact of perceived change on place dependence indicates that the urbanization can

increase tourists' preference for the destination. The positive effect of perceived change on affective attachment shows that the urbanization can increase tourists' emotional connection and sense of belonging to the destination. Finally, the positive impact of perceived change on social bonding indicates that the



urbanization can enhance tourists' social contact with the destination community.

Second, the results also demonstrate that the improvement of tourists' travel experience is an effective explanation for the positive impact of Chengdu's environmental changes. This result complements research by Singh (2008) and Luo et al. (2015) on the impact of urbanization on tourism. At the micro psychological level, among the many environmental changes brought about by urbanization, tourists are obviously more sensitive to the convenience of tourism infrastructure, which is closely related to their tourism activities. Consistent with the research results of Reitsamer et al. (2016), when urbanization invites a more comfortable tourist experience for visitors, they will have a greater stickiness to the tourism destination (i.e., place identity, place dependence, affective attachment, and social bonding). This finding also shows the success of Chengdu's green urbanization development in the past decades.

Third, the findings showed that an alternative explanation for the mediating role of behavioral control was not established. Although environmental change had a negative effect on behavioral control, this effect was not significant. The application of infrastructure information and intelligent technology is more conducive to making tourists' travel activities more convenient than making their actions more difficult to control. Meanwhile,

since the two items of behavioral control reflect the level of anxiety and uncertainty about tourists' traveling activities in the destination, their positive impact on destination attachment well reflects the motivation of pursuit of excitement and novelty in tourism behavior. This result shows that changes in the tourism environment are more likely to bring new experiences for tourists, and the challenges brought by this experience may instead promote tourists' destination attachment.

Although the negative impact of perceived change on behavioral control is not significant, this result suggests that urbanization does not bring travel anxiety to tourists, but can improve their perception of behavior controllability. This may be due to the similarity of infrastructure upgrades and improvements involved in urbanization changes across most cities in China. As a result, tourists are no stranger to the experience in such a tourist city, especially the experience of the use of urban infrastructure. The highly controllable perception of traveling behavior (i.e., familiar traveling experience) makes the novel experience, one of the important motivations of tourism, not satisfied (Wymer et al., 2010), which leads to the reduction of destination attachment (Babu and Bibin, 2004; Jang and Feng, 2007; García et al., 2012). This conclusion infers that the urbanization of the sample city—Chengdu currently conducted has a negative impact on tourism behavior, that is, the urbanization that leads to the similarity between tourist destination and other cities will reduce tourists' destination attachment.

TABLE 4 Discriminant validity and criterion-related validity.

	PC	PI	PD	AA	SB	BC	TE
PC	<b>0.743</b>						
PI	0.431	<b>0.718</b>					
PD	0.372	0.690	<b>0.749</b>				
AA	0.330	0.705	0.706	<b>0.841</b>			
SB	0.352	0.618	0.650	0.664	<b>0.724</b>		
BC	-0.061	0.004	0.009	0.047	0.052	<b>0.903</b>	
TE	0.401	0.487	0.464	0.431	0.420	-0.166	<b>0.756</b>

Square root of AVE is shown on the diagonal of the matrix in bold; inter-construct correlation is shown off the diagonal.

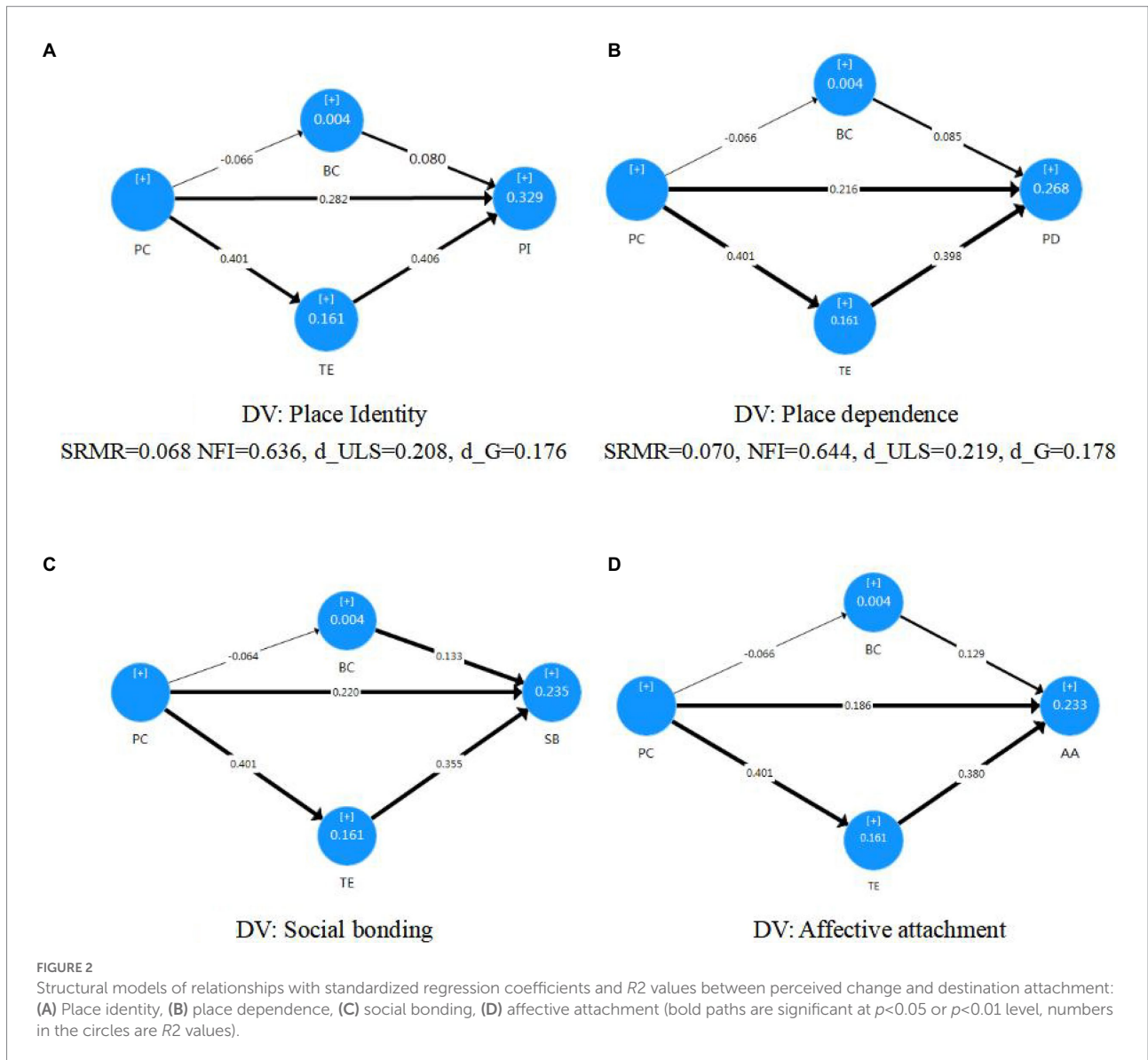
## Management implications

The results of this study provide evidence for the micro-psychological effects of urbanization on tourism destinations. Accordingly, the impact of this study on tourism city managers is threefold. First, destination managers can consider the positive impact on tourists' sticky behavior by taking advantage of the convenience of urban infrastructure, particularly soft facilities. That is, destination planners must consider improving the ease of

TABLE 5 Inner model evaluation (hypotheses testing).

Hypotheses	Tested effects	DV: PI	Tested effects	DV: PD	Tested Effects	DV: AA	Tested effects	DV: SB
		$\beta$ -value		$\beta$ -value		$\beta$ -value		$\beta$ -value
Direct effect								
Hypothesis 1 supported	PC→PI	<b>0.282***</b>	PC→PD	<b>0.216***</b>	PC→AA	<b>0.186***</b>	PC→SB	<b>0.220***</b>
	PC→TE	<b>0.401***</b>	PC→TE	<b>0.401***</b>	PC→TE	<b>0.401***</b>	PC→TE	<b>0.401***</b>
	PC→PR	-0.066 <sup>N.S.</sup>	PC→PR	-0.066 <sup>N.S.</sup>	PC→PR	-0.066 <sup>N.S.</sup>	PC→PR	-0.064 <sup>N.S.</sup>
	PR→PI	<b>0.08**</b>	PR→PD	<b>0.085**</b>	PR→AA	<b>0.129***</b>	PR→SB	<b>0.133***</b>
	TE→PI	<b>0.406***</b>	TE→PD	<b>0.398***</b>	TE→AA	<b>0.38***</b>	TE→SB	<b>0.355***</b>
Indirect effect								
Hypothesis 2 supported	PC→TE→PI	<b>0.163***</b>	PC→TE→PD	<b>0.16***</b>	PC→TE→AA	<b>0.152***</b>	PC→TE→SB	<b>0.142***</b>
Hypothesis 3 rejected	PC→PR→PI	-0.05 <sup>N.S.</sup>	PC→PR→PD	-0.006 <sup>N.S.</sup>	PC→PR→AA	-0.008 <sup>N.S.</sup>	PC→PR→SB	-0.008 <sup>N.S.</sup>

\* $p < 0.1$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ , N.S., not significant. The bold numbers are significant at  $p < 0.05$  or  $p < 0.01$  level.



use of infrastructure when carrying out the urbanization improvement of the destination, especially promoting the application of new technologies and artificial intelligence. The main purpose of applying these technologies is to improve functions such as the life and travel convenience of visitors.

Second, to strengthen the city’s sticky tourist market, destination marketers may use the comfort and novelty of tourism infrastructure to reflect changes in the city rather than only show the change in the city’s appearance. For example, the theme of park city development in Chengdu shows the optimization of the urban environment and brings a better ecological environment experience for tourists. Compared with the overall changes in the city, this type of detail is more conducive to promoting the destination attachment of tourists. Although this study does not provide sufficient evidence, excessive changes in the city’s appearance may invite obstacles to tourists’ travel.

Third, the result of Chengdu’s urbanization is a good example of China’s adoption of green development concepts. The results of this study also show that the urbanization of Chengdu positively contributes to the formation of a sticky tourism market. Therefore, when the progress of urbanization is inevitable, destination managers should adhere to the green development theory to avoid adverse effects on the tourism market. Meanwhile, according to our research, urbanization may lead to similarities between tourist destination and other cities, thus reducing the tourism experience. Therefore, when carrying out urbanization, tourist destinations need to pay attention to maintain the difference with other cities and ensure the novel experience of tourists.

Finally, for the problem of over-urbanization, based on the results of this research, our suggestion is that we must restore or redevelop unique tourism resources for the destination. By



bringing novel and comfortable tourism experience to tourists, the destination can be rebuild a sustainable tourism market.

## Conclusion

This article addressed the unexplored questions of how an environmental change (i.e., urbanization) in the destination influences tourists' destination attachment. The conceptual contribution of this study lies in the development of a scale of tourists' perception of destination urbanization and the establishment of a relationship between urbanization and destination attachment through a structural model. Thus, we expand our understanding of the impact of tourism destination urbanization on the individual behavior of tourists.

To date, prior researches have considered negative impact to tourist behavior by COVID-19, such as travel avoidance (Zheng et al., 2021), and directly cutting off the possibility of destination attachment (Liu and Mair, 2023). However, from the view of urbanization, the global pandemic of COVID-19 has promoted the upgrading of emergency systems in most cities to respond to public health events. In China, this emergency system has become standardized, which makes the emergency systems of all cities in the country highly consistent. Based on the results of this study, although the upgrading of this highly consistent urban emergency system has increased the traveling cost of tourists, it may also reduce the barriers to travel due to operational familiarity, so as to maintain tourists' destination attachment.

However, this study only makes a preliminary exploration of the psychological perception scale of urbanization according to the previous literature. First, the content involved is limited. In the future, more in-depth research can be conducted on the psychological scale of environmental change, such as increasing the perception survey of economic, ecological, community, and other related environmental factors, to obtain a more comprehensive impact of environmental change on tourism psychology. Second, given the impact of the change, this study used the methodology of tourists' self-reporting to collect and analyze the data. In the future, more objective empirical research can be carried out through a comparison before and after the change. In addition to the excessive urbanization pointed out in the previous literature, which leads to the unsustainable development of tourism, this study finds that urbanization will lead to the similarity of tourism cities. This conclusion indicates that there may be different types of urbanization, and tourists have psychological and behavioral

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responses to these changes. At present, the related research is very limited. Therefore, it is necessary to conduct in-depth research on the theoretical framework construction of destinations urbanization as well as empirical researches on different tourist cities in the future.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

## Author contributions

MH reviewed the literature, proposed the research model, designed the study, and conducted the experiment. XY collect data and analyze data. DL conducted the literature search, drafted the manuscript, and edited it. HF participated in the edited. All authors discussed, finalized, and approved the manuscript for publication.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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# Factors affecting domestic tourists' repeat purchase intention towards accommodation in Malaysia

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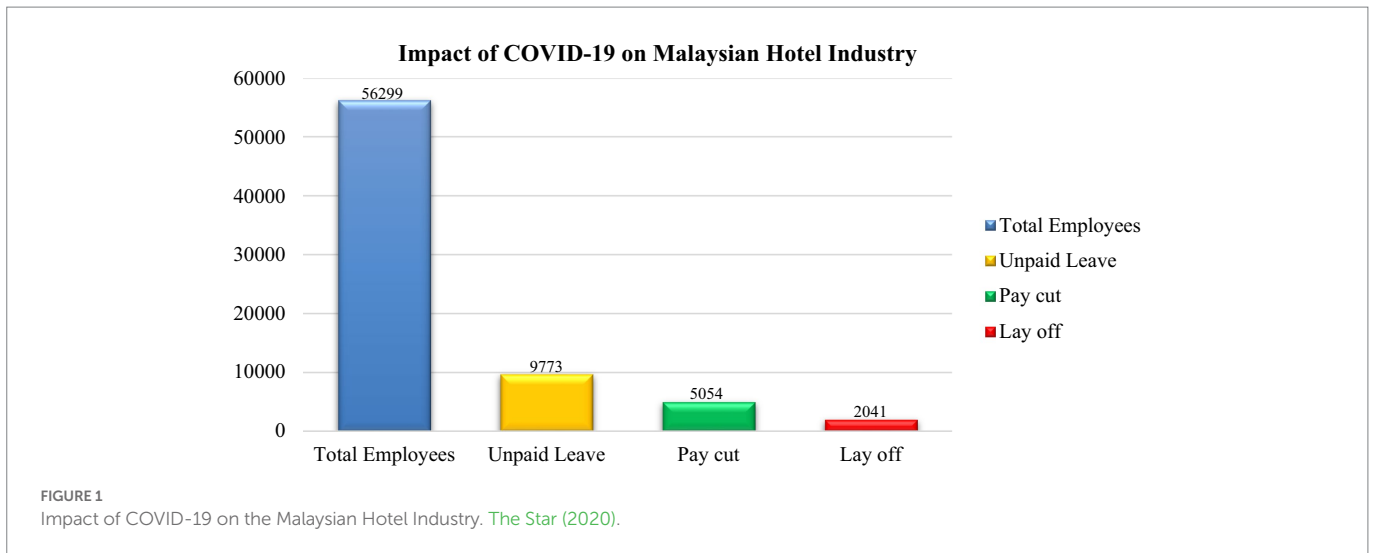
The hospitality and tourist industries depend on homestays and accommodations. Different factors, i.e., promotion strategies, service quality, cleanliness, and perceived health risks, influence tourists' repeat purchase intention for accommodation. This study highlights different variables influencing domestic tourists' accommodation repurchase decisions in Malaysia. Around 304 respondents from this quantitative survey are tourists who have already experienced choosing their accommodations during travel. Statistical Packages of Social science software (SPSS-23.0) were used to examine the data through multiple regression and descriptive approaches. The finding suggests that promotion, and services, can positively affect visitors' purchasing decisions. However, there is a negative but statistically significant link between perceived health risk and repurchase decisions. Furthermore, the result revealed that the predictors of purchase decisions significantly influence selection. This study observed the undervalued quality of services and facilities provided by the hotel industry. The results identified that sustainable practices could enhance the impressive recovery of the tourism industry during and after the pandemic. Furthermore, cleanliness and cost are vital to be considered a primary quality service factor, reducing the perceived health risk, even if there is a pandemic. The study suggested that lodging providers could upgrade on-site facilities and acquire better promotion strategies. The study's conclusions can increase satisfaction to avoid health risks in any circumstance and promote tourism.

## KEYWORDS

repeat purchase intention, perceived health risk, service quality, sales promotion, domestic tourist's accommodation, Malaysia

## 1. Introduction

Malaysia's tourism industry focuses on improving its competitiveness and dynamic environmental sustainability. The provision of sustainable facilitative tourism comes under the United Nations' sustainable development objectives and the 11th Malaysian Plan (11MP). Around RM 86.10 billion was accumulated from tourist receipts for 26.10 million from inter-state tourism in 2019. Moreover, 4.33 million tourists visited, and industry earnings were reduced to RM 12.7 billion when counting tourist receipts in 2021 (Abumandil et al., 2022). The novel coronavirus strain has substantially impacted tourism and travel behavior (Farzanegan et al., 2021). Tourism remained one of the top features to spread the illness and has been affected along with the supply and value chains during the pandemic (Foo et al., 2020; World Health Organisation [WHO], 2020). A sudden downfall of the global hospitality sector (companies, hotels, restaurants, theme parks, event planners, and booking agencies) was observed (Uğur and Akbıyık, 2020). Presently the tourism industry needed several strategies to recover from the year 2022 and tried to remove the fear of the public by



providing more facilities for higher earnings (Halme, 2021). Several factors need to be analyzed to increase domestic tourism by knowing the consumers’ choice of accommodations within Malaysia.

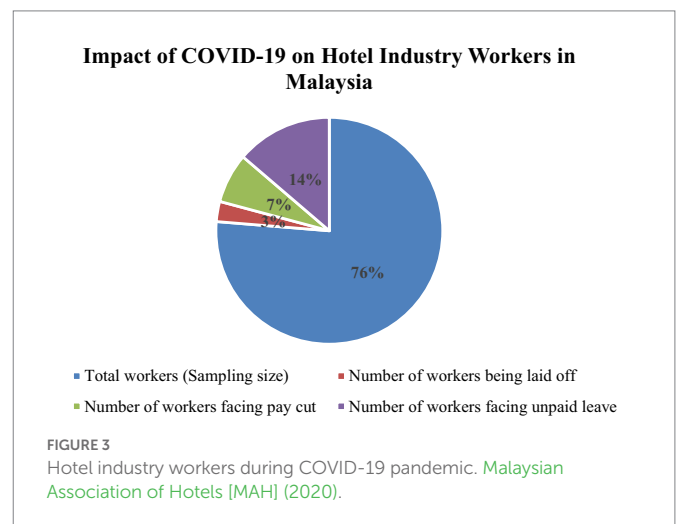
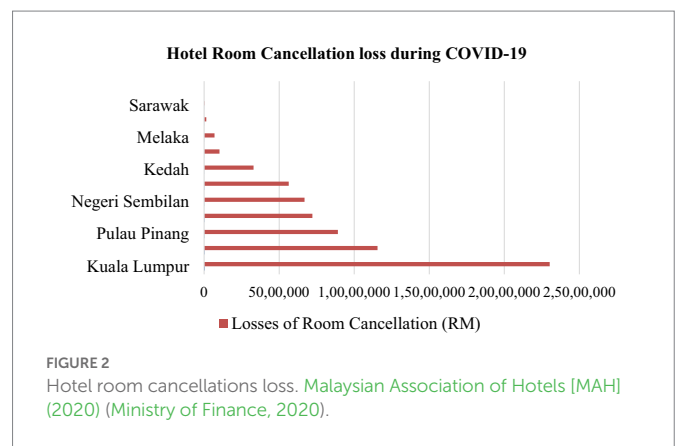
There still needs to be more studies on how consumers’ impressions of service quality, promotional strategies, perceived health risks, and repurchase intention for hotel accommodations among domestic travelers relate to the hospitality business. Rarely are the findings of the expanding literature on purchase decisions placed in a pandemic setting. Most previous studies only examined one of these crucial factors. Therefore, the current study uses this knowledge gap to examine five factors related to purchase decisions.

According to reports, the hotel business had an income loss of RM560.72 million during the movement control order (MCO) (Malaysian Association of Hotels [MAH], 2020). Figure 1 shows that out of a 56,299 sample, 2,041 workers were laid off from the hotel business, 9,773 (17%) had taken unpaid leave, and 5,054 (9%) had their earnings slashed (The Star, 2020). On the other hand, Kuala Lumpur was severely affected, as 3,641 workers were on unpaid leave, three were fired, 17,826 former workers, and 2,880 (16%) had their salaries reduced (The Star, 2020).

The local hotel business lost RM 75.69 million between January and March 2020. Nevertheless, there has been a dramatic increase in cancellations of reservations in Kuala Lumpur, with 61,859, which costs RM24.91 million in lost income (MAH,2020). Sabah has sustained the second-highest losses after Kuala Lumpur. Around 33,769 cancellations had been made since March 2020, costing RM11.79 million (Shah K. et al., 2020; Shah A. U. M. et al., 2020; Figure 2).

After COVID-19 arose, a total of 17,500,085 hotel reservation cancellations resulted in a loss of RM 681,903,64. As a result, 76% of the total workers were affected. At the same time, workers without pay leave were 14%. However, hotel industry workers’ cut-off salaries were 7%. Likewise, Laid-off workers were 3% as shown in Figure 3.

The government introduced a wage subsidy scheme by paying RM600 per month for each employee retained for 3 months to offset the growing unemployment risk during COVID-19. However, the industry needs reforms and marketing strategies to solve this issue during the present recovery phase. Different scholars and think tanks offered this threat of COVID-19 as an opportunity for the tourism sector. The elements that affect consumer decision-making are crucial to understanding as the hotel business is directly and



significantly affected by consumer behavior during an epidemic. COVID-19 emerged with many factors, i.e., non-refundable income, new travel behaviors, online travel business due to increased internet usage and online banking, the web presence of hotels and tourism directories, and many others (Kaushal and Srivastava, 2021).



The repurchase decision is a significant part of consumer behavior, and ideas date back to the middle of the 1960s. However, several other factors influence client repurchase decisions, i.e., service quality, cleanliness facilities, and reduction in perceived health risk (McKenzie et al., 2011; Vlontzos and Duquenne, 2014; Amanah and Harahap, 2018).

Most of the research was conducted to see natural casualties due to the pandemic crises (Dinçer and Alrawadieh, 2017; Sao et al., 2017; Jeaheng et al., 2020; Raja Omar et al., 2020). In these situations, such as in various financial and health crises, consumers' judgments of pricing, quality, cleanliness, location, and amenities fluctuate significantly depending on the crisis (McKenzie et al., 2011; Vlontzos and Duquenne, 2014). Consumers repurchase intention and buying habits changed due to increased sensitivity to issues brought on by concerns like job security (Hampson and McGoldrick, 2013). This study will also observe whether factors such as pricing, cleanliness, location, services, and facilities alter the purchase behavior under normal circumstances than crises.

This study is pertinent to domestic tourists choosing lodgings in Malaysia, particularly when prioritizing their selections among the various lodging options offered by the hospitality sector. Tourists increasingly consider hotel attributes, including cleanliness, location, services, perceived health risks to enhance buying choices (Jiang and Wen, 2020). Domestic guests must thus comprehend diverse hotel characteristics and how they affect buying selections. The theory of quality service (Oliver, 1980) states that an increase in quality could surpass performance expectations. As a result, the standard by which the evaluation of service quality is based on consumer expectations. The current study aims to pinpoint the significant determinants of domestic travelers' accommodation choices influenced by the fear of COVID-19 when travelling in Malaysia's several states. Based on the above, we present the following research questions:

- RQ1. Does service quality influence domestic tourists' accommodation repurchase intentions?
- RQ2. Does the price affect domestic tourists' accommodation repurchase intentions?
- RQ3. Does perceived health risk influence domestic tourists' accommodation repurchase intentions?
- RQ4. Does an increase in service quality reduce the perceived health risk and positively influence domestic tourists' accommodation repurchase intentions?
- RQ5. Does Gender moderate the relationship between perceived health risks and determine domestic tourists repurchase intentions?

## 2. Theoretical framework and hypotheses development

Service quality is the discrepancy between customers' expectations for service performance before the service contact and their service evaluations. Perceived quality decreases when performance falls short of expectations (Oliver, 1980). The service quality is the predicted performance compared with the actual performance (Grönroos, 1984). Since Gronroos published the first model for assessing service quality, the Nordic model in the early 1980s stated that service performance is received when the functional qualities are a subjective perception of the service delivered. After that, Parasuraman et al. (1985) presented a new model called SERVQUAL, the most well-known and widely used model

in the field of service quality. They initially proposed ten dimensions for their model, but in a subsequent version released in 1988, they decreased the dimensions to five. The foundation of this concept was to use five recommended characteristics to measure the gaps between customer expectations and perceptions of the service supplied. Researchers introduced other models and measurements for service quality during these three decades. Therefore, the current research fascinates the service quality theory in explaining the relationship between price, promotion, service, facilities, cleanliness, and purchasing decisions among domestic travelers regarding their selection of accommodation affected by the Covid-19 pandemic while travelling Malaysia.

This study has adopted the variable of intention from the theory of planned behavior TPB (Ajzen, 1985). Several studies in different contexts (i.e., hotel industry, hospitals, educational institutes, and transportation) have used TPB theory to predict the attitude and behavior of customers.

Many empirical studies conducted by different academicians locally and internationally on the impact of promotional strategies, service quality, and purchasing decisions on firms have yielded varied findings. Some of these are given as evidence in the following section.

### 2.1. Service quality and repurchase intention

Meeting the demands of tourists, especially business travelers and hotel service delivery, is the industry's top priority. A green hotel tries to provide customers with various services, such as transportation, hygiene food, meeting spaces, individualized services, and a place to sleep (Petrenko et al., 2021). Kim (2013) discovered a connection between good customer service and in-store shopping intentions. Furthermore, Aptaguna and Pitaloka (2016) found that the service's quality positively impacted the user intention of Go-Ojek. Banjarnahor (2017), who examined the effect of service quality on internet service purchase intention in West Jakarta, provided support for this vital contribution. Researchers Pratiwi and Murwanti (2017) showed the impact of service quality on dealer user intention. Similar conclusions were reached by Alharthey (2019), who found that service quality positively influenced consumers' intentions to purchase groceries. Perceived service quality is one of the critical elements of online purchasing trust (Wiyadi and Ayuningtyas, 2019). Most online selling platforms foster client confidence and enduring connections by providing high-quality services (Shafiee and Bazargan, 2018). Consumers' opinions of service quality significantly influence their faith in shops, which helps them embrace online purchasing (Ibrahim and Daniel, 2019). For instance, Lien (2017) conducted an exploratory study to look at the effects of stickiness and satisfaction on usage intention and the effects of service quality (environment quality, interaction quality, and result quality) on user pleasure on WeChat. The study concluded that service quality positively affects usage intentions based on data from 310 respondents in China. Setiawan and Sayuti (2017) argued that increasing service quality would encourage client satisfaction and purchases.

The significance of a travel pricing package is now beyond controversy. Tourists enjoy the services and the price since they distinguish the goods (Aguiló et al., 2001). All managers in the tourist industry should understand the pricing structure and be aware of the aspects that impact the pricing policy to achieve more successful package design and service provision. Given that it is one aspect that affects consumer purchase decisions, price plays a crucial part in how customers

view a product. [Ferdinand et al. \(2002\)](#) asserts that pricing can influence consumers' purchasing decisions, which is a significant marketing component. A consumer's impression of a product's price significantly impacts whether they decide to buy it ([Kotler and Armstrong, 1996](#)). The information about a product is explained and given purpose by consumers' opinions of the price ([Kotler and Keller, 2016](#)).

Customers can assess the hotel's overall cleanliness by observing guest spaces (such as the lobby, restrooms, rooms, and restaurants), staff spaces, and the personnel's hygiene (such as uniforms, hands, and heads) (e.g., computers, desks, and chairs). In-service places utilized by a range of consumers, like hotels, require effective hygiene management since these circumstances significantly impact how customers behave and make decisions. In times of a public health emergency, like the present COVID-19 issue, it is imperative to concentrate on general hotel cleanliness and employee hygiene ([Faulkner et al., 2021](#)).

Consumer evaluations of service quality and individual attitudes toward decision-making are correlated ([O'Neill and Palmer, 2001](#)). Professional services may adjust to consumer characteristics, leading to delighted clients ([Jaakkola, 2007](#)). Consequently, the following hypothesis is developed:

*H1: There is a significant and positive influence of service quality on repurchase intention for domestic tourists' hotel accommodation selection.*

## 2.2. Sales promotion and repurchase intention

It might be challenging to promote travel and tourist sites. Increasing customer awareness while utilizing conventional technologies and sales communication techniques is complex. Regardless of the season, hotels constantly fascinate new consumers due to the fierce rivalry in the hospitality business. As a result, hotels invest substantial money in strategic advertising each year. Print and visual media are essential to promoting accommodation and tourism services since they educate and promote the sale of specialized services. A rising number of hotels and vacation places are luring potential visitors with print, online, and television photos since a picture is worth a thousand words ([Warta, T., 2011](#)). The tourism industry consumes the most printed materials (brochures, flyers, folios, and catalogues). Print and visual media are materials whose production and distribution costs are included in the marketing budget to educate existing and potential customers and boost demand for the goods and services provided ([Rávar, 2011](#)). Sales promotions are widely used by businesses to expand into new areas, create a strong brand, raise awareness, increase sales, provide value to their products and services, and differentiate themselves from their rivals. According to [Köksal et al. \(2014\)](#), sales promotions strongly impact brand preference and purchase intent. [Blythe et al. \(2005\)](#) claims that sales promotion is essential to brand recognition, which may affect a consumer's choice to purchase in the future. Additionally, recent research has shown that promotional offers significantly impact a customer's purchase decision ([Biswas and Bhatnagar, 2013](#)). Another hypothesis for this study is provided as follows:

*H2: Sales promotion positively affects the Repurchase intention for domestic tourists' hotel accommodation selection.*

## 2.3. Perceived health risk and repurchase intention

According to the notion of perceived risk in consumer research, consumers consider risk while making decisions since there is ambiguity about potential harmful outcomes. As a result, perceived risk equals the likelihood that repercussions will materialize times the unfavorable effects of choosing the wrong brand ([Mitchell, 1992](#)). The unpleasant repercussions of unforeseen and unknown goods purchases are the source of perceived risk ([Bauer, 1960; Rehman et al., 2020](#)). Conceptually, perceived risk and perceived uncertainty are closely related.

Both ideas are viewed as one construct by a corpus of research; perceived risk is a consumer's sense of unpredictability ([Bearden and Shimp, 1982](#)). However, another study focuses on the differences between them; risk perception is made up of two elements: uncertainty and unfavorable outcomes of purchasing a good or service ([Mitchell and Vassos, 1998; Rehman et al., 2020](#)). According to the current study, clients perceive risk differently depending on how much ambiguity they have about a product or service.

The notion of perceived risk has been used to explain consumer decision-making practices since the 1960s ([Buratti and Allwood, 2019](#)). Since the 1990s, there has been an increase in a study in the hospitality and tourism fields that looks at how visitors perceive risk, what variables affect that perception, and how that perception affects how they travel and make decisions (e.g., [Lepp and Gibson, 2003; Lepp et al., 2011; Adam, 2015](#)). Finding various travel-related dangers has been the focus of earlier studies ([Yang and Nair, 2014](#)). Travel groups were initially divided into categories according to physical-equipment risk, vacation risk, and destination risk by [Fuchs and Reichel \(2011\)](#).

[Reisinger and Mavondo \(2005\)](#) investigated how the danger of terrorism, the risk to one's health and finances, and the risk to one's sociocultural identity affected travel intention. [Adam \(2015\)](#) most recently categorized the perceived risks faced by travelers into six categories: expectations risk, sociopsychological risk, political risk, financial risk, and environmental risk. Health risk is one of several categories of a perceived risk that refers to how tourists or consumers of hospitality businesses perceive the danger to their physical health as a result of uncontrollable events like terrorism, political unrest, natural catastrophes, and pandemics.

In the past, research on health risks has aimed chiefly to comprehend how visitors perceive health risks when they partake in risky activities in contexts related to adventure tourism (e.g., [Bentley and Page, 2008; Buckley, 2012](#)). After a string of incidents, including the 9/11 terrorist attacks in 2001, the SARS epidemic in 2003, the Bali bombings in 2002, and the Asian tsunami in 2004 ([Yang and Nair, 2014; Williams and Baláz, 2015](#)), a growing corpus of research started to focus on concerns related to health or safety threats. Travelers now perceive a significant health risk when they visit locations or hospitality facilities due to the COVID-19 epidemic.

Because of health concerns, most visitors will still be hesitant to travel even after the epidemic; therefore, risk-reduction tactics must be implemented by those working in the hospitality and tourism industries. As previously stated, perceived risk results from uncertainty. Thus, one of the most critical aspects of health risk management is effectively decreasing uncertainty. In this context, epistemic and aleatory uncertainty offers fundamental knowledge to comprehend perceived health risks. First, ignorance leads to epistemic uncertainty, also known as internal, functional, subjective, or reducible uncertainty ([Yoe, 2019](#)).



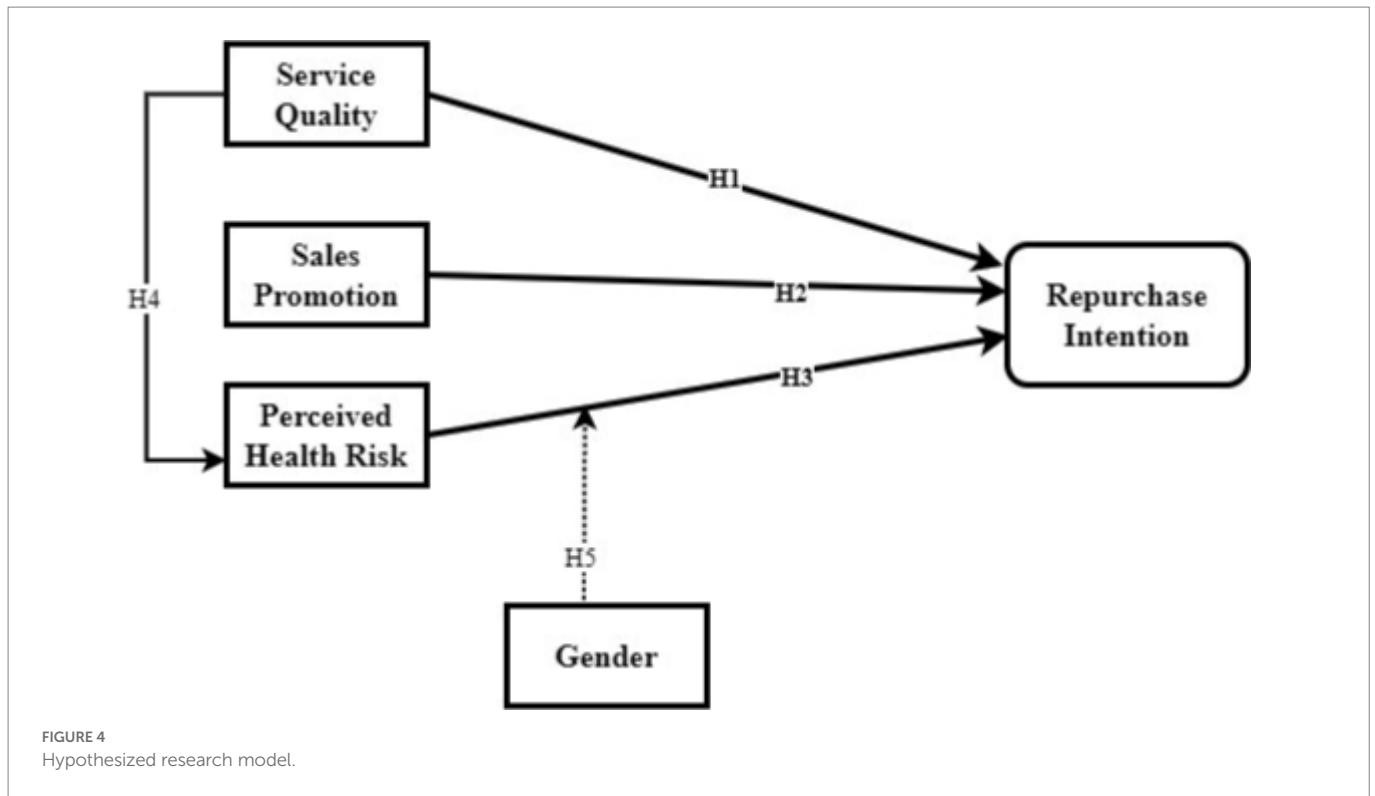


FIGURE 4  
Hypothesized research model.

Additional product or service knowledge might lessen perceived risk and epistemic uncertainty. Broader marketing research has primarily concentrated on risks of epistemic uncertainty, such as financial risk (failure to meet consumers’ financial needs), psychological risk (damage to consumers’ sense of self-worth), performance risk (failure to provide benefits to customers), social risk (loss of customers’ social status), time risk (failure to perform on time), and satisfaction risk (failure to be satisfied with the performance of products or services).

On the other hand, aleatory ambiguity is strongly correlated with perceived health risk. Aleatory uncertainty results from the unpredictability and innate variability of the physical universe. Aleatory uncertainty is strongly correlated with unforeseen hazards at the destination level in the hospitality and tourist sectors, such as perceived health risks (Bruce, 2002). Therefore, there are certain restrictions on how much aleatory uncertainty may be reduced by gathering more data (Yoe, 2019).

Earlier tourism and hospitality research has identified several tourism risks associated with asymmetrical uncertainty, including operational risk (the possibility of mechanical, equipment, or organizational problems), health risk (the possibility of becoming ill or contracting certain diseases), physical risk (the possibility of physical danger or injury), political risk (the possibility of being caught up in a political upheaval), and crisis risk (the possibility of natural disasters). One is perceived health risk, which relies heavily on aleatory uncertainty and cannot be reduced by learning more facts.

One additional critical factor for health risk perception is cleanliness. The hospitality and tourism industry needs to provide a more extensive level of cleanliness to attract customers. In particular, hotel cleanliness is a critical aspect of hotel firms’ success; most hotel customers are highly concerned with the quality of hotel cleaning (Barker, 2015). Hotel cleanliness has been examined in terms of its impact on customer satisfaction (Liu and Jang, 2009), service quality (Barber et al., 2011), and hotel security (Amblee, 2015). Bitner (1992)

argued that the perceived services cape (physical settings) elicits cognitive and emotional responses. In this regard, how hotel customers expect the cleanliness of hotel physical environments influences their perceived health risk during the COVID-19 pandemic. Innovative services in hotel cleaning systems can allow tourists to develop a certain level of expected cleanliness (Zemke et al., 2015; Zeng et al., 2020). When prospective customers know that enhanced cleaning technology systems are implemented at hotels, they are likely to have higher levels of expected cleanliness, resulting in lower health risk levels (Zemke et al., 2015). Thus, the following hypothesis is proposed.

*H3:* Expected service quality of the hotel will affect perceived health risk, such that hotel customers will perceive lower levels of health risk which significantly affect the repurchase intention.

*H4:* Perceived health risk is negatively associated with repurchase intention for domestic tourists’ hotel accommodation selection.

### 2.4. Hypothesized research model

The present study has proposed the research framework and the research hypothesis tested in the study. Service quality, promotion, perceived health risk directly and significantly influences the domestic tourists repurchase decision for the accommodation during their trip during the period of COVID-19 in Malaysia (refer to Figure 4).

## 3. Materials and methods

The quantitative method was used in the investigation. Given that the respondents are likely bilingual, this study’s survey questionnaires were created in Malay and English. The questionnaire’s first section

covers socio-demographic factors. Other portions include buying price, service, promotional strategies, environment, and cleanliness. Questionnaires will be distributed to gather primary data, with the individual (domestic passengers in Malaysia) serving as the analytic unit. The researcher will gather the data between January and March 2022. Due to the popularity of these states as tourist destinations in Malaysia, this study concentrated on domestic tourists from Kuala Lumpur, Perak, Selangor, Pahang, Sabah, Negeri Sembilan, Sarawak, Melaka, Penang, Johor, Terengganu, and Kelantan (Farhana et al., 2020). The respondents received the most significant guarantees, assuring them that throughout the study, all information provided was always treated with utmost secrecy and respect. The email was used to administer the surveys individually (Dobbs et al., 2011). The minimal sample size for this study is determined using a power analysis.

The sample parameters were selected using the G\*Power 3.1 program (Faul et al., 2007, 2009). It was determined that 138 is the minimal sample size to predict the results. Thus, a regression-based model must be tested using more than 138 samples (Cohen, 1992; Faul et al., 2007, 2009). More sample size is adequate; therefore, a convenient sampling technique was utilized to choose the appropriate sample size for this investigation (304 domestic tourists).

### 3.1. Measures

The measures used in this study and their operational definitions were covered in this part. Each respondent was asked to rate their level of agreement with each purchase choice statement on a five-point scale, with 1 denoting a “strongly disagree” and 5 indicating a strongly agree.

#### 3.1.1. Repurchase intention

A six-item measure created by Kotler and Keller (2012) has been modified for this investigation. The instrument’s internal consistency was considered satisfactory in prior investigations, with Cronbach alphas ranging from 0.90 to 0.96.

#### 3.1.2. Service quality

The modified 4-item instrument adopted from the study (Zietsman et al., 2018). The instrument’s internal consistency was considered satisfactory in prior investigations, with Cronbach alphas varying 0.70–0.96.

#### 3.1.3. Sales promotion

The research modified a six-item questionnaire Chandon et al. (2000) created. The instrument’s internal consistency was considered satisfactory in prior investigations, with Cronbach alphas varying 0.53 to 0.78.

#### 3.1.4. Perceived health risk

For this study, Shin and Kang (2020), 4 elements have been modified. The instrument’s internal consistency was considered satisfactory in prior investigations, with Cronbach alphas varying from 0.83 to 0.70. Table 1 displays the operationalization.

## 4. Data analysis and results

Data were filtered, reviewed, and validated to analyze descriptive statistics before entering the statistical package for social science (SPSS)

version 23. The demographic statistics show that among the 304 respondents, only 190 (62.5 percent) were men, and 114 (37.5 percent) were women. There were 164 persons in the 25–35 age range (53.9 percent of the total population) and 118 in the 46–55 age range (38.8 percent). Those aged 56 to 65 made up 22 (7.2 percent) of the population. Regarding marital status, 170 respondents (or 55.9 percent) made up the single group, while 134 respondents (44 percent) were married. Only 43 respondents (14.1 percent), according to the respondents’ educational profiles, have completed the SPM. Following this are those with a diploma, with 91 (29.9 percent), and those with a bachelor’s are 130, (42.7 percent). Master’s degree credential was held by roughly 66 (21.1 percent) respondents. Finally, 17 (5.5 percent) of the responders were PhD holders. In terms of race, 228 (75 percent) of the respondents were Malays, 53 (17.4 percent) were Chinese, 17 (5.5%) were Indians, and 6 (1.9 percent) were from other races. In terms of wages, there were 68 (22.3 percent) people earning less than RM2,000, 158 (51.9 percent) people earning more than RM4,000, and 56 people earning between RM2,001 and RM3,000 (18.4 percent). Finally, there were 22 people in the RM3,000–RM4,000 bracket (7.2 percent). Regression analysis was performed using the SPSS programs. To measure the moderation hypothesis, we employ the methods outlined by Aguinis (2004).

### 4.1. Reliability

The reliability statistics of all the variables, i.e., RI, SQ, PRO and HR are 0.873, 0.852, 0.874, and 0.929 are more significant than the standard value of 0.70 as shown in Table 1. The reliability values for Cronbach’s Alpha should be better than 0.70 (Flynn et al., 1990).

### 4.2. Exploratory factor analysis

Additionally, the validity is distinguished when the main components are computed using factor analysis while carrying out the Varimax rotation. According to Hair et al. (2006), the minimal factor loading requirements vary from 0.50 to 0.80; loadings of 0.50 or more are considered more important. Hair et al. (2010) highlighted the significance of the KMO value of 0.90 in related research. A value of 0.80 is considered excellent, ordinary as 0.70, inadequate as 0.60, bearable but unsatisfactory as 0.50, and horrible as less than 0.50.

Four components from an Explanatory Factor Analysis (EFA) were used to study the repurchase intention. The factor loadings of five repurchase intention criteria are shown in Table 2. The KMO value should be in the 0–1 range. When every variable is completely and accurately predictable by every other variable, the KMO value is closer to 1 (Hair et al., 2010). Bartlett’s test results were also extremely significant ( $p=0.00$ ). Results from the MSA test for individual measurements indicate that the values are within acceptable bounds. Each item’s MSA value was set to be higher than 0.50. It shows that the requirements for factor analysis have been satisfied. The results show that the KMO and Chi-Square values and the research items met the requirements for factor analysis. The outcomes are low factor loading (0.50) or double loading. Results for all the products’ loadings range from 0.509 to 0.642.

The KMO measures of repurchase decisions are 0.689, the Chi-square value is (117.389), and the significance level is 0.000 as shown in Table 3. The KMO and chi-square test results show that all the

TABLE 1 Measures of the constructs.

	Operational definition	Items adapted	Reference
Repurchase intention	Financial economics, technology, politics, culture, products, pricing, location, advertising, tangible evidence, people, and procedures impact consumer decisions.	I chose this hotel because of its outstanding quality.	Kotler and Keller (2012)
		I chose this hotel because of the high level of service.	
		I choose this lodging because of word-of-mouth advertising (WOM).	
		I chose this lodging based on my own experience.	
		I chose this hotel because of its reputation.	
Service quality	All the benefits that a consumer receives from using or owning a product.	This hotel has reasonable pricing.	Beneke and Zimmerman (2014)
		This hotel's cost is fair for the level of service it provides.	
		The cost of this lodging is reasonable.	
	The discrepancy between a customer's expectation of service and what they receive.	The result of this hotel service meets my chosen needs.	Zietsman et al. (2018)
		The length of this hotel's service is in keeping with the level I liked.	
		According to my preferences, the hotel's product is decent and nutritious.	
		This hotel's services and products have a high reputation.	
Promotion	A range of incentive techniques, most of which are short-term, are used to encourage buyers or sellers to make purchases faster or to make more sales.	If this lodging provider has an alluring promotion, I will use it.	Chandon et al. (2000)
		This lodging establishment offers promotions.	
		They force me to buy from them out of the blue because of their promotion effort.	
		I want to be more inclined to use this lodging service regularly.	
		I am tempted to make impulsive purchases at this hotel.	
		This hotel serves as a constant reminder for me to use its services.	
Perceived health risk	A key factor that influences tourists' decision-making processes for repurchase intention; they are less likely to visit a destination when they perceive high levels of health risk at the destination.	I feel nervous about visiting hotel because of health concerns.	Shin and Kang, 2020
		Visiting hotel is a risky decision for my health.	
		There is high probability that visiting hotel would lead to a health problem.	
		I feel uncomfortable visiting hotel because of my health safety.	

TABLE 2 Reliability result.

Variables	No. of items	Cronbach's alpha ( $\alpha$ )
Repurchase intention (RI)	10	0.873
Service quality (SQ)	4	0.852
Promotion (PRO)	6	0.874
Perceived health risk (HR)	4	0.929

used items met the requirements for factor analysis and are thus suitable for repurchase intention. After each phase of the approach, the factor loading of four pricing item components indicates either low factor loadings (0.50) or double loading, as indicated in the table. Every item received a score of 0.701 and 0.857.

Typically, the KMO (total items) value is at least 0.50 Coakes and Steed (2010) and Hair et al. (2006). The findings of Bartlett's test were similarly very significant ( $p=0.00$ ). Individual measures' MSA test results show that the levels are within permissible limits. The MSA value for each item was set to be greater than 0.50. The ten service quality items examined at each stage of the process were shown in Table 3, with

either a low factor loading (less than 0.05) or double loading. The loadings were between 0.81 and 0.86. Table 3 also showed the six items of sales promotion items that were examined at each stage of the operation, showing either a double loading or a low factor loading (less than 0.05). The loadings were between 0.64 to 0.871. The loadings for the four perceived health risk factor varied from 0.874 to 0.913. It demonstrates that the prerequisites for factor analysis have been met.

### 4.3. Hypotheses testing

Multiple regression analysis is used to identify the answers to the research questions and test the research hypothesis using varied outcomes (Table 4).

The hypothesis testing was performed by using regression analysis. Table 3 represents the results of the analysis. The repurchase intention, service quality, promotion, and perceived health risks ( $R^2$ )  $R$  square was 0.463 with an adjacent  $R$  square ( $R^2$ ) of 0.463 and an  $F$  value of 33.398. The result suggests that each of the four independent factors can account for 69.1 percent of the variation in purchasing decisions. The study demonstrates a significant positive relationship between service quality

TABLE 3 Exploratory factor analysis for purchasing decision.

Items	Factor loadings	Kaiser-Meyer-Olkin measure of sampling adequacy	Bartlett's test of sphericity	Df	Sig
			Approximation of chi-square		
<b>Purchasing decision</b>					
RI1	0.623	0.689	117.389	15	0.00
RI2	0.573				
RI3	0.509				
RI4	0.515				
RI5	0.642				
RI6	0.542				
RI7	0.701				
RI8	0.758				
RI9	0.857				
RI10	0.738				
<b>Service quality</b>					
SQ1	0.861	0.800	319.666	6	0.00
SQ2	0.812				
SQ3	0.819				
SQ4	0.844				
<b>Promotion</b>					
PRO1	0.718	0.867	557.511	15	0.00
PRO2	0.644				
PRO3	0.771				
PRO4	0.856				
PRO5	0.834				
PRO6	0.871				
<b>Perceived health risk</b>					
HR1	0.913	0.872	803.271	10	0.00
HR2	0.911				
HR3	0.874				
HR4	0.856				

and repurchase intention  $\beta=0.161$  at  $p<0.044$ . There is a significant positive relationship between promotion and repurchase intention, i.e.,  $\beta=0.284$  at  $p<0.000$ . There is a significant negative relationship between facilities and purchasing decision, i.e.,  $\beta=-146$  ( $p<0.015$ ). The perceived health risks mediate the relationship between service quality and repurchase intention was significant  $\beta=181$  at  $p<0.032$ .

### 4.3.1. Moderation effect

According to the study in the previous section, service quality and marketing tactics can, to some extent, forecast customers' intentions to make another purchase. Repurchase intention is inversely correlated with perceived health risk. On the other hand, we need to make sure that gender moderating has an impact on this relationship.

Aguinis (2004) outlined the procedures for moderate regression analysis as follows:

1. Centralize variables, which entails deducting their means from the newly collected data so that the mean is 0. This will help the regression equation's multicollinearity issue between variables.
2. Construct interactive items. It centralizes the moderating variable and multiplies the centralized independent variable.
3. Create a model. To calculate the R<sup>2</sup> square and R<sup>22</sup> square coefficients, independent and dependent variables (centralized values) and interactions are included in the regression equation. Suppose R<sup>22</sup> is higher than R<sup>2</sup> and Sig. There is a moderating variable and a moderating effect, and the value of the centralized variables is significant ( $p$  value = 0.05).

The Table 5 displays the moderating impact of Gender on perceived health risk and repurchase intention. It is concluded that Gender had a significant moderating effect on Perceived Health Risk and Repurchase Intention. As the estimated coefficient changed from 0.635 to 0.643, R<sup>22</sup> is higher than R<sup>2</sup> by 0.012, and the Significant value of GenderxHR reaches the significant level ( $P 0.05$ ) after the interaction item (GenderxRI) was introduced in the second model. Therefore, hypothesis H5 is accepted by this research.

## 5. Discussion

The concerns about health risks within the hotel and tourist industries need study and investigation given the increased perception

TABLE 4 Hypotheses testing.

Hypotheses	Standardized coefficients beta	t-value	Sig.	Decision
(Constant)		5.026	0.000	
H1: Service quality → Repurchase intention	0.161	2.031	0.044	Supported
H2: Sales promotion → Repurchase intention	0.284	4.565	0.000	Supported
H3: Perceived health risk → Purchase decision	-0.146	-2.446	0.015	Supported
H4: Service quality → Perceived health risk → Repurchase intention	0.181	2.743	0.032	Supported
R <sup>2</sup> 0.691	F = 33.398	Sig. = 0.000	DF = 5	

TABLE 5 Effect of gender on the relationship between HR and RI.

Model		B	R <sup>2</sup>	R <sup>2</sup> Change	Beta	T	Sig.
1	(Constant)	5.890	0.635	0.635		24.837	0.000
	Gender	-1.140			-0.731	-20.193	0.000
	RI	-0.210			0.206	5.777	0.000
2	(Constant)	5.855	0.647	0.012		24.359	0.000
	Gender	-1.141			-0.731	-20.839	0.000
	RI	0.243			0.239	6.530	0.000
	GenderxRI	-0.150			-0.115	-3.192	0.002

a. Dependent Variable: Perceived Health Risk.

of destination and hospitality properties as hazardous locations to go to during the COVID-19 pandemic. In both pandemic and post-pandemic settings, this study looked at reducing risk through service provision and promotional strategies, which can affect guests' perceptions of health risk and intent to return.

This study's findings show that the accommodation's effective services (tangible and intangible) are vigilantly favourable to the repurchase decision, consistent with earlier studies (Jayanti and Zuhri, 2017; Ramadhani et al., 2019). While making decisions service quality is crucial when making decisions (Kotler and Keller, 2016). According to the Theory of Service Quality Clients (Oliver, 1980), people will view quality as being low if performance falls short of their expectations. Quality will increase if performance meets or surpasses those expectations. As a result, the standard by which service quality is evaluated is based on consumer expectations—additionally, client satisfaction and the likelihood of using the business increase as service quality increases. The data indicated a good and substantial link between promotions and purchase choices. Numerous organizations have argued that marketing is the most effective way to sway consumers' purchase decisions (Astuti et al., 2015; Wongleedee, 2015). The underlying premise of consumer promotion is that consumers will be exposed to high-quality, practical items to make wise purchase decisions *via* various consumer promotion instruments.

Additionally, numerous organizations have stated how a person's internal environment might affect their decision to make a purchase (Nasikan, 2013; Kuspriyono and Nurelasari, 2018). Therefore, hotels or managers need to pay attention to marketing techniques to influence domestic tourists' lodging choices when visiting Malaysia and how the COVID-19 epidemic may impact those choices. The findings of this study are consistent with earlier research (Ariastini et al., 2017; Hermiyenti and Wardi, 2019). The regression analysis results demonstrated that service quality has a favourable and substantial impact on domestic visitors' decisions about their choice of lodging when visiting Malaysia and being impacted by the COVID-19 epidemic. The findings by Laksmi et al. (2022), which showed a substantial correlation between service quality and purchase choice, are comparable to this outcome. In their decision-making process, consumers often use service quality as a comparison indicator when choosing from among the offered services. Additionally, comfortable customers who receive good service will be satisfied.

To enhance customers' perception of their hotels or homestays, hotels and other service providers could incorporate service perceptions and expectations metrics. In the Borobudur Hotel in Jakarta, the relationship between amenities and buying choices significantly impacts customer happiness. The results are consistent with those of Nurcahyo

et al. (2017), who found that facilities had a significant and favorable impact on purchase decisions. This result showed no evidence to suggest a link between cleanliness and purchase behavior.

The researchers observed that the client's purchasing behavior was unaffected by cleanliness. This conclusion is consistent with that of Vilnai-Yavetz and Gilboa (2010), which also revealed no correlation between cleanliness and purchase behavior. The current study adds to the body of knowledge by describing how to approach behaviors influenced by cleanliness. Cleanliness is crucial because poor service performances or failures affect client satisfaction and purchasing decisions more than good service performances (Fu and Mount, 2002; Mattila, 2006). Based on this finding, D'Astous (2000) argues that service managers should concentrate on removing environmental irritants that annoy customers before attempting to enhance other aspects. Therefore, the findings indicated that domestic travelers' decisions about the type of lodging they would choose in Malaysia during the COVID-19 outbreak were influenced by pricing, service quality, advertisements, and promotional strategies and facilities.

## 6. Implications

This section indicates both managerial and theoretical implications drawn from the results of this study. On the other hand, this study provided significance in terms of theoretical level. In Malaysia, no study emphasized the purchase decision. This study is intended to identify key contributing factors for domestic travelers in their selection of accommodation affected by the COVID-19 pandemic while travelling in Malaysia. Theoretically, the study is underpinned by the theory of service quality, planned behaviour theory and perceived health risks. As a result, consumers' expectations serve as the benchmark against which service quality is measured.

This study addressed a research vacuum in this area by demonstrating the strong influence of perceived health risks on hotel booking intention. Notably, the study's findings suggest that consumers' perceptions of health risks may only sometimes be considered when choosing a hotel. In light of the COVID-19 epidemic, the non-compensatory decision rule can serve as a theoretical framework to comprehend the decision-making practises of visitors or hospitality clients.

Furthermore, customer happiness and intent to utilize the service again improve as service quality improves. According to this idea, the quality of services is determined by comparing expected performance with perceptions of actual performance, as initially prescribed by



Grönroos (1984). It has also been proposed that *quality* can be defined as a person's subjective assessment of a product's or service's excellence and perfection. The philosophy of service quality is founded on the literature on product quality and client satisfaction (Brady and Cronin, 2001). In 1988, Zeithaml defined *service quality* as "an assessment of customers from the overall excellence of services".

Future researchers can use this study as a reference to extend accommodation selection. This study has five proposed factors: price, service quality, promotion, facilities, and cleanliness. This is the first research to include various hotelier industry predictors.

Since customers are familiar with famous hotels and homestay settings and services, it is possible that if some items need to meet customers' standard of cleanliness, they can quickly notice the point even when they visit for the first time. This section outlines the theoretical and managerial implications of the study's findings. This study aims to pinpoint the significant influencing elements that domestic traveler should consider while choosing accommodations in Malaysia during the COVID-19 epidemic. The service quality supports the study. As a result, the standard by which service quality is evaluated is based on consumer expectations.

According to this concept, comparing predicted performance with perceptions of actual performance, as initially suggested by Grönroos (1984), determines the quality of services. Additionally, it has been suggested that quality might be described as a person's subjective evaluation of the excellence and perfection of a good or service. The literature on product quality and customer satisfaction is the foundation for service quality (Brady and Cronin, 2001).

This study can be used as a guide for future studies to broaden their choice of accommodations. Price, service quality, promotion, amenities, and cleanliness are the five recommended elements in this study. This research is the first to consider several factors specific to the hospitality sector in Malaysia during the COVID-19 era. Customers may readily notice if some objects need to reach their level of cleanliness even when they arrive for the first time since they are familiar with well-known hotels' and homestays' settings and services.

Additionally, they should be aware that rather than rating individual objects, guests evaluate hotels on various integral aspects. To achieve the best hotel cleanliness, hotel managers must consider various factors. To correctly manage their limited resources and make the most effective use of them, hotel managers must comprehend what customers value most when evaluating the cleanliness of their accommodations. Additionally, the study's findings suggested that a hotel's cleanliness affects guests' satisfaction levels and decisions about returning in the future.

## 7. Future suggestions and limitations

This research has some limitations. The first limitation concerns the sampling frame used. Since this study used convenience sampling, it cannot represent an entire population. In addition, this study chose domestic tourists from Kuala Lumpur, Perak, Selangor, Pahang, Sabah, Negeri Sembilan, Sarawak, Melaka, Penang, Johor, Terengganu, and Kelantan, Malaysia. However, it is hard to generalize the respondents to represent eleven states of Malaysia. The model's validity across regions of Malaysia may be compared for future studies. A more and higher representative

sample should be taken into consideration. A future study could also examine the dimensions of accommodation choice criteria between domestic and international tourists or high versus low-end. Finally, a future study on tourism in mentioned states could focus on destination development and the local perception of the current form of tourism, assessing signs of tourism, and developing tools to manage them in a more sustainable approach.

Additionally, domestic passengers were selected for this survey to serve as a representative sample of Malaysian respondents. However, extrapolating respondents to encompass all Malaysians is challenging. A future study may examine the model's validity throughout Malaysia's regions.

A more significant, more representative sample should be considered. This study's potential future extensions may look at factors like choosing high-end versus low-end accommodations or the differences in accommodation selection criteria for local versus foreign tourists. Finally, future research on tourism can concentrate on destination creation, local perceptions of the existing type of tourism, identifying tourism signals, and creating instruments to manage them more sustainably.

The last restriction is the usage of a Likert scale for significance ratings. When consumers say something significant, they could be using their judgment. Other approaches, such as experimental design and decision modelling, are thus beneficial in reducing this issue. Future studies should keep track of the characteristics that buyers value while making judgments about what to buy. Future research should test across a range of demographic categories, including those based on age and wealth.

In reality, deploying technology to lower health risks is a company-wide process; various technologies may be used throughout hotel facilities, including hotel rooms, lobbies, front offices, restaurants, swimming pools, etc.

The adoptions at several contact points on perceived health risks and hotel effects of more advanced technologies must be examined in future studies.

## 8. Conclusion

This study contributes to the knowledge about hotels for tourists in Malaysia and Southeast Asia. This thesis investigated how the COVID-19 outbreak influenced domestic travelers' choice of accommodations when visiting Malaysia. It has been discovered that the purchase choice is influenced by how domestic tourists perceive the pricing, service quality, promotion, amenities, and cleanliness. The results agree with other studies regarding how tourists behave while choosing accommodations in Malaysia. Results showed favorable and substantial relationships between pricing, service quality, promotion, and facilities and purchase decisions.

Contrarily, cleanliness could have been more essential and helpful in the choice to buy. This research provides a scholarship for the Malaysian hotel industry's target audiences and shifting tourist patterns. The findings of this study help guide hotels' decisions on amenities, customer service, and marketing. Additionally, it will assist hoteliers in developing and maintaining distinctive selling factors. According to research findings, more excellent thought and action are needed regarding infrastructure design and development, particularly regarding municipal parking avenues.

Given the increase in same-day visits, this research has found that such infrastructure issues are predicted to worsen. Additionally, to further divert the tourist crowds, the destination may need to incorporate more lodging alternatives and day activities outside the city Centre, or it may want to explore adopting laws that cap the number of visitors and set reasonable boundaries on change. The report is also an excellent resource for hotel owners looking to grow their companies internationally. This research has important management ramifications for hotels and resorts.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

## Author contributions

CSPR highlighted the problem statement, set the hypotheses, and execute the research process. KD was supervising, correcting, and editing the manuscript. HY conceived the whole project idea. MK has processed the data analysis with the help of Smart PLS and SPSS software. FS performed the pilot testing and data collection

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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# How does social support influence tourist-oriented citizenship behavior? A self-determination theory perspective

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As a driver of tourist-oriented citizenship behavior (TOCB), the effect of social support has not been thoroughly investigated. Grounded in a framework integrating the stimulus-organism-response model and self-determination theory, this study investigates how social support influences TOCB through the sense of self-determination. Structural equation modeling is used to analyze the survey data collected from 377 tourists in China. It is found that social support (information and emotional support) have a remarkably positive impact on the sense of self-determination (perceived autonomy, competence, and relatedness) which have an intermediary role in the relationship between social support and TOCB. This study provides empirical evidence for the marketing strategies of tourism destinations and enterprises.

## KEYWORDS

tourist-oriented citizenship behavior, self-determination theory, stimulus-organism-response model, information support, emotional support

## Introduction

Customer citizenship behavior has made an enormous contribution to the service quality, performance, and competitiveness of enterprises (Groth, 2005). Given the importance of customer citizenship behavior, scholars have applied this concept to the tourist sector (e.g., Liu and Tsaur, 2014; Cheng et al., 2016; Assiouras et al., 2019; Shafiee et al., 2020; Liu et al., 2021; Torres-Moraga et al., 2021; Tsaur et al., 2021). Building on Groth's (2005) definition of customer citizenship behavior, tourist citizenship behavior is defined as tourists' autonomously altruistic behaviors (Liu and Tsaur, 2014; Arica and Çorbacı, 2020). Many scholars have explored the antecedents of tourist citizenship behaviors (e.g., Cheng et al., 2016; Assiouras et al., 2019; Shafiee et al., 2020). Many studies have adopted the old understanding of customer citizenship behavior but have overlooked the differences in customer citizenship behavior in different industries, which precluded their findings from fully reflecting the characteristics of tourism activity (Liu et al., 2021).

Furthermore, tourist citizenship behavior consists of tourist-and destination-oriented citizenship behavior (Torres-Moraga et al., 2021). The two dimensions of tourist citizenship behavior are driven by different factors, as some scholars have recognized. However, most existing research focused on the factors influencing tourist citizenship behavior at the destination level or in the tour group (Torres-Moraga et al., 2021; Li et al., 2022; Zhang et al., 2022). In this context, our understanding of how tourist citizenship behavior is formed is incomplete, and much attention should be paid to the antecedent variables affecting TOCB.

Research has shown that people are embedded in a social network composed of relationships (Granovetter, 1983). These social relationships contain rich information and group norms that can affect every member's cognition, preferences, and behaviors. Tourists' decisions rely not only on their own information sets; their attitudes will be corrected by others' words and deeds. Especially in ambiguous situations, tourists usually make decisions by relying on the views of closely related groups (Kang and Schuett, 2013). For example, when tourists face uncertainty (e.g., about service reliability), they will actively seek credible information sources, looking at the behavior of other tourists for clues as to how to behave (Yi et al., 2013). Thus, tourism activities far exceed the scope of temporary stay or consumption by tourists at their destinations. Tourism activity is the reproduction of individual social relations. Tourist consumption behaviors will inevitably be affected by social support from others (Kim and Tussyadiah, 2013; Chung et al., 2017).

Studies have found that customer behavior maintains a close association with social networks, and kindness from related individuals can stimulate customer citizenship behavior (Verleye et al., 2014; Chiu et al., 2015), or positively influence customer citizenship behavior by increasing satisfaction (Rosenbaum and Massiah, 2007; Zhu et al., 2016). Since customer citizenship behaviors usually refer to the source of benefits for individuals, social support, as the external benefits obtained by individuals in social networks, have a noticeable impact on individual customer citizenship behavior toward other customers (Yi et al., 2013). Tourist citizenship behavior is often induced from favorable encounters, as this reciprocity maintains a mutually beneficial relationship between tourists and operators (Chen et al., 2015). The quality of social interaction between tourists also influences tourist citizenship behavioral intention (Wong and Lin, 2022). However, few scholars have discussed how social support affects tourist citizenship behavior. To fill this gap, this study attempts to uncover the effect mechanism of social support on TOCB.

Self-determination theory is a cognitive motivation theory constructed on people's needs for self-determination. According to this theory, humans are viewed as striving toward growth and optimal development, not just shaped by social learning or stimulus-response pairing. However, in order to attain optimal results, people require some positive support from the environment. The theory provides a new perspective for

understanding the formation mechanism of TOCB and better explaining why and how factors identified by existing research influence TOCB. Based on self-determination theory, this study draws on the stimulus-organism-response (S-O-R) theory to interpret the effect of social support on TOCB and the intermediary role of self-determination to deepen our understanding of this behavior.

In brief, this study aims to explore how social support affects TOCB through the sense of self-determination. Specifically, the three specific objectives are as follows: (a) to explore the influences of social support on the sense of self-determination; (b) to investigate the effects of the sense of self-determination on TOCB; and (c) to examine the mediating role of the sense of self-determination in the social support-TOCB relationship. The comprehensive framework developed in this study contributes to the body of knowledge by extending the driving factors of TOCB from the perspective of individual psychology. In addition, the "black box" of the social support-TOCB relationship is described by comprehensively considering the sense of self-determination as a mediator. In practice, this study provides references for formulating marketing strategies for tourist destinations and enterprises.

## Theoretical background

### Social support

In social psychology, social support is the verbal and non-verbal communication between a provider and a recipient. Social support could reduce the uncertainty of situations, egos, others, or relationships and enhance the individual's sense of control in the experience (Albrecht and Adelman, 1987). According to this definition, social support needs a provider, a recipient, and the transfer of resources. Social support is a prevalent social behavior (Thoits, 1995). Family members, friends, and colleagues are essential providers of social support, and anyone can receive it (Van der Poel, 1993). Strong social support can enable individuals to feel connected with other members of social networks and can build trust between people (Crocker and Canevello, 2008). A consumer market is an important place for customers to obtain social support, where enterprises, service staff, or even other consumers can provide social support (Hajli, 2014). In tourism consumption, social support may come from strong ties with friends or family (Klooster and Go, 2006) or weak ties with service providers, fellow travelers, and others with the same tourism experiences (Huang and Hsu, 2010). The social network is also an important channel for tourists to get social support (Kim and Tussyadiah, 2013).

Social support is a dimensional concept whose structure varies with the situation (Madjar, 2008; Chiu et al., 2015). Early researchers have identified three kinds of social support: information, emotional, and tangible (Schaefer et al., 1981). With the rapid development of information and communication



technology, the boundary of social support has expanded from traditional support networks based on kinship and geographical relationships to flexible social support with the internet as media. In the era of the mobile internet, people can socialize face-to-face or on a virtual network. Information and emotional support become the main objectives of support on social networks. As a result, many scholars focus on intangible social support, which is based on the social network, and divide social support into information and emotional support (Liang et al., 2011; Hajli, 2014; Zhu et al., 2016). Information support focuses on information provided for recipients through advice, opinions, and knowledge to help solve problems. Emotional support concentrates on news delivered to recipients to express care, encouragement, and empathy. In tourism consumption, social support is manifested as providing tourists with information that can assist in arranging tourism activities and expressing emotions that can help strengthen their tourism experience. Thus, this study will analyze social support in terms of information and emotional support.

## Tourist-oriented citizenship behavior

The concept of tourist citizenship behavior was adopted from the customer citizenship behavior literature. Customer citizenship behavior is the spontaneous behavior of customers. It is not necessary but beneficial to the whole service organization in the process of transactions or service delivery (Groth, 2005). The tourism experience involves close contact between tourists and others before and after traveling (Frías Jamilena et al., 2017). In contrast, general customer citizenship behavior ignores the dynamic characteristics of social change in this continuous contact so that it cannot fully explain citizenship behavior (Liu and Tsauro, 2014). Therefore, it is necessary to conduct an in-depth discussion based on the unique situation of tourism consumption.

Liu and Tsauro (2014) expand the concept of customer citizenship behavior to tourist citizenship behavior and define it as autonomous altruistic behavior of the visitors in tourism activities, such as enlivening a team atmosphere, sharing personal resources, and doing service providers a favor. These behaviors benefit communication and management in the tourism team and can bring harmony to the team members (Tsauro et al., 2021).

The particularity of the tourism consumption situation determines the uniqueness of tourist citizenship behavior (Wong and Lin, 2022). Customer citizenship behavior focuses on consumers who support the business, while tourist citizenship behavior focuses on tourists who help the destination and other tourists (Torres-Moraga et al., 2021). In addition, tourist citizenship behavior is a vital part of tourism activities. If tourists get a sense of connection with the destination, they will define themselves by this feeling (Hultman et al., 2015; Kumar and Nayak, 2019), resulting in citizenship behaviors such as sharing, recommending, and helping (Rather et al., 2020). Tourist citizenship behavior regulates and guides the behavior of other

tourists. While traveling, some tourists inadvertently violate social norms because they are not familiar with the culture of the tourist destination or have bad consumption habits. Tourist citizenship behavior can guide behavior through event presentations and codes of conduct (Liu and Tsauro, 2014).

As a discretionary behavior that is reciprocal in nature, tourist citizenship behavior is driven by tourist internal psychological and external environmental factors. Factors such as resource uniqueness, service quality, destination identification, perceived value, tour guide humor, and the quality of tourist-tourist interaction are considered the antecedents of tourist citizenship behavior (Liu et al., 2021; Torres-Moraga et al., 2021; Li et al., 2022; Wong and Lin, 2022; Zhang et al., 2022).

Tourist citizenship behavior is also dimensional. The two kinds of tourist citizenship behavior are TOCB and destination-oriented citizenship behavior (Torres-Moraga et al., 2021). The former direct beneficiaries are either actual or potential tourists, and the latter natural beneficiaries are the enterprises and residents in tourist destinations. Some scholars see three dimensions of tourist citizenship behavior: help, recommendation, and feedback (Li et al., 2022). In fact, help and recommendation should belong to TOCB because they are more directed to other tourists. In contrast, since feedback behavior refers to service providers, it should be the content of destination-oriented citizenship behavior.

Internet technology has changed the information collection methods of tourists, and the information shared by individual social circles is considered reliable (Kang and Schuett, 2013). Tourist sharing behavior has become an important part of TOCB, significantly affecting other tourists' decisions and consumption behavior. Consequently, the dimensions of TOCB should be sharing, help, and recommendation. Sharing indicates the consumption experiences and experiences about tourism shared by tourists in their social circles. Help refers to providing assistance to optimize decisions or solve problems for others in need. Recommendation means that tourists advise others to visit a tourist destination.

## Self-determination theory and sense of self-determination

Proposed by Deci and Ryan in the 1980s, self-determination theory illustrates that individual behavior is voluntary and self-determining, based on the assumption that human beings tend to pursue psychological growth and development (Deci and Ryan, 2000). Deci and Ryan have proposed a theoretical system of five branches (Ryan and Deci, 2017). According to psychological needs theory, individuals' three basic psychological needs are autonomy, competence, and relatedness. Autonomy means that an individual, when performing an activity, desires to make his or her own choices. Competence means that an individual wants to feel effective when interacting with the environment. Relatedness means that an individual wants to

establish connections with others to obtain understanding, support, and respect from others. These needs are inborn and prevalent. However, they differ in the extent to which they are met (Gagné and Deci, 2005). Environmental factors can activate or awaken them. At the same time, individuals strive to meet these needs and tend to the environment that can meet these needs.

According to self-determination theory, every behavior in an individual can be explained in terms of whether a need has been satisfied. Individuals develop perceived autonomy, competence, and relatedness based on the degree to which these needs have been met psychological needs. Perceived autonomy denotes how much the individual's behavior depends on their own will. Perceived competence is concerned with whether the individual is qualified for a task. Perceived relatedness posits that an individual is integrated into an environment and can feel cared for, valued, and relied on (Hsieh and Chang, 2016). If a social climate supports and satisfies the three needs, individuals will obtain a strong sense of self-determination and choose to participate in some activities beneficial to their own development and that of others (Engström and Elg, 2015). Self-determination theory defines the three basic psychological needs and illustrates the effect of environmental factors on inner motivation, which is an excellent theoretical vision for positive behavior. Many scholars have explored tourist self-expression behavior (Bosnjak et al., 2016), tourism participation behavior (Aicher et al., 2015), and tourist citizenship behavior (Liu et al., 2021) based on this theory, which shows the effectiveness and applicability of the tourism research field theory. Therefore, this study will investigate the effect mechanism of social support on TOCB based on self-determination theory.

## Conceptual model and hypotheses

### Research framework

The S-O-R analytical framework emphasizes that environmental factors will affect an individual's mental status and elicit a behavioral response (Namkung and Jang, 2010). The S-O-R analytical framework has been widely applied to the research on the effect of environmental factors on customer value co-creation behavior and citizenship behavior (Zhu et al., 2016; Aljarah and Alrawashdeh, 2020). A social network is an environment for and carrier of TOCB. Social support from social networks is advantageous to tourists in optimizing tourism decisions and consumption experience and improving their sense of self-determination, leading to behavioral reactions. Thus, social support can be regarded as a stimulus, a sense of self-determination can be regarded as an organism, and TOCB can be regarded as a response. This study therefore discusses the effect of social support on TOCB through the sense of self-determination by constructing an S-O-R model, as shown in Figure 1.

## Research assumption

### Social support and sense of self-determination

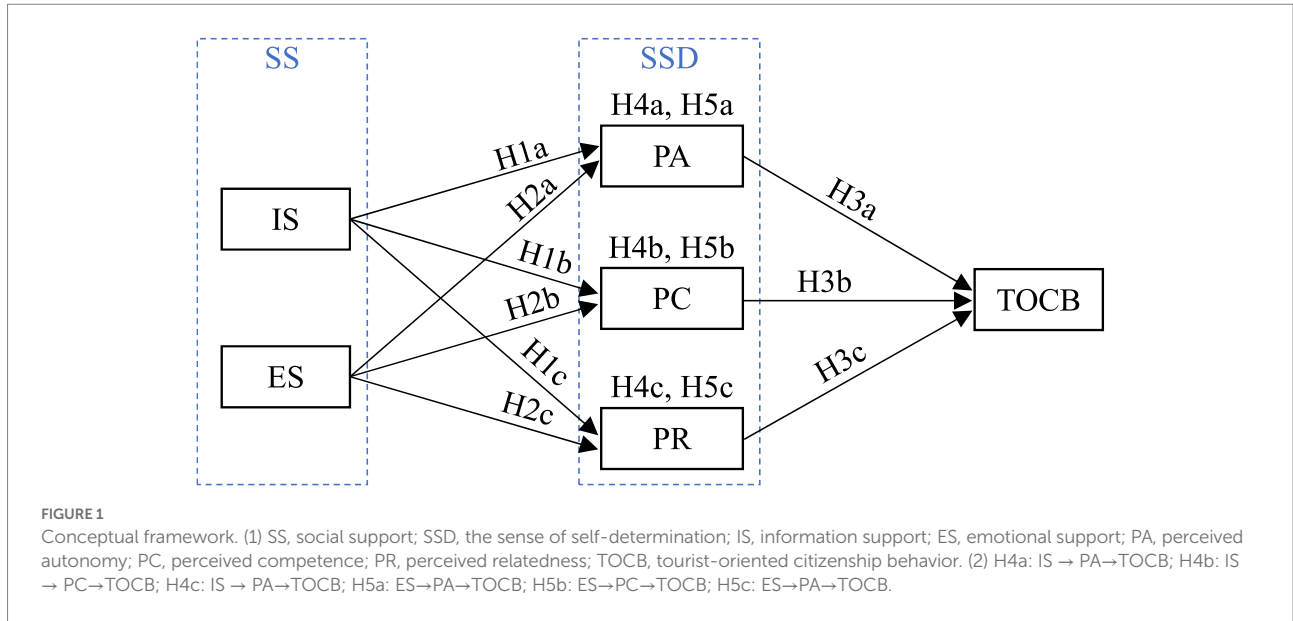
According to self-determination theory, if the external environment benefits from achieving expected goals, individuals' sense of self-determination would be strengthened; if not, it would be weakened (Deci and Ryan, 2000). On their trip, tourists obtain travel information and emotional support from relatives, friends, and the organizations or individuals they contact through social media. The social network has become a kind of external environment that helps to optimize tourism experiences for tourists and has an important connection with tourists' sense of self-determination. As a kind of valuable information, social support makes individuals feel cared for, loved, and respected and realize that they are members of a social network (Cobb, 1976).

Interactional communication is the primary way for individuals to get social support during consumption (Kang and Ridgway, 1996). On the one hand, social interaction can cultivate individuals' sense of self-concern, self-adjustment, and connection with others; it can also meet individuals' basic psychological needs for autonomy, competence, and relatedness (Ryan and Solky, 1996). On the other hand, the content of people's communication is primarily related to consumer products and related knowledge, which can promote the acquisition of individual knowledge and enhance their perceived competence (Hsu et al., 2007; Kim et al., 2011). In other words, information support enables recipients to acquire knowledge and abilities, which is favorable for them to complete specific tasks and promote their perceived competence (Köhler et al., 2011). Because of the characteristics of tourism activities, such as advance purchase and consumption in different places, the decision-making of tourism consumption is fraught with uncertainty. To reduce decision risks, people tend to rely on the independent and fair tourism information the experienced provide, especially the comments, opinions, and advice from relatives and friends and other members of social networks, which are viewed as objective and reliable information sources (Kang and Schuett, 2013). Therefore, as soon as tourists get information support when making tourism decisions, they will develop a sense of competence and control over tourism decisions and consumption behavior. Following these arguments, the following hypotheses are advanced:

*Hypothesis 1a:* Information support has a positive impact on tourist perceived autonomy.

*Hypothesis 1b:* Information support has a positive impact on tourist perceived competence.

*Hypothesis 1c:* Information support has a positive impact on tourist perceived relatedness.



Social support can bring warmth to people, promote mutual understanding, and satisfy psychological needs (Liang et al., 2011). Both information and emotional support can enable individuals to develop perceived self-value, satisfaction, and relatedness. If individuals can take advantage of this social support, they will increase their sense of control over their life (Song and Fan, 2013). In essence, emotional support refers to spiritual support, care, and encouragement that help to enhance the understanding of intimacy between individuals and others and strengthen their sense of membership and belonging. Even if the support and maintenance of others felt by individuals in the social interaction cannot provide practical help for directly solving problems, they can make the individuals feel cared for (Chen et al., 2013). At the same time, as emotional support can make individuals think of spiritual support from others, it also can help indirectly enhance the ability of individuals to solve problems to improve their perceived competence (Liang et al., 2011). This spiritual support and encouragement can make individuals feel their tasks are from their heart instead of being imposed, thus helping to enhance their perceived autonomy. In the context of tourism consumption, particularly emotional support such as followers, likes, and comments from tourist social networks can make tourists develop emotional resonance and feel proud after making informed tourism decisions, stimulate tourists' confidence for gaining expected tourism experience and strengthen tourists' recognition of social network membership. Based on this, the study puts forward the following research hypotheses:

*Hypothesis 2a:* Emotional support has a positive impact on tourist perceived autonomy.

*Hypothesis 2b:* Emotional support has a positive impact on tourist perceived competence.

*Hypothesis 2c:* Emotional support has a positive impact on tourist perceived relatedness.

### Sense of self-determination and TOCB

TOCB is a kind of spontaneous extra-role behavior, and emotionally positive individuals tend to have extra-role behavior (Hsieh and Chang, 2016). In tourism activities, tourists maintain constant social interaction and association and are in a state of social exchange. If tourists benefit from others, achieving autonomy, competence, and relatedness, they will generate positive attitudes and behavior that reward others, such as information sharing, service recommendation, and helping others, all of which constitute TOCB. Greguras and Diefendorff (2009) think that the sense of self-determination can influence individuals' willingness and sense of identification which are embedded in organizational relationships, and promote individuals' positive value co-creation in the interaction. Perceived autonomy and competence positively affect the positive experience, which accelerates the formation of extra-role behavior (Greguras and Diefendorff, 2009). From this, tourists with a higher sense of self-determination more easily reach an internally driven state and show a higher level of participation, interest, and behavior in social exchange. In addition, according to other fields of empirical results, the sense of self-determination positively affects customers' citizenship behavior through improving personal connections (Chiu et al., 2019). In the brand community, customers' perceived competence and connection help enhance community promises and customer citizenship behavior (Fu et al., 2018). According to these arguments, the following hypotheses are suggested:

*Hypothesis 3a:* Perceived autonomy has a positive impact on TOCB.



*Hypothesis 3b:* Perceived competence has a positive impact on TOCB.

*Hypothesis 3c:* Perceived relatedness has a positive impact on TOCB.

### The intermediary role of sense of self-determination.

The S-O-R analysis framework provides a reasonable theoretical explanation for individuals' reaction behavior formed under environmental factors. According to the framework, individuals do not respond passively to the stimulus in the external environment but make choices and reply through their own selective internal processing. When individuals perceive support from others, they will feel responsible for supporting others, and the direction and intensity of such behaviors are closely related to their benefits (Crocker and Canevello, 2008). With the richness of materials, the strengthening of the value of power, and the enhancement of subject consciousness, an increasing number of tourists are not willing to accept homogeneous tourism products passively but strive to dominate tourism activities and pursue personalized and high-quality tourism experiences. This goal cannot be achieved without information and emotional support from the social network. During the tour, the more social support tourists receive, the stronger their sense of self-determination and control over the content of tourism activities and the service delivery process. Out of the internal need to balance social exchange relations, tourists receiving a stronger sense of self-determination are more willing to devote personal resources such as time, energy, and knowledge to providing feedback, support, and help. It can be seen that the sense of self-determination plays a mediating role in the effect of social support on TOCB. According to these arguments, the following hypotheses are proposed:

*Hypothesis 4a:* Perceived autonomy mediates the relationship between information support and TOCB.

*Hypothesis 4b:* Perceived competence mediates the relationship between information support and TOCB.

*Hypothesis 4c:* Perceived relatedness mediates the relationship between information support and TOCB.

*Hypothesis 5a:* Perceived autonomy mediates the relationship between emotional support and TOCB.

*Hypothesis 5b:* Perceived competence mediates the relationship between emotional support and TOCB.

*Hypothesis 5c:* Perceived relatedness mediates the relationship between emotional support and TOCB.

## Materials and methods

### Measures

The questionnaire consists of two parts. The first part measures latent variables such as information support (IS), emotional support (ES), perceived autonomy (PA), perceived competence (PC), perceived relatedness (PR), and TOCB. The second part describes the respondents' gender, age, occupation, education level, and monthly income. All variables in this study were derived from well-established scales provided in Appendix 1. The items of IS (3 items) and ES (4 items) were adopted from Liang et al. (2011). The items of PA (3 items), PC (3 items), and PR (3 items) were derived from Johnston and Finney (2010). TOCB is conceived as a reflective second-order construct formed of sharing (SH), help (HE), and recommendation (RE). SH was measured by three items derived from Oliveira et al. (2020). HE and RE were measured by three items from Li et al. (2022). To ensure measurement validity, all items were translated into Chinese using a blind translation-back-translation method. Respondents were asked to assess their level of agreement on each item using a 7-point Likert scale (1 = *strongly disagree*; 7 = *strongly agree*).

### Data collection and sampling

The respondents are aged over 15 and people who had traveled within the last 6 months were surveyed. All questionnaires were distributed online due to the COVID-19 epidemic, and the distribution time spanned from 12 to 26 October 2021. The snowballing method was introduced to collect data from individual social networks. Questionnaires were published on the Questionnaire Star survey platform. The respondents were given the website address and made a progress on the questionnaire by clicking or touching the answers on the screen. Some scholars believe that a questionnaire survey conducted through personal social relations in the Chinese context can better obtain the cooperation of respondents, thus ensuring the filling quality and recovery rate of questionnaires (Hitt et al., 2004). Moreover, this snowballing questionnaire survey has been used many times and proved to be a better data collection method (Hennig-Thurau et al., 2002; Chan and Kuok, 2021). Especially in the COVID-19 pandemic, this kind of non-personnel direct contact survey is more maneuverable.

The survey was self-administered and distributed to 412 respondents. Among these, 35 responses were excluded due to missing data or duplicate cases. The remaining sample of 377 responses was used for the analyses. Among the respondents,

TABLE 1 The demographic characteristics (N=377).

Variable	Category	Frequency (N)	%
Gender	Male	186	49.3
	Female	191	50.7
Age	15–20	11	2.9
	21–40	175	46.4
	41–60	158	41.9
	>60	33	8.8
Education	Haven't completed high school	12	3.2
	High school/secondary school	49	13.0
	Junior college	85	22.5
	University/college	158	41.9
	Master's degree or above	73	19.4
Profession	Student	22	5.8
	Government employee/public institution staff	66	17.5
	Employee of company	146	38.7
	Laborer	18	4.8
	Individual business	65	17.2
	Freelancer	44	11.7
	Other	16	4.2
Income level (1 RMB=0.1443 USD)	Below US \$577	13	3.4
	US \$577–865	32	8.5
	US \$866–1,154	106	28.1
	US \$1155–1,443	127	33.7
	US \$1,444 or above	99	26.3

50.7% were female and 49.3% were male. The most significant percentage (46.6%) was 21–40 years old and 41.9% were university/college graduates. In all, 38.7% of the respondents were employees of companies and 17.5% had a job in government or public institution. Respondents earning a monthly income of US \$1155–1,443 represented 33.7%, and the group making a monthly income of US \$866–1,154 accounted for 28.1%. Respondents' profiles are summarized in Table 1.

## Results

### Common method variance

To reduce the impact of common method variance (CMV), we conducted preventive control by optimizing the order of items and asking respondents to complete the questionnaire anonymously. Nonetheless, the potential CMV may have contaminated the correlations or path coefficients due to all self-reported data under the cross-sectional research design. For this reason, Harman's single-factor test was utilized to assess the presence of CMV (Podsakoff et al., 2003). The results of factor analysis indicated that the one-factor model explained 36.02% of the variance, while the results of the eight-factor model indicated that 75.15% of the variance was explained by the eight underlying factors. Thus, CMV did not cause severe problems in this study.

### Reliability and validity evaluation

To determine the reliability of the measurement scales, Cronbach's  $\alpha$  and composite reliability (CR) values were computed for each construct. All Cronbach's  $\alpha$  and CR values surpassed the cut-off of 0.70. The measures in this study were accordingly reliable.

The modified scale to measure TOCB in this study was examined in a second order as Torres-Moraga et al. (2021) initially did. Before estimating the whole measurement model, a separate second-order confirmatory factor analysis (CFA) for the TOCB scale was conducted based on the suggestions of Bollen and Stine (1992). We performed this analysis using the SPSS Amos 24 package and employed a maximum likelihood approach. The results show that the fit indices are acceptable ( $\chi^2/df=1.587$ , GFI=0.978, AGFI=0.959, CFI=0.990, TLI=0.985, RMSEA=0.040). As depicted in Table 2, the path coefficients of the three first-order factors (sharing, help, and recommendation) and the second-order factor (TOCB) are higher than 0.70, and the variance explanation rates are all over 50%. In addition, bootstrap analysis results (extraction number is 5,000, 95% confidence interval), the standard error and deviation estimates of the first-order factor load are minimal (<0.001), which validated that TOCB was a second-order construct (Dwivedi and Merrilees, 2016).

Then, following Bollen and Stine (1992), the whole measurement model was performed, and the goodness-of-fit

TABLE 2 Results of second order model.

Construct	Path coefficient	t-statistic	Bias-corrected confidence intervals (BCCIs)	
			5%	95%
TOCB → SH	0.770	10.53	0.645	0.883
TOCB → HE	0.774	11.20	0.637	0.885
TOCB → RE	0.724	10.28	0.622	0.809

TABLE 3 Results of measurement model.

Construct	Item	Std. loading	t-statistic	CR	AVE	$\alpha$	
Information support	IS1	0.753	15.58	0.799	0.570	0.798	
	IS2	0.792	16.64				
	IS3	0.718	14.68				
Emotional support	ES1	0.843	19.50	0.884	0.657	0.882	
	ES2	0.868	20.43				
	ES3	0.728	15.77				
	ES4	0.797	17.95				
Perceived autonomy	PA1	0.800	17.18	0.828	0.616	0.827	
	PA2	0.756	15.94				
	PA3	0.797	17.08				
Perceived competence	PC1	0.786	17.39	0.874	0.699	0.873	
	PC2	0.848	19.35				
	PC3	0.872	20.14				
Perceived relatedness	PR1	0.784	17.00	0.838	0.633	0.838	
	PR2	0.797	17.41				
	PR3	0.806	17.67				
TOCB	Sharing	SH1	0.747	15.59	0.804	0.579	0.801
		SH2	0.810	17.34			
		SH3	0.722	14.93			
	Help	HE1	0.794	16.98	0.817	0.598	0.814
		HE2	0.785	16.74			
		HE3	0.740	15.50			
	Recommendation	RE1	0.762	16.34	0.835	0.628	0.834
		RE2	0.808	17.72			
		RE3	0.807	17.67			

indices ( $\chi^2/df=1.337$ , GFI=0.936, AGFI=0.916, CFI=0.983, TLI=0.979, RMSEA=0.030) supported an acceptable fit (Bentler, 1990). The standardized factor loading values of each measurement item range from 0.718 to 0.872 and are significant at the level of 0.001 (see Table 3), indicating that the measurement scale has good aggregation validity. Additionally, all constructs' average variance extracted (AVE) ranged from 0.570 to 0.699, higher than 0.50, also supporting the satisfaction of the convergent validity of scales (Fornell and Larcker, 1981). Further, the correlation coefficients between each variable and others are calculated, and their absolute values are compared with the square roots of AVEs to judge the discriminant validity of the scale. As presented in Table 4, the correlation coefficient between variables ranges from 0.310 to 0.600, and the square root of the AVEs value range from 0.755 to 0.836. The square roots of AVEs were higher

than the correlation coefficients between variables, thus implying satisfactory discriminant validity (Fornell and Larcker, 1981).

## Structural model and hypotheses testing

### Path analysis

Structural equation modeling (SEM) and maximum likelihood estimation were conducted to test the causal interconnectedness between research variables in AMOS 24. Overall, the goodness-of-fit indices ( $\chi^2/df=1.612$ , GFI=0.917, AGFI=0.900, CFI=0.966, TLI=0.962, RMSEA=0.040) support an acceptable fit of the structural model (Schumacker and Lomax, 2004). As presented in Table 5, all hypotheses are empirically supported. Specifically, information support has positive effects on

TABLE 4 Descriptive statistics and correlation estimates.

Variable	Mean	SD	IS	ES	PA	PC	PR	SH	HE	RE
IS	5.64	0.647	0.755							
ES	5.66	0.820	0.390**	0.811						
PA	5.04	0.842	0.417**	0.447**	0.785					
PC	5.36	0.845	0.489**	0.310**	0.414**	0.836				
PR	5.58	0.757	0.524**	0.578**	0.558**	0.394**	0.796			
SH	5.82	0.738	0.576**	0.365**	0.534**	0.437**	0.529**	0.761		
HE	5.60	0.605	0.555**	0.434**	0.478**	0.457**	0.536**	0.600**	0.773	
RE	5.05	0.811	0.497**	0.588**	0.456**	0.453**	0.573**	0.554**	0.562**	0.792

Diagonal values represent square root values of the AVE. \*\* $p < 0.01$ .

TABLE 5 Results of path analysis.

Hypothesis	Relationships	Path coefficient	<i>t</i> -statistic	Supported?
H1a	IS → PA	0.347**	5.34	Yes
H1b	IS → PC	0.466**	6.87	Yes
H1c	IS → PR	0.403**	6.59	Yes
H2a	ES → PA	0.337**	5.53	Yes
H2b	ES → PC	0.145*	2.48	Yes
H2c	ES → PR	0.448**	7.74	Yes
H3a	PA → TOCB	0.307**	4.99	Yes
H3b	PC → TOCB	0.314**	5.36	Yes
H3c	PR → TOCB	0.491**	6.93	Yes

\* $p < 0.05$ ; \*\* $p < 0.01$ .

perceived autonomy (H1a supported:  $\beta = 0.347$ ,  $p < 0.01$ ), perceived competence (H1b supported:  $\beta = 0.466$ ,  $p < 0.01$ ), and perceived relatedness (H1c supported:  $\beta = 0.403$ ,  $p < 0.01$ ). Similarly, emotional support is positively related to perceived autonomy (H2a supported:  $\beta = 0.337$ ,  $p < 0.01$ ), perceived competence (H2b supported:  $\beta = 0.145$ ,  $p < 0.05$ ), and perceived relatedness (H2c supported:  $\beta = 0.448$ ,  $p < 0.01$ ). Furthermore, perceived autonomy (H3a supported:  $\beta = 0.307$ ,  $p < 0.01$ ), perceived competence (H3b supported:  $\beta = 0.314$ ,  $p < 0.01$ ), and perceived relatedness (H3c supported:  $\beta = 0.491$ ,  $p < 0.01$ ) are found to be significant drivers of TOCB.

### Mediation effect testing emotional support

This study used bootstrapping to examine the mediating effects of perceived autonomy, competence, and relatedness with the help of Mplus 7.4. With reference to Li et al. (2022), the bootstrapping sample was set as 2,000, and the bias-corrected confident interval was set as 95%. Table 5 outlines the results of testing for mediation. The indirect influences of information support on TOCB through the proposed three paths are all significantly supported, given that the 95% bias-corrected confident interval excludes 0 (Lau and Cheung, 2012). The results imply that perceived autonomy, perceived competence, and perceived relatedness play mediating roles in the relationship between information support and TOCB. Thus, H4a to H4c are empirically supported. Table 6 depicts that the path coefficients of emotional support indirectly affecting TOCB are 0.046 to 0.220, respectively, and the 95% confidence interval also

excludes 0, indicating that perceived autonomy, perceived competence, and perceived relatedness significantly mediate the relationship between emotional support and TOCB. Thus, H5a to H5c are empirically supported.

## Conclusion and implications

### Conclusion

Based on the self-determination theory and S-O-R analysis framework, this study constructed a theoretical model of the effect of social support on TOCB through the sense of self-determination, which was empirically tested with 377 sample data. It is found that social support has a significant positive effect on TOCB through the sense of self-determination, which plays a mediating role in the relationship between social support and TOCB.

Although the driving factors of TOCB have not specifically been addressed in previous literature, our results are consistent with those of other studies that have examined related concepts. For example, our results echo those of Rosenbaum and Massiah's (2007), who found that social support has a significant positive impact on customer citizenship behavior. In addition, the findings show that the relationship between social support and customer citizenship behavior is verified in tourism consumption. Furthermore, the result supports the research findings of Ryan and Solky (1996) and Xie

TABLE 6 Results of mediating effects.

Hypothesis	Relationships	Indirect effects	SE	t-statistic	BCCIs		Supported?
					5%	95%	
H4a	IS → PA → TOCB	0.107	0.036	3.00	0.055	0.173	Yes
H4b	IS → PC → TOCB	0.146	0.042	3.53	0.087	0.224	Yes
H4c	IS → PR → TOCB	0.198	0.051	3.91	0.124	0.290	Yes
H5a	ES → PA → TOCB	0.104	0.034	3.05	0.056	0.169	Yes
H5b	ES → PC → TOCB	0.046	0.025	1.85	0.013	0.094	Yes
H5c	ES → PR → TOCB	0.220	0.043	5.13	0.158	0.299	Yes

et al. (2019). As a social resource that provides information and emotion, social support can satisfy individuals' basic psychological needs for autonomy, competence, and connection and help to cultivate individuals' self-esteem, self-regulation, and sense of connection (Ryan and Solky, 1996). In the era of mobile internet, every individual who comprehends the information and consumption experience plays an increasingly important role as the provider of social support. Social network members, in particular, can provide more objective and reliable information resources and support individuals to obtain psychological benefits. When making consumption decisions, tourists seek social support from social network members to improve their perceived competence and self-determination. According to social exchange theory, an individual's behavior toward another individual does not arise out of the individual's response based on self-interest.

Some studies have shown that perceived benefits positively affect tourist citizenship behavior in the virtual community (Xie et al., 2019). This reciprocal behavior is not only reflected in the social interaction between members of the virtual tourism community. When tourists obtain psychological benefits from social support, they will also think that they are responsible for providing positive feedback to the source of social support, thus generating tourist citizenship behavior that benefits related individuals. Therefore, the findings of this study are consistent with social exchange theory. TOCB can be regarded as a reward for tourists to improve their sense of self-determination through social support. Enhancing social support can improve tourists' sense of self-determination and TOCB.

## Theoretical implications

This study makes theoretical contributions to previous literature in three ways. Firstly, it contributes to the literature on tourist citizenship behavior. Despite the fact that some scholars recognize the multidimensional nature of tourist citizenship behavior, scant research has conducted targeted research on one of these dimensions. Previous studies have paid attention to tourist citizenship behavior at the destination level (Torres-Moraga et al., 2021) and those in group package tours (Liu and Tsaur, 2014). Still, the antecedents and consequences of TOCB behavior remain underexplored. This study enhances our understanding of TOCB by finding that social support motivates TOCB by inducing the sense of self-determination.

Secondly, this study verifies that social support is an important antecedent of TOCB, which extends and expands the research on driving factors of TOCB. Social relations are invisible but constitute the environment and objective conditions for tourist citizenship behavior. However, early studies have not clearly understood whether and how social support significantly affects tourist citizenship behavior. Although relevant research has identified the driving factors of customer citizenship behavior, the connotation of customer citizenship behavior in tourism now presents new characteristics. This study responds to this problem by extending customer citizenship behavior to the tourism context, focusing on TOCB that is more closely related to social support received by tourists, and empirically testing the impact of social support on TOCB.

Thirdly, the most notable contribution of this study lies in its exploration of the mechanism of social support influencing TOCB. Tourist citizenship behavior is a spontaneous extra-role behavior, in essence, independent of the service delivery process and enterprise incentive system. It is essential to explore how tourist citizenship behavior comes into being from the point of view of individual psychology. Based on self-determination theory, relying on the S-O-R analysis framework, this study brings social support, a sense of self-determination, and TOCB into the same research framework and empirically tests the intermediary role of the sense of self-determination in the relationship between social support and TOCB, which not only opens the "black box" of the relationship among the three, but also provides a new perspective for understanding the mechanism that generates TOCB. In addition, linking the sense of self-determination and TOCB not only responds to the future research directions regarding the positive psychology applied in the tourism setting as suggested by Filep and Laing (2019), but also answers Zhu et al.'s (2016) call to empirically demonstrate the influence mechanism of psychological variables on customer citizenship behavior.

## Practical implications

The findings of this study can help tourism enterprises understand the influence of social support and the sense of self-determination on TOCB to provide a reference for the development of marketing strategy. This study makes the following contributions. First, tourism enterprises should understand and



view the role of social support in enterprise and product information publicity. TOCB is not an isolated individual behavior but is deeply influenced by tourist social network, showing strong imitiveness and transmissibility. Therefore, tourism enterprises should engage in relationship marketing, establish and maintain a good relationship with tourists and the public, use the ripple effect of tourists on their associated individuals, and constantly improve the influence and competitiveness of tourism enterprises.

In addition, promoting tourists' sense of self-determination is an important strategy to encourage TOCB. TOCB is a kind of autonomous behavior, and the sense of self-determination is an important driving factor of this behavior. Tourism enterprises should change their role, positioning from the leader of tourism activities to the participant in the process of co-creation of tourist experience value, support and help tourists to devote their efforts in the process of product design and service delivery according to their own will and way, and make them get a sense of self-determination from it, to promote their TOCB.

Finally, it is necessary to formulate appropriate incentive mechanisms to guide and stimulate TOCB. Studies have shown that extrinsic motivations such as obtaining additional rewards, maintaining relationships, and gaining praise are essential in sharing consumption experience (Lee et al., 2019). Tourism enterprises can set up incentive mechanisms such as star-rated membership, accessible experience, or rewards based on bonus points to encourage tourists to generate extra-role behavior such as sharing information, recommending services, helping others, and giving full play to the role of "part-time employees."

## Limitations and future studies

Although this study arrives at several meaningful conclusions, the following limitations need to be addressed. One limitation is that the sample coverage was not comprehensive enough. This study used a personal social network to obtain sample data by the snowballing method. The respondents were mainly from some cities in China, and the sample was not representative enough, thus affecting the reliability of conclusions to a certain extent. In addition, in the survey process, the respondents were asked to recall their previous travel experience and complete the questionnaire based on it. Although this method is often used in many studies, the passage of time delay has caused a discrepancy between the respondents' recall and their real feelings at the time. Finally, this study generally explored the

effect of social support on TOCB without considering the possible moderating effects of tourists' personality characteristics and types of tourism activities. Future research should improve the survey methods, enhance the sample coverage, and explore the driving factors and mechanisms of TOCB for different types of tourism activities and other forms of tourist participation.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

## Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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## Appendix

### Appendix 1 Measurement scales.

#### Items and statements

#### Sources

##### Information support (IS)

Liang et al. (2011)

IS1: Some people offered help when I needed it during this trip

IS2: When I encountered a problem during this trip, some people gave me information to overcome it

IS3: When faced with difficulties during this trip, some people gave me suggestions

##### Emotional support (ES)

Liang et al. (2011)

ES1: When faced with difficulties during this trip, some people were on my side with me

ES2: When faced with difficulties during this trip, some people comforted and encouraged me

ES3: When faced with difficulties during this trip, some people listened to me talk about my private feelings

ES4: When faced with difficulties during this trip, some people expressed concern for me

##### Perceived autonomy (PA)

Johnston and Finney (2010)

PA1: I was free to decide for myself what to do during this trip

PA2: I was free to express my ideas and opinions during this trip

PA3: I felt like I was myself during this trip

##### Perceived competence (PC)

Johnston and Finney (2010)

PC1: People I knew told me I was good at what I did during this trip

PC2: I felt a sense of accomplishment from what I did during this trip

PC3: I got much of a chance to show how capable I was during this trip

##### Perceived relatedness (PR)

Johnston and Finney (2010)

PR1: I got along with people I came into contact with during this trip

PR2: The people I interacted with regularly seemed to like me much during this trip

PR3: People were generally pretty friendly toward me during this trip

##### Sharing (SH)

Oliveira et al. (2020)

SH1: I shared photos or videos about this trip

SH2: I shared personal blogs about this trip

SH3: I shared reviews on WeChat or online platforms about this trip

##### Help (HE)

Li et al. (2022)

HE1: I assisted others if they needed help with their trip

HE2: I helped others if they seemed to have problems with their trip

HE3: I gave others advice about their trip

##### Recommendation (RE)

Li et al. (2022)

RE1: I said positive things about this trip to others

RE2: I recommended something about this trip to others

RE3: I encouraged friends and relatives to choose a similar trip



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# Portugal nautical stations: Strategic alliances for sport tourism and environmental sustainability

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Nautical tourism is a tourist product with great development in the European space and a lot of potential to promote and develop tourist destinations. Considering the dynamics of nautical tourism management and the importance of meeting the specificities of this market niche, the objective of this study was to analyse the strategic alliances for the development of the offer of nautical tourism products, namely the strategic goals and sustainable environmental practices adopted by their actors which integrated the strategic alliances in order to certificate a plethora of nautical stations in Portugal. Between September and December 2021, 17 Portuguese nautical stations' application forms were collected. Content analysis using Nvivo software was the technique used for data analysis. The results showed a multiplicity of strategic objectives associated with the strategic alliance established between the nautical stations. The strategic vision of nautical stations for the development of strategic alliances is built, firstly, on the objective of structuring the tourism offer, followed by increasing governance and promoting and marketing nautical tourism using the image of the destination. Based on these results, it is possible to infer the importance of nautical stations in destination competitiveness and the role of strategic alliances in facilitating penetration in the nautical tourism market. The managers of nautical stations should consider the use of strategic alliances to make a cooperative marketing in order to improve the experience of the clients. Regarding environmental sustainability practices, the results exposed the prominence of environmental education actions in contrast to the reduced number of nautical stations developing actions for the adoption of sustainable transport. This study contributes to a better understanding of nautical tourism and Portuguese nautical stations, a project of strategic investment in sport and tourism, inferring on the objectives underlying the formation of strategic alliances and on the adopted environmental sustainability practices. The conclusions of this study point to the need for future scientific research on the actual operationalization of the objectives underlying the formation of strategic alliances, as well as the environmental practices developed by nautical stations.

## KEYWORDS

nautical stations, strategy, sustainability, alliances, sport tourism

## Introduction

The last decades of the twentieth century have observed the development of strategic alliances as the most significant change in the business context (Peroff et al., 2017). According to the authors, the establishment of strategic alliances is the only way by which organizations have attempted to respond to changes in the market, while simultaneously maintaining relationships with current customers and expanding their relationships with the main customers. The main objective of forming strategic alliances is to minimize risk, while maximizing market presence (Harbison and Pekar, 1998) and synergistically increase the organization's competitiveness, through access to external sources and promoting learning and rapid changes.

A strategic alliance is a long-standing relationship between two or more partners within a demand chain to improve and develop mutual agreement strategies in terms of common goals and contextual opportunities (Eisenhardt and Schoonhoven, 1996). Bitran et al. (2002) define a strategic alliance as a strategic agreement between two or more organizations who want to improve their competitive position and performance through shared resources.

The loss of identity and independence of corporations, as the result of strategic alliances, has become an obsolete idea. Hence, the creation of a strategic alliance between organizations requires considering the process of alliance adaptation and its drivers (Reuer and Zollo, 2000). In some national and international markets, strategic alliances have changed the underlying model of competition, from the traditional competition of the company to the company to compete against the network (Kotler and Keller, 2016). Strategic contributions differ in terms of the level of cooperation of partners and value (Larrinaga, 2017).

In general, the notion of strategic alliances is based on three principles (Masselink et al., 2016): (i) the partnership between partners is formal and informal; (ii) existence of at least two partners; and (iii) achieving strategic goals. Also, four types of strategic alliances can be introduced (Rodrigues, 2016): (a) joint venture—it is the most common type of unification, by which a business partnership activity is formed by two or more organizations with strategic objectives, generating independent institutions, and each of these entities allocates operational responsibilities, financial hazards and rewards while their independence and identity are maintained; (b) consortium of mutual services—it is the involvement of similar firms in industries that integrate their resources to obtain advanced benefits and technology, which otherwise, would be highly expensive to achieve; (c) licensing agreement—it is an agreement under which the exporting company grants a legal license to another company to produce commodities, and the receiver company pays a license to the issuing company. This alliance is useful when the business sign of the donor company is

well-known; (iv) participation in the value chain—it is a strong and close union where a firm or business unit forms a long-term agreement with suppliers or key distributors to gain a competitive advantage.

Creating a strategic alliance has many benefits (Carayannis et al., 2000), such as: (a) scale savings and savings resulting from the scope; (b) quick and easy access to knowledge and market; (c) reducing the capital needs and the risks involved in the development of new products and technology; (d) effect of competition on relevant markets; (e) reduce the political and financial risk; (f) achieve a competitive advantage; (g) improvement of sales growth; (h) generating engagement in the business portfolio; and (i) increasing revenue. Several authors have stressed that in small and medium enterprises (SME) this business strategy is much more important (Kiple and Lewis, 2008; Zhao, 2014; Sefiani et al., 2018). The strategic alliances are also highlighted as beneficial in the production and in the service sectors, such as tourism (del Barrio-García and Prados-Peña, 2019) and sport tourism (Wäsche and Woll, 2013).

Tourism and sport are key elements of today's culture and have a special effect on social behavior. Sport is an important activity of tourists during tourism, and tourism and travel products/services are accompanied by different types of sports offers (Ito and Higham, 2020). Sport is a common motivation for tourists, highlighted by their tendency to participate in sports (Ito and Higham, 2020).

Sport tourism is interpreted as a leisure sport trip that temporarily pulls individuals out of their community (Gibson, 2006). In this way, it can cover trips away from home aiming to practicing sports and play, sport watching, visiting sports attractions, involving both competition and competition activities (Hudson, 2003). Therefore, it can be said that any type of travel for sport activities is called sport tourism and may take place individually or collectively (Luković, 2013).

The sport tourism product is a multi-dimensional combination of services and experience opportunities such as transport, lodging, sport activities and facilities, infrastructure, natural surroundings, and social contacts (Murphy et al., 2000; Tuppen, 2000; Thwaites and Chadwick, 2006). As the authors stressed, this kind of offer are provided by a vast array of actors in the visited region contributing to the sport tourism experience. Thus, the quality of the whole sport tourism experience is determined by the combination and coordination of a bundle of diverse services and goods provided by different stakeholders (actors) within the tourist region (Woods and Deeganm, 2006; Elbe et al., 2009). Furthermore, aspects of physical appearance such as beautiful landscapes, attractive and well-maintained areas and spaces for sport tourism, and the attitude of local residents toward sport tourism activities, are relevant. Since quality in sport tourism depends on of many different elements, the sport tourism product must be understood as the overall sport tourism experience as perceived by a visitor (Harrison-Hill and Chalip, 2005). Different social systems such as sport,



economy, the systems of health, leisure, ecology, and politics, as well as several subfields with differing interests, create the sport tourism context and therefore a complicated field (Hinch and Higham, 2004). Wäsche and Woll (2010, 2013) have stressed that this inherent complexity results in a great number of actors from different sectors with different organizational cultures, interests, and goals. For the authors, public organizations (e.g., regional administration and infrastructures, tourist boards, and public sport spaces/facilities), non-profit organizations (e.g., sport clubs) as well as for-profit organizations (e.g., skiing schools and sport rentals) play an important part in contributing to a regional sport tourism product. Furthermore, hotels, retailers, farmers, local residents, and pressure groups (e.g., environmental protection bodies) must be considered. It is a key issue in sport tourism that requires nature-based resources and infrastructural arrangements which might have significant ecological and social impacts and subsequent problematic issues (Bull, 2005; Hall, 2005). In sum, the highly heterogeneous group of actors constitutes a specific feature of sport tourism and contributes to making the management of a sport tourism destination a complex task (Tuppen, 2000; Hall, 2005; Wäsche and Woll, 2010, 2013; Ziakas and Costa, 2011).

Fredline and Faulkner (2001) advocate that one of the most important ways by which sport tourism industry can improve global competitiveness is to create strategic alliances with other members of the industry. Concerning regional sport tourism development, the cooperation of a very diverse group of actors (individual or corporate) from different social systems is crucial. Specifically, the differing interests of various regional stakeholders in sport tourism have to be coordinated. Also, collective efforts are required to provide a sport tourism experience for visitors with a diverse range of products, aiming for a positive and sustainable regional development. Subsequently, a key challenge in managing regional sport tourism is the intersectoral integration of a heterogeneous group of actors (Tuppen, 2000) who act both as single actors, and simultaneously, as a collective actor in organizing and providing the overall sport tourism product of a region. However, there is only limited scientific knowledge about organizational structures, mechanisms, and processes in strategic alliances (Wäsche and Woll, 2010, 2013; Kennelly and Toohey, 2014). Hence, it is crucial to understand the complex interplay of single actors' actions and the development of collective structure through regional cooperation in sport tourism (Mollah et al., 2021).

For a deeper understanding of the phenomenon, and since sport tourism is highlighted by the World Tourism Organization (2019) for its potential to promote environmental sustainability, both by raising awareness and encouraging the adoption of pro-environmental measures, being one of the fastest growing tourism segments (Alexandris and Kaplanidou, 2014), it is important to understand this complex interplay also in an environmental sustainability perspective.

According to the European Commission (2014), coastal tourism is a large part of tourism, which employs more than 3.2 million people, produces more than one-third of the world's economy, a total of 183 billion euros. Around 51% of the EU accommodation capacity is concentrated in coastal areas (Weston et al., 2019).

Nautical tourism activity is a scattered industry based on small businesses, hampering managers' control of all components of the tourism system and/or all elements of the decision-making process (Goni and Yustika, 2019). Verdet (2002) places nautical tourism within the framework of a set of relationships between people who come together when they travel for less than a year and whose main motivation is to carry out nautical activities. Due to the multifaceted nature of tourism, new typologies have come into existence and many different forms of tourism have co-existed over the last decades, as water tourism (Jennings, 2007), lake tourism (Hall and Härkönen, 2006) and more recently, nautical tourism (Luković, 2013). Jennings (2007) advocates the concept of water-based tourism because it "relates to any touristic activity undertaken in or in relation to water resources, such as lakes, dams, canals, creeks, streams, rivers, waterways, marine coastal zones, seas, oceans and ice-associated areas" (p. 10). In this point of view, this form of tourism is strongly resource-based, i.e., the natural resource (water) firmly determines the whole development and activity (boating, sailing, surfing, fishing, 1-day tours, scuba diving, etc.). Luković (2013) defines nautical tourism as a sum of poly-functional activities and relations that are caused by the tourist stay within or out of the ports of nautical tourism, and by the use of vessels or other objects related to the nautical and tourist activities, for the purpose of recreation, sport, entertainment or other needs. In relation to the differences that may exist between nautical, maritime, and marine tourism (Forteza et al., 2017), there is no unanimity or clarity among the authors. In general terms, the differentiating element attributed to nautical tourism is the practice of sporting activities at sea (Carrasco, 2001; Luković, 2013) which can also be carried out in other aquatic environments (Jovanovic et al., 2013).

Nautical tourism is considered a recent commercial activity that has been developed between ordinary tourism and maritime activity, comprising characteristics that make it a special type of tourism (Kovačić et al., 2006). The authors point out the importance of developing a relatively new nautical market, defining it as a system that is divided into technological subsystems at sea and on land (Kasum et al., 2011). Nautical tourism is a diversified branch of general tourism that has significantly changed the structure and peculiarities of the tourism industry (Kovačić and Favro, 2012). These authors underline that nautical tourism is a variety of tourism with the sea as a distinctive element where the marinas are considered central facilities of nautical tourism, dedicated to satisfying the complex and growing demand of the nautical tourist (Benevolo and Spinelli, 2018). It is a complex system that uses various



forms of technical and technological processes, hence it is exposed to certain risks (Kasum et al., 2018). Nautical tourism is a relevant category of maritime tourism, since it generates direct impacts on coastal development and destination promotion and has become one of the most important areas of research (Bal and Czaczynska-Podolska, 2019). As highlighted by Vázquez (2020), nautical tourism in the Mediterranean Sea is greatly dynamic and developed. Especially, for tourists from the cold North of Europe, the mild Mediterranean climate gives the opportunity to go on vacation almost all year round. Nevertheless, the summer season remains particularly popular, creating a strong seasonal character in nautical tourism. The European Atlantic coast nautical tourism is very well developed despite the climate, which is a consequence of the high degree of development of countries in this part of Europe (Masselink et al., 2016).

Nautical tourism is a highly dynamic product with great potential to develop consolidated destinations and can serve destinations that are not attractive for development (Javaloyes, 2012). The success of this type of tourism depends on the wide range of activities it offers and on the possibility of integrating it with active tourism and contact with nature (Perelló, 2013). However, due to the fragility of coastal ecosystems and landscapes, the European Union (EU) and numerous international organizations have concerned about the most appropriate approach for the development and the management of coastal zones.

Currently, the pursuit of the implementation of sustainability by society has a guiding political panel—the Sustainable Development Goals (SDG) within the United Nations Agenda 2030 (United Nations, 2015). The environmental pillar of sustainability, defined as “a condition of balance, resilience, and interconnectedness that allows human society to satisfy its needs while neither exceeding the capacity of its supporting ecosystems to continue to regenerate the services necessary to meet those needs nor by our actions diminishing biological diversity” (Morelli, 2011, p. 6), is contemplated by the SDG and has already been embraced by the main international organizations that lead sport (International Olympic Committee, 2012), and particularly, sport tourism (World Tourism Organization, 2019). The creation of the Sports for Climate Action Framework (United Nations Framework Convention on Climate Change, 2019a) is an example of the sport community’s willingness to act on behalf of the environmental cause. This framework calls for the commitment of sport organizations to adopt strategies that aim and operationalize the climate action, spreading the environmental message within the sport community. Among the participating organizations, there are several acting in the coastal and maritime context (United Nations Framework Convention on Climate Change, 2019b), namely: (a) federations and leagues (e.g., World Surf League, CSA Surf Canada, World Sailing, World Rowing Federation, International and World Rafting Federations); (b) national teams (e.g., Sail

GP team—United States, Great Britain, Australia, Japan, France; and (c) sporting events (e.g., The Ocean Race).

In the context of nautical tourism, the Fédération Européenne de Destinations Touristiques Nautiques prepared a declaration (Fédération Européenne de Destinations Touristiques Nautiques, 2012), exposing the sector’s concern regarding the integration of sustainability, in which 10 objectives are proposed, highlighting: preservation of coastal ecosystems; protection of natural areas and endangered species in the exercise of nautical activities; reduction in the consumption of natural resources, waste and polluting products; promoting environmental education and awareness; innovation in the management and marketing of nautical products and services in order to promote environmental sustainability; and introduction of environmental criteria in the involved organizations’ management policies. In this scenario, the Portuguese organization “Fórum Oceano: Associação da Economia do Mar,” an association that manages the Portuguese sea cluster, established the regulation for the certification of nautical stations that intend to integrate the network of Portuguese Nautical Stations, including a criterion for environmental sustainability, asking for “reference to actions to ensure the environmental sustainability of interventions” (Fórum Oceano, 2019, p. 10). Recognizing the importance of implementing and measuring environmental sustainability in nautical tourism is not only desirable, but absolutely necessary.

The environmental sustainability of sport tourism developed in the context of coastal and maritime areas has been investigated in order to understand the influence of the various factors that contribute to its implementation (Mascarenhas et al., 2021). For instances, a greater sporting experience of divers has been associated with a sport practice that is less harmful to the marine biota (Hammerton, 2017). Conversely, the use of accessories, such as cameras or musk sticks, has been associated with higher levels of destruction of the marine space used by snorkelers and divers for sporting purposes (Hammerton, 2017; Giglio et al., 2018). Several strategies have been advanced to mitigate these negative impacts on marine biota (Giglio et al., 2018), such as: zoning, i.e., limiting the access of tourists (or those with low sport practice experience) to more environmentally sensitive locations; and the promotion of good diving/snorkeling practices through short video-briefings. Additionally, resorting to the implementation of artificial reefs can satisfy the various segments of dive tourism, where tourists with less sporting experience can dive in a space suitable for their sport skills. These strategies promote the protection of fauna and flora in diving spaces, relieving the pressure of mass tourism in the natural space (Belhassen et al., 2017).

The environmental impact of sport tourism is not just a result of the pressure of recreation in the natural space. Unequivocally, it is also necessary to monitor and analyse the carbon emissions generated by the activities carried out in the context of sport tourism (Mascarenhas et al.,

2021). The promotion of energy efficiency, consumption of environmentally friendly products and implementation of recycling/reuse programs by sport tourism operators are frequently cited examples of good environmental management practices by coastal tourism operators (Carneiro et al., 2016; Yfantidou et al., 2017). In conjunction with these environmental practices, the importance of the collaborative factor for the implementation of more environmental management has also been highly recommended (Mascarenhas et al., 2021). Examples of positive results for the environmental sustainability of nautical tourism support the recommendation for processes of collaboration and participation of the main stakeholders: in Aljezur, Portugal, a municipal charter for sustainable management was elaborated with the collaboration of the main stakeholders, taking into account the convergence of several indicators, including environmental indicators regarding the surfing activity and the necessary actions for a better environmental management of the surf tourism in the destination (Machado et al., 2018); in Villefranche-sur-Mer, on the French Riviera, the management of the local nautical station was reconverted to meet the objective of presenting a current and environmentally conscious nautical tourism offer. The objectives relating to the promotion of high environmental quality supported the design of strategies that included the increase in the offer of recreational and sporting activities that meet certain environmental requirements, such as aqua gym, nautical trails, all derivatives of windsurfing, paddle, sea triathlon, sport swimming on the high seas, pedal boats, water polo and scuba (Coglievina et al., 2016).

However, as has been widely emphasized, transport is the biggest contributor to the generation of carbon emissions in the tourism sector (Scott et al., 2016). For this reason, nautical tourism also has to implement strategies and practices capable of mitigating climate change, with a special focus on transport sustainability.

Within the management tools intended to facilitate the implementation of environmental sustainability in coastal tourism, some can be highlighted, namely those focusing on: (i) the need for coordinated collaboration between all stakeholders, in order to infer on converging and divergent topics, enhancing possible synergies between extractive, recreational and natural space conservation use, framed in the ecosystem concept (Biggs et al., 2016; Chen et al., 2016); and (ii) the identification of indicators for assessing sustainability (Drius et al., 2019; Coccossis and Koutsopoulou, 2020). For example, Drius et al. (2019) present a conceptual framework that addresses the management of the environmental impacts of nautical tourism by analyzing the trade-offs between environmental threats from coastal tourism and other human activities and coastal ecosystem services. In turn, the study developed by Coccossis and Koutsopoulou (2020) elaborated and applied a tool for measuring and monitoring sustainability at the local level (e.g., a nautical station). This tool integrates

three types of indicators to assess sustainability in nautical tourism: core indicators (i.e., general indicators for sustainable coastal tourism); destination indicators (i.e., to access the unique characteristics of different tourism products, such as beach/maritime tourism, urban/cultural tourism, cruising, recreational boating and nature/ecotourism); and area-specific indicators (i.e., incorporating the crucial and specific aspects of each destination to monitor sustainability). To ensure the effectiveness of the operationalization of this tool, the importance of collaboration among key stakeholders in selecting and prioritizing indicators, and obtaining data, is also highly recommended (Coccossis and Koutsopoulou, 2020).

In addition to applying tools to monitor and analyse environmental indicators, another alternative for the promotion of environmental sustainability involves the inclusion of marketing strategies to enhance the message and environmental action of nautical stations, such as co-branding. As a marketing strategy, co-branding “in which two or more brands are presented simultaneously to the consumer as one product to create a sum of brand assets, that is greater than that of the individual brands” (Turan, 2021, p. 1), may allow a more effective connection between the environmental image of the nautical stations and the corresponding tourist offer, highlighting the fact that the brand image fit is one of the success factors of this strategy (Turan, 2021). In this regard, the study developed by Hsiao (2018) exposed the incongruity of the co-branding strategy in relation to the image of a low carbon island that was presented to tourists incorporating a recreational offer that included high carbon activities, namely motorized nautical activities, which culminated in a mismatch between the image of the island and its tourist offer.

In this sequence, to achieve mutual benefits (i.e., either for the environmental image for a nautical station, or for the implementation of the environmental sustainability of the different products and services of nautical tourism), the following recommendations must be observed: (i) enhancing the offer of more sustainable alternatives from the inventory of nautical sport activities; and (ii) operationalization and dissemination of more environmentally friendly choices in other areas of the tourism offer, namely, in terms of accommodation and transport (Hsiao, 2018).

According to the exposed, the focus of this research is to analyse the strategic alliances for the development of the offer of nautical tourism products, namely its strategic goals and sustainable environmental practices adopted by the actors which integrated the strategic alliance in order to certificate a plethora of nautical stations in Portugal.

## Materials and methods

According to the National Strategic Plan for Tourism 2027 (Turismo de Portugal I. P., 2017), Portugal has an excellent

coastline for surfing, recognized worldwide, as well as for sport and nautical activities; vast marine biodiversity; and natural and infrastructural touristic conditions for cruises. Some of the lines of action of the National Strategic Plan for Tourism 2027 are based on the axis of valorization of the territory with the affirmation of tourism in the economy of the sea, namely: (i) Reinforcement of Portugal's position as a destination for nautical, sport and leisure activities associated with the sea, on the entire coast, and as an internationally recognized surfing destination; (ii) Dynamization and valorization of infrastructures, equipment and services to support nautical tourism, namely, ports, marinas and nautical centers; (iii) Nautical activities for enjoyment of the sea connected to diving, sailing, canoeing, observation of cetaceans and seabirds, fishing, sightseeing tours and beach activities that integrate sustainability in the nautical culture of the sea; (iv) Promotion of "routes of experiences" and tourist offers around the sea and nautical activities; (v) Coastal enhancement actions, including the requalification of marginal areas and the appreciation of beaches; (vi) Tourism projects including health tourism' projects associated with the therapeutic properties of the sea; and (vii) Appreciation of seafood associated with the Mediterranean diet (Turismo de Portugal I. P., 2017). The inclusion of nautical tourism as a strategic product for Portugal is essential for valuing the product, both in tourism and in sport (Morais de Brito and Cordeiro, 2020).

In line with this recognition, between 2014 and 2015, the Business Association of Portugal, in cooperation with the Fórum Oceano (FO), developed the project entitled Nautical Portugal (Fórum Oceano, 2019). The main goal of the project was to potentiate the development of a collective strategy to accelerate the structuring of the nautical sector in order to compete in the global market. The aim of FO was to create, promote and certify nautical stations in Portugal (Fórum Oceano, 2019). The Regulation for the Certification of Nautical Stations (NS) of Portugal (Morais de Brito and Cordeiro, 2020) states that nautical stations are, for the most part, coastal destinations and nautical tourism with an excellent opportunity to reorient some sun and beach tourism destinations. Alongside, there are conditions in the interior territories for the certification of NS, in stable water plans, namely rivers, lakes and reservoirs of dams. For potential visitors, the network offering, under the name of NS, guarantees the quality of the tourist product and the services provided, as well as information support and reservation of accommodation and services (Morais de Brito and Cordeiro, 2020).

The Portuguese nautical stations (PNS) is our case study as an organized network that contributes to the valorization of nautical resources present in the territory (for more information visit <http://www.forumoceano.pt/index.php>). This network includes nautical activities, facilities such as accommodation, restaurants, and other important services for attracting tourists. The main goal of the PNS is to create and

add value to a diverse and integrated experience, based on a cooperation platform between players who offer an organized touristic product or service. The data collection was developed through the establishment of a protocol with the FO. The FO streamlined the authorization process for nautical stations to allow us access to the NS application forms to obtain certification. Portugal has 29 nautical stations certified from north to south and from the coast to the inland waters, of which 17 allowed the research team to consult the official applications forms. As such, in this study the official application forms of 17 certified Nautical Stations were collected and analyzed. For the purpose of the present research, two dimensions of the applications forms were analyzed, namely the strategic goals and the environmental practices described by the different partners of the network. The inductive content analysis was the method pursued related to the study of the mentioned dimensions. According to Bardin (1977) "the content analysis appears as a technique conjunction of communications' analysis that uses systematic procedures and description objectives from the message content" (p. 38). That is why it is an effective method to many areas in the social empirical sciences and often used in tourism research (Rejowski, 2010). The emergent references related to strategic goals and environmental practices were coded in open concepts. Systematically, comparison of concepts led to the definition of the key code followed by an axial and selective coding which in turn, allowed the definition of the subcategories in the two analyzed dimensions. This process was done based on intercoder reliability procedures between tree of the co-authors. The NVIVO software was used to the codification process in order to explore patterns related with the dimensions in study.

## Results and discussion

The results show the multiplicity of strategic objectives associated with the established strategic alliance related to sport, namely nautical sport (Table 1).

TABLE 1 Strategic goals per nautical station.

Strategic goals	Nautical stations (n)
Structure the offer	16
Increase governance	11
Promote and market destinations	11
Increase sustainability	8
Train human resources	7
Create and improve facilities	7
Organize events	6
Intensify service quality	5
Develop accessible and inclusive services	4
Others	2

The nautical stations as a strategic alliance confirm the [Masselink et al. \(2016\)](#) theory since the following assumptions are verified: (i) the partnership is formal and informal; (ii) the existence of at least two partners; and (iii) the achievement of strategic goals. In sport tourism industry, strategic alliances can improve global competitiveness and the cooperation of a very diverse group of actors (individual or corporate) from different social systems is crucial ([Tuppen, 2000](#)).

Nautical stations can be framed in the concept of tourism destination competitiveness with a particular focus on sport ([Happ, 2021](#)), as defined by the author as “a place’s ability to optimize its attractiveness for residents and non-residents, to deliver high-quality, innovative, and attractive sports tourism services and to gain market shares in domestic and global marketplaces, while ensuring that the available resources supporting tourism are used efficiently and sustainably” (p. 67).

The data show the importance attributed by most nautical stations to the structuring of the offer as illustrated by several quotations, such as: “create an integrated strategy for the development of the nautical product, aggregating the offer, with the involvement of all sectors of activity directly connected and other complementary ones (NS5). Or:

*Structuring the tourist offer, in terms of nautical, entertainment activities, catering, accommodation and other services relevant to the attraction of tourists. For this purpose, it is important to create packages that are sufficiently attractive to customers in terms of the offer per se, quality, follow-up and its relationship with the price (NS1).*

Or:

*Enhance the offer of nautical activities, in particular wakeboarding, water skiing, canoeing, rowing, stand-up-paddle, tourist fishing and nautical tours, namely through the creation of a network of partners, including operators of nautical activities, clubs and nautical sports centers, accommodation, restaurants and bars, and the main municipal and regional entities (NS2).*

The structuring of the offer is a fundamental strategic objective as the sport tourism product is a multi-dimensional combination of services and experience opportunities such as transport, lodging, sports activities and facilities, infrastructure, natural surroundings, and social contacts ([Thwaites and Chadwick, 2006](#); [Woods and Deeganm, 2006](#); [Elbe et al., 2009](#)). Some authors [Zehrer et al. \(2017\)](#), [Aicher and Newland \(2018\)](#), [Newland and Aicher \(2018\)](#), and [Happ \(2021\)](#) stressed that there are different types of experiences and different types of sport tourism consumers, such as active tourists and athletes; summer and winter sport tourists; different views in the range of stakeholders; new sports trend. For example, for active sport tourists, the quality of the sport experience and sport

entertainment were vital ([Aicher and Newland, 2018](#)); on the contrary, for athletes, the event’s reputation and status, constantly renewed event experience, and playing to the limit were more important ([Getz and McConnell, 2011](#)). On the whole, as there are different consumers with different interests, when working as a NS approach, the destination should offer different experiences, create packages composed by different sports and attributes/attractions of the destinations and design specific offers for each target group (e.g., athletes or active).

Promoting and marketing destinations, as well as increasing governance, were also mentioned as strategic objectives by a large number of nautical stations (11 of the 17 NS). Regarding promotion, the role of NS in projecting the image of the destination as a nautical destination is mentioned (e.g., NS1; NS3; NS10; and NS14). As attested by the quotation of the NS1 “project the [] as a nautical destination in international markets, through a communication campaign aimed at specific target groups that have as aspiration the practice of nautical in articulation with the natural and cultural heritage,” or “promotion of the territory to increase the market share of visitors from abroad (mainly from Spain)” (NS14).

This objective falls within the meaning of [Carayannis et al. \(2000\)](#) when considering that strategic alliances are a quick and easy way of access to market. [Wäsche et al. \(2013\)](#) stress that sport tourism organizations should engage in cooperative marketing in order to improve the experience to the clients. Specifically, in regions “characterized by small businesses this ‘imperative for cooperation’ is critical for successful marketing and management in tourism” ([Wilkinson and March, 2008](#), p. 27). The Portugal nautical stations are a model of promotion on an international scale. The study by [Lam-González et al. \(2019\)](#) shows the relevance of internationalization in the context of nautical tourism to increase competitiveness for destinations.

With regard to governance, the importance of NS is highlighted to “encourage the articulation of promoting agents with public and private entities, creating partnerships that generate value in the development of nautical tourism” (NS16), or “establish with partners and associated nautical actors, a regular policy of internal and external communication” (NS17). Or, as added in another quotation:

*Implement a collaborative network between local public and private actors representing civil society that works as a discussion group for different themes associated with nautical and is an aggregator element, lobbying institutions and guardianship in order to influence facilitating policies and modes of action of the economic exercise of the tourist activity and in particular the nautical one (NS1).*

Thus, a vision of governance was highlighted in this study to the extent that shared management—a collaborative network between local public and private actors that functions as a discussion and decision-making group—was understood as a



strategic objective associated with the creation of the nautical stations. [Klijn \(2008\)](#) accentuates that the term governance appears associated with the purpose of improving coordination between related actors in solving society's problems. It is underlined by [Emerson et al. \(2012\)](#) that this concept integrates, in addition to public administration, stakeholders, civil society and the community, which is in line with the findings of this study, as stressed by the quotation “ensure greater access for local populations to nautical activities—involvement and access of populations, with special emphasis on school and competitive sports” (NS5). Governance acquires even more relevance insofar as, since tourism is considered as a complex system ([Baggio et al., 2010](#)), sport tourism, due to the intensification of the defined characteristics, can also be considered a complex system, implying that “the governance of a destination is controlled by a limited number of entities and is further confirmation of the necessity of creating cohesive inter-organizational networks for the production of integrated tourism experiences” ([Baggio et al., 2010](#), p. 55). Moreover, the cooperation is considered crucial for the operative field of sport tourism management ([Wäsche and Woll, 2013](#)).

Sustainability, namely from a perspective associated with environmental protection and sustainable mobility, is a strategic objective for eight of the nautical stations under study. Quotes such as: “promotion of awareness-raising actions for the protection of the coastal area, promoting sustainable behaviors” (NS16), or “betting on sustainable development as a collective commitment, valuing and respecting the environment and territorial balance” (NS11) attest to the aspect of ecological sustainability. Moreover, “create sustainable dynamics of use, enhancement and preservation of the natural and environmental heritage linked to nautical activity, as well as the cultural and identity heritage of the region” (NS5).

Attending to cooperation as a determining factor for the implementation of a more environmental management in sport tourism ([Mascarenhas et al., 2021](#)), strategic alliances in sport and tourism should consider the strategic dimension related to the environmental sustainability (e.g., social and ecological compatibility: [Wäsche et al., 2013](#)). This dimension is particularly relevant since the nautical stations inscribe their action in natural ecosystems and the respective resources are key elements from the perspective of the sport tourist experience and have a powerful effect on the tourist perception of a chosen sport tourism destination ([Hinch and Higham, 2004](#)). As [Perić et al. \(2016\)](#) advocate, the environment is one of the vital elements in the key resources of the business model in sport tourism. Thus, it is important to integrate this dimension in product design, in the analysis of tourist flows and consequent carrying capacity, in the analysis of threats and enabling factors for tourism sustainability, littoralization and urbanization, land-sea interactions, coastal erosion and protection measures, water management, transport and accessibility, monitoring and measuring results.

The remaining strategic objectives—i.e., objectives focused on training human resources, creating and improving facilities, organizing events, intensifying service quality and developing accessible and inclusive services—were not mentioned in most of the analyzed forms, but worth to be mentioned as results of this study. As for example “NS will emphasize its strategy in training existing nautical operators in the surroundings, to attract new target groups” (NS8), or “promotion of nautical and safety training with nautical education institutions promoting a close relationship between the nautical sector, companies operating in the field and the school community” (NS16).

The importance of training of human resources and knowledge transfer, as pointed out in this study, are related to the strategic alliances. In this line, [Ferreira and Franco \(2020\)](#) showed that strategic alliances create important benefits on the human capital of the small and medium enterprises. As the authors point out, human capital is affected by strategic alliances and the relationships developed between SMEs and other companies are increasingly important for their growth. An isolated performance in the market can negatively influence the development capacity of this type of enterprises.

The creation and improvement of facilities/infrastructures was considered a priority insofar as many of the existing structures are geared toward a purely sporting and non-sports-tourist offer. As stressed in the quotation “dynamize and enhance the infrastructure, equipment and services to support nautical tourism” (NS10) or “creation of conditions and incentives for the requalification of existing spaces linked to nautical and/or implementation of new support structures” (NS12). In fact, [Ivanić et al. \(2018\)](#) refer to investment in infrastructure construction as an important factor in the development and enhancement of nautical tourism insofar as the existing facilities do not include the tourist vocation.

It should be noted that sporting events are referred to as strategic for attracting tourists, but also as a way to prolong the stay (NS1; NS10) in association with other events, as quoted:

*Promote, in partnership, a set of nautical events in complementarity with other entertainment events linked to the local culture and environment that offer the visitor the possibility of experiencing diversified experiences that contribute to increasing their stay in the territory (NS1).*

The category “others” includes objectives with only one occurrence, namely, “capitalizing on knowledge networks and their transfer between territories” (NS1), as well as “creating normative elements for the development of nautical activities” (NS13).

The results of the practices of environment sustainability were categorized into five areas of action ([Table 2](#)), evidencing the concern of the NS coordinators for this world urgency.

The results lead to the conclusion that the environmental sustainability practices of the nautical stations follow the

TABLE 2 Environmental sustainability practices per nautical station.

Environmental sustainability practices	Nautical stations (n)
Environmental education	13
Resources management	8
Monitorization	7
Guidelines for environmental responsibility	7
Sustainable transportation	3

trend of implementing the environmental practices identified in the context of sport tourism, namely, the prevalence of environmental education and awareness actions (Mascarenhas et al., 2021) but little attention given to the implementation of the sustainable transport (Martins et al., 2021; Mascarenhas et al., 2021). Practices in terms of environmental education are mentioned by most of the EN in the study, namely through “awareness actions on sustainable tourism and environmental protection” both for the network partners and for local communities, as well as for the customers of the NS (e.g., NS2, NS4, NS6, NS7, and NS14), namely: “awareness-raising actions on sustainable tourism and environmental protection” (NS2); “awareness-raising and information activities, dedicated in particular to these issues (among which the effects of climate change, the presence of plastics in the oceans and the threat of protected species gain increasing expression” (NS4); “environmental awareness actions among network partners” (NS6); “creation of the Environmental Guide for sailors, whose objectives are: to improve environmental quality, safety, educate the youngest and participate in the preservation of natural resources” (NS7); and “develop and promote educational programs that encourage good practices in schools” (NS14).

As the results showed, the environmental education practices integrate several levels and involve different types of actors, such as children, providers and sport tourists. This way, by one side, it is important a high degree of training of the managers in the environmental items, as they influence several actors and practices; by the other side, the providers in sport tourism must be informed about sport tourists behaviors in order to create clear explanations about the activities and their rules so negative impacts may be minimized (Perić et al., 2016) and benefits may be maximized whenever it is possible (min-max approach). It is also important to raise the awareness of the actors involved in the offer of nautical tourism to the need to create more benign alternatives for the environment, and to communicate and promote them in an effective and persuasive way, anticipating the factors that will influence their adoption by sport tourism consumers (Martins et al., 2021; Mascarenhas et al., 2021). Nautical stations are based in water/outdoor sports, mainly held in natural spaces, and therefore, consumers and providers must be aware of the variables that can damage the environment. There are several examples of the negative

impact of sport tourists activities and equipments on aquatic resources, namely, the erosion of marine biota caused by divers (Hammerton, 2017; Giglio et al., 2018) and the various types of pollution produced by recreational boat engines (e.g., noise, light pollution, oil discharges, and other waste: Perić et al., 2016). Nevertheless, water sports as, for example, sailing, rowing, canoeing, surf, and other less polluting sports, could be inspiring to create a more environmentally friendly human-nature relationship.

Within the scope of resource management, practices focus on the management of water, beaches, nautical centers, marinas and other nautical support infrastructure as well as recyclable waste (NS8, NS9, NS11, and NS16). There is a NS that presents a management plan with the responsibility of each actor by area of intervention (NS17):

*Partner [X] undertakes to inspect all those involved in the events of good practices for the preservation of the aquatic environment, at the request of the partners responsible for them; as well as inform the authorities of any anomaly detected, either in the aquatic environment or on its banks. Partner [Y] undertakes to carry out at least one environmental awareness campaign in schools. Partner [Z] is committed to cleaning the space surrounding the water access platform and raising awareness of the adoption of behaviours consistent with protecting the environment, such as not throwing debris on the floor, using reusable bottles/drums and not voluntarily expel secretions into the surrounding environment.*

Monitoring is referred to at several levels: (i) number of visitors and their impacts/carrying capacities (NS4, NS10); (ii) waste (NS4); (iii) waters (NS9, NS10, NS11, NS15); (iv) biodiversity (NS11, NS15); and (v) consumption (energy and water) (NS11). For example:

*The environmental and territorial enhancement and qualification of the Municipality is supported by an integrative, dynamic and technologically advanced management model that allows the permanent availability of information on the various environmental components, thus contributing to the permanent and objective monitoring of the consequences associated with taking decision. On the coast, there is monitoring of bathing water quality, and biodiversity monitoring is also carried out (NS15).*

In the application forms of the nautical stations, the adoption of guidelines for environmental responsibility was pointed out: (i) already created by other entities (e.g., European Charter for Sport and Sustainable Tourism; Code of Conduct and Good Practices of Portuguese Geoparks); (ii) created (NS1) or being created (NS2, NS4), within the scope of the nautical station [e.g., “in the process of adapting various models/regulations



and existing manuals, to create a specific behavior manual, for the station [NS name omission] or the [NS name omission], which covers partners in the five municipalities, has a quality benchmark in preparation” (NS4)].

Resources management, monitoring and guidelines for environmental responsibility should be incorporated into practices associated with strategic management of the environment. Coccossis and Koutsopoulou (2020) elaborated and applied a tool with three types of indicators to assess sustainability in nautical tourism: core indicators (i.e., general indicators for sustainable coastal tourism); destination indicators (i.e., to access the unique characteristics of different tourism products, such as beach/maritime tourism, urban/cultural tourism, cruising, recreational boating, and nature/ecotourism); and area-specific indicators (i.e., incorporating the crucial and specific aspects of each destination to monitor sustainability).

It was found that there are nautical stations with holistic solutions, which could constitute cases to be analyzed in more depth in order to replicate in other nautical stations. For example, NS15 has an Environmental Management and Information System, within the scope of the Municipal Geographic Information System, which constitutes an online platform that integrates information on various environmental descriptors: Water, Air, Biodiversity, Energy, Soils and Landscape, Waste, Noise and Environmental Education. As advocated by Carneiro et al. (2016) and Yfantidou et al. (2017), this type of measures lead to environmental savings, e.g., the promotion of energy efficiency, consumption of environmentally friendly products and implementation of recycling/reuse programs, and are developed by sport tourism operators. Perić et al. (2016) advocate that “one of the possible solutions for reducing negative effects on the environment is fostering eco-innovations, a technological term usually closely correlated to eco-efficiency and ecological design”. Kelly et al. (2007) have found that significant tourist support existed for options that could increase the overall eco-efficiency of destinations. The study developed by Trstenjak et al. (2020) on nautical tourism in the Mediterranean shows that it is important to have more information about the creation of more environmentally friendly processes as it concludes that there are three major obstacles to greater renewable energy sources: “a lack of awareness and knowledge related to available EU funds intended for achieving sustainable business models and products, attractive financing opportunities for sustainable projects, and complicated bureaucratic procedures” (p. 12).

The area of sustainable transport is contemplated through the implementation of more ecological modes of mobility, such as electric vehicles and bicycles, the evaluation of the various flows related to demand and feasibility studies regarding the implementation of public transport (NS5, NS6, NS11). As pointed out in these quotations: “implementation of sustainable mobility measures” (NS5); “smooth modes of mobility such as

electric vehicles and bicycles are available on the routes” (EN6); “assessment of demand-related road flows and feasibility studies for the implementation of public transport” (EN11).

The development of alternatives to include sustainable transport is in fact a measure that must be considered in a context where natural resources are the key to tourist attractiveness. In this sense, Hsiao (2018) has already recommended for the implementation of the environmental sustainability of the different products and services of nautical tourism, the operationalization and dissemination of more environmentally friendly choices in other areas of the tourism offer, namely, transport. The specification of sport services, taking into account the characteristics of consumers for the adoption of more sustainable behaviors, is important for the implementation of more ecological services, such as the inclusion of sustainable transport alternatives (Martins et al., 2021; Mascarenhas et al., 2021). In this sense, it is of great importance to promote these services given the fact that sport consumers are influenced by a greater aesthetic need and a stronger connection to the local community when considering using sustainable transport in the context of sport tourism (Martins et al., 2021).

## Conclusion

To conclude, this study analyzed the strategic alliances for the development of the offer of nautical tourism products, allowing for a first overview of a pioneering project in Portugal of strategic investment in sport and tourism. The main strategic goal with these alliances was to structure the nautical tourism offer, as well as to increase governance and to promote and market destinations. Although in a less pronounced way, a concern to integrate sustainability in its ecological aspect also emerged as a strategic goal. The results of the adopted environmental sustainability practices showed that there are nautical stations with holistic solutions, which could constitute cases to be analyzed in more depth in order to replicate in other nautical stations, namely, the environmental education practices.

As PNS is a pioneering project and the structuration of the nautical tourism offer is a new area of sport management in Portugal. FO and managers of the nautical stations should create workshops and workgroups to training and to promote the discussion of solutions, sharing of knowledge and development of such offer.

Bearing in mind the urgency of climate action, it is important to raise awareness of FO for the importance of all nautical stations prioritize the integration of sustainability as a strategic goal; future studies should focus on case studies on nautical stations that develop alternatives for sustainable transport. In this way, it will be possible to understand the context of the implementation of this type of actions,

as well as the different factors that facilitate and constrain their effectiveness.

Future research should try to analyse all the PNS and also the remaining dimensions of the applications forms 1. In accordance with the objectives of the study, the direct observation of the environmental sustainability practices implemented by the nautical stations was not carried out, which constitutes a limitation of this study. Thus, future studies should carry out the scientific follow-up of the operationalization of the strategic objectives and practices exposed by the entities, as well as the respective impacts on the management of nautical stations in order to create scientific knowledge for the management of sport tourism, particularly, the nautical tourism.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

## Author contributions

EP, AF, JM, VA, and MM contributed to conception and design of the study. VA organized the database. EP, VA, and AF performed the analysis. EP and VA wrote the first draft of the manuscript. EP, AF, JM, RM, VA, and MM wrote sections of the manuscript. All authors contributed to manuscript revision, read, and approved the submitted version.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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# Survey on the tourist satisfaction of rural homestay based on the theory of importance–performance analysis

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Guilin rural homestays are an important support for rural tourism destinations, serving not only as accommodation but also as a representative of the local culture of the town. To improve satisfaction with rural homestays among tourists, enhance destination attractiveness, and better meet tourist demands for accommodation conditions, this study combines literature and network text analysis to construct an evaluation index system for Guilin rural homestay tourist satisfaction. The data collected by a questionnaire survey based on importance–performance analysis (IPA) are analyzed. The results show that actual tourist satisfaction with the experience in the 21 indexes is lower than the pre-consumption expectation, due to the imperfect facilities, lack of special service development, relative optimization of basic road construction, and the need for improvement in the internal and external environment, among other factors. Through the improvement of the above factors, the satisfaction of tourists to the rural homestay can be improved.

## KEYWORDS

IPA analysis, rural homestay, tourist satisfaction, network text analysis, emotional change

## Introduction

As an emerging representative of the homestay industry, rural homestays are an important support for rural tourism. They make full use of idle old houses and land resources in the countryside, as well as employ the rural population, thus bringing vitality and vigor to the countryside and helping the development of the rural economy. Rural residential accommodation is an important part of rural tourism planning. Subsidized by relevant policies, idle rural land resources are being built and improved to provide rural tourism consumers with a return to nature—a mind–body retreat.

Tourist satisfaction plays an important role in the success of tourist destinations (Meng et al., 2006; Yan, 2018). By studying the degree of satisfaction with rural homestays among tourists, this study has an important theoretical basis and is of practical significance for the industry's sustainable future development.

The term "homestay" originated in Japan and refers to small self-employed hotels that provide a non-commercial, home-like environment, as well as breakfast (Nuntsu et al., 2004; Chen et al., 2013; Yang, 2016). According to the Chinese Ministry of Culture and Tourism, a homestay refers to the use of idle resources, such as local residences, to operate short-term occupancy accommodations with no more than four floors, and a construction area of no more than 800 square meters; the host's participation in the reception provides visitors with an experience of the local natural, cultural, and productive lifestyle in small accommodation facilities (LB/t065-2019, 2019). According to the Organization for Economic Cooperation and Development, rural tourism is defined as tourism that takes place in the countryside: "Villages are the focus and unique selling point of the rural tourism package" (Reichel et al., 2000). With the development of tourism, the homestay industry has become a unique and rapidly developing sector in the hotel industry (Chiu, 2018). The form of homestays began to diversify, as a new form of homestay, the village homestay (which makes use of idle houses), appeared widely in scenic tourist destinations. According to the existing literature, the rural residential accommodations in this study refer to places where the villagers make full use of their own idle houses, creating a tourist offer that combines the local regional culture, human environment, natural landscape, production, and living forms while providing tourists with the experience of rural residential services.

Tourist satisfaction is an important aspect of the tourism service industry (Kozak et al., 2004). In a study of the factors influencing satisfaction with homestay accommodations, Stringer (1981) has examined the preferences of Australian tourists traveling to the United Kingdom and found that the tourists' usual consumer preferences, the location of the accommodation, the environment of the tourist's place of residence, and their understanding of the destination have a great influence on satisfaction. According to the customer satisfaction system constructed by Zhao and Wu (2013) for the Beijing Economy Hotel, the customer-perceived value of an economy hotel is divided into three parts, related to the product, service, and emotional values. Jiang and Sheng (2020) collated and analyzed data from a customer satisfaction questionnaire for residential accommodation, with evaluation indexes for consumers related to the external environment, building layout, space layout, service facilities, service quality, and management benefit of a Suzhou rural residential quarters. Chen's (2018)

research and analysis of the customer satisfaction index based on the perceived value and behavioral intention of the hotel based on online comments divides the customer perception of the homestay into five dimensions, related to functional, interactive, affective, cognitive, and social value. Hu (2021) included five categories in an evaluation index system for guest satisfaction with guesthouses in ethnic areas: location, facilities, services, image, and price. Dong et al. (2021) used the grounded theory to construct an influence model for the degree of satisfaction with residential accommodation and concluded that the factors influencing homestay satisfaction fall into six categories: service facilities, geographic location, house facilities, hygiene, environment, and charm points. In view of this, the introduction of the importance performance analysis (IPA) method into the study of tourist satisfaction with rural homestays can better find problems that can be targeted for solutions.

This study analyzes the gap between the products and services provided by rural homestays in tourist destinations in terms of consumer expectations by constructing a tourist satisfaction evaluation index system and analyzing the data using IPA analysis, pointing out the weak factors among them, which have important practical significance for the sustainable development of homestays, and analyzing them in depth to recognize the shortage of homestay facilities and environment, the lack of homestay special services, and the optimization of homestay basic road construction. The four aspects of the problems of the homestay, the lack of quality of the homestay operators, as well as providing improvement paths for the homestay and putting forward corresponding suggestions and countermeasures to improve the shortcomings of rural homestay and increase the satisfaction of rural homestay tourists in order to achieve the purpose of increasing the income of rural tourism homestay. Studying homestays, exploring the factors and countermeasures affecting their tourism attractiveness, the same has important theoretical significance for the sustainable development of homestays, and gaining an in-depth understanding of the connotation of the perceived value of rural homestays. This paper hopes to enrich and extend the research boundary of tourists' perceived value through the study of the perceived value of homestays and inspire and attract more scholars to focus on and study the perceived value of rural homestays. It also systematically analyzes the difference between the actual satisfaction and importance of perceived value of rural homestay. At present, there are few studies on the perceived value of rural homestay tourists using IPA analysis, and the research on the perceived value of rural homestay using IPA analysis has not been systematically conducted. This study uses IPA analysis to provide a new research method for the study of the perceived value of homestay visitors.



## Research design

### Methodology

#### Importance–performance analysis

Importance–performance analysis is also known as importance–satisfaction analysis in China. At first, IPA was mainly used in the research of image perception, but as the method gradually became more widely known, the scope of its use also became more widespread in the analysis of, for example, service quality, destination image, market segmentation, and destination competitiveness (Ennew et al., 1993; Ford et al., 1999; Baloglu and Mangalolu, 2001; Wade and Eagles, 2003; Croes and Kubickova, 2013). IPA, formally proposed by Martilla and James (1977), has been applied to the research of various industries, especially the service industry, with importance (expectation) listed as the vertical axis, and performance (satisfaction) as the horizontal axis (Martilla and James, 1977). American researcher Evans and Chon (1989) was the first to apply IPA to the study of satisfaction in the context of travel destinations (Evans and Chon, 1989). Oh and Parks (1998) conducted an empirical study on customer satisfaction and tourism using the IPA method. Domestic research on the IPA method has involved various fields in the service industry. Wang and Chen (2017) put forward recommendations for Xiamen Smart Tourism based on data results obtained through the IPA analysis of the four dimensions of facility, service, safety, and environmental experience. Sang et al. (2018) found that Hubei Enshi homestay tourism needed to be improvement in three aspects *via* IPA: the surrounding environment of the homestay, the interaction between the homestay owner and tourists, and the scope of the homestay “home.”

In IPA, the overall and performance averages of the customer product/service attributes are divided into four quadrants. Higher satisfaction and expectation in the first quadrant constitute the superior region, and lower satisfaction and higher expectation in the second quadrant are called the improvement region. Lower expectation in the third quadrant with lower satisfaction is called the opportunity region; while lower expectation with higher satisfaction in the fourth quadrant is called the maintenance region. The IPA method establishes these cross coordinates after inputting the data, and the analysis elements will be directly distributed in each quadrant area so the results are clear and easy to understand. This advantage can help researchers determine the essential factors that need to be improved quickly and effectively. The research on IPA at home and abroad has thus been involved in various fields of the service industry.

#### Web text analysis

Web text analysis extracts a large number of web-based reviews from relevant websites *via* a web crawler

and quantitatively analyzes the comment information (Lu and Li, 2020). With the development of online travel booking platforms, more and more people are choosing to book homestays online, and consumers tend to evaluate the homestay experience online as well. A large number of online reviews can have high credibility and scientificity, which greatly influences the homestay choice (Lin et al., 2021). Network text analysis requires segmentation of the text documents related to the reviews, filtering of the words unrelated to the research content, and then analysis of the documents after the segmentation to yield a vocabulary frequency table based on how often a word occurs, from high to low, to select the content for analysis (Zhao and Wu, 2013).

### Construction of evaluation index system

#### Establishment of the high-frequency feature vocabulary

The evaluation index of perceived value comes from Airbnb, Ctrip, Qunar, Meituan, and other OTA online travel booking platforms. To ensure the accuracy and validity of the perceived value system constructed by the keywords extracted from the online reviews, corresponding conditions were set up for data collection: first, the collection areas for online reviews were the three provinces of southwest Yunnan, Guangxi, and Guizhou; second, the score for the homestay had to be 4.5 and above. Octopus data grabber was used to capture the keywords from 1 million online reviews collected from the main domestic online tourism platforms such as Ctrip, Qunar, eLong, Mafengwo, and Tuniu. **Table 1** is a summary table of the top 50 keywords in online reviews.

#### Construction of evaluation index system for satisfaction of rural homestay tourists

Woodruff (1997) believed that the main source of consumer expectation in buying and using goods was the value of the goods themselves, and the degree of satisfaction is determined by whether the actual effect of the commodity itself on the consumer is greater than the expected value the consumer perceived before using the commodity, based on his theory, Woodruff distinguished between perceived and added value. Sheth et al. proposed that any commodity service can be divided into five dimensions of product value: function, society, cognition, emotion, and context. The functional value refers to the value attached to the commodity itself; the emotional value refers to the change in the value of the commodity brought about by the change in consumers' emotions; and the cognitive value refers to the injection of new knowledge, the new change in the consumer's cognition, and the new cognition value of goods and services can also be interpreted as their novelty. The

TABLE 1 Online rating of high-frequency feature words.

	Characteristic word	Frequency	Part of speech		Characteristic word	Frequency	Part of speech
1	Boss	235577	Nouns	26	Thoughtful	38452	Adjectives
2	Service	208863	Nouns	27	Yard	38259	Nouns
3	Room	192296	Nouns	28	Traffic	37415	Nouns
4	Environment	190514	Nouns	29	Tidy	35846	Adjectives
5	Clean	160536	Adjectives	30	Pretty	33727	Adjectives
6	Inns	153447	Nouns	31	Reception	32619	Nouns
7	Passion	149469	Adjectives	32	Delicious	27568	Adjectives
8	Convenient	125606	Adjectives	33	Geography	27035	Nouns
9	Position	121276	Nouns	34	Housekeeper	26202	Nouns
10	Comfortable	89277	Adjectives	35	Luggage	25086	Nouns
11	Facilities	82643	Nouns	36	Style	24451	Nouns
12	Sanitation	82459	Nouns	37	Arrangement	23182	Nouns
13	Quiet	71781	Adjectives	38	Ancient town	20723	Nouns
14	Check in	68050	Verbs	39	Lay out	15911	Nouns
15	Satisfy	56703	Adjectives	40	Store	19101	Nouns
16	Cozy	53931	Adjectives	41	Supplies	18951	Nouns
17	Attitude	53328	Nouns	42	Hot water	17738	Nouns
18	Friend	49038	Nouns	43	Affordable	17689	Adjectives
19	Warm	46469	Adjectives	44	Intimate	17511	Adjectives
20	Boss lady	45748	Nouns	45	Bathroom	17438	Nouns
21	Furnish	44807	Nouns	46	Experience	17417	Verbs
22	Value for money	43749	Nouns	47	Stay	17364	Verbs
23	Breakfast	43600	Nouns	48	Suggest	17030	Nouns
24	Free	39221	Nouns	49	Pick up	16655	Verbs
25	Features	39098	Nouns	50	Easy to find	16125	Verbs

social value is the connection between goods and services and social groups, while the situational value refers to the difference in commodity value due to differences and changes in actual situations (Fang and Qu, 2018).

Based on a literature review and analysis, we divide customers' perceived value in the customer satisfaction system into functional value, homestay service value, the four dimensions of emotional value, and price cognitive value (Xiao, 1996; Tian and Wu, 2011; Wei, 2011; Li, 2012; Zhao and Wu, 2013; Chiao, 2014; Chen, 2018; Fang and Qu, 2018; Yan, 2018; Wu et al., 2018; Jiang and Sheng, 2020; Dong et al., 2021; Hu, 2021). Functional value refers to the basic facilities and equipment of the homestay, such as the road, landmarks, room, bed, and toilet, as well as whether the host is hospitable or not, and whether the staff efficiency is high or low. The emotional value is whether or not the host provides warm-hearted shuttle service, the service of the staff is considerate, and the host prepares local specialties to serve the guests. The cognitive value refers to the evaluation of the cost-effectiveness of the homestay after the tourist experience, and so on.

By clearly summing up the characteristic categories of high-frequency words in the tourists' online comments, we constructed an evaluation system of perceived value from the

perspective of the tourists' online comments, as shown in Table 2.

## Questionnaire design

The questionnaire was divided into three parts. The first part was about the importance of each index and the evaluation of the degree of satisfaction. This section contained 21 indicators, each of which needed to be judged in terms of pre-consumption expectations and post-consumption actual satisfaction, each measured on a 5-point Likert scale, where pre-consumption expectation ranged from 1, not important at all, to 5, very important, and actual experience satisfaction ranged from 1, not at all satisfied, to 5, very satisfied (Wang et al., 2012). The second part contained questions about the basic situation of the homestay, including the number of times, days, access to information, and so on. The third part dealt with demographic characteristics, including gender, age, occupation, monthly income (cost of living), and questions about the provinces. According to the perceived value system of the above collation—and combined with the actual situation of the keyword design questions—the question design is shown in Table 3.

**TABLE 2** Evaluation index for tourist satisfaction with Guilin rural homestay house.

Primary index	Secondary index
A. Functional value satisfaction	A1. External traffic in the homestay
	A2. The homestay is close to the scenic spot
	A3. The homestay room is large
	A4. Room decoration style
	A5. The sanitary condition of the bed and breakfast room is good
	A6. The bed is comfortable
	A7. The bathroom is clean and tidy
	A8. The homestay hot water supply stable
	A9. The room air-conditioning is in normal use and no noise
	A10. The Wi-Fi in the room is fast
	A11. The room has a balcony
	A12. The room is well-insulated
	A13. Courtyard environment
	A14. Overall residential decoration style
B. Satisfaction with the value of bed and breakfast service	B1. Normal charges for bed and breakfast service
	B2. The service attitude of the accommodation staff (warm, considerate, and patient)
	B3. Room service for bed and breakfast (thoughtful, fast)
C. Emotional value satisfaction	C1. Homestay hosts provide guided tour services (professional, detailed, efficient, and considerate)
	C2. The homestay offers local food
	C3. Homestay provides shuttle service, pick up, and drop off station
D. Price perception, value satisfaction	D1. Homestay is cost effective

## Questionnaire

The survey was conducted in Yangshuo County, Guangxi Province, starting on May 18, 2020, over a 4-month period, and a total of 221 valid questionnaires were collected, with an effective collection rate of 93.644%.

In this study, 63 valid questionnaires were collected through the Internet and random distribution on the spot. Owing to the slow speed and difficulty of collecting questionnaires, this was combined with network-issued questionnaires by the screening of relevant network groups, which provided access to eligible subjects. First, questionnaires were sent out *via* WeChat, with homestay operators setting up WeChat groups and friends sharing the questionnaire information. The specific operation was as follows: the researchers used Ctrip to find the target residential accommodations and get in touch with the operators. The researchers then asked for the operators' support and cooperation, and the homestay operators pulled former and current visitors into the same WeChat group to help

forward the questionnaire. Second, the QQ Group distributed questionnaires, which were first sent directly to the QQ friends who met the identity of the surveyed users to fill in the form. Second, after searching the relevant QQ groups (Guilin mutual aid travel group and Guangxi Guilin Travel Group) and joining them, the QQ Group released the questionnaire link, asking for respondents with Yangshuo residential experience to help fill out the questionnaire. The pertinence of the Network Questionnaire ensures its authenticity and reliability, as well as improving the collection speed and yielding 158 valid questionnaires.

## Results and analysis

### Demographic characteristics of the sample

The statistical results for the demographic characteristics of respondents from the valid questionnaires are shown in [Table 2](#).

Women accounted for 66.5% of the respondents (men, 33.5%). It appeared that women prefer to experience a homestay, pursue a specific lifestyle, and experience a different lifestyle. More than 90% of the respondents were in the range of 18–40 years old, and 80% of the respondents were 18–25 years

**TABLE 3** Summary of questionnaire items.

Number of questions	Content of questions
Q1	External traffic of homestay
Q2	Homestay is close to the scenic spot
Q3	The homestay room is large
Q4	The decoration style of the homestay room
Q5	Sanitary conditions of bed and breakfast rooms
Q6	The bathroom is clean and tidy
Q7	The comfort of the bed
Q8	Homestay hot water supply is stable
Q9	Normal use of room air conditioning
Q10	The Wi-Fi in the room is fast
Q11	The room has a balcony
Q12	The room is well-insulated
Q13	There is a courtyard downstairs where you can play
Q14	The overall decoration style of the homestay
Q15	Normal charges for homestay service
Q16	The homestay service staff's attitude (warm, considerate, patient)
Q17	The homestay room service is very thoughtful and fast
Q18	The host provides the warm service as well as the personalized tour guide service
Q19	Local food is available at the hostel
Q20	Provides pick-up and drop-off car and/or pick-up and drop-off station services
Q21	The homestay price is economical and practical

old. Homestay consumers appeared among all of the monthly income groups, and we can see that the choice of homestay hotels at tourist destinations has become increasingly common: there are homestay tourists across all walks of life, which shows that homestays have a wide appeal for all sectors of society.

## Analysis of importance and performance

To ensure the reliability and consistency of the survey data, the Cronbach's alpha coefficient was used to test the reliability of the questionnaire in SPSS (Oh, 2001; Bacon, 2003; Asif et al., 2019a,b); the Cronbach's alpha coefficient for pre-consumption expectations is 0.980, the Cronbach's alpha coefficient for post-consumption satisfaction is 0.983, and the total reliability of the questionnaire designed in this study is 0.986. According to the Reliability Index, a value of 0.8 or above indicates that the reliability of the questionnaire and its data are high; here, the values are above 0.9, which indicates that the information collected from this questionnaire is true and reliable (Wang et al., 2012; Jin and Park, 2019).

The importance and performance values of the four primary indicators (Table 4) were obtained by averaging the importance (expectation) and performance (satisfaction) values of the secondary indicators (Table 5). The entire performance of expectation value and degree of satisfaction follows the degree of satisfaction with bed and breakfast service > price cognition value satisfaction degree > function value satisfaction degree > emotion value satisfaction degree. The expectation value of the four first-class indexes is higher than the satisfaction value, while the expectation value of the homestay service is the highest, the satisfaction degree is the highest, and the affective value is the lowest for the tourists to choose a homestay. The expectation value of the first index appears to be positively correlated with the degree of satisfaction. The difference between the expectation value of the functional value and degree of satisfaction is the largest, which shows that there is a big gap between the actual situation of the homestay house and tourists' expectations.

Looking at the expected values of the secondary indicators (Table 6), the choice of the rural homestay is focused on the stability of the hot water supply, the cleanliness and tidiness of the toilet, the sound insulation of the room, the air conditioning, and the available service. Expected values at the bottom of the index ranking are provision of shuttle service, room area, and downstairs courtyard environment.

In terms of satisfaction with the secondary indicators (Table 6), the top 5 of the 21 indicators were the stable supply of hot water, the service attitude of the staff (warm, considerate, and patient), the normal charge for the service, the comfort of the bed, and the cleanliness and tidiness of the toilet. The top five are all in the functional value satisfaction and

homestay service value satisfaction categories. The lowest degree of satisfaction was found for provision of a pick-up and drop-off car, station pick-up services, and the residential downstairs courtyard environment.

On the whole, the expectation value and the degree of satisfaction all rank in the top five of second-class index for the toilet being clean and tidy (7), the bed and breakfast hot water supply being stable (8), and the bed and breakfast service personnel's service attitude (warm, sweet, patient) (16), with two items from the functional value degree of satisfaction belonging to the first-class index and the residential service value satisfaction degree. All 21 measures of satisfaction were below pre-consumption expectations, with the difference between expectation of and satisfaction with room sound insulation (12) reaching above 0.45, which indicates a big difference between expectation and actual satisfaction.

## Importance–performance analysis

The data show that the average value of rural tourists' pre-consumption expectation is 3.764, and the average value of the post-consumption satisfaction is 3.474. The IPA quadrant graph of the *g* satisfaction factor index is based on the general mean of expectation and the general mean of satisfaction. The horizontal axis of the IPA graph is post-consumption satisfaction, and the vertical axis is the pre-consumption expectation (Figure 1).

### First quadrant (dominant region)

The first IPA quadrant is usually called the dominant index region, and the factor index is characterized by high expectations and satisfaction. As can be seen from Figure 1, there are 10 indicators in the dominant region, corresponding to room decoration style (A4), the comfort of the bed (A6), the cleanliness and tidiness of the toilet (A7), the stable supply of hot water (A8), the normal use and no noise of the room air-conditioning (A9), the normal charge for the room service (B1), the service attitude (warm, considerate, patient) (B2), the room service of the bed is very thoughtful and fast (B3), the host provides tour guide service (professional, detailed, efficient, and considerate) (C1), and the price of the bed is economical (D1). Of the 21 elements, these 10 aspects are in the dominant quadrant, so the rural homestay operators should pay special attention to them. It is also worth noting that, for these 10 indicators, the after-consumption satisfaction is higher but lower than pre-consumption expectations, so these 10 aspects should be the focus for improvements to enhance customer satisfaction.

### Second quadrant (improvement area)

The second quadrant is often referred to as the key improvement (Pia) indicator area. The indicators located in this

TABLE 4 Respondent demographic characteristics.

	Demographic attribute	Frequency/times	Percentage/%	Effective percentage/%	Cumulative percentage/%
Gender	Male	74	33.5	33.5	33.5
	Female	147	66.5	66.5	100.0
	Total	221	100.0	100.0	—
Age	Under 18	10	4.5	4.5	4.5
	18–25	183	82.8	82.8	87.3
	26–40	23	10.4	10.4	97.7
	41–65	5	2.3	2.3	100.0
	Over 65	0	0	0	100.0
	Total	221	100.0	100.0	—
Monthly income (RMB)	Under 1,500	115	52.0	52.0	52.0
	1,500–3,500	50	22.6	22.6	74.6
	3,501–5,000	32	14.5	14.5	89.1
	5,000 and up	24	10.9	10.9	100.0
	Total	221	100.0	100.0	—
Occupation	Staff of government agencies	7	3.2	3.2	3.2
	Staff of enterprises and institutions	31	14.0	14.0	17.2
	Self-employed	5	2.7	2.7	19.9
	Freelancer	19	8.6	8.6	28.5
	Student	139	62.9	62.9	91.4
	In the news	19	8.6	8.6	100.0
	Total	221	100.0	100.0	—

TABLE 5 Importance–performance analysis of the primary indicators.

Primary index	Expected value before consumption	Post-consumer satisfaction	Difference	If satisfied
A. Functional value satisfaction	3.770	3.466	−0.304	No
B. Satisfaction degree of service value of homestay	3.857	3.561	−0.296	No
C. Emotional value satisfaction	3.650	3.410	−0.240	No
D. Price perception, value satisfaction	3.801	3.511	−0.290	No
Composite situation	3.746	3.474	−0.272	No

quadrant have a higher level of expectation but a lower post-consumption satisfaction, and the indicators in this quadrant area should be the focus for improvement among rural homestay operators. As can be seen from **Figure 1**, there are three indicators in this quadrant: sanitary condition (A5), sound insulation effect (A12), and the overall decoration style (A14). The *t*-values and two tails of these three indexes were found by SPSS Data Software as follows: good sanitary condition (A5) ( $t = 5.896, p = 0.000 < 0.05$ ); sound insulation effect (A12) ( $t = 7.121, p = 0.000 < 0.05$ ); and decoration style (A14) ( $t = 5.048, p = 0.000 < 0.05$ ). All three indexes are lower than the pre-consumption expectation, with significance at the 5% level. This indicates that there is a significant difference between the pre-consumption expectation and the post-consumption satisfaction related to the perceived value of tourists. Substantial improvement is needed for these three indicators, which should be a focus for the development of

rural residential accommodation. Both the government and the operators should increase efforts to solve the problems related to these indicators to enhance tourist satisfaction.

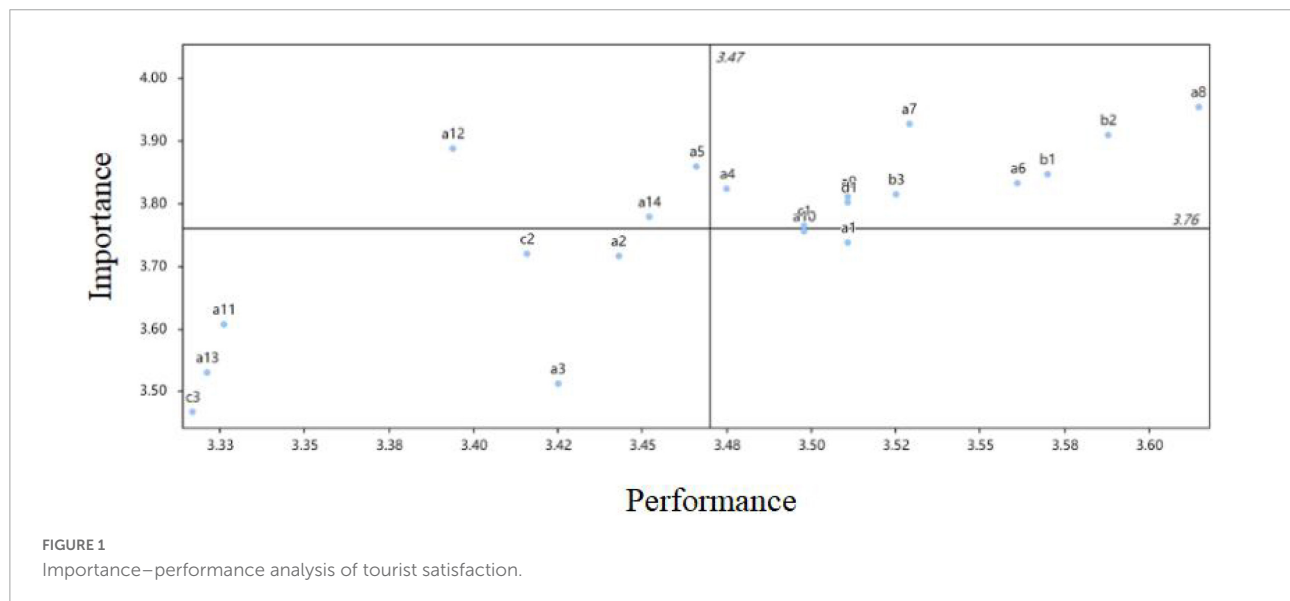
### Third quadrant (opportunity area)

The third quadrant is called the opportunity index region, and items in this quadrant are characterized by low expectation and low satisfaction. As can be seen in **Figure 1**, there are six indicators in this region: distance from the scenic spot (A2), the large size of the room (A3), room with a balcony (A11), the downstairs courtyard environment (A13), local food characteristics (C2), and provision of shuttle or station shuttle service (C3). Factor indicators located in this area are generally considered as elements that cannot be (or are not worth being) improved because of the low expectations and satisfaction. According to the *t*-test results of the paired samples,



TABLE 6 Importance–performance analysis of the secondary indicators.

Indicator system	Average expected value before consumption	Sort by degree of expectation	Average satisfaction after consumption	Ranking of satisfaction	Difference value	T-value	Probability of double tail significance ( <i>p</i> )
A1. External traffic in the homestay	3.738	15	3.511	9	-0.227	3.539	0.000
A2. The homestay is close to the scenic spot	3.715	17	3.443	15	-0.272	4.301	0.000
A3. The homestay room is large	3.511	20	3.425	16	-0.086	1.280	0.202
A4. Room decoration style	3.824	8	3.475	12	-0.349	5.513	0.000
A5. The sanitary condition of the bed and breakfast room is good	3.860	5	3.466	13	-0.394	5.896	0.000
A6. The bed is comfortable	3.833	7	3.561	4	-0.272	4.324	0.000
A7. The bathroom is clean and tidy	3.928	2	3.529	5	-0.399	6.527	0.000
A8. The homestay hot water supply stable	3.955	1	3.615	1	-0.340	5.271	0.000
A9. The room air-conditioning is in normal use and no noise	3.810	10	3.511	7	-0.299	4.607	0.000
A10. The Wi-Fi in the room is fast	3.756	14	3.498	11	-0.258	4.464	0.000
A11. The room has a balcony	3.606	18	3.326	19	-0.280	3.908	0.000
A12. The room is well-insulated	3.887	4	3.394	18	-0.493	7.121	0.000
A13. Courtyard environment	3.529	19	3.321	20	-0.208	2.855	0.005
A14. Overall residential decoration style	3.778	12	3.452	14	-0.326	5.048	0.000
B1. Normal charges for bed and breakfast service	3.846	6	3.570	3	-0.276	4.239	0.000
B2. The service attitude of the accommodation staff (warm, considerate, and patient)	3.910	3	3.588	2	-0.322	5.083	0.000
B3. Room service for bed and breakfast (thoughtful, fast)	3.814	9	3.525	6	-0.289	4.714	0.000
C1. Homestay hosts provide guided tour services (professional, detailed, efficient, and considerate)	3.765	13	3.498	10	-0.267	4.525	0.000
C2. The homestay offers local food	3.719	16	3.416	17	-0.303	4.584	0.000
C3. Homestay provides shuttle service, pick up, and drop off station	3.466	21	3.317	21	-0.149	2.082	0.038
D1. Homestay is cost effective	3.801	11	3.511	8	-0.290	4.059	0.000



the  $p$ -values for pre-consumption expectation and post-consumption satisfaction are less than 0.05 for the six indexes, except for Index 3, and the pre-consumption expectation value is larger than the post-consumption satisfaction mean value. Items 2, 11, 13, and 19 can therefore be considered sub-key improvement projects.

#### Fourth quadrant (maintenance area)

The fourth quadrant is called the maintenance index area because of its low expectation and high satisfaction. According to **Figure 1**, external traffic (A1) and fast Wi-Fi (A10) in the room are located in this area. The double-tail significance probability of these two indexes is equal to 0, and there appears to be a strong correlation between expectation and satisfaction, although it is the index of low expectation and high satisfaction.

## Conclusion

### Results

Homestay facilities and equipment are not perfect. The sanitary conditions, the sound insulation effect, and the entire decoration style are the three aspects for which tourists have high expectations but low satisfaction. These are key areas for improvement. Homestays lack special service development. Through the above analysis, it is clear that the opportunity to eat native special food suffers from the low expectation/low satisfaction phenomenon among target visitors, so this needs key promotion. The construction of basic roads for residential quarters still needs to be optimized. The distance from scenic spots to the homestay yields both low expectation and satisfaction. On a more positive note, the homestay service staff's service attitude (warm, thoughtful, patient) and room service are very thoughtful and fast, yielding both high expectations and high satisfaction, and this needs to be maintained.

### Suggestions

#### Improvement of homestay facilities and environment

According to the actual circumstances of the room and the design position, the room should be soundproofed to reduce the influence of noise on the customer's rest and improve customer satisfaction. It is also necessary to improve the standard of room hygiene. For this, it may be necessary to hire professional health service personnel, rather than choosing the cheapest cleaners to save costs. Homestays should develop a set of health service standards to ensure room hygiene. The bedclothes and sheets should be regularly disinfected and replaced to ensure the most hygienic and comfortable service for customers. During the construction of homestay rooms, appropriate steps should be

taken to increase the area and strengthen room lighting, while homestays can also increase their courtyard area to provide entertainment for customers and enhance customer satisfaction.

#### Development of special services for homestays

It is necessary to strengthen the catering part of the homestay and incorporate local specialties into the menu, so that customers can enjoy the most local flavor in during the homestay experience, and reduce customers venturing to the street to eat local food. In the future development of homestays, the service of additional pick-up at the station can be increased, which would also shorten the time it takes to arrive at the homestay and thus improve the customer's experience.

#### Optimization of basic road construction to support homestay destinations

Although external traffic had lower expectations and higher satisfaction in the data results, it is not necessary for homestays in Yangshuo to develop naturally. Contacts with local homestay operators in Yangshuo during a Ctrip internship revealed that, due to the government's efforts to repair roads to scenic spots and restrict the entry of non-local vehicles, the occupancy rate of many homestays has been affected, causing many businesses to complain. It is hoped that the relevant government departments will increase the efficiency of the engineering team during the road construction period and ensure quality and efficiency, which would reduce the impact of the road on homestays, allowing them to improve their occupancy rates and increase profits.

#### Quality improvement of homestay operators

Homestay operators should study the relevant material for running a bed and breakfast and improve their knowledge and self-cultivation, so they can give the customers the most comfortable feeling in terms of amenities and style, as well as enhance the customer's experience. Homestay operators regularly learn the relevant esthetic collocation knowledge in terms of overall decoration and homestay items, allowing them to draw on their best judgment to enhance customer satisfaction in terms of decoration style. They can also solicit feedback from customers to enhance the homestay experience. It is also necessary to strengthen the personality training of homestay workers and encourage them to have more in-depth exchanges with customers, including small talk about local scenic spots and in-depth communication about local culture. This will strengthen the creation of a homestay general atmosphere and improve customer satisfaction.

## Discussion

This study uses IPA analysis to analyze the tourist satisfaction of rural homestays and proposes improvement

methods and suggestions in four major aspects: facilities and environment of homestays, development of special services, optimization of basic road construction, and quality improvement of homestay operators, in order to improve the shortcomings of rural homestays and provide a new research method for the study of tourist perception value of homestays. This study provides a new research methodology. It also aims to increase the income of rural homestay operators and to make rural homestays sustainable. The study also aims to increase the income of rural homestay operators and make the sustainable development of rural homestays, which has important practical and theoretical significance for the sustainable development of rural homestays.

## Research limitation and further research

The evaluation index system assessing the degree of satisfaction with tourists to rural areas constructed in this study needs further verification and improvement in future research, as there are some deficiencies in it. It is hoped that, in a following study, the sample data will be expanded and the occupational percentages of the subjects will be averaged to ensure the validity of the data and the authenticity of the results. The object of this study was only Yangshuo, which is a tourist destination within the three provinces of southwest Yunnan, Guangxi, and Guizhou. Increasing the sample size would make the data analysis more representative, and the analysis results can be used to promote the healthy development of rural homestays.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

## Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation

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and institutional requirements. Written informed consent was obtained from all participants for their participation in this study.

## Author contributions

XZ: conceptualization, methodology, and funding acquisition. PM: software. YW and PM: formal analysis. YW: investigation and data curation. XZ and PM: writing—original draft preparation. XZ and YW: writing—review and editing. All authors have read and agreed to the published version of the manuscript.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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# The mechanism of body–mind integration in the formation of destination attachment: A comparison of first-time and repeat tourists

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By constructing a person-body–mind-place framework of destination attachment, this study explores the physical and mental formation mechanism of destination attachment and examines its dynamics between first-time and repeat tourists. The present study found that multisensory impressions can, directly and indirectly, affect destination attachment through emotional and cognitive psychological mediation. There are differences between first-time tourists and repeat tourists in terms of this mediation path. As the frequency of travel increases, the influence of multisensory impressions gradually increases. The formation of destination attachment is dominated by emotion for first-time tourists, whereas it is dominated by cognition for repeat tourists. Based on these findings, theoretical and practical implications are presented.

## KEYWORDS

multisensory impressions, embodied theory, dual-system theory, emotional responses, cognitive responses, destination attachment

## Introduction

As a representation of the human-land relationship, destination attachment has unique tourism marketing value (Ramkissoon, 2016), and exploring its formation mechanism is of great significance to tourism industry. However, previous studies tend to explain the formation of destination attachment in terms of either social construction (i.e., the perspective of the body) or subjective construction (i.e., the perspective of the mind) while ignoring the process of body–mind unity in the formation of destination attachment (Kastenholz et al., 2020). With the increasing rise of embodied theory emphasizing the “oneness of mind and body” in tourism research, its explanatory power for destination attachment has been recognized by some scholars (Yuksel et al., 2010). However, systematic integration studies have yet to be conducted.

Destination attachment is formed through the interaction of tourists with the tangible/intangible environment of the destination, and it is embodied in the process of travel experience (Loureiro, 2014). Tourists use their five senses to get information about a



destination. Multisensory impressions are the first impression of tourists after entering the destination, which directly determines the perception, attitude, and behavior of tourists during the tour (Manosuthi et al., 2021). These impressions naturally become a key factor affecting destination attachment (Lv and McCabe, 2020). In addition, when tourists' bodies are in a tourist situation, their psychological states may be activated (Krishna, 2012). Therefore, the interaction between tourists and the destination involves multisensory stimulation and emotional and cognitive psychological processes (Rakić and Chambers, 2012). Emotion and cognition coexist in attachment relationships as potential components of destination attachment (Scannell and Gifford, 2010). Although previous studies have recognized the importance of individual psychological factors on destination attachment (Prayag and Lee, 2019), they have not differentiated between emotional and cognitive pathways in shaping the different dimensions of destination attachment.

Moreover, due to their different travel experiences, first-time tourists may be more likely to trigger emotional reactions after receiving information through the senses. In contrast, with increased travel frequency, repeat tourists emphasize psychological meaning (Fuchs and Reichel, 2011). While previous studies have confirmed that a difference exists in the intensity of destination attachment between first-time and repeat tourists (Morais and Lin, 2010), determining how and in which ways first-time and repeat tourists diverge in the psychological mechanism of sensory impression influencing destination attachment has yet to be examined.

Therefore, this study aims to explore the relationship between multisensory impressions, emotional responses, cognitive responses, and destination attachment and identify differences in these relationships between first-time and repeat tourists. The shortcomings of existing research will be accounted for by achieving the above goals, and the mind–body mechanisms underlying the dynamic formation of destination attachment will be discovered.

## Literature review and hypotheses development

### Destination attachment and its formation mechanism

Rooted in the attachment theory, destination attachment is defined as the cognitive and emotional linkage that tourists establish with a tourism destination (Japutra, 2020), reflecting the extent to which an individual values and identifies with a particular environmental setting (Yuksel et al., 2010). The sense of physically being and feeling “at home” can be considered a sign that a tourist creates a connection to the destination. Although destination attachment has been mentioned as a multidimensional construct (Io and Wan, 2018), the two-dimensional division, which includes place identity and

place dependence (Yuksel et al., 2010), is widely recognized by scholars (Liu et al., 2019).

Place identity refers to a tourist's rich memories and affection for a particular destination, which are preserved in the definition of self. Place identity underscores the cognitive domain of a sense of place, which is related to symbolic meanings that a tourist ascribes to and self-identifies with that destination (Williams and Vaske, 2003). Place identity can be developed through positively balanced perceptions (Dwyer et al., 2019). Place dependence refers to the collection of social and material resources that meet the specific needs of tourists and represent the unique qualities of a place. Place dependence is a form of functional attachment, providing features and conditions that support achieving specific goals or desired activities (Williams and Vaske, 2003). Place dependence occurs when tourists show a functional need for a destination that is not transferable to another destination (Mlozi and Pesämaa, 2013). In the existing research on the measurement of the destination attachment model, place dependence and place identity are often used as second-order latent variables to conduct path tests (Hosany et al., 2017; Kastenholz et al., 2020). Although this can encompass the overall characteristics of destination attachment from a macro perspective, it ignores the complexity of the internal structure of destination attachment and the uniqueness of the formation mechanism of different dimensions (Mlozi et al., 2012). Therefore, the importance of refining the two-dimensional construct of destination attachment has been well approved (Mlozi et al., 2012).

Developing a market base made up of attached tourists is important, as they are less likely to change their choice of place despite the offerings of the alternatives (Loureiro, 2014). Destination attachment has the potential to improve satisfaction (Ramkissoon, 2016), foster attitudinal loyalty (Yi et al., 2018), expand word-of-mouth advocacy (Pandey and Sahu, 2020), and promote revisiting (Jian et al., 2021). Destination attachment is even seen as the key to enhancing the competitiveness of tourist destinations through increased patronage and profits (Dwyer et al., 2019). Exploring the formation mechanism of purposive attachment thus becomes an important topic.

There are two main paradigms of place attachment formation mechanisms. The earliest is social constructivism, which emphasizes physical practice and gives spatial meaning through interaction (Tuan, 1975). An abstract space becomes a meaningful place through experience (Kastenholz et al., 2020). Individuals are not directly attached to places but to the symbolism they represent. The classic “place ballet” view explains how people's movement in space and time forms the process of place meaning (Seamon, 1980). However, this physically-based idea of the formation of place attachment is limited to theoretical discussion and lacks empirical evidence. Furthermore, the single view of physical practice ignores the complex psychological activities of tourists in the tourism situation.

The more recent subjective constructivism synthetically describes the formation of place attachment by a tripartite

framework of “people-place-psychological processes” (Scannell and Gifford, 2010). Psychological processes link people with a place, thus dominating this research branch. However, existing research explores the effect of a comprehensive psychological variable that blends the cognitive and affective effects (e.g., motivations, satisfaction, personal involvement, destination image, perceived attractiveness, and self-congruity) on place attachment as a one-dimensional concept (Prayag and Ryan, 2012; Xu and Zhang, 2016; Riper et al., 2019; Tasci et al., 2022; Usakli et al., 2022). Little is known about the concrete effect of cognition and emotion in isolation on place attachment, especially on the different dimensions of place attachment. Moreover, this research branch also ignores the influence of physical elements in co-shaping place attachment. Therefore, the research gaps are two-fold. First, on the whole, the process of body–mind unity in forming destination attachment has yet to be studied. Second, regarding the mind branch, the separation effect of cognition and emotion on the different dimensions of destination attachment has to be delineated. The two gaps will be bridged together in this study.

## Embodied theory and multisensory impressions

The embodied theory emphasizes that consumers’ physical senses first receive external marketing stimuli, which is then processed by consumers’ psychology, followed by affecting their attitudes and behaviors (Walther-Hansen, 2020). The senses are not independent of psychology but rather participate in the process of psychology. The mind must be understood in the context of its relationship to the body, which is the process of “body–mind oneness”. When the external environment stimulates different sensory cells of tourists, tourists first form different “sensations” and then produce a “conscious sensory experience” (Ji and King, 2018). In the research topic of the people-land relationship under the embodied paradigm, the body of tourists is similar to the plasma membrane of cells, which plays a role in material exchange and energy transfer (Vaske and Kobrin, 2001). In this connection between the inside and outside of the interface, the birth of a new people-land relationship occurs.

The concept of multisensory impressions first appeared in the field of sensory marketing and has recently attracted the interest of tourism scholars (Manosuthi et al., 2021). Fakfare et al. (2021) found that multisensory impressions are a good way to determine the perception of tourists’ degree of sensory stimulation when visiting a destination and can be summarized into five aspects: sight, hearing, taste, touch, and smell (Chen et al., 2021). Agapito et al. (2017) posited that multisensory impressions result from screening stimuli and experiences by tourists’ bodily senses. Usually, only those unique, profound, and valuable sensory stimuli and experiences will leave multisensory impressions. In recent years, multisensory experiences have been mentioned as an

important prerequisite for destination attachment formation. Human geography studies have shown that the five senses are crucial for developing human-land relationships (Xiong et al., 2015). Tourists interact with destinations through their five senses (Agapito et al., 2017), stimulating an emotional preference for destinations. Multisensory impressions reflect the quality of the travel experience and link the objective physical environment with subjective emotional attachment (Agapito et al., 2014). Extraordinary multisensory impressions not only enhance tourists’ intimacy with the destination but may also trigger more identification with the destination (Lv and Wu, 2021). Multisensory impressions satisfy tourists’ needs for sensory pleasure and prompt tourists to reflect on the relationship between themselves and the destination, which is conducive to the formation of place dependence and place identity (Yang et al., 2021). The stronger the multisensory impression, the stronger the visitor’s attachment to the destination is likely to be. Therefore, this study proposes the following:

*H1*: Multisensory impressions have a significant positive effect on destination attachment.

*H1a*: Multisensory impressions have a significant positive impact on place dependence.

*H1b*: Multisensory impressions have a significant positive impact on place identity.

## “Emotion-cognition” psychological systems

After external stimuli are input into the body of tourists through the senses, the tourists still need to go through a complex psychological process before they can have a conscious sensory experience, affecting subsequent behavioral choices (Jiang, 2020). Some scholars have proposed the “emotion-cognitive dual system model” to subdivide the complex psychological state of individuals (Alyahya and McLean, 2021). The dual system theory is also regarded as an information processing theory, which explains the formation of individual attitude preferences through two different information processing pathways (the limbic pathway of the emotional system and the central pathway of the cognitive system; Alyahya and McLean, 2021). Among them, the emotional system adopts the principle of intuition, requiring individuals to process information quickly with less effort. In contrast, the cognitive system adopts the principle of rationality, requiring individuals to use enough cognitive resources to comprehensively evaluate the content of the information. Emotional and cognitive responses trigger travel destination preferences (Michael et al., 2019).

Emotions represent distinct mental states characterized by episodes of intense feelings associated with a specific referent and instigate specific response behaviors, which are often unconsciously aroused. Emotions fundamentally shape the tourism experience; particularly, positive emotions are the core of hedonic tourism (Kim and Fesenmaier, 2015). Empirical evidence

highlights the outstanding role of positive emotions in tourism, positively arousing tourist experiences connected to increased satisfaction, memorability, and loyalty (Agapito et al., 2017). Hosany and Gilbert (2010) developed the Destination Emotion Scale, arguing that positive emotion in tourism destinations involves a psychological state characterized by joy, love, and positive surprise.

However, tourists go beyond the superficial reception of sensory information and enter the consciousness domain of the mind (Wen and Leung, 2021), triggering deep-level cognition such as imagination, association, and thinking (Collins and Allard, 2001). Cognitive responses are the collection of all mental abilities and processes related to knowledge, memory, judgment, and even decision-making, which is a conscious mental process (Brown and Raymond, 2007). Tourists' thinking and understanding of the destination environment occur throughout the entire tourism process. There is widespread support for cognitive assessment of destinations regarding goal congruence, certainty, and novelty (Choi and Choi, 2019).

Although emotion and cognition are independent psychological processes, they are closely related (Plass and Kalyuga, 2019). The broaden-and-build theory of positive emotions suggests that positive emotions promote cognitive processing (Gable and Harmon-Jones, 2010). The emotions evoked by tourists interacting with the destination environment are all prerequisites for evaluating the cognitive experience of tourism (Tsai et al., 2020). Therefore, this study proposes the following:

*H2: Emotional responses have a significant positive impact on cognitive responses.*

Sensory marketing theory emphasizes that consumers interact with the outside world through their senses, affecting their emotions, attitudes, memories, and behaviors (Sthapit, 2019). Sensory stimuli, which are regarded as key tools for creating a tourism experience, are an important prerequisite for activating tourists' emotional and cognitive responses. Tourists' multisensory impressions partly explain the positive emotions associated with travel experiences (Yang et al., 2021). In the context of rural tourism, Kastenholz et al. (2020) verified the positive effects of multisensory impressions on emotions, and different sensory impressions have different effects on different dimensions of emotion. Lindstrom (2005) found that tactile experience stimulated tourists' positive emotions and played a significant role in decision-making. Furthermore, tourists' cognitive process of a destination is also deeply rooted in the body's interaction with the world (Barsalou, 2008). Embodied tourism activities are also of great value in enhancing tourists' perceptions (Walther-Hansen, 2020). Multisensory impressions can stimulate the perception and imagination of tourists, resulting in a more profound cognitive effect (Liu et al., 2019). Rich multisensory impressions play a crucial role in promoting tourists' cognitive memory of a

destination (Agapito et al., 2017). The stronger the sensory impression, the stronger the emotional and cognitive responses of visitors. Therefore, this study proposes the following hypotheses:

*H3: Multisensory impressions have a significant positive impact on emotional responses.*

*H4: Multisensory impressions have a significant positive impact on cognitive responses.*

Destination attachment is generally multifaceted, involving at least the cognitive interpretations of emotional responses to environmental stimuli relating to a particular geographical area (Hidalgo and Hernandez, 2001). Therefore, the formation of destination attachment involves both an emotional path and a cognitive path. First, attachment is regarded as an adaptive emotional response of an individual in a specific social relationship in psychology. Positive emotions are essential for building attachment to a destination (Grisaffe and Nguyen, 2011). High levels of positive emotions lead to strong destination attachment (Yan and Halpenny, 2019). Kim and Fesenmaier (2015) argued that positive emotions could activate on-site peak experiences and affect the recall of attachment memories. Fredrickson (2001) believed that tourists who receive more positive emotions through tourism experience might participate in more travel activities, promoting the development of place dependence. Io (2018) found that positive emotions promote tourist satisfaction and trigger tourists' thinking about destination identity. Second, although a person's attachment orientation is often conceptualized as a single global orientation toward close relationships, it is rooted in a complex network of cognitive processes. Current studies argue that a person's cognitive evaluation of the experience is a necessary and sufficient condition for attachment to be formed (Gillath et al., 2009). Tourists' cognitive assessments of destination travel experiences may alter a person's attachment orientation. For example, the higher the perceived value of the landscape, the stronger the dependence on the destination (Brown and Raymond, 2007). When tourists associate their travel goals with themselves, they tend to identify with the destination (Barsalou, 2008). Therefore, this study proposes the following:

*H5: Emotional responses have a significant positive impact on destination attachment.*

*H5a: Emotional responses have a significant positive impact on place dependence.*

*H5b: Emotional responses have a significant positive impact on place identity.*

*H6: Cognitive responses have a significant positive impact on destination attachment.*

*H6a: Cognitive responses have a significant positive impact on place dependence.*

*H6b*: Cognitive responses have a significant positive impact on place identity.

## Path difference between first-time and repeat tourists

It has been widely confirmed that there are differences in travel behaviors (e.g., motivation, experience, satisfaction, and revisit intention) between first-time and repeat tourists (Shanka and Taylor, 2004; Morais and Lin, 2010; Hsu et al., 2014). As the value of destination attachment becomes more pronounced, studies have begun to explore differences in destination attachment between first-time and repeat tourists. For example, Lewicka (2011) believed that tourists' attachment to a destination gradually increases with the increase in travel frequency. Similarly, Vada et al. (2019) found that tourists more familiar with a destination are more likely to have a close relationship with the destination. Morais and Lin (2010) found that first-time tourists were mainly influenced by destination image, while repeat tourists were influenced by place attachment. Although these studies focused on the difference in the manifestation and effect of destination attachment, the differences in physical and mental mechanisms in the formation of destination attachment between first-time and repeat tourists have been ignored. Destination attachment is a product of the interaction of tourists with the destination. Tourists with different travel experiences have different degrees of received destination information through their senses, leading to differences in psychological activities and affecting the relationship between tourists and the destination.

For first-time tourists, due to the lack of prior experience with the destination, the landscape stimuli of the destination are a new experience for them, which may trigger intuitive emotional responses and do not require a lot of cognitive resources (Fuchs and Reichel, 2011). In addition, due to the short contact time with the destination, first-time tourists generally form a superficial attachment to the destination. Repeat tourists have a certain degree of knowledge about the destination (Shanka and Taylor, 2004). When repeat tourists are immersed in the scene again, the tourists will fully mobilize their cognitive resources to process the information received by the senses (Hwang et al., 2005). Generally speaking, the revisit is given more meaning, a process of spiritual awakening and self-reflection for tourists. Furthermore, with the increase in the frequency of travel, tourists' attachment to the destination is more reflected in symbolic attachment. Accordingly, this study proposes the following:

*H7*: There are significant differences in the relational pathways of multisensory impressions, emotional responses, cognitive responses, and destination attachment between first-time tourists and repeat tourists.

## Study design

### Case study context

As the southernmost and only tropical coastal destination in China, Hainan Island has a long history with the development of coastal vacation tourism. However, in recent years, the characteristics of this destination entering a mature/stagnant period have become more prominent. Since 2012, the growth rate of domestic tourists in Hainan has been relatively low (10%), showing a steady trend with alternating slight declines and low recovery. Sanya, its core attraction area, has seen a more pronounced decline. The traditional functional marketing methods of Hainan destinations, which mainly focus on promoting destination attributes, are slightly exhausted. In contrast, relationship marketing methods emphasizing establishing an affective connection with the destination may provide an opportunity to reverse the unfavorable situation. Therefore, by taking Hainan Island as a case study, the "body-mind utility" shaping mechanism of destination attachment is explored.

### Measures

The research questionnaire is divided into two parts. The first part is the central part of the questionnaire, including the scales of different variables, while the second part is the personal information of tourists. The measurement items of each variable in the model are from mature scales widely used in the relevant literature. The English scale has been appropriately modified according to the specific situation of the Hainan destination. The survey was first developed in English and then translated into Chinese by accredited translators. It was later translated back to English to ensure that the meanings of the survey items did not get lost during the process.

Among them, multisensory impressions refer to the research of Lv and McCabe (2020), Santos et al. (2019), and Fakfare et al. (2021), which covers the five dimensions of visual impression, auditory impression, gustatory impression, olfactory impression, and tactile impression. Emotional responses refer to research on destination emotion conducted by Hosany and Gilbert (2010), Hosany et al. (2015), and Hosany and Prayag (2013). The three dimensions of joy, love, and positive surprise were selected. Cognitive responses refer to the research conducted by Ma et al. (2019), Rivera et al. (2019), and Zheng et al. (2019) on cognitive assessment in tourism contexts. The three dimensions of goal consistency, certainty, and novelty were selected. Destination attachment refers to the research of Prayag and Lee (2019) and Liu et al. (2019), which includes the two dimensions of place dependence and place identity. All variables were measured using a 5-point Likert scale (1 = completely disagree, 5 = completely agree).



Before the formal investigation, this study conducted a pre-test to verify the reliability and validity of the scale. The pre-test was conducted in Sanya Bay, one of Hainan's most famous and tourist-concentrated scenic spots. A total of 100 questionnaires were distributed through systematic random sampling, and 86 valid questionnaires were recovered. The pre-test results show that the Cronbach's alpha coefficient of each construct is greater than 0.7, indicating that the scale has good reliability; the factor loading of each item is above 0.7, indicating that the scale has good construct validity (Hair et al., 2021).

## Data collection

Given the particularity of the formation of destination attachment (such as requiring a certain length of human-land interaction), by referring to the practice of previous research (e.g., Prayag and Lee, 2019), the present study excludes non-overnight excursionists who stay for less than 1 day and chooses the formal research time from October 5th to October 7th, 2021. This period is when Hainan tourism begins to enter its peak season, and China's National Day holiday is longer, making it easy for tourists to immerse themselves in the tour. In such a context, the sample quality is high, thereby improving the validity of the sampling. In addition, to make the sample representative, the Sanya Phoenix Airport and Haikou Meilan Airport in Hainan Province (the leading import and export channels for Hainan tourism) were selected as the questionnaire distribution places, and the survey was mainly conducted by a random interception with an interval of every five tourists. Furthermore, to ensure the quality of the questionnaire collection, the questionnaire distributors consisted of postgraduates majoring in tourism management (7 students in total), who were more qualified for survey management.

First, the respondents were asked whether they planned to leave the island after traveling in Hainan. In this way, local residents, transfer passengers, and tourists who have just entered the island were excluded from the study. After getting a confirmed answer, the questionnaire was shown to the tourists. Due to the lengthy questionnaire questions, a small gift was given to express gratitude to the tourists. A total of 700 questionnaires were distributed during the period. Excluding those filled incompletely, 670 valid samples were recovered, and the effective recovery rate was 95.71%. The questionnaires split between first-time tourists and repeat tourists amounted to 332 and 338, respectively. Generally, the number of samples should be at least 10 times the number of variables (Hair et al., 2021). In addition, the G\*Power program was used to calculate the sample size required, based on an effect of 0.15 for the predictors, a precision level of 5%, a test power of 0.97 and 32 predictors (Memon et al., 2020). The sample size required was 291 respondents. Thus, the current sample size (more than 300 for each group) was sufficient.

The sample was almost evenly divided between males and females for both groups. Most respondents were between the

ages of 18–40 (first-timers: 82.8%; repeat tourists: 65.1%) and held a university degree (first-timers: 76.1%; repeat tourists: 76.2%). The majority of respondents were full-time employed professionals (first-timers: 50.5%; repeat tourists: 49.5%).

## Data analysis

This study used partial least squares-structural equation modeling (PLS-SEM) for analysis. The reasons are as follows. Firstly, PLS provides a variance-based predictive SEM method with the ability to analyze complex models and simultaneously handle reflective, formative, and higher-order model structures (Henseler et al., 2015). Secondly, PLS does not have data restrictions regarding normal distribution, randomness, and sample size, and the requirements are relatively loose, thereby providing flexibility for data analysis (Hair et al., 2021). Thirdly, PLS can effectively manage interfering data and missing values with good predictive and explanatory power.

## Results

### Measurement model

As shown in Tables 1, 2, firstly, the combined reliability (CR) and Cronbach's alpha coefficient of each variable were greater than 0.7 in both the first-time and repeat groups, indicating that all scales had good reliability (Bagozzi and Yi, 1988). Secondly, the factor loadings of all items and the average variance extraction (AVE) in both groups were higher than the threshold of 0.5, indicating that the model had good convergent validity (Fornell and Larcker, 1981). Furthermore, for both first-time and repeat tourists, the values of the heterotrait-monotrait (HTMT) were all below 0.85, indicating that each variable had good discriminant validity (Hair et al., 2021). In addition, the variance inflation factor (VIF) value ranged from 2.124 to 3.581 for both groups, which was less than the threshold of 5.000, indicating that multicollinearity was not an issue in this research (Hair et al., 2021).

### Structural model

As shown in Table 3, the  $R^2$  results of both groups (first-timers: between 38.1 and 78.9%; repeat tourists: between 55.2 and 64.9%) showed that the predictive ability of the model constructs reached a medium level or above (Hair et al., 2021). The  $Q^2$  values were all greater than 0 (first-timers: between 0.271 and 1.817; repeat tourists: between 0.502 and 1.752), indicating that the exogenous constructs had a certain predictive ability to endogenous constructs. The effect size ( $f^2$ ) values of the proposed structural model were all higher than the standard value of 0.02 for both groups (Hair et al.,



TABLE 1 Assessment results of the measurement model.

Items	Statements	Loading		Cronbach's Alpha		CR		AVE	
		First	Repeat	First	Repeat	First	Repeat	First	Repeat
Visual impression	Ocean landscape	0.916	0.891	0.846	0.870	0.907	0.911	0.766	0.812
	Natural astronomical	0.844	0.920						
	Historical buildings	0.861	0.781						
Auditory impression	Bird sounds	0.907	0.830	0.852	0.854	0.931	0.913	0.871	0.760
	Dialect	0.810	0.791						
Gustatory impression	Seafood	0.947	0.856	0.863	0.803	0.935	0.890	0.879	0.753
	Tropical fruits	0.842	0.867						
Olfactory impression	Fresh air	0.918	0.907	0.823	0.819	0.918	0.912	0.849	0.871
	Floral fragrance	0.859	0.896						
Tactile impression	Water sports	0.937	0.931	0.821	0.854	0.917	0.906	0.847	0.834
	Soft feeling	0.903	0.887						
Joy	Enthusiasm	0.905	0.912	0.835	0.801	0.901	0.911	0.753	0.811
	Delight	0.857	0.798						
Love	Caring	0.894	0.906	0.841	0.835	0.904	0.932	0.759	0.781
	Affection	0.856	0.912						
	Tenderness	0.862	0.790						
Positive surprise	Amazement	0.913	0.913	0.843	0.825	0.906	0.900	0.762	0.766
	Fascinated	0.834	0.790						
Goal congruence	Achieving your needs	0.926	0.912	0.881	0.813	0.927	0.911	0.808	0.723
	Achieving your desires	0.878	0.897						
	Achieving life goals	0.892	0.900						
Certainty	You understand what was happening	0.952	0.914	0.878	0.815	0.942	0.936	0.891	0.819
	You are sure of what was happening	0.936	0.840						
Novelty	Unexpected	0.912	0.923	0.814	0.800	0.89	0.912	0.73	0.88
	Unusual	0.832	0.815						
	Unfamiliar	0.816	0.890						
Place dependence	Hainan is the best place	0.936	0.876	0.900	0.810	0.926	0.912	0.715	0.890
	I get more satisfaction from Hainan	0.829	0.912						
	Hainan is more important to me	0.836	0.826						
Place identity	Hainan means a lot to me	0.809	0.837	0.871	0.839	0.912	0.923	0.722	0.790
	I identify strongly with Hainan	0.838	0.901						
	I have become part of Hainan	0.890	0.923						

2021). The standardized root mean square residual (SRMR) values of the model in the two groups were 0.065 and 0.061, respectively, which met the criterion of less than 0.08 proposed by Henseler et al. (2015), indicating that the model had a good model fit. The acceptability and invariance of the measurement model were also confirmed.

## Direct effects test and multi-group analysis

First, the invariance of the two groups was assessed using the measurement invariance of composite models (MICOM) procedure of PLS-SEM, which showed that configural invariance,

TABLE 2 HTMT discriminant validity analysis results (first-time tourists/repeat tourists).

Sequence	Item	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Visual impression													
2	Auditory impression	0.574/0.641												
3	Taste impression	0.556/0.447	0.520/0.432											
4	Olfactory impression	0.499/0.371	0.672/0.312	0.662/0.551										
5	Tactile impression	0.451/0.301	0.456/0.380	0.543/0.541	0.441/0.446									
6	Joy	0.491/0.502	0.447/0.302	0.559/0.500	0.565/0.309	0.458/0.231								
7	Love	0.683/0.544	0.546/0.456	0.444/0.308	0.481/0.377	0.458/0.543	0.672/0.500							
8	Positive surprise	0.597/0.470	0.474/0.543	0.372/0.411	0.592/0.444	0.595/0.431	0.597/0.501	0.508/0.602						
9	Goal congruence	0.397/0.421	0.453/0.324	0.609/0.599	0.670/0.625	0.649/0.570	0.565/0.311	0.373/0.441	0.411/0.605					
10	Certainty	0.507/0.556	0.661/0.602	0.730/0.423	0.688/0.570	0.754/0.690	0.476/0.280	0.683/0.423	0.502/0.200	0.682/0.443				
11	Novelty	0.685/0.466	0.746/0.701	0.594/0.610	0.787/0.702	0.665/0.234	0.487/0.462	0.775/0.651	0.507/0.552	0.791/0.534	0.580/0.551			
12	Place dependence	0.504/0.511	0.554/0.543	0.556/0.552	0.383/0.367	0.485/0.467	0.683/0.602	0.384/0.301	0.602/0.612	0.569/0.345	0.772/0.678	0.380/0.225		
13	Place identity	0.590/0.432	0.642/0.432	0.671/0.603	0.387/0.467	0.474/0.511	0.486/0.467	0.488/0.543	0.396/0.400	0.478/0.287	0.393/0.443	0.593/0.430	0.501/0.430	

TABLE 3 Structural model test results.

	R <sup>2</sup>		Q <sup>2</sup>		The effect size (f <sup>2</sup> )							
	First	Repeat	First	Repeat	Emotional responses		Cognitive responses		Place dependence		Place identity	
					First	Repeat	First	Repeat	First	Repeat	First	Repeat
Multisensory impressions					0.632	0.582	0.373	0.412	0.146	0.161	0.135	0.154
Emotional responses	71.9%	64.9%	1.817	1.752			0.263	0.234	0.067	0.108	0.077	0.046
Cognitive responses	63.1%	65.1%	1.091	1.544					0.031	0.041	0.049	0.059
Place dependence	48.4%	55.2%	0.360	0.502								
Place identity	38.1%	57.1%	0.271	0.521								

compositional invariance, equal mean values, and variances were all well-established (Hair et al., 2021). Hypothesis testing and multi-group analysis results can therefore be carried out. The test results are shown in Figures 1, 2, as well as in Table 4.

The results show that multisensory impressions significantly and positively affected place dependence (first-timers:  $\beta=0.156$ ;  $p<0.001$ ; repeat tourists:  $\beta=0.124$ ;  $p<0.001$ ) across the two groups, H1a was thus supported. However, there was no significant difference between first-time tourists and repeat tourists for hypothesis H1a ( $\beta_{first}-\beta_{repeat}=0.032$ ,  $p>0.05$ ). As for the relationship between multisensory impressions and place identity, H1b was partially supported across the two groups because the positive relationship existed not for first-timers but for repeat tourists (first-timers:  $\beta=0.155$ ,  $p>0.05$ ; repeat tourists:  $\beta=0.181$ ,  $p<0.001$ ). Moreover, the difference that multisensory impressions had on place identity between the two groups was significant ( $\beta_{first}-\beta_{repeat}=-0.026$ ,  $p<0.001$ ). Hypothesis H2 was also supported across the two groups, showing a significant relationship between emotional responses and cognitive responses (first-timers:  $\beta=0.310$ ,  $p<0.001$ ; repeat tourists:  $\beta=0.327$ ,  $p<0.001$ ). However, hypothesis H2 showed no significant difference between first-time tourists and repeat tourists ( $\beta_{first}-\beta_{repeat}=-0.017$ ,  $p>0.05$ ).

In addition, multisensory impressions were found to be positively related to emotional responses (first-timers:  $\beta=0.907$ ,  $p<0.001$ ; repeat tourists:  $\beta=0.609$ ,  $p<0.001$ ) and cognitive responses (first-timers:  $\beta=0.564$ ,  $p<0.001$ ; repeat tourists:  $\beta=0.711$ ,  $p<0.001$ ) across the two groups, thus supporting hypotheses H3 and H4. For both groups, multisensory impressions had a significant difference in emotional responses ( $\beta_{first}-\beta_{repeat}=0.298$ ,  $p<0.05$ ) and cognitive responses ( $\beta_{first}-\beta_{repeat}=-0.147$ ,  $p<0.05$ ). Emotional responses significantly affected place dependence for the two groups (first-timers:  $\beta=0.586$ ,  $p<0.001$ ; repeat tourists:  $\beta=0.373$ ,  $p<0.001$ ). However, emotional response did not significantly affect place identity for the two groups (first-timers:  $\beta=0.029$ ,  $p>0.05$ ; repeat tourists:  $\beta=0.043$ ,  $p>0.05$ ). Thus, hypothesis H5a was accepted, while H5b was rejected. For both groups, emotional

responses had a significant difference in place dependence ( $\beta_{first}-\beta_{repeat}=0.213$ ,  $p<0.001$ ), but not in place identity ( $\beta_{first}-\beta_{repeat}=-0.147$ ,  $p>0.05$ ). Similarly, cognitive response significantly affected place dependence for repeat tourists, but not for first-timers (first-timers:  $\beta=0.149$ ,  $p>0.05$ ; repeat tourists:  $\beta=0.169$ ,  $p<0.01$ ). However, cognitive response significantly affected place identity for the two groups (first-timers:  $\beta=0.312$ ,  $p<0.001$ ; repeat tourists:  $\beta=0.555$ ,  $p<0.001$ ). Hypothesis H6a was partially supported, and H6b was accepted. Nevertheless, cognitive responses had a significant difference in place dependence ( $\beta_{first}-\beta_{repeat}=0.020$ ,  $p<0.01$ ) and in place identity ( $\beta_{first}-\beta_{repeat}=-0.243$ ,  $p<0.05$ ) between the two groups. Based on this, therefore, the results partially support hypothesis H7.

### Indirect effects test and multi-group analysis

According to the results in Table 4, the indirect effect of multisensory impressions on place dependence was significant through the emotional responses in both groups (first-timers:  $\beta=0.474$ ,  $p<0.001$ ; repeat tourists:  $\beta=0.386$ ,  $p<0.001$ ). Emotional responses partially mediate the relationship between multisensory impressions and place dependence across the two groups. Moreover, the difference that multisensory impressions had on place dependence through emotional responses between the two groups was significant ( $\beta_{first}-\beta_{repeat}=0.088$ ,  $p<0.001$ ). However, the indirect effect of multisensory impressions on place identity was not significant through emotional responses for either of the groups (first-timers:  $\beta=0.017$ ,  $p>0.05$ ; repeat tourists:  $\beta=0.296$ ,  $p>0.05$ ). There was no difference between first-time tourists and repeat tourists ( $\beta_{first}-\beta_{repeat}=-0.279$ ,  $p>0.05$ ).

In addition, the indirect effect of multisensory impressions on place dependence was significant through cognitive responses for repeat tourists ( $\beta=0.015$ ,  $p<0.01$ ), but not for

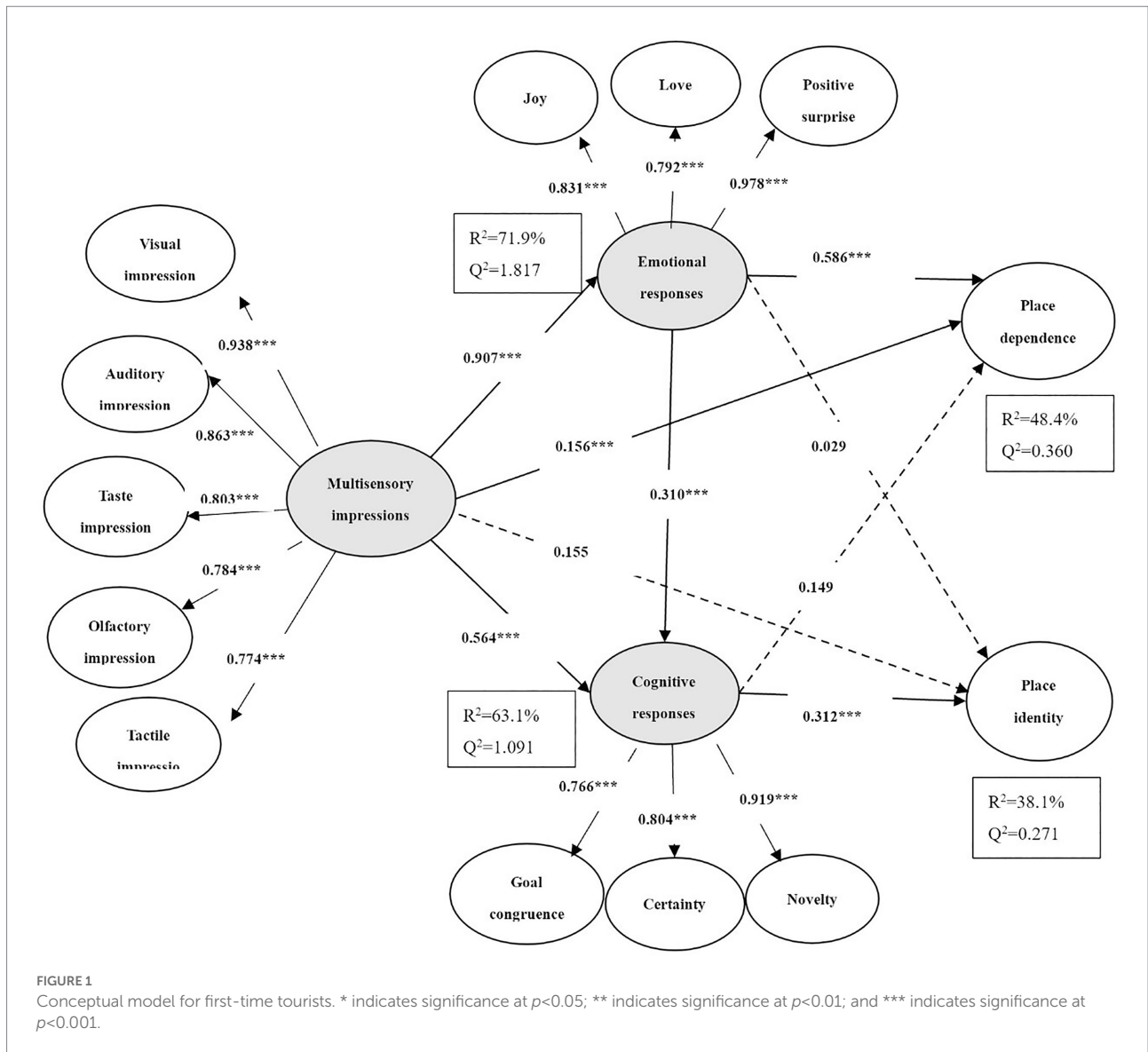


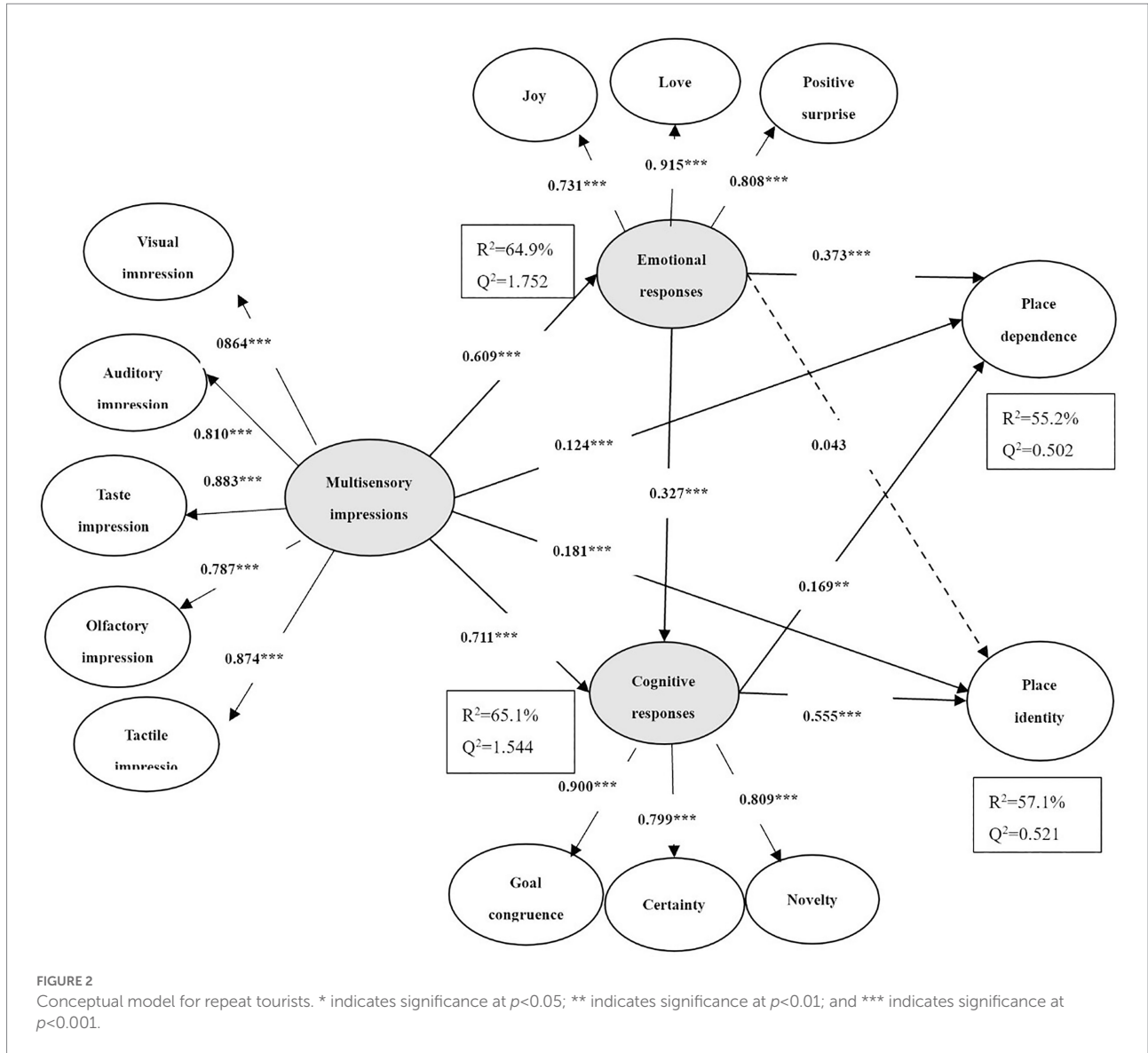
FIGURE 1 Conceptual model for first-time tourists. \* indicates significance at  $p < 0.05$ ; \*\* indicates significance at  $p < 0.01$ ; and \*\*\* indicates significance at  $p < 0.001$ .

first-timers ( $\beta = 0.037, p > 0.05$ ). Cognitive responses partially mediate the relationship between multisensory impressions and place dependence for repeat tourists. Moreover, the difference that multisensory impressions had on place dependence through cognitive responses between the two groups was significant ( $\beta_{\text{first}} - \beta_{\text{repeat}} = 0.022, p < 0.05$ ). However, in both groups, the indirect effect of multisensory impressions on place identity was significant through cognitive responses (first-timers:  $\beta = 0.313, p < 0.001$ ; repeat tourists:  $\beta = 0.451, p < 0.001$ ). Among the indirect effects of multisensory impressions on place identity, cognitive responses play a fully mediating role for first-time tourists. In contrast, cognitive responses play a partial mediating role for repeat tourists. Moreover, the difference that multisensory impressions had on place identity through cognitive responses between the two groups was significant ( $\beta_{\text{first}} - \beta_{\text{repeat}} = -0.138, p < 0.001$ ). Based on this, the results also partially support hypothesis H7.

## Discussion and implications

### Discussion

This paper constructs a structural equation model to explore the mind-body mechanism of destination attachment across the two groups of first-time and repeat tourists, contributing to understanding the formation of destination attachment. The results show that physical factors (multisensory impressions) and psychological factors (emotional and cognitive responses) are important antecedents of destination attachment. The effects of the antecedents differ between first-time and repeat tourists. In addition, emotional responses and cognitive responses significantly mediate the relationship between multisensory impressions and destination attachment, which varies between first-time and repeat tourists. Further discussion of the results has yielded several interesting insights.



Specifically, multisensory impressions were found to be an antecedent of place identity only for repeat tourists, while cognitive responses were an antecedent of place dependence only for repeat tourists. However, emotional responses were not a prerequisite for place identity for either group. The possible reason for this is that forming the place identity requires a long period of contact. Repeat tourists with rich travel experiences will directly generate place identity under the stimulation of multisensory impressions. However, due to the lack of travel experience to the destination for first-time tourists, the simple sensory impression cannot directly activate place identity. It requires the intermediary of cognitive psychology to achieve this (Fuchs and Reichel, 2011). Compared with shallow emotional responses, tourists' cognitive activities at the destination are usually accompanied by deep thinking and more complex psychological activities (Ayduk et al., 2002). Therefore, impulsive emotions cannot affect place identity. Once cognitive activities occur, place identity will first be affected,

which has been confirmed in both first-time tourists and repeat tourists. Moreover, the depth of cognition will affect its spillover validity. Comparatively speaking, repeat tourists have higher cognitive responses, and their cognitive responses affect place identity and slightly affect place dependence. This also proves that, compared with place dependence, place identity has higher requirements on physical and mental factors (Bolam et al., 2006).

In addition, repeat tourists showed stronger relationships on multisensory impressions→cognitive responses ( $\beta_{first} = 0.564 < \beta_{repeat} = 0.711$ ) and cognitive responses→place identity ( $\beta_{first} = 0.312 < \beta_{repeat} = 0.555$ ) than did first-time tourists. However, first-time tourists showed stronger relationships on multisensory impressions→emotional responses ( $\beta_{first} = 0.907 > \beta_{repeat} = 0.609$ ) and emotional responses→place dependence ( $\beta_{first} = 0.586 > \beta_{repeat} = 0.373$ ) than did the repeat tourists. Therefore, the results highlight that multisensory impressions can positively affect emotional



TABLE 4 Hypothetical test and multi-group analysis.

Path relationship	Path coefficients		Path coefficient differences	p-value Henseler's MGA
	Original (first-time)	Original (repeat)		
Multisensory Impressions→Place Dependence	0.156***	0.124***	0.032	0.594
Multisensory Impressions→Place Identity	0.155	0.181***	-0.026***	0.000
Emotional Responses→Cognitive Responses	0.310***	0.327***	-0.017	0.559
Multisensory Impressions→Emotional Responses	0.907***	0.609***	0.298*	0.012
Multisensory Impressions→Cognitive Responses	0.564***	0.711***	-0.147*	0.038
Emotional Responses→Place Dependence	0.586***	0.373***	0.213***	0.000
Emotional Responses→Place Identity	0.029	0.043	-0.014	0.803
Cognitive Responses→Place Dependence	0.149	0.169**	0.020**	0.006
Cognitive Responses→Place Identity	0.312***	0.555***	-0.243*	0.046
Multisensory Impressions→Emotional Responses→Place Dependence	0.474***	0.386***	0.088***	0.000
Multisensory Impressions→Emotional Responses→Place Identity	0.017	0.296	-0.279	0.505
Multisensory Impressions→Cognitive Responses→Place Dependence	0.037	0.015**	0.022*	0.02
Multisensory Impressions→Cognitive Responses→Place Identity	0.313***	0.451***	-0.138***	0.000

\* indicates significance at  $p < 0.05$ ; \*\* indicates significance at  $p < 0.01$ ; and \*\*\* indicates significance at  $p < 0.001$ .

and cognitive responses, but the effects on first-time and repeat tourists differ. Further, first-time tourists tend to choose the marginal path to process information when receiving the same sensory stimuli, and the intuitive, emotional responses dominate, which, in turn, mainly affect place dependence (Jiang, 2020). On the other hand, repeat tourists tend to choose the central route to process information, and the cognitive response of rational thinking dominates, mainly affecting place identity.

Correspondingly, the indirect effect size of multisensory impressions on place dependence through emotional responses for first-time tourists was much larger than for repeat tourists ( $\beta_{first} = 0.474 > \beta_{repeat} = 0.386$ ). The indirect effect size of multisensory impressions on place identity through cognitive responses for repeat tourists was much larger than for first-time tourists ( $\beta_{first} = 0.313 < \beta_{repeat} = 0.451$ ). This result suggests that first-time tourists rely more on the mediating role of emotional responses than repeat tourists in the indirect effects of sensory impressions on destination attachment. In contrast, repeat tourists rely more on the mediating role of cognitive responses than first-time tourists.

Considering the size of indirect effects, multisensory impressions exert a more considerable impact on place dependence under the mediation of emotional processing. In contrast, multisensory impressions exert a more considerable impact on place identity under the mediation of cognitive processing. For physical factors, if they want to achieve a greater impact on destination attachment, they must go through emotional or cognitive psychological processes. In the physical and mental mechanism of destination attachment, psychological factors play a dominant role, while physical factors play a fundamental role in triggering the mechanism. Moreover, physical factors are important antecedents of psychological factors. Sensory impressions directly affect emotional and cognitive responses and

can also indirectly affect cognitive responses through emotional responses and realize a chain-mediated mediation of destination attachment.

By further identifying the intermediary type, it is found that the emotional response partially mediates for first-time tourists. In contrast, the cognitive response plays the role of complete mediation. For repeat tourists, the emotional and cognitive responses play partial mediation roles. That is to say, with the increase in travel frequency, the body's role becomes increasingly important in shaping the attachment to the destination.

By combining the weight changes of the second-order structure of multisensory impressions, emotional responses, and cognitive responses, it can be determined that visual ( $\beta_{first} = 0.938$ ) and auditory impressions ( $\beta_{first} = 0.863$ ) have strong explanatory power for first-time tourists. In contrast, taste ( $\beta_{repeat} = 0.883$ ) and tactile impressions ( $\beta_{repeat} = 0.874$ ) have strong explanatory power for repeat tourists. Positive surprise ( $\beta_{first} = 0.978$ ) has strong explanatory power for first-time tourists, while love ( $\beta_{repeat} = 0.915$ ) has strong explanatory power for repeat tourists. Novelty ( $\beta_{first} = 0.919$ ) has strong explanatory power for first-time tourists, while goal congruence ( $\beta_{repeat} = 0.900$ ) has strong explanatory power for repeat tourists. It can be speculated that, for first-time tourists, visual and auditory impressions directly or indirectly affect destination attachment mainly through positive surprise and novelty cognition. For repeat tourists, taste and tactile impressions directly or indirectly affect destination attachment, mainly through love and goal congruence.

## Theoretical implications

This paper proposes a people-body-mind-land framework of destination attachment formation, examining the body-mind utility effects therein. First, it verifies the effect of physical factors

in the formation of destination attachment. The study found that while psychological factors play a leading role in shaping destination attachment, physical factors are the foundation. Although the direct effect of sensory impressions on destination attachment is not high, it can also indirectly influence destination attachment to a greater extent through the psychological mediating effects of emotion and cognition. As travel frequency increases, the body's role becomes increasingly important. This affirms the value of the body in the formation mechanism of destination attachment and expands the applicability of the embodied theory in destination attachment research (Agapito et al., 2017).

Second, different from previous studies in which destination attachment was used as an overall construct (Skavronskaya et al., 2017), this study fine-grained the two-dimensional construct of destination attachment and examined the differences in the effects of mental factors on place dependence and place identity, respectively. Different psychological factors have different effects on different dimensions of destination attachment. Among them, place dependence is mainly driven by emotion. In contrast, place identity is mainly driven by cognition, which is consistent with the view posited by Backlund and Williams (2003) that the cognitive component is viewed as the place identity construct, and the emotional component is referred to as the place dependence construct. This study not only confirms the validity of the dual-system theory in explaining the psychology of destination attachment (Xu et al., 2019), but delineates different mechanisms of body–mind integration in motivating different attachment dimensions.

Finally, this study identifies differences in the body–mind mechanisms underlying destination attachment formation in first-time and repeat tourists. This study found that the physical and mental paths of first-time tourists are mainly as follows: multisensory impressions–emotional responses–place dependence, while the physical and mental paths of repeat tourists are multisensory impressions–cognitive responses–place identification. This means that the emotional response of first-time tourists is more prominent, while the cognitive response of repeat tourists is more prominent. This is in line with the position presented by Hwang et al. (2005) and Cao et al. (2021) to a certain extent: before the first-time tourists establish a connection with the destination, they mainly rely on the interaction between their senses and the physical environment to intuitively perceive and understand a destination. On the other hand, repeat tourists pay more attention to psychological meaning, and the level of place attachment is usually linked to the investment of cognitive resources. However, this may be different from the findings of Yolal et al. (2017) and Gursoy et al. (2014), who believe that first-time tourists place more importance on cognitive evaluation (service quality), while repeaters are loyal to their destination and rely more on emotional evaluation (satisfaction). The likely reason is that the context and destination of the studies are different, and the two studies ignore the underlying role of the body. Therefore, this

study also provides a new perspective for exploring the differences in the travel behavior of first-time and repeat visitors from the perspective of body–mind integration.

## Managerial implications

This study provides a reference for coastal destination marketing organizations (DMOs) to cultivate tourists' attachment to the destination from an embodied perspective. Firstly, destination marketers can design rich multisensory experiences for tourists to highlight the uniqueness of coastal destinations in an integrated way. The five dimensions (sight, hearing, taste, touch, and smell) of sensory experiences can be connected, targeted, and creatively based on the preference of different tourist markets. In this way, creating a sensory experience can better meet the heterogeneous needs of different tourists and promote the emotional connection between tourists and the destination. In particular, destination marketers need to focus on conveying the multisensory landscapes to tourists rather than waiting for this to be initiated by tourists. This allows the priming effect of sensory experiences on destination attachment to be maximized in accordance with the expectations of the DMO rather than being elusive.

Secondly, since the formation of destination attachment is fundamentally a body–mind integration process, destination marketers can design destination landscape presentations based on the connection ways of tourists' bodies and mind to induce attachment. To make a few examples. By rendering the visual impact of blue skies and white clouds or enhancing the olfactory enjoyment of fresh air, a strong and intuitive aesthetic experience will induce tourists' positive emotions of joy, love, and surprise, which is beneficial to place dependence. By delivering historical allusions to tourists through the way of scrolling on the electronic screen or situational interpretation, the cognitive thinking of tourists on the destination culture can be aroused. By providing some embodied entertainment activities, such as allowing tourists to fish and work together with local residents, or encouraging tourists to taste local delicacies, tourists will be stimulated to reflect on the unique local way of life and the value identification of the destination can be strengthened.

In addition, the different needs and function mechanisms of multisensory experiences of first-time and repeat tourists must be considered in targeted marketing.

Visual and auditory impressions are prone to evoking the psychological process of first-time tourists, while taste and tactile impressions likely stimulate the psychological process of repeat tourists. Once the multisensory impressions occur, the emotional responses of first-time tourists will primarily be triggered, which affects place dependence. However, the cognitive responses of repeat tourists will primarily be triggered, which affects place identity. Therefore, it is important to deliver landscape resources, iconic attractions, convenient tourism

facilities, and other material satisfaction for first-time tourists to develop functional attachments. In contrast, for those who return, it is necessary to cultivate their interaction with the destination and strengthen their social relations at the destination to enable more in-depth sensory senses and cognitive psychological processes. This suggestion concurs with those of Li et al. (2008).

## Limitations and future research

This research has two limitations. First, this study only takes Hainan as a tourist destination as an example to verify the hypothesis model. The external validity of the conclusion requires further verification. In the future, the case location can be replaced, or a comparison of multiple coastal destinations can be conducted to investigate the mechanism of body–mind integration in the formation of destination attachment. Also, for a popular destination, there may always be a wide variety of tourism products, such as those that are religious, natural, or historical in nature. After tourists receive information through their senses, they will have different psychological preferences and reactions to various products. In future research, variables such as spiritual recovery, aesthetic perception, or cultural value can be added to the model to reflect the diversified reactions and refine the intermediary mechanism involved. The complex physical and mental mechanism of tourists' destination attachment formation will be further explained.

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## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Author contributions

YD: conceptualization, methodology, project administration, and writing – original draft. YQ: formal analysis, reviewing and editing, and correspond with the journal. All authors contributed to the article and approved the submitted version.

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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# Understanding the Reality of China's Health Tourism and Consumer Demand From the Perspective of Consumers: A Cross-Sectional Study

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**Background:** Travel for health reasons is booming around the world and in China. As a huge source and destination of health tourism, little is understood about the volume, characteristics, motivations, and preferences of health travelers in China. This study provides details of China's health tourism reality and consumer demand of Chinese residents who did or will travel for health.

**Methods:** We established a questionnaire through literature analysis and a focus group, then collected 695 responses based on an online random sampling design. Finally, 629 questionnaires (effective recovery rate was 90%) were analyzed with statistical description, binary logistic regression, and word frequency analysis to draw the reality of health tourism, explore the influential factors, and sort out suggestions.

**Results:** In this study, 387 respondents knew of health tourism (61.53%), 446 reported interest (70.9%), and 234 had traveled for health reasons before (37.2%), with 329 occurring within China (91.4%). The top three reasons for health tourism were decompression and relaxation (116, 20%), physical examination (82, 14.1%), and health care (73, 12.6%). High costs (372, 16.3%), little disposable time (309, 13.5%), and lack of reliable professional institutions (289, 12.6%) were the main potential barriers for consumers. Professional level and quality of the institution, personal privacy, and service personnel's attitude were the most important concerns for consumers when arranging health travel. Marital status (OR = 0.209, 95% CI = 0.085–0.514,  $P = 0.001$ ) and attitude to health tourism (OR = 2.259, 95% CI = 1.553–3.287,  $P < 0.001$ ) were factors for consumers' willingness to perform health tourism. "Propaganda" was proposed most frequently by participants, followed by "service" and "price".

**Conclusion:** The popularity of health tourists is low although there is a huge market in China. There are also differences between willingness of previous and prospective customers with varying socio-demographic characteristics in this investigation. Overall, more diverse propaganda measures should be taken, and government policies or legal documents ought to keep pace with it. Health tourism products' promotion, as well as supporting measures and brand, need to be emphasized.

**Keywords:** health tourism, consumer demand, attitude, promotion strategy, cognition

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## INTRODUCTION

Health tourism, which combines health service and tourism, has recently boomed as the social economy develops and travel demand for physical and psychological health promotion surges (Vetitnev et al., 2016). Health tourism has existed for a long time (Bauer, 2015), and was first documented in Ancient Greece. Jonathan initially created the concept of health tourism in 1987 (Goodrich and Goodrich, 1987), and it has been evolving alongside continuous research. However, a complete consensus on its definition has not been established. It is commonly accepted that health tourism is a form of tourism which comprises all natural and cultural resources, rehabilitation and sport activities, facilities, and places with services associated with the healthcare sector and tourism sector to serve people traveling for physical and mental health reasons (Huiyur, 2020). There are many categories of health tourism activities. It can be divided into obligatory or elective based on the tourist's decision. Obligatory travel means travelers have to go outside due to the unavailability of required treatments in local place. However, elective travel usually occurs whenever they want although the service may be available in their home regions (Jones and Keith, 2006). Other research classifies health tourism according to their functions, such as medical tourism, leisure-oriented tourism, cosmetic surgery, wellness tourism, and Chinese medicine tourism (Han et al., 2018; Gongmei et al., 2021).

People continue to travel in the pursuit of health, and worldwide revenue from health tourism estimated by several authoritative global Non-Governmental Organizations (e.g., WHO, Patient without borders, Medical Tourism Association) for health tourism is large and growing. Health tourism has become the economic backbone in developed countries (Lee and Li, 2019). Nevertheless, most recent growth has been in the developing countries of Latin America, Eastern Europe, South and South-East Asia, and the Middle East (Kamassi et al., 2020). Moreover, Asia gains a large part of the international health tourism market, with many countries like Thailand, India, Malaysia, and Singapore recognized as prime destinations for healthcare seekers (Han et al., 2018; Tingfang and Shengtian, 2021). China has emerged as a popular destination for health tourists at home and abroad who come to take advantages of the abundant travel resources, high level of healthcare, and unique Chinese traditional medicine. The China Tourism Research Institute released in 2017 that the total tourism revenue for 2016 was 4.69 trillion yuan, with an increase of 13.6%.

There is also a strong interest in health tourism research. To date, a great deal of studies have been done on this area, and they reveal three notable relevant research streams. First, specific tourism activities like medical tourism (Willson et al., 2018), wellness tourism (Goodarzi et al., 2016), spa tourism, and more become the main topic. Studies tend to understand unique health tourism destinations and products from various perspectives. A study using a systematic review method indicated natural resources are essential to the development and sustainability of health tourism destinations (Pessot et al., 2021). Second, scholars explored the influencing mechanism of the health tourism industry on the associated society, politics, and economy.

Results showed a positive relationship between health tourism activities and psychological, physical, and social health (Lee et al., 2020). A study found that in Italy health tourism primarily consisted of domestic travel and increased the widening of the north-south divide (Manna et al., 2020). Moreover, health tourism and health inequities shape each other in low- and middle-income countries (Ceron et al., 2019). It could likewise improve the economic growth (Cheah and Abdul-Rahim, 2018). Third, the influential factors and promotion strategies of health tourism have been studied. Korea is trying a new model by fusing medical tourism and wellness tourism (Kim and Jin, 2021). Lee and Kim (2018) found that service quality, tourism resources, and culture resources positively affected health tourists' satisfaction. Pu et al. (2021) stated that health consciousness and subjective knowledge could predict health tourism intention, and the behavior partially mediated the function. A paper identified the key factors in China from the view of the intra-industry trade, showing that the total health expenditure per capital and the number of domestic health consumers impacted health tourism (Jiang et al., 2022). Diversifying health tourism offerings and constructing a standard framework and index system of health tourism service institutions are also suggested. Liu (2016) had built the evaluation system covering six indexes: subject, object, standard, process, team, and tool.

To survive in the continuously competitive world of the health tourism market, the Chinese government has introduced a number of promotion policies to regulate the domestic health tourism industry. For example, the National Tourism Administration officially promulgated "Standard of National Health-promotion tourism Demonstration Base," and identified the first five bases in 2016 (Gongmei et al., 2021). And a document issued in 2017 indicated the positive role of health tourism in optimizing the allocation of medical resources, stabilizing China's economic growth, and safeguarding the people's livelihood. The file further pointed out that "by 2030, a relatively complete health tourism service system will be basically established and the capacity will be greatly improved."

However, in China, health resources are relatively insufficient and unevenly distributed, which produces huge demand of seeking therapy across different provinces, cities, and even counties. The health tourism sector is still in its infancy, lacking strategic planning and systematic practice. Health tourism is basically determined by the "willingness to spend on health" of consumers (Jiang et al., 2022); tourists are considered key to business success for health-care providers in each destination (Kamassi et al., 2020). Therefore, studies from the perspective of consumers would be essential. But previous studies have analyzed health tourism from a macro view (Pocock and Phua, 2011); there is a lack of evidence-based investigation on Chinese residents knowledge and attitude toward health tourism, thus offering no scientific basis for policy proposal to boost domestic health tourism. Hence, this study aims to investigate the health tourism demand of Chinese citizens via questionnaires and explore the influential factors. Through this, we can provide practical suggestions to stimulate the

health tourism industry as well as making contributions to a “Healthy China” plan.

## MATERIALS AND METHODS

### Study Design and Sampling

This study adopted a mixed-method approach to fully understand Chinese health tourists' demand. Due to the COVID-19 virus outbreak, considering the cost and time effectiveness, non-probability sampling was used (Han et al., 2018). This cross-sectional observational survey was undertaken in February and March 2021 via an online survey-related software called “Questionnaire star” that allows surveyors to produce their own questionnaires. The link generated by the software was relayed to some social networks covering people of different ages (e.g., Wechat, Weibo) (Rotonda et al., 2021; Reissmann and Lange, 2021). Participants were informed of the study purpose prior to the questions and completed it by using their phones or computers. A total of 695 questionnaires were received. After getting rid of invalid and missing cases, 629 usable returns were obtained, resulting in a response rate of 90%.

### Questionnaire Development

The questionnaire was developed through a systematic literature review and a focus review. We searched the PubMed, Web of Science, CNKI, and VANFUND databases for health tourism demand and predictors, using terms such as [health tourism, medical tourism, wellness tourism, demand, need]. Based on the existent demand and potential demand of health tourism and one open question (Lunt and Carrera, 2010; Gan and Frederick, 2015), we established a set of questions. Then these questions were all discussed and validated by five professional experts from the healthcare and international health tourism fields.

The questionnaire consisted of two parts. The first part asked basic information such as age, gender, education, marital status, health status, monthly household income, and staff position. The second part was a structured scale covering health tourists' existent demand and potential demand (Table 1).

Existent demands focus on the cognition of health tourism and relevant experience. Questions concerning cognition included asking whether the respondent knew (or had heard about) health tourism before. Questions concerning relevant experience focused on the destination, tour arrangement (trip ways), as well as purposes of health tourism behavior. Potential demands include willingness, preference, worries, influence factors of health tourism, and attitudes toward it (Lancaster, 1966; Lee and Li, 2019). The consumer willingness was obtained through a binary single choice (“refuse” or “agree” to take part in health tourism activities if possible). Questions with respect to preference covered expected fees, duration time, and supporting service. For influence factors, a 5-point scale ranging from 1- (extremely unimportant) to 5- (extremely important) is used to measure 12 items (price,

**TABLE 1** | Predicators for health tourists' demand.

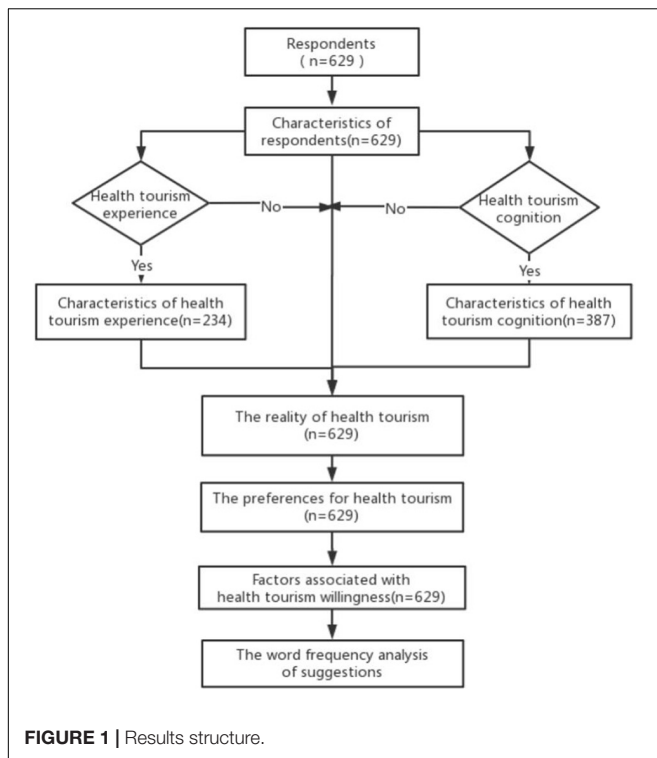
First level	Second level	Third level			
Existent demands	Cognition of health tourism	Have known(or heard about) health tourism before			
		Health tourism types known(or heard about) The way of getting information and knowledge about health tourism			
Potential demands	Health tourism experience	Have traveled for health purposes before			
		Destination traveled to before Purposes of health tourism behavior			
	Willingness	Willingness to recommend others to take health tourism			
		Willingness to take health tourism in the future			
	Preference	Preference	Preference for health tourism arrangement		
			Preference for health tourism types Preference for health tourism supporting services		
		Worries	Influence factors	Acceptable fees Acceptable time spent on health tourism Barriers to health tourism	
				Professional level and quality of the institution The confidentiality degree to the personal privacy The service personnel's attitude Destination's natural environment Supporting services(e.g., food, arrangement) Service project design of institution Transportation of destinations Project price of destination Geographical location of destination Oral communication of destination Reputation of destination Season features of destination	
				Attitude	Attitude to developing health tourism

service quality, environment, transport convenience, language, and so on). In this study, the overall Cronbach's  $\alpha$  of the questionnaire was 0.936, the values of the Kaiser–Meyer–Olkin (KMO) measure were 0.935 ( $>0.9$ ), and Bartlett's test results were significant ( $p < 0.001$ ), which implied satisfactory reliability and validity.

### Data Analysis

The quantitative data (the structured questionnaire) was analyzed simultaneously with the qualitative materials.

Quantitative study: The initial data was exported from “Questionnaire star,” and statistical analysis was mainly processed with SPSS 24.0 for Windows. A descriptive statistical study was performed to report participants' demographic characteristics and the health tourism *status quo* (personal health tourism



characters, existent health tourism demand, and potential health tourism demand) in China. We used means and standard deviation for numeric variables and percentages for categorical variables. The importance of health tourism influence factors was rated and sorted with an average score using a 5 Likert-type scale. Then willingness for health tourism was set as the dependent variable, using stepwise forward regression to screen variables (personal characteristics, health tourism product information), a binary logistic regression model was designed and run on the whole sample investigators to analyze influence factors.  $P < 0.05$  was set as the level of statistical significance.

**Qualitative study:** Word frequency statistics refers to counting the number and frequency of each word in a certain text (Yunqiu and Jinkuan, 2021). In total, 214 health tourism suggestions were sent for analysis. Key words were extracted and the frequency was calculated using the word frequency analysis technology of Yi Ciyun website, so as to put forward new ideas for the promotion of health tourism.

## RESULTS

We divided the result into five parts as follows: Characteristics of respondents, The reality of health tourism in China, The preferences for health tourism, Factors associated with health tourism willingness, and The word frequency analysis of health tourism suggestions (Figure 1).

### Characteristics of Respondents

The 629 participants featured more young people aged between 20 and 40 years old (Table 2, 489, 77.7%), with more females than

males (350, 55.6%). A majority of these people had obtained a college degree and above (465, 74%). About half were single (333, 52.9%). Many had a monthly household income between 5,001 and 10,000 yuan (176, 28%). Over half of the respondents lived in eastern China (393, 62.5%).

### The Reality of Health Tourism in China

Among all respondents, more than half knew of health tourism (387, 61.53%). As Table 3 shows, for these participants, the top three types of health tourism known were Leisure and fitness (229, 28.4%), Wellness tourism (206, 25.5%), and Medical tourism (194, 24%). Some of them reported how and/or where they got the information and knowledge about

**TABLE 2 |** Demographic characteristics of the respondents.

Variables	<i>n</i>	(%)
<b>Age, mean (SD), years</b>		
<20	24	3.8
20–29	370	58.8
30–39	119	18.9
40–49	68	10.8
≥50	48	7.6
<b>Gender</b>		
Male	279	44.4
Female	350	55.6
<b>Role</b>		
Civil servant/soldier	157	25
Technical worker	105	16.7
Commercial/service work	42	6.7
Self-employed	21	3.3
Industrial work	22	3.5
Agriculture	13	2.1
Retiree	11	1.7
Student	204	32.4
Other/unemployed	54	8.6
<b>Marital status</b>		
Single	333	52.9
Married	296	47.1
<b>Education level</b>		
Below Associate degree	70	11.1
Associate degree	94	14.9
College degree	245	39
Master degree or above	220	35
<b>Region</b>		
Eastern China	393	62.5
Central China	113	17.9
Western China	123	19.6
<b>Monthly household income (in yuan)</b>		
Nil	49	7.8
≤5000	128	20.3
5001–10000	176	28
10001–20000	162	25.8
20001–50000	83	13.2
≥50001	31	4.9



**TABLE 3** | Cognition of health tourism.

Variables	<i>n</i>	(%)
<b>Type of health tourism knew (<i>n</i> = 387, 61.53%)</b>		
Medical tourism	194	24
Wellness tourism	206	25.5
Chinese medicine tourism	133	16.5
Leisure and fitness	229	28.4
Other types	24	3
Unknown	21	2.6
<b>Approach to information and knowledge about health tourism (<i>n</i> = 195, 50.39%)</b>		
Travel agency	99	20.1
Medical institution	66	13.4
Internet	87	17.6
Television/radio	67	13.6
Newspaper/magazine	47	9.5
Relative recommendation	44	8.9
Professional recommendation	36	7.3
Propaganda brochures	21	4.3
Health tourism organization	21	4.3
Other	5	1

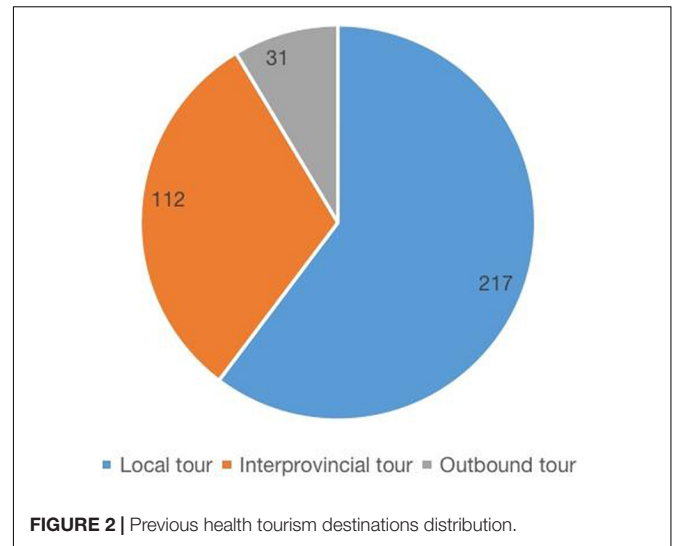
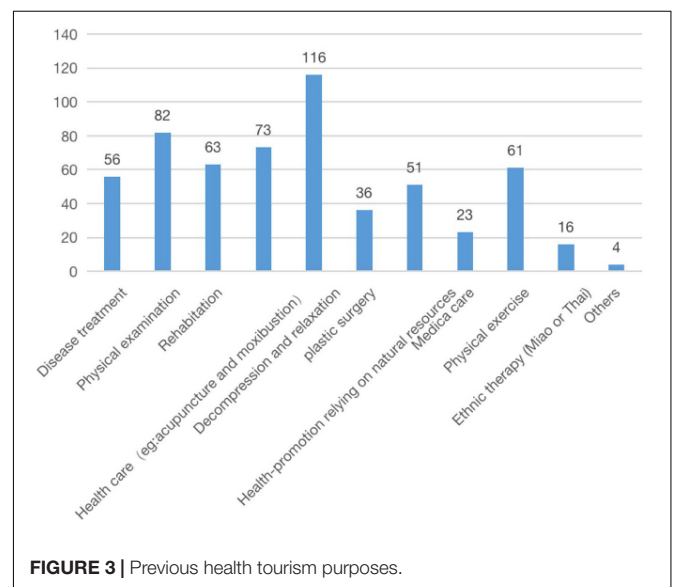
health tourism (195, 50.39%); travel agencies (99, 20.1%), the Internet (87, 17.6%), television/radio (67, 13.6%), and medical institution (66, 13.4) were the main sources of related information.

In total, 234 respondents had traveled for health reasons before, accounting for 37.2% of the whole. A majority of the health tourism occurred within China (329, 91.4%), including 217 (60.5%) within the confines of a province/an autonomous region or a municipality, and 112 (31.1%) across the provincial boundaries; 31 people (8.6%) reported going abroad. They mainly traveled to seek decompression and relaxation (116, 20%), physical examination (82, 14.1%), and health care (73, 12.6%) (Figure 2) and (Figure 3).

## The Preferences for Health Tourism

A total of 70.9% participants reported interest in health tourism (Table 4), and 71.7% preferred to go with friends and/or relatives, there is a universal demand for all kinds of service facilities, including booking service (15.1%), accommodation arrangement (16.4%), shutter service (15.3%), tourism advisory and planning (13.4%), special activities (12.7%), insurance service (10.6%), visa service (8.8%), and translation (6.9%). As for the cost, more than half would travel if the cost was less than 5000 yuan. A total of 446 residents stated that less than one week was appropriate (70.9%). Concerns including high costs (16.3%), little disposable time (13.5%), as well as lack of reliable professional institutions (12.6%) were the main barriers to potential health tourists' decision-making.

Furthermore, participants independently rated the importance of items they would be concerned about if they

**FIGURE 2** | Previous health tourism destinations distribution.**FIGURE 3** | Previous health tourism purposes.

were going to take part in health tourism, and the results suggested that professional level and quality of the institution was the first concern, followed by personal privacy, and service personnel's attitude (Table 5).

## Factors Associated With Health Tourism Willingness

We used the binary logistic regression and identified factors associated with health tourism willingness (Table 6). We found that marital status (OR = 0.209, 95% CI = 0.085–0.514,  $P = 0.001$ ) and attitude to health tourism (OR = 2.259, 95% CI = 1.553–3.287,  $P < 0.001$ ) were factors of willingness to perform health tourism.

Then, we converted each classification variable into dummy variables; marital status had a negative influence on willingness ( $P = 0.009 < 0.05$ ), as married people are 0.341 times more likely to travel than the single population. In relation to occupation, there were significant differences only in commercial and service



**TABLE 4 |** Health tourism preferences ( $n = 629$ ).

	<i>n</i>	(%)
<b>Willingness to health tourism</b>		
Very interested	204	32.4
Interested	242	38.5
Neutral	144	22.9
Not very interested	30	4.8
Not interested at all	9	1.4
<b>Preference for health tourism arrangement</b>		
Together with friends and/or relatives	451	71.7
Package tour	92	14.6
Traveling alone	72	11.4
Other	14	2.2
<b>Preference for health tourism supporting services</b>		
Booking service	430	15.1
Accommodation arrangement	468	16.4
Shutter service	436	15.3
Tourism advisory and planning	382	13.4
Special activities	362	12.7
Insurance service	302	10.6
Visa service	250	8.8
Translation	196	6.9
Other	24	0.8
<b>Acceptable fees (taking family as a unit, in yuan)</b>		
Under 1000	94	14.9
1001–3000	190	30.2
3001–5000	168	26.7
5001–10000	112	17.8
10001–20000	45	7.2
20000 and higher	20	3.2
<b>Acceptable time spent on health tourism(in day)</b>		
≤7	446	70.9
8–14	140	22.3
22–28	23	3.7
>28	20	3.2
<b>Barriers</b>		
High costs	372	16.3
Little disposable time	309	13.5
No effect	250	10.9
Harmful to health	231	10.1
Privacy disclosure	239	10.5
Distrust to institutions	187	8.2
Difficulty in communication	137	6
Shortage of professional institutions	250	10.9
Lack of credible institutions	289	12.6
Other	22	1

business. In terms of health status, better-health residents showed lower intention to participate ( $P = 0.01 < 0.05$ ,  $OR = 0.095$ ). As for attitude toward health tourism, the more people who were positive about health tourism saw it, the more likely they were to want to take part in it. Among them, the probability of people who were extremely passive and relatively passive about health tourism were 0.062 and 0.022 respectively, compared with those who were very optimistic about health tourism. In addition,

**TABLE 5 |** Importance of consumers-concerning factors for health tourism ( $n = 629$ ).

Variables	Mean	Ranking
Professional level and quality of the institution	4.38	1
The confidentiality degree to the personal privacy	4.32	2
The service personnel's attitude	4.30	3
Destination's natural environment	4.24	4
Supporting services(e.g., food, arrangement)	4.20	5
Service project design of institution	4.16	6
Transportation of destinations	4.13	7
Project price of destination	4.04	8
Geographical location of destination	3.97	9
Oral communication of destination	3.94	10
Reputation of destination	3.93	11
Season features of destination	3.85	12

**TABLE 6 |** Influence factors of health tourism willingness.

Variable	OR	95%CI		P-value
		Lower	Upper	
Age	1.032	0.994	1.071	0.099
Gender	1.50	0.740	3.04	0.260
Marital status	0.209	0.085	0.514	<b>0.001</b>
Family monthly income	1.269	0.919	1.753	0.148
Education	0.878	0.532	1.45	0.611
Health status	0.847	0.58	1.236	0.389
Occupation	1.022	0.899	1.162	0.738
Health tourism experience	1.657	0.714	3.845	0.239
Understanding of health tourism	1.02	0.89	1.168	0.776
Attitude to health tourism	2.259	1.553	3.287	<b>&lt;0.001</b>
Constant	0.405			1

*Bold number is of statistical significance.*

health tourism experience contributed to increasing participation rate ( $P = 0.024 < 0.05$ ). Those with health tourism experience were 2.642 times more likely to choose it than those without health tourism experience (Table 7).

## The Word Frequency Analysis of Health Tourism Suggestions

We carried out a word frequency analysis on all suggestions collected to detect the consumers' main focus. Results showed that "Propaganda" was proposed most frequently by participants, followed by "service" and "price" (Figure 4). Additionally, more beautiful scenic spots were expected to be built as health tourism destinations, and health tourism strategies were supposed to be individually adjusted.

## DISCUSSION

This study was a step forward in the rarely explored area of health tourism, and provided a general overview of Chinese health tourism development. As consumer behavior has been a research trend, this survey may enormously propel the industry marketing along with promotion by analyzing and sorting influence factors

**TABLE 7** | Detailed influence factors of health tourism willingness.

Variable	OR	95%CI		P-value
		Lower	Upper	
<b>Marital status</b>				
Single	ref.			
Married	0.341	0.152	0.763	0.009
<b>Occupation</b>				
Other/unemployed	ref.			
Commercial/service work	0.228	0.083	0.621	0.004
<b>Health status</b>				
Uncertainty	ref.			
Very healthy	0.095	0.016	0.564	0.01
<b>Attitude to health tourism</b>				
Very optimistic	ref.			
Not optimistic at all	0.062	0.01	0.391	0.003
Not very optimistic	0.022	0.008	0.066	<0.001
<b>Health tourism experience</b>				
No experience	ref.			
Having experience	2.642	1.133	6.161	0.024
constant	41.734			0

from demand perspective. What’s more, the mixed method was used to thoroughly understand domestic health tourism reality.

### The Reality of Health Tourism

As a new phenomenon, health tourism has been gradually accepted in China, which is supported by our survey which saw 61.53% respondents knew about health tourism and 37.2% had experience in these activities. Compared to Koreans (79.9% respondents knew health tourism) (Han et al., 2018),

the proportion of information getters and relevant experience in China were comparatively less. It is understandable that Chinese people rarely regard seeking treatment outside as an activity of tourism, thus reporting less. Moreover, that may indicate the potential to further develop domestic health tourism products. Travel agencies surprisingly became the main information provider, whereas (Musa et al., 2012) found that word of mouth obtained from close people accounted for 60.2% of health tourism understanding in Malaysia (Musa et al., 2012). It may be attributed to the prosperity of the health tourism industry in Malaysia. But in our sampling, there were a few respondents with health tourism experience before. Unlike private operators assisting travelers with the selection of doctors and hospitals as well as travel arrangements in developed countries, travel agencies usually play the advocacy role in China and the effects are not powerful enough (Johnston et al., 2011). They all imply that the health tourism market in China is nascent. The outdated policies as well as old-fashioned promotional methods may shrink its application population and hinder its expansion (Yongsheng and Tingfang, 2016), taking Hainan city for example (Yilong, 2015). Future publicity and promotion should be designed through multiple channels.

In line with our results, it has also been reported in 2018 that intra-regional tourism accounted for more than 50%. Less than 0.5% were foreign tourists (Tingfang and Shengtian, 2021) and most Italian (91%) as well as European Union citizens (92%) would like to travel within countries (Manna et al., 2020; Tingfang and Shengtian, 2021). The results encourage us to stress the significance of domestic health tourism (Han et al., 2018).



**FIGURE 4** | Word frequency chart of health tourism frequency.

In our research, participants mostly traveled for health-promotion or relaxation, while in other Asian countries like Malaysia, Thailand, and Singapore, medical care was the pursuit (Lee, 2010; Yan, 2020). This reflects the confusion between health tourism and medical tourism. Some scholars advised to establish clear and consistent definitions of them for an increased accuracy of relevant research (Hall, 2011; Pasadilla, 2014). This is because the concept of health tourism is broader than medical tourism (Kamassi et al., 2020), and foreign scholars are used to equating them. What's more, this may be explained by different demographic and resource structures of health tourism (Ceron et al., 2019). In Southeast Asian countries, there are inequities in service provision, whether in access to quality services or insurance (Pocock and Phua, 2011), so people have to travel abroad to get certain treatments. The level of medical technology in China is higher than the countries mentioned above (Kyu et al., 2018). And due to the aging of the population, an increasing number of Chinese people pay attention to health care and health promotion (Haiting, 2020), and would like to combine their vacation with their health tourism activities (Manna et al., 2020).

## Related Influence Factors

Residents weigh a number of factors when considering whether to begin a journey. These factors can be categorized based on the model of healthcare such as accessibility, affordability, and security. All in all, high costs, lack of disposable time, as well as lack of reliable professional institutions were the main barriers. Previous research has similarly pointed out that lower costs, shorter waiting periods, and better quality of care were the drivers of the rise of health tourism in developing countries (Ucak, 2016).

Additionally, we found marital status, health, and some occupation types associated with the willingness. Married persons show less willingness, consistent with former research (Medina-Munoz, 2013; Manna et al., 2020), because they spend lots of leisure time taking care of parents and kids. Unemployed people reported a higher probability of choosing health tourism than business or service employees, which is different from previous studies (Manna et al., 2020). This result could be linked with their increased freedom to plan and participate in travel. It reminds us that intensive job pressure in China generally consumes residents' energy and results in less interest in health tourism, so there should be more individual marketing strategies targeted on different population groups.

It is interesting to note that health status plays a negative role on willingness. This finding probably affirms that health is one of the key destination attributes on tourists' willingness (Lee, 2010). In contrast, Jiang et al. (2022) said Chinese health tourists are likely to visit Japan, South Korea, and Thailand for more advanced healthcare services like cosmetic surgery and anti-wrinkle treatments. Generally speaking, good health self-assessment would reduce the utilization of basic health services, subsequently reporting less participation rate. It is necessary to figure out the differences and features of health tourism demands between the domestic and overseas

market. More importantly, as the Knowledge-Attitude-Practice model indicates, good cognition and a positive attitude toward something may induce relevant behaviors (Connell, 2013). It is the same as our findings that more optimistic people are interested in health tourism and more likely to participate in health tourism. Moreover, as a study reported, perceived value was a crucial predictor of tourist intentions (Habibi and Ariffin, 2019). Previous feeling during health tourism activities impacted their health perceptions (Honggang et al., 2021; Pu et al., 2021). Health benefits and health tourism knowledge attained from vacation could derive their need, which also would be spread unconsciously.

## Preferences of Chinese Health Tourists

Consistent with previous studies, tourist number, cost, and time were the driving forces to motivate health tourism (Shengtian et al., 2019). Similar to previous research (Medina-Munoz, 2013; Manna et al., 2020), the majority preferred to travel with friends or relatives autonomously. Maybe the timely support and security from fellow travelers smooths consumers psychologically and physically. Then, as Lee and Kim (2018) demonstrated, quality of medical service positively affected satisfaction of health tourism from a comprehensive research of 369 participants who had experienced health tourism. Hanefeld et al. (2014) affirmed the significance of quality standards in the health tourism industry. Our result revealed a preference for healthcare safety and quality too. However, there is an inadequate and loose inter-organizational relationship between tourism organization and famous health care organizations at present. And the profit-making of some tourism agencies is not conducive to gaining the trust of consumers. So professionalism together with consumers' privacy are the primary and common focus (Sarwar et al., 2012). There is without a doubt a need to construct a complete and tight industrial chain including intermediary, quality of care, talent, infrastructure, and marketing for China like other hot health tourism spots in Asia (Yan, 2020).

On the whole, we systematically summarized the *status quo* and consumer demand of the health tourism industry in China. As China has a large market of tourists, some of the research results are also suitable for international health tourism promotion. It provides a chance for other health tourism destinations to preview the features and future trends of health tourism, through which we can collaboratively improve the quality of each destination.

## CONCLUSION

This study focuses on the domestic demand and development of health tourism in China. Firstly, a large number of people expressed willingness to conduct health tourism (70.9%), although the proportion of respondents who knew about health tourism was much lower, implying that extensive propaganda and marketing activities are needed. And diverse channels such as the internet, magazine, television, radio, and some travel agencies to spread information are needed. In addition, we could

invite consumers to experience the service by themselves via relevant tickets. Apart from propaganda, government policies or legal documents ought to keep pace with the market. Especially during public health events like COVID-19, governments need to actively establish a systematic tourism program together with a health tourism monitoring system to avoid the risk of mass transmission.

Secondly, this study population with different socio-demographic characteristics showed different intentions to health tourism. Although now provincial governments are sparing no efforts to establish a comprehensive health tourism policy system covering quality supervision, medical security, and industry support, health tourism is still underdeveloped. Based on the results of the current survey, the following advice can be made. Some health tourism fees should be involved. Various and targeted health tourism routes need to be launched by travel agencies or commercial insurance institutions, such as excursion. Moreover, travel agencies are supposed to cooperate with authoritative medical institutions on the premise of taking consumer demand as the guide. It should be remembered that brand and specialty matters very much in the development. For global competition, we should create a Chinese brand, taking Chinese traditional medicine for example. For domestic competition, every region is encouraged to build a unique brand based on their characteristics, such as professional technique or beautiful scenery, to avoid repetition.

Last but not least, the importance of quality needs to be emphasized because it ranks as the most important in our test. Relevant infrastructures including transport, accommodation, and security need to be enhanced to create a comfortable residential environment. Additionally, we hope to mobilize social and association forces by setting honest and strict standards in the health tourism service, urging society to form an industry consciousness and regulation of quality.

## LIMITATIONS

This study has some limitations. The research population needs to be expanded so that the result can be generalized (Han et al., 2018). Moreover, there may be some degree of selection bias since the survey was advertised through social media (Michel et al., 2018), meaning the respondents are likely familiar with the internet (Bosnjak et al., 2013). Second, health tourism includes lots of types like traditional Chinese medicine tourism, medical tourism, and so on. There are different consumer demands due

to the variance of age, income, and health status. For instance, the elderly may be interested in wellness tourism with the preference for life cultivation. Besides, due to the COVID-19 crisis, the intention to perform health tourism, especially global health tourism, may be influenced. However, we analyzed the influential factors in a general type called health tourism. Future surveys should overcome the limitation, they could choose only one type or divide into more specific classifications to get more detailed and meaningful results.

## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusion of this article will be made available by the authors, without undue reservation.

## ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Tsinghua University. Written informed consent from the participants' legal guardian/next of kin was not required to participate in this study in accordance with the national legislation and the institutional requirements.

## AUTHOR CONTRIBUTIONS

DZ and YL did mainly the design and analysis of the findings. YL and QL provided a manuscript based on the data analyzed with DZ's instruction. All authors read, revised, and approved the final manuscript.

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