THE PARADIGM OF CREATING A NEW ENVIRONMENT FOR TRAVEL INDUSTRY CONSUMERS DURING THE CRISIS AND INSTABILITY IN THE WORLD

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Editorial: The paradigm of creating a new environment for travel industry consumers during the crisis and instability in the world

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travel industry, consumers, environment, crisis, tourism

Editorial on the Research Topic
The paradigm of creating a new environment for travel industry consumers during the crisis and instability in the world

The humanity of the twenty-first century is faced with numerous natural and social disasters, which leave great and long-lasting consequences on the entire society and economy. Turbulence caused by the COVID-19 pandemic is still felt in the tourism sector today, and it is uncertain whether the invisible enemy of humanity is only in a period of lull, or whether it will completely withdraw. The goal of this Research Topic was to fully explore the emerging key problems in this newly created environment, both for businesses in a wide range of tourism activities, and for tourists themselves. The crisis situation has led to significant changes in the economic sphere, but also in the sphere of human interaction, reaction, and behavior. The results of the research on the given Research Topic pointed to all the visible consequences of the pandemic that the tourism industry and its related activities are facing, but the authors tried to identify the given problems to devise and propose strategic measures that would be applied in the recovery of the entire sector.

In their Research Topic, the authors Liu et al., point out that the need for health tourism is not so clearly expressed in the minds of Chinese tourists, regardless of the enormous consequences caused by the pandemic. China is a large market with a rich resource base, and the authors suggest the implementation of concrete measures with the support of the government sector for greater development of health tourism.

Calder et al. investigated the impact of COVID-19 on the behavior of pro-environmental travelers and the intention to travel to other countries for

recreational reasons, using the health belief model (HBM) and the theory of planned behavior (TPB) for determining the factors that will influence the behavior of pro-environmental tourists after the pandemic. Certain categories of tourists and potential travelers are in favor of choosing ecological or green services, although this is not necessarily the only choice for travel. They found that fears regarding safety, as well as factors of the TPB model, have a positive influence on behavioral intention.

Zhu et al. claim that heritage tourism was also damaged during the pandemic. Uncertainty and new challenges are certainly a problem that needs to be faced, but closures during the crisis situation also caused the closure of cultural and heritage facilities for security reasons. They pointed out that emotions and personal attitudes are the drivers of personal norms and intentions, and the selection of cultural heritage is influenced by these drivers. Also using the TPB model and the extended form of the NAM model, they indicated that social pressure does not greatly affect tourists' intentions. This further implies the conclusion that the feeling of guilt due to non-compliance with security measures that have been established does not affect visits to cultural heritage sites.

Ecotourism was also was researched by Mengkebayaer et al. The authors proposed ways of researching and presenting attributes that serve to brand an ecotourism destination. They presented data that confirm the fact that the perceived value and experience gained in the tourist movement influence the creation of loyalty toward the tourist destination. Memory is a moderator in the relationship between destination attachment, destination equity, and destination loyalty. While destination attachment and destination equity are mediators of the relationship between perceived value, experience, and loyalty.

Xu et al. examine whether the measures of the absence of customs duties in certain countries can influence the intention of tourists to visit those countries during the pandemic. On a sample of 410 respondents, the obtained results were analyzed through Causal stepwise regression and bootstrap sampling analyses. The results confirm that destinations with duty-free travel are more attractive for tourists, and explain the counterfactual situation by pointing out that tourists in a state of less fear of the pandemic were more likely to visit such countries, and vice versa.

Aware of the overall damage caused by the pandemic, the authors Zhao et al. investigated with a large number of respondents the extent to which tourists are willing to share a short video, thus untangling previous mediators of parasocial relations between tourists and Vlogger videos. They showed that, to the greatest extent, the parasocial relationships of tourists and videos from the domain of tourism are influenced by motivation for entertainment, loyalty to values and emotional engagement.

Aleksić et al. conducted a study on airline choice and passenger loyalty during a pandemic. Using regression analysis, they determined that food quality and safety factors significantly influence attitude, subjective norms, and perceived behavioral control, in the case of medium- and long-haul flights. Intentions serve as a mediator in the relationship between: food quality, food and beverage safety, subjective norms, perceived behavioral control, and airline choice.

A Research Topic that is inevitable during the pandemic is the possession of a vaccination certificate, which is always a taboo topic and creates great limitations because very often in research respondents are given socially desirable responses. Gajić et al. investigated the predictive power of the Big Five (OCEAN) factors on the decision to visit restaurants during the pandemic, depending on having a certificate. The obtained results indicate the behavior of certain consumer profiles. Respondents with pronounced traits of openness and extraversion had positive attitudes and were ready to visit restaurants during the pandemic. Respondents with pronounced traits of conscientiousness and neuroticism had negative attitudes toward restaurant visits during the pandemic. However, the variable of possessing a vaccination certificate partially moderated the attitude of respondents with pronounced neurotic traits. Having a certificate partially reduces the fear of staying in closed facilities during the pandemic.

Akhrani et al. also emphasized the Research Topic of vaccines during the pandemic and the fear of it in their research. They highlight the different policies of the Indonesian and Taiwanese authorities in the fight against the pandemic compared to other parts of the world. They analyzed the travel intention of Indonesian and Taiwanese tourists, investigating the perception of pandemic risk, pandemic fear, vaccination attitude, and general fear of travel during that period. The results indicated that among Indonesian tourists, the intention to travel is influenced by all the mentioned factors directly and indirectly, while among Taiwanese tourists, the fear of COVID-19 is the only one that does not play a role.

Kürüm Varolgüneş et al. investigated how to create indicators of sustainable rural development in the course of increased tourist movements during the pandemic. The research highlights the process of creating awareness among local tourists about the sustainability of the destination and its resources. Local tourists are to the greatest extent the users of the rural tourism product during the pandemic. In their study, they used A'VOT and TOWS hybrid methods. They believe that by determining sustainability indicators, it will be possible to establish strategies for building strengths and eliminating weaknesses.

The importance of the Research Topic is reflected in the overview of the wide range of negative consequences caused by the pandemic in all parts of the world. The authors were

given the freedom to, through the topic of the Research Topic, summarize the results of all the negative consequences experienced by the destination, but also to propose corrective measures for future operations. Based on the research presented in the special edition, it is possible to see all the difficulties that the tourism industry was facing, which includes the users of tourism services. Identifying key weaknesses and problems that can be caused by a crisis situation is of great importance in the application sense for future business in conditions that enable the safety of both service providers and tourists. However, the results of all the research presented will certainly have significance in a theoretical context in order to complement the existing literature and knowledge about the consequences of the pandemic. The fact is that every country and every form of tourism faced the crisis in different ways. The results of the research will remain as a witness to a difficult time in today's civilization. The importance is reflected in summarizing as much research as possible that would be available to science, economy and society. Considering the results, proposals for recovery and economic measures stability, this Research Topic will certainly contribute to future precaution and timely reaction to some future possible crisis situations.

Author contributions

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

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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COVID-19 and Pro-environmental Behaviour at Destinations Amongst International Travellers

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This paper investigates the COVID-19 pandemic, and its impact on pro-environmental behaviour of individuals travelling internationally for leisure and recreational purposes. The aim of this manuscript is to investigate a conceptual framework created through the examination of current existing literature in the field of tourism science. The conceptual framework, consisting of certain constructs of the health belief model (HBM), and the theory of planned behaviour (TPB), is applied and tested using a partial least-squares-structural equation modelling (PLS-SEM). Data were collected from participants who have travelled internationally before and during the outbreak of the COVID-19 pandemic, and those who plan to travel post-COVID-19 pandemic. Results revealed that the conceptual framework tested positively against existing theory, highlighting the key influencing factors in which COVID-19 is likely to have on future pro-environmental behaviour of individuals travelling internationally for leisure and recreational purposes. Moreover, perceived safety threat and outcome expectations have a positive impact on attitude; attitude has a positive impact on behavioural intentions; subjective norm has a positive impact on behavioural intentions, and perceived behavioural control has a positive impact on behavioural intentions. The study results identify practical and theoretical implications for global and travel companies and organisations, presenting opportunities to adjust environmental policies and procedures accordingly, whilst identifying the most effective marketing and management strategies to rebuild a collapsed global travel industry.

Keywords: health belief model (HBM), theory of planned behaviour (TPB), COVID-19, international travellers, pro-environmental behaviour

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INTRODUCTION

This study sets out to investigate the effect of the Coronavirus (COVID-19) pandemic on pro-environmental behaviour amongst individuals travelling internationally for leisure and recreational purposes. Since 2019, the COVID-19 pandemic has brought devastation across the globe, causing turmoil and socioeconomic distress, particularly within the travel and tourism industry (Yazir et al., 2020). Despite scientists previously warning worldwide leaders for many years regarding

the possibility of a pandemic, the global society was caught off guard by the devastation caused by COVID-19 (Žižek, 2021).

Recent studies suggest there is a link between the COVID-19 pandemic and environmentally reckless capitalist practises such as the accelerated clearing of rainforests for palm oil. Consequently, this practice destroys the insulation forests offer from zoonotic diseases and has resulted in infections that are transmissible from animals to humans (Gillespie, 2020). Further, greenhouse gases contribute to the gradual increase of the Earth's temperature (climate change), generated from the by-product of non-renewable energy sources used for economic activities.

According to Han et al. (2020), due to the COVID-19 pandemic, the global travel and tourism sector has faced its most catastrophic crisis in history, resulting in substantial disruption to the sociological behaviours of individuals travelling internationally, whilst causing serious economic impact across the travel industry (Scarlett, 2021). With extreme uncertainty across the travel and tourism sector, understanding the behavioural intention of individuals travelling internationally will allow industry practitioners and researchers to identify fundamental issues within the global travel industry, and to offer solutions to effectively rebuild a collapsed travel economy. Since 2019, according to the most recent data collected the United Nations Conference on Trade and Development (UNCTAD), it is estimated there has been a 74% decrease in internationally inbound tourist arrivals, equating to approximately 1 billion trips, with an estimated loss of between US$1–2.5 trillion during the COVID-19 pandemic (Vanzetti et al., 2021).

Bamberg and Möser (2007) explain that pro-environmental behaviour derives from pro-social motives, such as social anxiety, the influence of future generations, and ecological community awareness. Societal behaviours are commonly categorised as *norm* theories, or normative beliefs (Ajzen, 1991), which are set rules for behaviours that concern the plausibility of an individual approving or disapproving of an expected, or socially accepted behaviour. The power and influence each *norm* holds depend on the self-esteem of the individual, with *personal norms* suggested to have more influence over *subjective norms* and *societal norms*. Further, research studies that focus on eco-friendly behaviour as self-interested behaviour, namely the Theory of Planned Behaviour (TPB), emphasise that cognitive triggers significantly promote "green" and "eco-friendly" behaviour (Ajzen, 1991). In addition, the TPB has been proven to help clarify travellers' decision-making processes, providing a better understanding for industry professionals and analysts (Han et al., 2020). Although the TPB has been proven to support behavioural intention, it is noted that empirical data regarding TPB within the context of the effects of the COVID-19 pandemic on pro-environmental behaviour is limited. Therefore, insights that would provide a deeper understanding of international travellers' choice for selecting safer and more eco-friendly tourist travel methods and destinations, are sparse, particularly during the COVID-19 pandemic.

Over the past year, studies suggest that the COVID-19 vaccination rollout has brought the rate of infections and symptoms under control (Centers for Disease Control and Prevention [CDC], 2021). However, the behaviours of international travellers remain unclear, particularly with the awareness, or lack of, regarding the adverse impact capitalists have on the global environment. Therefore, the following research questions will be addressed: (1) How is the COVID-19 pandemic affecting pro-environmental behaviour of leisure-orientated international travellers? (2) How is the COVID-19 pandemic affecting leisure-orientated international travellers' perceived safety threat and the outcome expectations? (3) How is the COVID-19 pandemic affecting leisure-orientated international travellers' attitudes, subjective norms and perceived behavioural control toward pro-environmental behaviour?

This paper will contribute to existing theory by effectively expanding the TPB through certain constructs of the Health Belief Model framework. A focus on key concepts, such as attitudes, subjective norms, perceived behavioural control, perceived safety threat, and the outcome expectations will help identify behavioural intentions with the effect of the COVID-19 pandemic, and its impact on an individual's pro-environmental behaviour.

As previously mentioned, the tourism sector has faced its largest crisis in history, resulting in substantial disruption of the sociological behaviours of international travellers (Han et al., 2020), including a consequential economic impact across the travel and tourism industry (Scarlett, 2021). Inevitably, the outbreak of the COVID-19 pandemic witnessed global public health officials placing orders restricting international travel and activities associated with the spread of the virus (Ojo et al., 2022), such as population movement and person-to-person contact. Thus, by considering the perceived safety threat and outcome expectations related to the health risk of COVID-19, this study will provide a valuable framework to help companies and organisations within the travel and tourism industry address the international traveller's pro-environmental expectations by providing theoretical and practical implications.

LITERATURE REVIEW

The Health Belief Model

The Health Belief Model (HBM) was developed in the 1950s to help explain why individuals fail to participate in programmes to detect and prevent (Rosenstock, 1974). Since its development in the 1950s, the HBM has expanded and evolved globally, supporting diverse cultures and sociopsychological behaviours (Jones et al., 2014). The HBM, consisting of six constructs, includes *risk susceptibility*, *risk severity*, *benefits to action*, *barriers to action*, *self-efficacy* and *cues to action* (Jones et al., 2014). It is important to note, the first four constructs, namely *risk severity*, *risk susceptibility*, *benefits to action* and *barriers to action*, were developed initially, creating the foundation of the framework, with *cues to action and self-efficacy* helping to explain, or intervene the anticipated outcome expectancies (LaMorte, 2019). Given the nature of the COVID-19 pandemic and its limited research across the global travel industry thus far, there

is a significant emphasis on the initial 2 constructs of the HBM, namely *risk susceptibility* and *risk severity*.

Risk Susceptibility (Perceived Safety Threat)

Rosenstock (1974) outlines *perceived safety threat* factors that influence individual health-related action. The three factors include (1) *the existence of sufficient concern to make health issues relevant*, (2) *the belief that an individual and their behaviour creates vulnerability to a specific condition*, and (3) *the belief that following recommended health guidelines will reduce susceptibility to the condition, at a subjectively justifiable cost*. According to the Centers for Disease Control and Prevention [CDC] (2020), individuals with the highest *perceived safety threat* from the COVID-19 virus are determined by age (*80 and 95% of COVID-19 deaths occurring in people aged 65+ and 45+ respectively*), suggesting those aged 44 and younger account for only 5% of deaths caused by COVID-19. Further, according to Clark et al. (2020) an estimated 22% of the global population (1.7 billion people) possess one or more underlying health conditions that increases the risk of severe COVID-19 symptoms if infected. In addition, a potential 4% of the world's population (349 million people) face hospitalisation if infected (London School of Hygienic and Tropical Medicine, 2021).

Risk Severity

Many factors influence the likelihood of contracting COVID-19 (Collins, 2021), including possible virus exposure, and whether there is an acquired immunity from previous infections. COVID-19 is a highly transmissible virus, spreading from human to human through inhalation, or contact with infected droplets (Wu et al., 2021), or direct contact via saliva, coughing or sneezing within a range of approximately 1–1.5 m (Mohapatra et al., 2020). Recent studies have suggested that risk perceptions and subjective norms play a significant role in the decision to cancel or postpone international travel due to the COVID-19 pandemic (Ojo et al., 2022). Further, according to Sorci et al. (2020) COVID-19 case severity and fatality rates varied from country to country as the pandemic continued to spread. Moreover, in a research article conducted by Cartaxo et al. (2021) countries with the highest COVID-19 risk and severity based on the speed of the virus, the incidence of infection and population size, included India, the United States and Brazil, while the countries with the lowest potential risk and severity due to the COVID-19 exposure included New Zealand and Germany. A study conducted by Shadmi et al. (2020) further emphasises concern regarding the inequitable spread of COVID-19 in densely populated areas as well as the limited and poor access to high-quality health and medical care systems, particularly in countries with lower socioeconomic status. Hence, individuals may consider alternate travel destinations, such as New Zealand and Germany, based on a lower risk severity, whilst avoiding countries such as India, the United States, and Brazil, that possess a higher risk severity (Cartaxo et al., 2021). Over the past year, the COVID-19 vaccine rollout has substantially reduced the risk of infection by 91% for those who have received full vaccination (Centers for Disease Control and Prevention [CDC], 2021). However, it is important to note that the COVID-19 vaccine rollout has been uneven across the globe (Tatar et al., 2021).

Theory of Planned Behaviour

The TPB was created by social psychologist Icek Ajzen as a general model to predict and explain the performance of human behaviour and behavioural intention. Since its development, TPB has tested, progressed, and raised questions in many social science fields, resulting in considerable interest amongst practitioners and researchers in the field (Tornikoski and Maalaoui, 2019). The TPB explains the formation of behavioural intention via three precursors: *behavioural attitudes*, *subjective norms,* and *perceived behavioural control* (Ajzen, 1991). Due to its complexity, explaining human behaviour is a difficult task, and in general terms, TPB is supported significantly by observational and experimentational studies (Ajzen, 1991). Further, conclusive data outlining *behavioural attitudes*, *subjective norms* and *perceived behavioural control* has provided compelling explanations against actual human behaviour and predicted future trends. Recent studies that utilised the three constructs of the TPB framework identified behavioural patterns relating to following COVID-19 socially distancing rules, demonstrating positive results with individuals changing their behavioural attitude, adhering to social pressures whilst recognising their ability to perform the required behavioural outcome. This behavioural change is triggered by the individual's fear of contracting COVID-19 and the potentially fatal symptoms that COVID-19 carries (Frounfelker et al., 2021). It is suggested that this highlights the importance of extending the TPB model by amalgamating certain constructs of the HBM framework, such as the previously mentioned *risk susceptibility* and *risk severity*, with behaviours portrayed by individuals adhering to social-distancing rules.

Attitude

Attitude toward human behaviour refers to the individual evaluation or appraisal in question, and whether certain decisions are favourable, or unfavourable (Tornikoski and Maalaoui, 2019). In broad terms, we, as humans, support some policies, whilst undermining others; we make certain decisions and reject others (Crano and Prislin, 2008). The more optimistic an individual's thought process is toward the aftereffect of a particular decision, the more favourable their attitude is toward engaging in such behaviours, particularly toward the ease of engagement. It is important to note, Azlan et al. (2020) emphasise that an effective outcome depends on the cooperation and compliance of all members of society. During the initial outbreak of the pandemic, Perrotta et al. (2021) conducted a survey, with 71,612 questionnaires collected between 13 March 2020 and 19 April 2020 from participants across the globe. It was found that individuals were wearing face coverings before mandatory rules were put in place by governing officials. Further, Abolfotouh et al. (2021) conducted a study with 2,470 adults in Saudi Arabia between 17 April 2020 and 29 April 2020 and found positive attitudes toward social distancing (97.1%), the government's response to the crisis (95%), and individual hygiene standards (93.2%), whilst identifying negative attitudes toward COVID-19

deaths (83.7%), the impact of the pandemic globally (81.0%), and those who had tested positive to the virus (77.8%).

Subjective Norms

According to Ojo et al. (2022), in addition to the risk of contracting COVID-19 while travelling, an individual's decision to engage in recreational travel depends on the subjective norms of others, especially with the influence of public appeals from government officials to adhere to social distancing and travel restrictions. *Subjective norms* affect behavioural intentions and are explained by Ajzen (1991) as the perceived pressure from society to conduct, or not to conduct a specific behaviour. In essence, *subjective norms* refer to the persuasion from an individual, or individual's family member, friend, loved one, work or business partner, toward a particular decision-making process. During the period of the pandemic, government officials and global leaders have suggested the use of COVID-19 passports (Michaels, 2021). A recent study conducted by Cerda and García (2021), identified that 28% of the 370 participants surveyed were hesitant to receive the COVID-19 vaccine for three main reasons: adverse side effects and extent of risk, the lack of vaccine knowledge, and the preference for others to be vaccinated first. This conclusive data is backed by Han et al. (2020), highlighting the significant influence of the perceived psychological risk when individuals consider travelling internationally, particularly whilst considering destinations that are perceived safer than others. Moreover, according to Saracevic and Schlegelmilch (2021), identifying subjective norms is important to motivate sustainable practises, particularly regarding pro-environmental behaviour. In addition, Ramkissoon (2020) identifies that there is growing evidence of a link between health and wellbeing, and pro-environmental behaviour, and whilst the COVID-19 vaccine has proven 95% effective (Centers for Disease Control and Prevention [CDC], 2021), there are many individuals that remain unvaccinated.

Perceived Behavioural Control

Perceived behavioural control consists of two components: self-efficacy (the ease or difficulty of engaging in a specific behaviour), and controllability (the extent of individual performance) (Mai et al., 2021). It also indicates the importance of available resources and opportunities that contribute to a specific behaviour achievement (Ajzen, 1991). In addition, Ajzen (1991) explains that the idea of behavioural achievement depends on the intention through motivation, and ability through self-control. It has been recognised that previous studies have revealed there is a direct link between *attitudes* and *subjective norms* (Zhang et al., 2017), as social pressure that arises from other individuals' beliefs or behaviours could facilitate or dictate the way a person behaves. Whilst Bandura (1977) recognised that behavioural control can produce positive outcomes, it is a complex task to foresee future decisions of people without understanding their behavioural attitudes and actions (Mai et al., 2021), particularly across the global tourism industry. Although Mai et al. (2021) identified there is a connection between subjective well-being and perceived behavioural control of international travellers, this is limited to predicting individuals' intentions, not behaviour. As positive behavioural performance is motivated through the ability to remove individual psychological barriers (Hardin-Fanning and Ricks, 2016), a person's behavioural control is also swayed by lower costs, time effectiveness, and adequate resources.

Conceptual Model and Hypothesis Development

This study aims to identify whether individuals' behavioural intentions demonstrate whether the perceived safety threat of COVID-19 affects their pro-environmental attitudes positively within the global travel industry. As the international travel industry begins to reopen, companies and organisations must inevitably adjust and amend policies and procedures, particularly regarding health, safety, and long-term environmental sustainability. This study uses certain constructs of the HBM and the TPB to gain a comprehensive insight into the pro-environmental behaviours of international travellers for leisure and recreational purposes.

As rendered by Rosenstock (1974), three factors that influence health-related action:

The Existing Concern of Making Health-Related Issues Relevant

As of 19 January 2022, 335,521,830 COVID-19 cases have been reported thus far, 5,574,726 deaths globally (Worldometer, n.d.). In addition, there are over 394,712 new cases and over 8,092 fatalities per day.

The Belief That Behaviours Create Vulnerability to a Specific Condition

The Centers for Disease Control and Prevention [CDC] (2021) declared that the COVID-19 vaccine rollout substantially reduced the risk of infection by 91% for those who have received full vaccination. Health and safety campaigns announced by the Centers for Disease Control and Prevention [CDC] (2021) and other governing officials have advised to be vaccinated, wear a face mask, and practise social distancing. It is noted, scientific studies have proven the effectiveness of these three precautionary measures, with 96.4% vaccine effectiveness (Pormohammad et al., 2021), 79% face mask effectiveness (Howard et al., 2021), and a substantial decrease in cases by adhering to social distancing, according to the results of a comprehensive study conducted by Matrajt and Leung (2020).

By Following Guidelines, Perceived Safety Threats Will Be Reduced, at a Justifiable Cost

An individual must believe that change of a specific kind will prove beneficial if it is set at an acceptable cost, whilst believing they can implement that change (Rosenstock, 1974). Several studies support the effectiveness of preventative measures, however, there is still scepticism amongst individuals globally, especially with a vaccine developed at "breakneck" speed (Abcarian, 2020), and a substantial number of online sources containing misleading and false information (Li et al., 2020). Based on the literature review, the authors proposed the following hypothesis.

H1: *Perceived safety threat has a positive impact on attitude.*

Rosenstock (1974) mentions that the outcome expectation is an individual's chosen behaviour will determine a particular result. In addition, for a change in a specific behavioural pattern, a person must have an incentive to take relevant action, or possess a feeling of vulnerability, or be threatened, by their current behavioural patterns. Further, Rotter (1954) and Bandura (1977) suggest that an individual's behavioural attitude is determined by expectancies and incentives regarding environmentally friendly practice. Expectations include environmental cues such as the belief about how events are connected, the consequence of one's action, and self-efficacy. Incentives include an increase in health, physical appearance, approval of others, and economic gain. A positive outcome expectation will be measured against whether an individual's attitude, perceived control, and the ability to influence others outweigh the risk susceptibility and risk severity whilst travelling during the COVID-19 pandemic, and thereafter, with current preventative measures in place. Consequently, the following hypothesis is proposed.

H2: *Outcome expectations has a positive impact on attitude.*

According to Ajzen (1991), identifying an individual's chosen behaviour can be predicted with accuracy from that individual's attitude, whilst capturing the motivational factors that initially influenced the behaviour. Campbell (1963) suggests that attitudes are residues of experience, with an individual's unique contribution based on habit, rather than on reasoned action. Given the novel nature of the global outbreak, an individual's knowledge and experience of COVID-19 may be limited. Therefore, results may produce a positive attitude regarding behavioural intention based on an individual's reason, rather than based on habit, past knowledge, or experience. In addition, as outlined by Crano and Prislin (2008), we, as humans, favour some policies, whilst undermining others. As individuals and governmental bodies have demonstrated a strong emphasis on sustainable environmental practice and public health (Centers for Disease Control and Prevention [CDC], 2020), people were allowed to express their opinions regarding the use of travel and hospitality services that are pro-environmental. Based on hypotheses 1 and 2, people's attitudes could affect international travel decisions, and choice of transportation during pandemics (Abdullah et al., 2020). Consequently, the authors postulate the following hypothesis.

H3: *Attitude has a positive impact on behavioural intention.*

Perceived pressure from society to conform, or not to conform to a specific behaviour is crucial to understand whether people are influenced by other individuals, family members, friends, loved ones, work or business partners (Ajzen, 1991). As previously mentioned, there is scepticism amongst adults regarding misinformation on social media sites, and mixed messages by government officials and scientists, particularly regarding vaccination and international travel (Abcarian, 2020). According to Ajzen and Fishbein (2000), as a general rule, the stronger a subjective norm, the more inclined an individual will perform the behaviour in question. Further, Vallerand et al. (1992) and Chang (1998), have demonstrated a significant existence between subjective norms and an individual's behavioural intention (Al-Swidi et al., 2014). According to Yang et al. (2020), the subjective norm shapes people's behaviours, as the fear of social rejection motivates individuals to act in accordance with referent groups. In a recent study conducted by Shin et al. (2022), results determined that individual's travel decisions were significantly and positively impacted regarding subjective norms during the COVID-19 pandemic. Thus, this hypothesis will be tested to confirm whether individuals perform behaviours that fall in line with subjective norms, reflecting the social expectations that others have regarding an individual's behavioural intention (Ajzen, 1991), particularly in the context of this research paper. Thus, on the basis of the above theoretical background, literature review, and empirical findings, the following hypothesis is proposed.

H4: *Subjective norm has a positive impact on behavioural intention.*

The idea of behavioural control is based on individual motivation, and is considered as an antecedent of behavioural intention (Ajzen, 1991). Further, Song et al. (2015) outline behaviour control as the perception of the ease or challenge in performing a behaviour. According to Mai et al. (2021), it is a difficult task to predict individuals' future actions without understanding behavioural attitudes, particularly with the current situation of a global pandemic. In addition, perceived behavioural control has been associated with lower costs, time efficiency, and necessary resources (Hardin-Fanning and Ricks, 2016). Regarding the impact of COVID-19 and the awareness it has created around environmental practises (Lamers and Student, 2021), individual perception may have changed, or been influenced to utilise travel and hospitality services that are pro-environmental. In a study conducted by Aschwanden et al. (2021), findings suggest a strong connection between perceived behavioural control and preventative behaviours regarding the effect of COVID-19, such as hand washing, staying at home, using hand sanitiser and social distancing, especially with older adults. Therefore, this hypothesis aims to identify and validate the causal relationship between behavioural control and the positive impact on behavioural intention regarding COVID-19 and international travel. Consequently, the authors put forward the following hypothesis.

H5: *Perceived behavioural control has a positive impact on behavioural intention.*

In this context, the proposed hypotheses were based on individual knowledge and beliefs regarding risk susceptibility and severity of the COVID-19 virus. Further, this study sets out to test whether the preventative measures recommended by governing officials to reduce the perceived safety threat have had a positive effect on attitude, subjective norms, and perceived behavioural control toward international travel for leisure and recreational purposes. Below, **Figure 1** shows the relationships between constructs and proposed hypotheses.

On reflection, the methodology section provides a clear and precise description of how the hypotheses were tested, and a

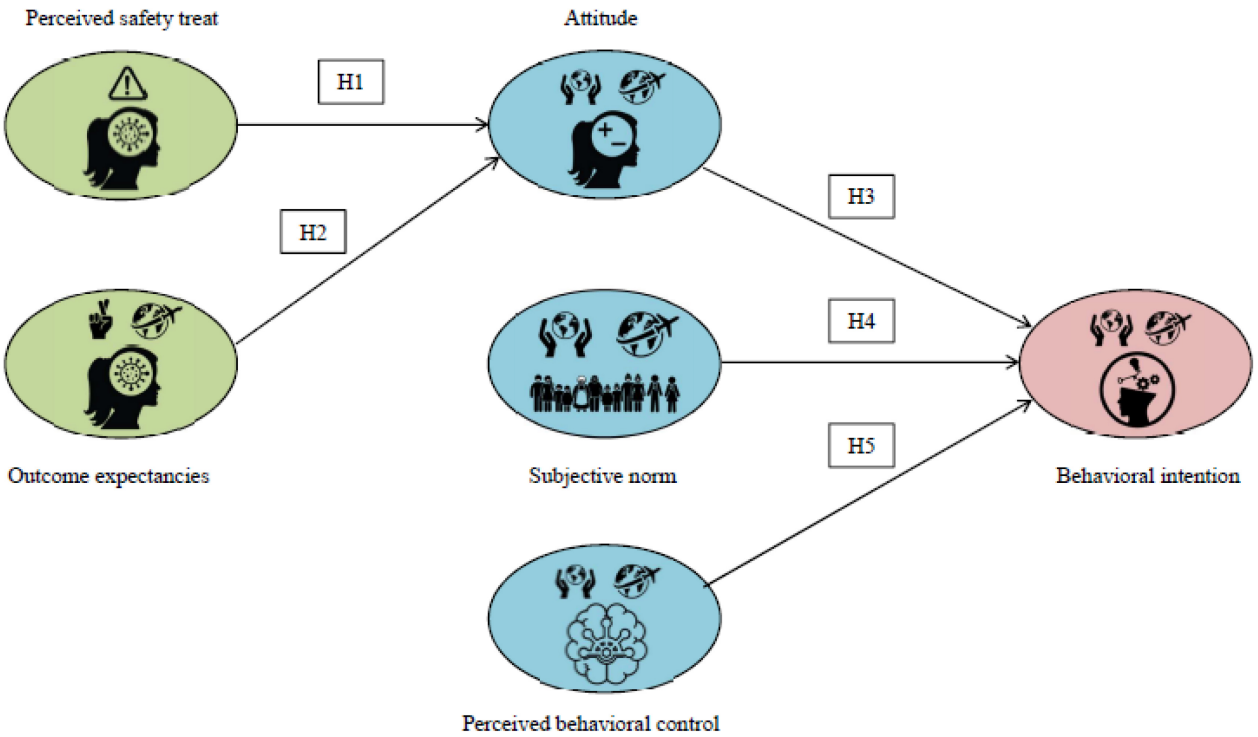

FIGURE 1 | Integrative conceptual framework and proposed hypotheses.

rationale for the selected procedures critical for this specific topic. It is noted, the methodology was developed in line with the conceptual framework, which leads into the data analysis and results section.

METHODOLOGY

As per the literature review, the HBM and the TPB models have been utilised with a confirmed validity across a vast number of socio-psychological studies, with relevant research topics conducted, tested, and proven by Huang et al. (2016) and Han et al. (2020). By applying a deductive approach, an explanation of causal relationships between the proposed hypotheses and their variables may present the ability to generalise findings to an extent and allow concepts to be measured in a quantitative capacity. This allows for a shorter time to complete the research and reduce the risk that the study will be influenced by pre-existing literature.

In this study quantitative approach was employed, as quantitative approach allows researcher to presents theories that are exemplified within specific hypotheses, which are then tested against relevant literature (Almalki, 2016). Lastly, gathered data through a quantitative measure will allow the application of a partial least-squares-structural equation modelling (PLS-SEM), which predicts variables based on the results of survey participants, and their observations (Hair et al., 2014), which, according to Usakli and Kucukergin (2018), has proved particularly beneficial in travel and hospitality research.

Data Collection

A comprehensive online survey (please see **Appendix 1**) was constructed in English at SurveyMonkey®, an AI-powered platform, allowing a fast collection of data from online participation (SurveyMonkey, n.d.). SurveyMonkey was chosen for this study as it offers easy access, avoidance of input and data coding errors, and saves time and cost (Varela et al., 2016). Potential participants were invited to take part in the survey via social media platforms, including Facebook®, Instagram®, WhatsApp®, and LinkedIn®, using a mobile phone, tablet, laptop, or desktop. The main objective was to collect data from participants who have travelled internationally pre-COVID-19 pandemic (Pre-January 2020), travelled internationally during the COVID-19 pandemic (January 2020 – currently October 2021), and who plan to travel internationally in the future, post-COVID-19 pandemic. It is noted that targetting a broad, international sociodemographic range generates insight from individuals across many geographical locations. Thus, it is considered that participant results will differ across the nations included in the survey, particularly regarding risk susceptibility, risk severity, attitude, subjective norm, and perceived behavioural control.

Measures

A cross-sectional, online, anonymous survey was developed with a comprehensive list of questions based on certain constructs of the HBM, the TPB model, and pro-environmental behaviour. The survey was a Likert scale (Sullivan and Artino, 2013), comprised

of 21 adjective pairs, ranging from 1 = *extremely low*, to 7 = *extremely high*, and a bipolar scale including *bad-good*, *foolish-wise*, *unpleasant–pleasant*, and *harmful–beneficial*. Participants were asked to choose a number from 1 to 7 (including the bipolar scale options), that most closely described them, or their personal preference.

The scale items were adopted from the validated measurement items in the previous studies, and a Likert's scale was used except for the demographic questions. Four items were adopted from Huang et al. (2016) to measure perceived safety threat. Four items were adopted from Han and Hyun (2019) and Severt and Tasci (2020) in order to measure outcome expectation. Lastly, remaining items to measure attitude toward pro-environmental behaviour, subjective norm, perceived behavioural control and pro-environmental behavioural intention were adopted from Han et al. (2020).

A rigorous method is an important part of assessing the legitimacy of a study, and to ensure trustworthy findings (Jordan and Troth, 2020). A procedural method was applied to avoid a common method bias, as neither the Harman test, nor the common factor method allows the elimination of the common method bias (Richardson et al., 2009; Conway and Lance, 2010). Therefore, the procedural strategies set by Jordan and Troth (2020) were used to minimise the common method bias were all participants were well-informed regarding the purpose of the research and how research results would be used. In addition, the survey used was not extensive, measurements were not overlapping, and the questions presented were transparent and without ambiguities (Jordan and Troth, 2020). This included the verbiage was constructed meticulously and adopted from various sources.

RESULTS

Descriptive Statistics

A total of 331 respondents (125 males, 206 females) drawn from a variety of nations participated in the survey. The study attracted more women (62%) than men (38%). The age of participants was predominantly between 26 years old and 35 years old (44% of total respondents), followed by 36 years old to 45 years old (30% of total respondents). The majority of respondents held a university degree (38%), followed by those with a graduate degree (25%). Most participants were Caucasian/White (74%), the others were Asian, Hispanic, Black, and other (11, 7, 4, and 4% respectively). The monthly household income levels were well distributed, with most of the respondents earning between $55,000 to 69,999 (19%), followed by an income level of under $25,000, and $25,000 ∼ $39,999 (18% respectively). All participants were volunteers with no payment in return for completing the online survey. The descriptive statistics are provided below in **Table 1**.

TABLE 1 | Demographic characteristics of the sample.

Demographic characteristics	Frequency	Percentage
Gender		
Male	125	38%
Female	206	62%
Age group		
25 years old and younger	18	6%
26–35	144	44%
36–45	98	30%
46–55	45	14%
56 or above	20	6%
Income		
Under $25,000	58	18%
$25,000 ∼ $39,999	58	18%
$40,000 ∼ $54,999	46	14%
$55,000 ∼ $69,999	63	19%
$70,000 ∼ $84,999	30	9%
$85,000 ∼ $99,999	22	7%
$100,000 or higher	54	16%
Education		
Less than high school degree	11	3%
High school degree	46	14%
2-year degree/community-college degree	66	20%
University degree	125	38%
Graduate degree	83	25%
Ethnicity		
Asian	36	11%
Black	12	4%
Hispanic	23	7%
Caucasian/White	246	74%
Other	14	4%
Nationality		
African countries	29	9%
Asian countries	35	11%
Central American countries	16	5%
North American countries	40	12%
South American countries	8	2%
European countries	199	60%
Other countries	4	1%

Reliability and Validity Assessment

The reliability and validity were assessed in order to confirm the quality of the data and the consistency with the measurement items under the latent variables (Hair et al., 2019). To assess convergent validity, values relating to the average variance extracted (AVE) should be higher than 0.5 and the composite reliability (CR) of each construct should be above 0.6 (Fornell and Larcker, 1981). It is noted, AVE measures the number of variances captured by a construct, including the number of measurement errors (Afework et al., 2021). PL-SEM indices, including GFI, CFI, NFI, IFI, RFI, and TLI, should be greater than 0.90 to suggest a good model fit (Finch, 2019). Based on the results in **Table 2** below, this indeed demonstrates a good model fit. The RMSEA, described by Xia and Yang (2018) as an absolute fit index that assesses how far the proposed hypothesised framework is from being a perfect model, should be less than 0.9 (Hu and Bentler, 1998). In addition, the SRMR, which is a robust method used to estimate the model parameters (Shi and Maydeu-Olivares, 2019), should also produce a value less than 0.9 (Hu and Bentler, 1998).

TABLE 2 | Discriminant validity of conceptual model.

CMIN	DF	P	CMIN/DF	NFI	RFI	IFI	TLI	CFI	RMSEA
283.951	174	0	1.632	0.913	0.895	0.964	0.957	0.964	0.044

TABLE 3 | Correlations among latent constructs.

Factors	CR	AVE	Perceived safety	Outcome expectation	Attitude	Subjective norm	Perceived behavioural control	Behavioural intention
Perceived safety	0.752	0.539	**0.663**					
Outcome expectation	0.644	0.506	–0.18	**0.563**				
Attitude	0.859	0.606	–0.011	0.13	**0.799**			
Subjective norm	0.915	0.782	0.06	0.324	0.449	**0.885**		
Perceived behavioural control	0.797	0.573	–0.047	0.297	0.21	0.36	**0.757**	
Behavioural intention	0.873	0.698	0.016	0.335	0.336	0.66	0.623	**0.835**

Below, **Table 3** shows that all the values of AVE ranged from the satisfactory limit noted above (Fornell and Larcker, 1981). The internal consistency of measured items also indicated a good fit as CR, the measure of internal consistency in scale items (Fornell and Larcker, 1981; Netemeyer et al., 2003), also fulfilled the criteria of above 0.7 (Hu and Bentler, 1998). Both AVE and CR indicate good reliability of measured items (Bacon et al., 1995). In a CFA setting, the square root of AVE for each construct needs to be greater than its squared inter-construct correlation estimates to achieve discriminant validity (Hair et al., 2009), defined as a set of empirical criteria that can be assessed from multitrait-multimethod matrices (Rönkkö and Cho, 2020). The results show that the square root of AVE ranged from 0.506 to 0.786, exceeding the cut-off value of 0.5 (Fornell and Larcker, 1981). In addition, the factor loading of each item is above the recommended threshold of 0.5 (Zhu and Deng, 2020). The results indicate there are no serious occurrences of discriminant validity in this study. **Table 3** also illustrates and confirms that all AVE and CR values meet the threshold criteria.

Furthermore, as PLS-SEM suffers from criticisms of flexibility compared with CB-SEM a normality test was performed and **Table 4** outlines normality test of the variables.

The skewness of all the variables was between –1 and 1 except the value for attitude. The attitude was negative skewed and its value is –2.202. Likewise kurtosis of all the variables is acceptable except for the attitude. However, as PLS-SEM is not effected by the distribution of the data, further analysis was done with respect to the proposed hypotheses.

TABLE 4 | Assessment of normality.

Variable	Min	Max	Skew	c.r.	Kurtosis	c.r.
Outcome expectation	–2.629	1.143	–0.835	–6.202	1.310	4.865
Perceived safety	–1.738	2.140	0.463	3.441	–0.248	–0.922
Perceived behavioural control	–3.838	1.265	–0.884	–6.568	1.576	5.853
Subjective norm	–3.938	1.903	–0.571	–4.238	0.323	1.201
Attitude	–3.974	0.611	–2.202	–16.354	5.341	19.834
Behavioural intention	–4.255	1.594	–0.722	–5.361	1.318	4.893

Structural Model

The maximum-likelihood-estimation (MLE), which is a preferred method of parameter estimation in statistics is an indispensable tool for statistical modelling techniques (Myung, 2003). This was used to examine the relationships among perceived safety threat, outcome, attitude, perceived control, subjective norms, and behavioural intention (see **Table 5**). The results confirm that the full structural model (H1–H5) is a good model fit (CMIN/DF = 2.044; NFI = 0.895; RFI = 0.864; IFI = 0.944; TLI = 0.926; CFI = 0.943; RMSEA = 0.056; AND SRMR = 0.036), as per **Table 6** below. As both the RMSEA and the SRMR produced values of 0.056 and 0.036 respectively (see **Table 6**), this suggests the model is a good fit, as the results are below the 0.9 thresholds (Xia and Yang, 2018; Shi and Maydeu-Olivares, 2019). Moreover, the results in **Table 2** ($\chi 2 = 283.951$, df = 174, RMSEA = 0.044, CFI = 0.964, TLI = 0.957, IFI = 0.964, NFI = 0.913 yield a good model fit). Thus, the results of the measurement model ensured that the study has achieved construct reliability and validity. **Figure 2** shows the results of the structural conceptual framework model.

TABLE 5 | Hypothesis testing – MLE (maximum likelihood estimation).

Hypothesis				Estimate	*SE*	*P*-value
H1	Attitude	<—	Safety	0.147	0.104	*
H2	Attitude	<—	Outcome	0.444	0.101	***
H3	Intention	<—	Attitude	0.02	0.046	*
H4	Intention	<—	Norm	0.435	0.044	***
H5	Intention	<—	Control	0.513	0.064	***

TABLE 6 | Discriminant validity of final model.

CMIN/DF	NFI	RFI	IFI	TLI	CFI	RMSEA	SRMR
2.044	0.895	0.864	0.944	0.926	0.943	0.056	0.036

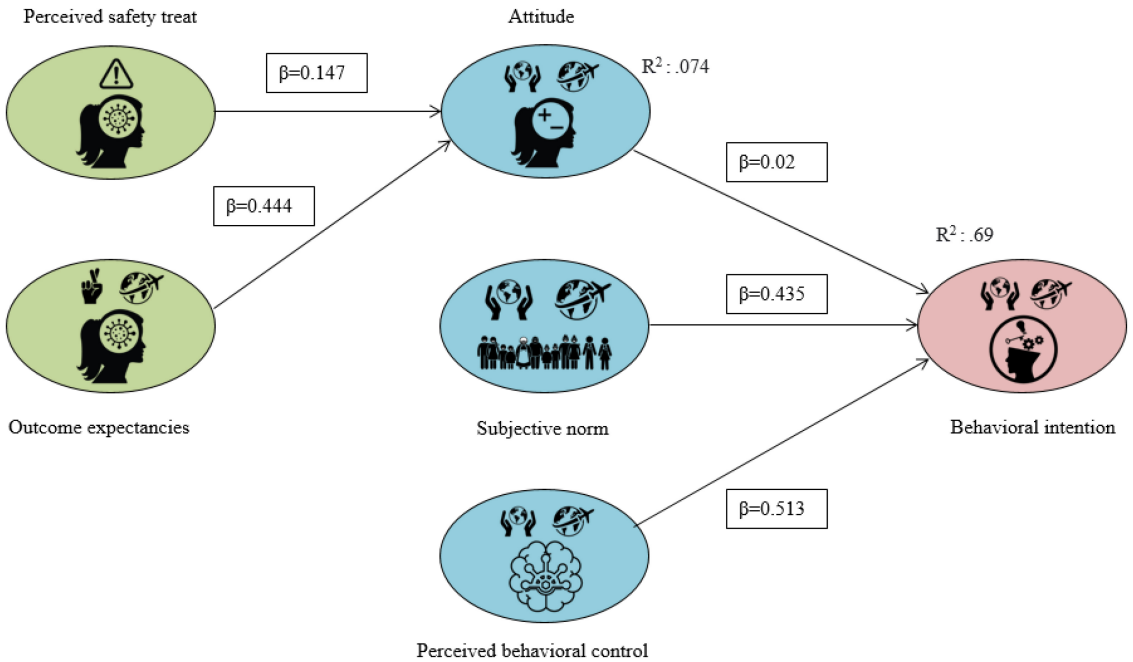

FIGURE 2 | Result of the structural conceptual framework model.

The proposed conceptual framework was deemed adequate for the relationship between the proposed hypotheses and study variables. The proposed conceptual model was deemed adequate for the total variance in attitude (7.4%) and behavioural intentions (69.4%), which were all, as per Aneshensel (2013), above the acceptable levels for studies in social sciences. Reflecting on **Table 5** and **Figure 2**, the perceived safety threat has a significant effect on attitude ($\beta = 0.147$, $p < 0.001$) and attitude has a significant effect on perceived behavioural intentions ($\beta = 0.02$, $p < 0.001$). Therefore, Hypotheses 1 and 3 are supported. Further, the hypothesised relationship of outcome expectancies on attitude was positively affected ($\beta = 0.444$, $p < 0.001$), supporting Hypothesis 2. Moreover, the positive link between the subjective norm and behavioural intention is statistically significant ($\beta = 0.435$, $p < 0.001$), supporting Hypothesis 4. Lastly, perceived control was positively influenced by perceived behavioural intentions ($\beta = 0.513$, $p < 0.001$), confirming Hypothesis 5.

The results have confirmed and supported the hypotheses, including the relationships with latent constructs. Therefore, **Table 5** outlines and exhibits the accepted conceptual framework (H1–H5), producing a significant, and positive outcome. To delve further into the meaning, relevance and importance of the results, the discussion section expands on the relationship between the literature review and proposed research questions.

DISCUSSION

The findings relating to the effect of COVID-19 on pro-environmental behaviour of individuals travelling internationally for leisure and recreational purposes, offer a significant contribution to current literature, including the five key components consisting of perceived risk susceptibility, perceived risk severity, attitude, subjective norm, and perceived behavioural control. From the findings, it appears that the hypotheses demonstrate a viable, and causal relationship, comprising five distinct variables based on existing literature.

The perceived safety threat (risk susceptibility) significantly impacted attitude, which confirms the three theoretical factors outlined by Rosenstock (1974) that influence individuals taking health-related action. With that being said, the first factor relates to the existence of sufficient concern regarding the effect of COVID-19, and the heightened perception of risk susceptibility toward health-related issues, particularly with international travel. Secondly, the vulnerability of one's behaviour is amplified, resulting in a reluctance to travel internationally for leisure and recreational purposes whilst COVID-19 is still prevalent. Lastly, individuals are more likely to follow the recommended guidelines set by governmental officials, such as wearing a face mask, socially distancing from others, staying at home, receiving the COVID-19 vaccination, washing hands and self-isolating if there are developing symptoms.

Although it is suggested that risk susceptibility affects individuals' attitudes positively, according to Zhu and Deng (2020), risk susceptibility is merely the starting point for a judgement of crisis impact on the tourism market. With this considered, the outcome of an individual's risk susceptibility suggests that the COVID-19 cycle is still in the early stages of the crisis. Further, an individual's attitude is subject to significant influence from perceived safety threats (Zhu and Deng, 2020), with some studies suggesting that an individual's perceived

susceptibility is of greater interest than the perceived value of travelling. In addition, individuals may only decide to travel if guidelines set by governmental officials are being followed, particularly regarding individuals receiving the COVID-19 vaccine. Inevitably, according to studies conducted by Polack et al. (2020), receiving the vaccination would lessen the risks of contracting COVID-19 by 95%. Moreover, the length of time required to reduce the level of scepticism amongst individuals, particularly with the rapid development of the COVID-19 virus vaccine, may highlight implications for organisations in the global travel industry. Lastly, tourism risk is often associated with a service or product that has gone beyond control after the process of travel has begun (Cui et al., 2016). Indeed, this is particularly true for the spread of the COVID-19 virus. Therefore, individuals may only begin to travel once nationals of the country travelled to, or individual travellers have received the COVID-19 vaccine, particularly regarding travel to well-known tourism hot spots.

According to Rosenstock (1974), an individual must benefit from changing their current behaviour patterns to counteract the feeling of vulnerability or threat regarding a particular situation. The testing of this hypothesis supports the positive reflection of individuals' attitudes toward risk susceptibility, as the outcome expectation is measured against whether an individual's attitude, the influence of others, or perceived behavioural control outweigh the risk susceptibility of contracting the COVID-19 virus. It is noted, however, expectations are the variations of beliefs (Hsu et al., 2009), such as distinctive demographic characteristics and behavioural patterns of identified market clusters that relate to an individual's action, and whether a decision produces a favourable, or unfavourable outcome. Consequently, one can motivate, or influence another, and subjectively manipulate the outcome expectation. In addition, demand for tourism significantly decreased because of the COVID-19 pandemic (Kim et al., 2021), with tourists expecting a less crowded "travel-to" destination.

Although results confirm positive behavioural changes to offset the feeling of vulnerability and threat, the question remains whether companies and organisations are responding to behavioural studies outlining consumer concerns, and expectations. However, according to Bielecki et al. (2020), there has been a fundamental challenge regarding traveller communication concerning air travel restrictions, including passenger number limitations, testing requirements and associated costs, quarantine measures, and enforcing governmental rules of wearing masks, washing hands, and socially distancing. The confusion with mixed messages from officials announcing reduced preventative measures, versus heightened measures with travel industry companies, may deter individuals further. Consequently, this causes increased frustration for individuals who wish to travel internationally (Escandón et al., 2021).

The outcome of this hypothesis has supported the previously mentioned study conducted by Perrotta et al. (2021), suggesting individuals' attitudes had changed significantly, with people adopting the use of facemasks, hand washing and social distancing before it was declared mandatory by governmental officials. As explained by Han et al. (2020), in conjunction with individuals' attitude toward risk susceptibility, it is identified that attitude has a similar outcome regarding individual behavioural intention: the decrease of anxiety and risk attitude increases travel intention.

As a result of individuals adhering to preventative measures set by governmental officials and global leaders to stay at home and limit travel, the global travel economy has been devastated. A further point to consider is that the findings from testing this hypothesis relate to individuals travelling internationally for leisure and recreational purposes in general, and don't specifically relate to individuals travelling to visit friends or family members, or people travelling for work or business purposes. In a study conducted by Das et al. (2021), approximately 85.7 million immigrants who currently reside in the United States, are unable to return to their native land to visit and care for family members who have been affected by the COVID-19 pandemic. Although the study may have tested positively regarding individuals travelling internationally in such circumstances, this presents an opportunity for continued research relating to COVID-19 and individuals' pro-environmental behaviour from a personal and business perspective, rather than solely for leisure and recreational purposes.

The survey presented three questions for the participant to identify whether the level of influence from others, those whose opinion matters, and those who are important in their lives, holds value regarding the decisions made to use travel and hospitality services that are pro-environmentally friendly. Indeed, the findings from the sample suggest that individuals are more inclined to use pro-environmental services in the future. According to Sujood and Bano (2021), there is substantial societal pressure to abide by preventative behaviour, and if family members or peers have a biassed attitude regarding preventative measures, the probability of an individual following the same behaviour would be likely high.

However, certain factors must be taken into consideration, such as the sociodemographic range of survey participants. Firstly, the Centers for Disease Control and Prevention [CDC] (2020) has determined that COVID-19 related deaths are predominantly among individuals aged 45 + years old. This study consisted of 65 individuals aged 46 and older (20% of all survey participants), suggesting that risk susceptibility and risk severity highlighted by governmental officials may pose a greater influence rather than individuals whose opinion matters most to the participant. Moreover, according to Hamer et al. (2018), ethnic minority group classification is vague, with no agreement on the definition of "ethnicity" by researchers across various disciplines in social science studies. Thus, there is ambiguity in defining "ethnic minorities" amongst researchers and how laypeople define the term. The Centers for Disease Control and Prevention [CDC] (2020) suggest ethnic minorities are amongst those deemed most at risk, including age and underlying health concerns. This study was skewed, as 74% of participants were of White/Caucasian ethnicity, and 26% were of Asian, Hispanic, and Black ethnicity. It is noted, survey participants may have answered the questionnaire with influence from individuals whose opinions are valued. However, the questions presented in

the survey focus on the subjective norm, rather than identifying the origin of where information was obtained, such as credible sources outlining facts and statistics published by scientists and governing officials, or, media sources that portray false, or misleading information.

The positive outcome of individuals' perceived behavioural control suggests that the necessary change of behaviour is relatively simple to achieve if the individual is (1) self-motivated, and, (2) has the necessary capability to do so (Ajzen, 1991). In addition, the findings suggest that perceived behavioural control is linked with an individual's attitude and the subjective norm (Tarkiainen and Sundqvist, 2005; Mai et al., 2021), suggesting individuals are influenced by others, and information received from other sources (Zhang et al., 2017). However, considering the divide between individuals influenced by personal and close relationships (direct), versus the influence caused by media announcements (indirect), a fundamental challenge remains for the global tourism industry regarding consumers' behavioural intention. This is significant, particularly with the number of mixed messages delivered by various accessible sources, government officials, scientific experts, and worldwide leaders (Zampetakis and Melas, 2021).

The findings from the survey suggest individuals were in favour of choosing pro-environmental travel and hospitality services, but, this isn't necessarily a true reflection of the final purchasing intention. In a survey conducted by White et al. (2019), 65% of consumers said they had good intentions to purchase "green," environmentally friendly, and sustainable services, but, only 26% did. Further, according to O'Connor and Assaker (2021), the relationship between global pandemics and travel/tourism has predominantly focussed on the financial and economic angle of general travel and tourist destinations. Consequently, the long-term, non-economic implications, such as the mental health and well-being of individuals (Knolle et al., 2021), and psychological and social effects of individuals (Calbi et al., 2021), are unaccounted for, particularly regarding the change in international travellers' behaviour (O'Connor and Assaker, 2021). Thus, individuals may have good intentions and are motivated to purchase sustainable, pro-environmental travel services, however, may not possess the necessary resources required to purchase environmentally sustainable options.

This study has focussed on the gap in current literature regarding the challenges outlined in the research questions. In addition, the objectives have been addressed, underpinning the theoretical and practical implications of the effect of COVID-19 is having on pro-environmental behaviours of leisure-orientated international travellers. Findings suggest there may still be many hurdles to recovering a collapsed global travel industry. Moreover, companies and organisations must promptly adjust policies regarding environmental practises, and strategically manoeuvre business objectives, given the impact of COVID-19, and its influence on the pro-environmental behaviour of international travellers.

Practical Implications

Based on Zhu and Deng (2020), there is a link between risk susceptibility and the judgement of crisis in the global travel industry. With that considered, industry practitioners and researchers must conduct frequent investigations to identify how to reduce an individual's susceptibility to the risks of international travel. This will provide significantly important updates to companies and organisations within the travel sector, allowing a shift in management and marketing strategies, including necessary adjustments to environmental policies and procedures. In addition, the frequent review of risk susceptibility would prepare the travel industry for the moment individuals decide to resume international travel based on a reduction in the existence of threats regarding the COVID-19 pandemic. Further, concerns about the unvaccinated, and those who are reluctant to follow governmental guidelines may heighten individuals' level of risk susceptibility and how they perceive the threat of contracting COVID-19. Therefore, it is necessary for governmental officials to regularly update companies and organisations to allow them to communicate and publish positive trends regarding vaccinations provided to home nationals. This holds the potential to reduce the threat and risk severity of the COVID-19 virus and entice individuals to resume international travel, particularly to hot spot tourist destinations.

Regarding mixed messages, government officials and global travel industry leaders must communicate the same message, given there is substantial tension between government officials whose primary objective is to protect the health and well-being of individuals, whilst global travel companies and organisations aim to generate profits (Ratten, 2020). This will increase peace of mind among those keen to travel in specific periods throughout the year. It may be in the best interest of industry companies and organisations to offer a full refund for any COVID-19 related circumstance, to rebuild long-term relationships with consumers. Global travel companies and organisations must further investigate alternative reasons for international travel rather than solely leisure and recreational purposes, such as visiting friends and family, and business professionals travelling for work. This would provide further insight into the attitudes of those for whom travel is a necessity, rather than a luxury, and support the travel industry to target the various needs and travel intentions of individuals.

Moreover, it is suggested age and ethnic demographics should be investigated further, including direct (those who provide valued opinions), or indirect (the media, scientists, and government officials) subjective norms to better understand the influencing factors associated with behavioural intentions. Further, it is necessary to understand behavioural intentions that relate to cost-effective pro-environmental services, as this, according to many studies, suggests individuals have good intentions to choose environmentally sustainable international travel options, but that the decision is swayed when factoring in an individual's financial resources. Therefore, it may be necessary to further investigate the extent of resources individuals are willing to exchange before the perceived value of pro-environmental travel becomes a financially viable option. This also supports companies and organisations to provide alternative cost-effective services that are sustainable or add value to entice individuals to select specific services. In addition, future studies would benefit from identifying and specifying alternative sources

that influence subjective norms, including the influencing factors from both people whose opinions matter the most, and external credible, and non-credible sources. As recent studies have also found over a quarter of online information is either false or misleading (Li et al., 2020), it may be necessary to identify which platform the participant used to gather the information that influenced the individual's behavioural intention.

Theoretical Implications

Regarding the conceptual framework, it is noted that this study predominantly focuses on two of the constructs of the Health Belief Model (Rosenstock, 1974), namely risk susceptibility and risk severity. Given the novel nature of the COVID-19 pandemic, an initial investigation of the constructs was necessary to identify the behavioural intentions of international travellers at a time of significant importance, such as the reopening of the global travel industry. Before the vaccine rollout, a survey conducted by Wong et al. (2020), consisting of 1,159 participants, found that an individual's perceived benefit from receiving a COVID-19 vaccine dose would be a lower chance of contracting the COVID-19 infection, making them less worried about virus severity and susceptibility. As there have been remarkable vaccination developments since this study was conducted, the rapid development and administration of the COVID-19 vaccine has caused a fundamental shift in behavioural attitude, as individuals have become increasingly sceptical, particularly with mixed messages, and misleading information (Li et al., 2020).

Comparing the results of this study versus the study results outlined by Wong et al. (2020), it is evident there is a notable change in an individual's behavioural intention, especially regarding the perceived barriers which are influenced by the attitude, the subjective norm, and the perceived behavioural control relating to individuals and the COVID-19 vaccination. Consequently, this adversely affects the two additional constructs, namely cue to action, an individual's ability to identify risk factors of the COVID-19 virus, and self-efficacy, the belief that a particular behaviour can influence a desirable outcome. As with the perceived benefits, this may result in a continuous change of an individual's behavioural intention (Glanz et al., 2015). With risk susceptibility and risk severity identified, further research into the additional four constructs previously mentioned would provide a valuable extension of an individual's behavioural intention to support companies and organisations in the international travel sector.

Limitations and Future Research

This study didn't come without its limitations. Regarding the quantitative research method, future studies should consider an adjustment to the Likert scale, offering a simple "yes" or "no" answer to collect a more definitive response. Further, the survey included more than three-quarters of individuals from a White/Caucasian background, with the sample predominantly aged between 26 years old to 35 years old. Future research would therefore benefit from incorporating more individuals from different nations, including a wider range of age groups. This would provide greater insight and more depth to the study, particularly with participants from societies who may possess alternate cultural perspectives. Moreover, this study contains a broad sociodemographic range with a general overview of travel methods within the global travel industry. Further research would benefit from identifying each sociodemographic category, and each type of travel used, which would offer companies and organisations within the global travel industry a specific strategy to support sustainability, as well as economic growth. In addition, this study includes respondents who have travelled outbound internationally before and during the outbreak of the COVID-19 pandemic with a variety of different and limited travel experiences. This may affect participants responses to the survey, suggesting there may be a need to identify the frequency of individuals' level of international travel, and categorise respondents accordingly for further insight into traveller's behavioural intentions. Lastly, this study consisted of a cross-sectional time horizon, focussing on a specific point in time regarding the study topic. Ongoing studies should consider both a cross-sectional time horizon method, and a longitudinal research method, to review and analyse data over a longer, more sustained period.

CONCLUSION

The impact of the COVID-19 pandemic across the globe is still very uncertain. Some of the most profound effects so far include local, national, and international travel restrictions, suggesting the COVID-19 pandemic is still at the starting point for a judgement of crisis. In addition, although there has been substantial development of the COVID-19 vaccine, there are still many individuals worldwide that have yet to receive the vaccination, particularly home nationals of countries listed as the most visited destinations in 2019. Moreover, there are fundamental challenges regarding rules and regulations with international travel, such as COVID-19 quarantine measures, testing requirements and associated costs, confusing international travellers. Moreover, non-economic implications, such as mental stability, and the psychological and social effects of individuals, may affect an individual's decision to travel, or choose to purchase pro-environmental services and products.

This research has set a foundation for the effect of COVID-19 on the pro-environmental behaviour of international travellers and will form the basis for further investigation into the previously mentioned practical implications. Given the novel nature of the COVID-19 pandemic and the unpredictability of human behaviour, the Health Belief Model and TPB frameworks must be utilised to test the behavioural intention of individuals who choose to travel internationally, for any reason. As the travel industry slowly reopens, strong communication is essential between governmental officials and consumers planning to travel, to instil trust, whilst reducing the fear and threat of the COVID-19 symptoms. Lastly, companies and organizations need to balance a fair cost regarding pro-environmental travel options while allowing access to those who are greatly influenced by the financial commitment to utilising such services.

DATA AVAILABILITY STATEMENT

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

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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APPENDIX

Appendix 1 | Constructs and measurement items.

Constructs and Items
Perceived safety threat (Huang et al., 2016)
1. My chance of getting contracted by COVID-19 while using travel and hospitality services for leisure [Extremely low (1) – (7) Extremely high]
2. Because of my physical health, I am more likely to be infected by COVID-19 if I use travel and hospitality services for leisure [Extremely low (1) – (7) Extremely high]
3. The thought of suffering COVID-19 scares me [Extremely low (1) – (7) Extremely high]
4. My financial security would be endangered if I had COVID-19 [Extremely low (1) – (7) Extremely high]
Outcome expectation (Han and Hyun, 2019; Severt and Tasci, 2020)
1. I use travel and hospitality services to interact with my friends and family (Extremely low (1) – (7) Extremely high)
2. Travelling for leisure is truly a joy (Extremely low (1) – (7) Extremely high)
3. Compared to the price I paid, I think I will receive good value while using travel and hospitality services (Extremely low (1) – (7) Extremely high)
4. Travelling for leisure will compensate for what I miss in my daily life during the COVID-19 pandemic period (Extremely low (1) – (7) Extremely high)
Attitude toward pro-environmental behaviour (Han et al., 2020)
1.Using travel and hospitality services that are pro-environmental is:
2. Bad (1) – Good (7)
Foolish (1) – Wise (7)
3. Unpleasant (1) – Pleasant (7)
4. Harmful (1) – Beneficial (7)
Subjective Norm (Han et al., 2020)
1. People who influence my behaviour would think that I should use travel and hospitality services that are pro-environmental [Extremely low (1) – (7) Extremely high]
2. People who are important to me would think that I should use travel and hospitality services that are pro-environmental [Extremely low (1) – (7) Extremely high]
3. People whose opinions that I value would prefer that I use travel and hospitality services that are pro-environmental [Extremely low (1) – (7) Extremely high]
Perceived behavioural control (Han et al., 2020)
1. Whether I use travel and hospitality services that are pro-environmental is entirely up to me [Extremely low (1) – (7) Extremely high]
2. I am confident that I can use travel and hospitality services that are pro-environmental [Extremely low (1) – (7) Extremely high]
3. I have sufficient resources, time, and opportunities to use travel and hospitality services that are pro-environmental [Extremely low (1) – (7) Extremely high]
Pro-environmental behavioural intention (Han et al., 2020)
1. I plan to use travel and hospitality services that are pro-environmental [Extremely low (1) – (7) Extremely high]
2. I will exert effort to use travel and hospitality services that are pro-environmental [Extremely low (1) – (7) Extremely high]
3. I am willing to use travel and hospitality services that are pro-environmental [Extremely low (1) – (7) Extremely high]

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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 VANFUN 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, service quality, environment, transport convenience, language, and so on). In this study, the overall Cronbach's α 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.

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
	Health tourism experience	Have traveled for health purposes before
		Destination traveled to before
		Purposes of health tourism behavior
Potential demands	Willingness	Willingness to recommend others to take health tourism
		Willingness to take health tourism in the future
	Preference	Preference for health tourism arrangement
		Preference for health tourism types
		Preference for health tourism supporting services
		Acceptable fees
		Acceptable time spent on health tourism
	Worries	Barriers to health tourism
	Influence factors	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

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

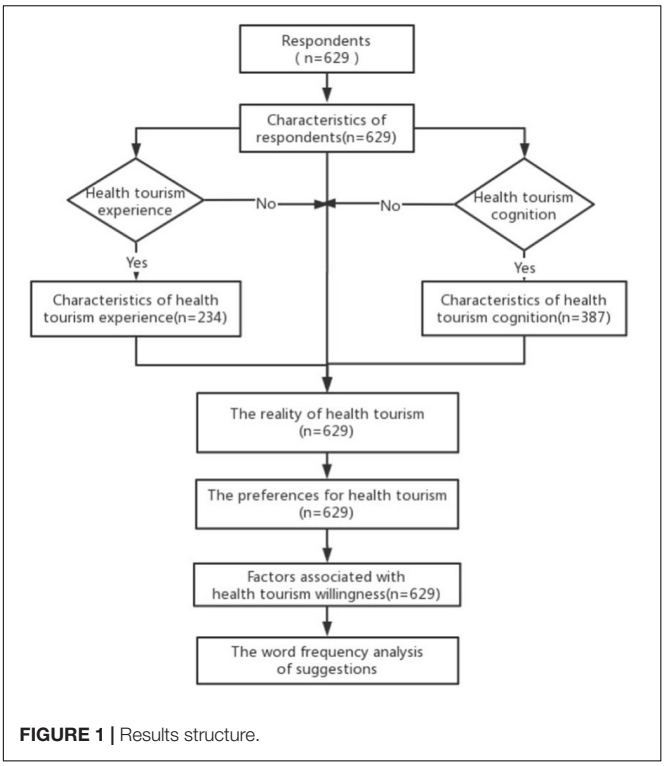

FIGURE 1 | Results structure.

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	*n*	(%)
Age, mean (SD), years		
<20	24	3.8
20–29	370	58.8
30–39	119	18.9
40-49	68	10.8
≥50	48	7.6
Gender		
Male	279	44.4
Female	350	55.6
Role		
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
Marital status		
Single	333	52.9
Married	296	47.1
Education level		
Below Associate degree	70	11.1
Associate degree	94	14.9
College degree	245	39
Master degree or above	220	35
Region		
Eastern China	393	62.5
Central China	113	17.9
Western China	123	19.6
Monthly household income (in yuan)		
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	*n*	(%)
Type of health tourism knew (*n = 387, 61.53%*)		
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
Approach to information and knowledge about health tourism (*n = 195, 50.39%*)		
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

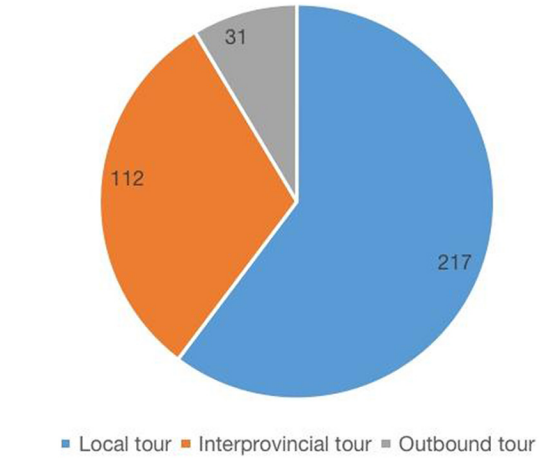

FIGURE 2 | Previous health tourism destinations distribution.

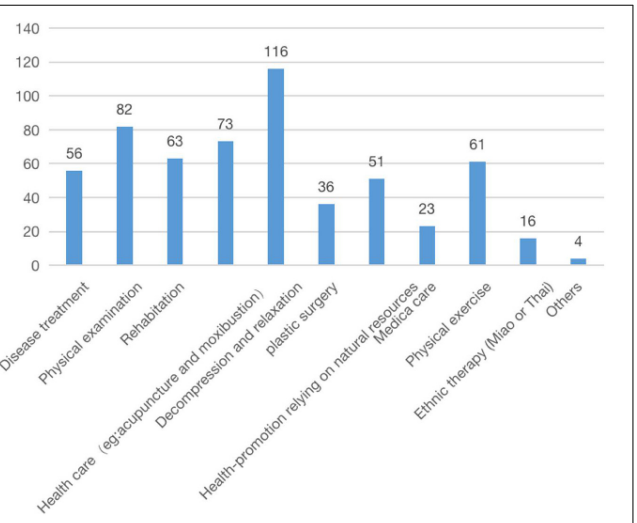

FIGURE 3 | Previous health tourism purposes.

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 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*).

	n	(%)
Willingness to health tourism		
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
Preference for health tourism arrangement		
Together with friends and/or relatives	451	71.7
Package tour	92	14.6
Traveling alone	72	11.4
Other	14	2.2
Preference for health tourism supporting services		
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
Acceptable fees (taking family as a unit, in yuan)		
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
Acceptable time spent on health tourism(in day)		
≦7	446	70.9
8–14	140	22.3
22–28	23	3.7
>28	20	3.2
Barriers		
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

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	**0.001**
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	**<0.001**
Constant	0.405			1

Bold number is of statistical significance.

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, 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	
Marital status				
Single	ref.			
Married	0.341	0.152	0.763	0.009
Occupation				
Other/unemployed	ref.			
Commercial/service work	0.228	0.083	0.621	0.004
Health status				
Uncertainty	ref.			
Very healthy	0.095	0.016	0.564	0.01
Attitude to health tourism				
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
Health tourism experience				
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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Traveler Pro-social Behaviors at Heritage Tourism Sites

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This study aimed to explain the development of tourists' pro-social intentions during heritage tourism within the pandemic context by combining the norm activation model (NAM) and two significant variables in the theory of planned behavior (TPB). The quantitative data analysis results indicated that the proposed hypotheses have been partially supported, which resonated and enriched the existing studies on COVID-19-related pro-social tourism and tourist behaviors from a theoretical angle. Based on the research outcomes, the corresponding managerial implications for heritage tourism practitioners and meaningful references for future researchers to promote sustainable and pro-social heritage tourism products have been discussed.

Keywords: COVID-related heritage tourism, norm activation model (NAM), attitude toward the pro-social behavior, anticipated emotions, social norm, pro-social behavioral intentions

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INTRODUCTION

Sustainable development has become a new challenge for human life today in all areas due to the negative impacts of the COVID-19 pandemic. The widespread global outbound restrictions resulted in a rapid decline in tourism arrivals and receipts, and heritage tourism has also been severely affected by the current severe situation (UNWTO, 2021). The tourism industry, as an essential part of society, should seek a new normal model to deal with the crisis that the pandemic has brought to humanity, communities, and society (Bae and Chang, 2020). As the pandemic crisis continues to unfold, heritage tourism is experiencing a very difficult time in history with total or partial closures, which have taken a heavy toll on socio-economic development, the cultural life of nations and communities, and the dissemination of knowledge (UNESCO, 2021).

Numerous studies in the field of hospitality and tourism industry have been actively investigating the solutions for the sustainable and pro-social transformation of post-pandemic tourism activities, within the contexts of festival tourism and rural tourism (Chi and Han, 2021; Chi et al., 2021a). Likewise, the investigation of the sustainability of heritage tourism is also a hot research topic (Mohanty et al., 2020; Zhang et al., 2020; Zheng et al., 2020; Hosseini et al., 2021; Singh, 2021). In the social dilemma of the pandemic, tourists are more willing to consume tourism products and services that are beneficial to their physical and mental health (Koh, 2020; Singh, 2021). Most of the heritage tourists are also preferring to visit some sites with a secure travel environment and experience the authentic local culture, traditions, and activities (Park et al., 2019; Chi and Han, 2020; Wang et al., 2021; Kunasekaran et al., 2022). With the implementation of different government policies, worldwide vaccine distribution, and collaborative efforts of the public and

private sectors, international and domestic tourism has restarted, and these inclusive, renewable, and sustainable practices will become mainstream alternatives to tourism (Spenceley, 2021). Therefore, the heritage tourism industry has also ushered in new challenges and opportunities for the sustainability of heritage site management, and transformation plays a crucial role in achieving social development, cultural exchange, economic recovery, environmental resource protection, and management (UNESCO, 2021).

As various forms of tourism products and services are adjusted and upgraded, and the perceived knowledge about COVID-19 is becoming more abundant, increasing demand for cultural tourism seems to be emerging. This means that heritage site managers work responsibly with national public health authorities to achieve synergy by promoting new normal lifestyles. The previous research studies on post-pandemic-related pro-social behavior already declared that advocating for the adoption of personal and social norms for pro-social behaviors (such as wearing masks, maintaining social distancing, etc.) in tourist areas is necessary (Chi et al., 2021a,b). All travelers are encouraged to visit and experience heritage sites with different forms of destinations and cultural activities in a pro-social manner to provide a safe and relaxed environment for the travelers and the local communities. Therefore, it is a well worth discussing topic to mobilize people to visit heritage sites in order to get rid of the current social dilemma and to achieve the sustainable transformation of society, which could contribute to a creative new model for the heritage tourism industry in the era of sharing economy and culture in general.

In the existing literature on COVID-19 tourism, some scholars have conducted research to evaluate consumers' travel attitudes and choices, as well as pro-social behaviors, by integrating the NAM (Zhu and Deng, 2020; Chi et al., 2021a,b; Rather, 2021). In addition, the importance of establishing personal norms and adhering to social norms has also been emphasized in the previous studies (Chi et al., 2021a,b). Therefore, for the sake of human wellbeing and social sustainability, the currently available information about the conformity of travelers' visit behavior and experiential activities at the heritage sites to the personal norms and social norms in the background of the pandemic is of widespread global concern. The relationships between problem awareness, ascription of responsibility, anticipated feelings, attitude toward the pro-social behavior, social norm, personal norm, and behavioral intentions were investigated in the former pro-environmental/pro-social-related studies (Han, 2014; Kim and Hwang, 2020; Chi et al., 2021a,b). To the best of our knowledge, the researchers have not adequately explored these types of significant connections in the background of COVID-19 heritage tourism to measure heritage visitors' response efforts and the pro-social behavioral intentions during the pandemic.

Therefore, the research objectives are listed as follows: (1) investigate the complicated relationships between variables based on the NAM to predict tourists' pro-social behavioral intentions in the heritage tourism post-pandemic, (2) establish the importance and mediating effects of dimensions in the proposed model of the development of pro-social behavioral intentions via personal norm, and (3) deepen the theoretical framework by taking into account the moderating effect of gender on the role of pro-social behavioral intentions in the heritage tourists.

LITERATURE REVIEW

Pro-social Heritage Tourism in the With-Corona Era

Culture tourism is one of the biggest tourism markets, which continued to expand by about 15% every year before COVID-19, and it was three times faster than mass tourism (Huibin et al., 2012; Zhao et al., 2020). Heritage tourism is an essential component of the global tourist business in the current tourism market, which also accounts for a major portion of cultural tourism (Poria et al., 2003; Richards, 2018). As a result of the COVID-19 pandemic outbreak, the impact is felt in all areas of life, which include health, society, and economic growth (Khan et al., 2020; Lenzen et al., 2020; Roy, 2020). Unsurprisingly, the heritage tourism industry has also been suffering uncertainness and new challenges within a global scope, due to the complete and partial closure of the heritage sites (UNESCO, 2021), which is exhibited in **Figure 1**. The travel restrictions have largely cut off the flow of tourists and led to a crisis for related income sources of heritage sites and local communities. Although the reduction in the number of tourists releases ecological pressures on some natural heritage sites to some extent, it has simultaneously brought negative social and economic impacts on local communities, such as uncertain livelihoods, increased poverty, reduced cultural conservation, and the ignored protection and maintenance management of cultural heritage sites (Murzyn-Kupisz, 2012; Xie et al., 2020; Goretti et al., 2021). Therefore, heritage tourism was important for promoting development in economic, social, and environmental terms (Hartmann, 2020; Lak et al., 2020).

It is the common pursuit of the tourists, governments, and non-governmental organizations to help relaunch heritage sites with safer and easier experiences. Multi-party cooperation facilitates the vitality of economic, cultural, and community partners to make heritage tourism sustainable (Singh, 2021). In addition, some scholars have discussed pro-social behaviors and sustainability studies in previous studies about hospitality and tourism (Han et al., 2019; Kim and Hwang, 2020; Chi et al., 2021a,b). However, few current studies have explored pro-social behaviors and sustainability in the context of heritage tourism. Considering the fact that it is challenging to manage the tourists' mobility and daily practices in terms of wearing masks, social distancing, and sanitation maintenance, it is essential for the heritage site management department to properly guide and mobilize tourists to work together in order to create a pro-social and secure travel environment in the post-pandemic era. Therefore, investigating tourists' perceptions and behaviors about participating in the actions of creating a pro-social heritage travel environment and exploring what kind of alternatives to develop pro-social and sustainable heritage tourism products within the crisis brought by COVID-19 are the imperative subjects (Higgins-Desbiolles, 2020; Yeh, 2020). As exhibited in **Figure 2**.

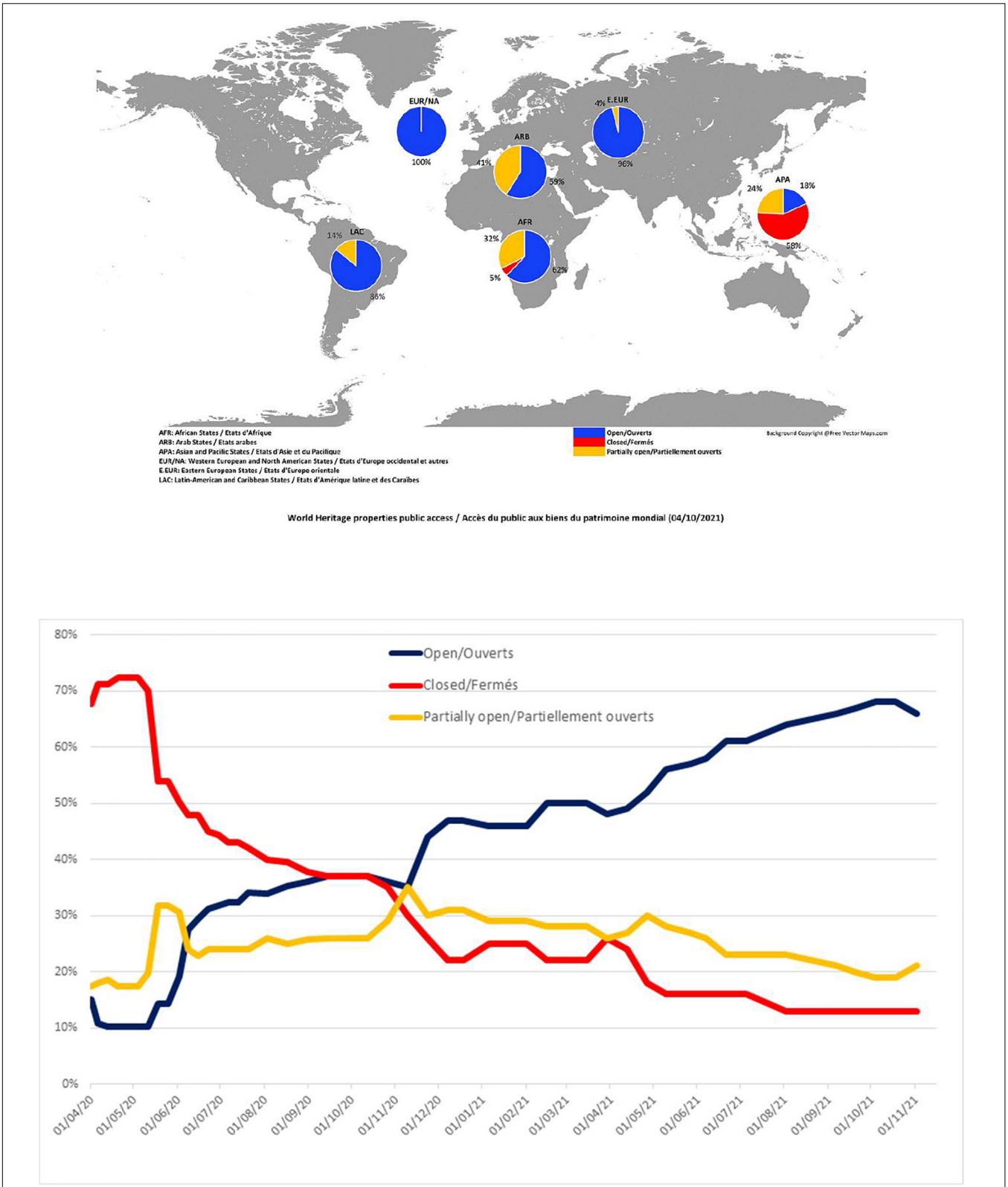

FIGURE 1 | The operating states of world heritage sites in a global scope. Sources from: https://en.unesco.org/covid19/cultureresponse/monitoring-world-heritage-site-closures.

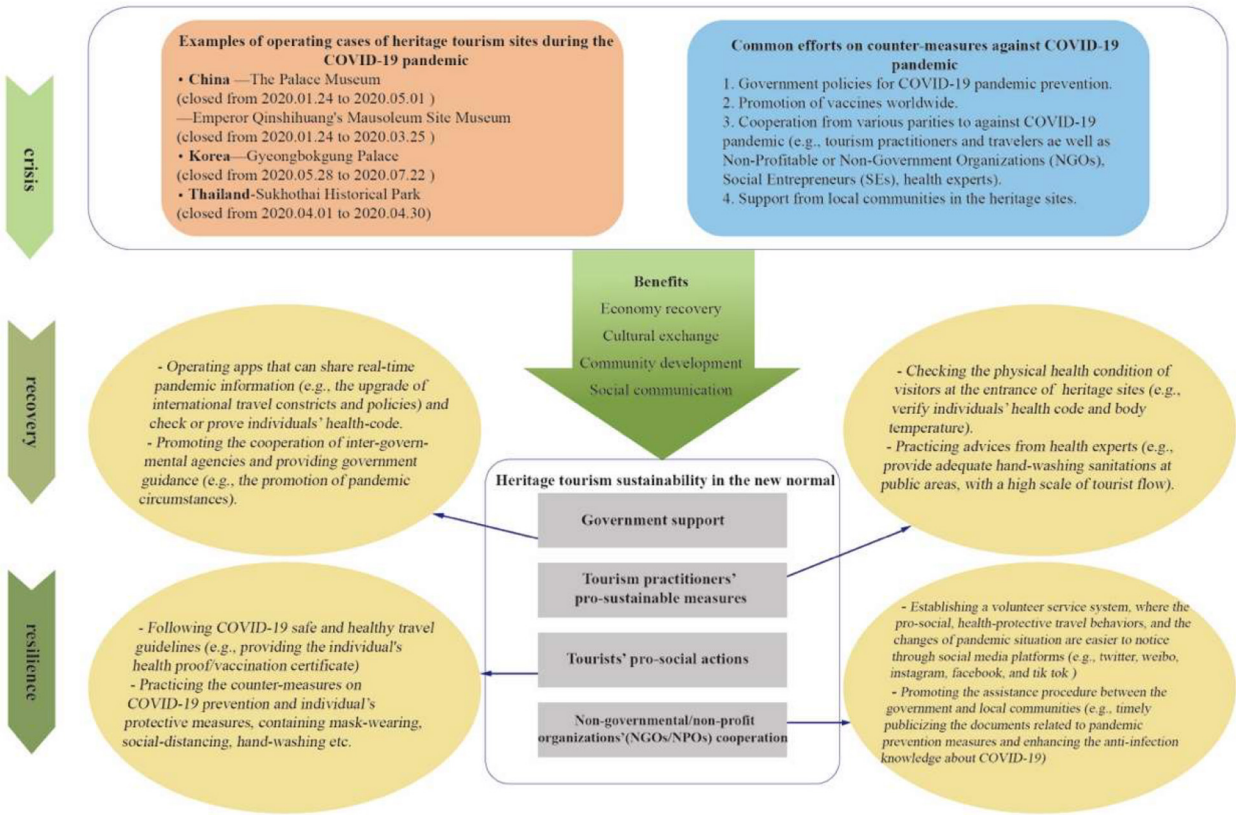

FIGURE 2 | Heritage tourism sustainability in the new normal. Sources from: Emperor Qinshihuang's Mausoleum Site Museum Website (2020), Gyeongbokgung Palace Management Office Website (2020), REUTERS (2020), The Palace Museum Website (2020), Tian (2020), and Spenceley (2021).

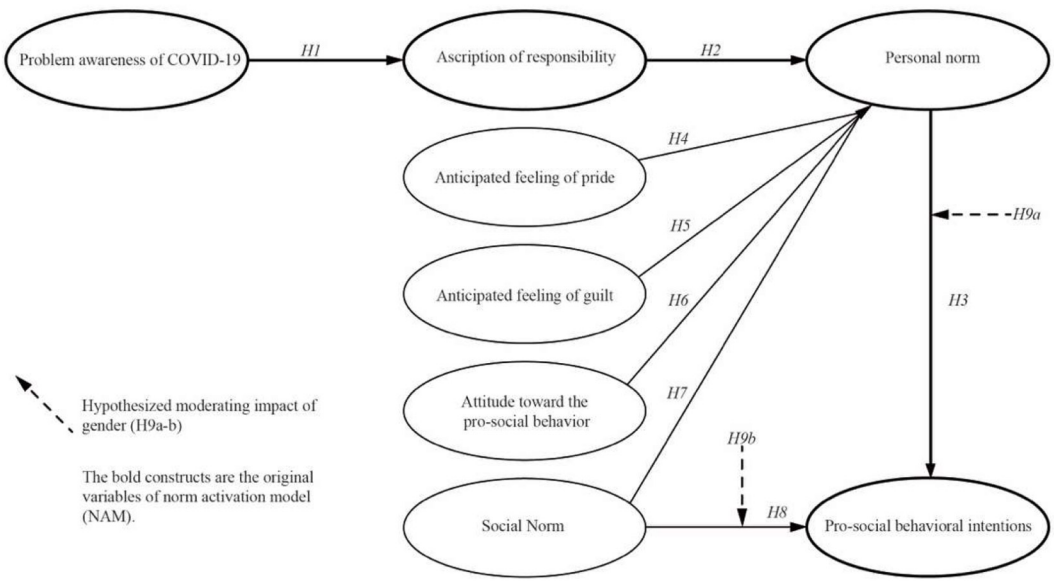

FIGURE 3 | Proposed conceptual model.

Norm Activation Model

Schwartz (1977) described that the normative activation model (NAM) is a vital model developed in the background of altruistic behavior. The model was designed to explain the individuals' pro-social or pro-environmental behavioral intentions, and it has also been used in recent studies on hospitality and tourism (Kim and Hwang, 2020; Chi et al., 2021a,b). The NAM predicts pro-social or pro-environmental behavior by utilizing three antecedents, which include problem awareness, ascription of responsibility, and personal norms, and it is the primary construct where the individuals engage in pro-social or pro-environmental behavior (Schwartz and Howard, 1981; Kim and Hwang, 2020), and the development of pro-social behavior intentions are directly or indirectly mediated by the ascription of responsibility and personal norms (Chi et al., 2021a). Personal norms are the closest antecedents when predicting pro-social or pro-environmental intentions/behaviors in the NAM (Onwezen et al., 2013; Chi et al., 2021a,b). The terms the personal norm, moral norm, and moral duty are frequently used interchangeably in the existing literature (Han and Hyun, 2017). In this theory, the process of norm activation begins with an individual's awareness of the potentially negative repercussions, which triggers a sense of responsibility for the negative effects of not adopting pro-social/environmental behavior (Schwartz, 1977), and this awareness stimulates personal norms, which determines whether he or she should engage in or avoid a specific behavior to prevent a negative outcome (Han, 2014; Kim and Hwang, 2020).

The existing research on the NAM-based theoretical framework has been widely used to understand the pro-social/pro-environmental behavior/intention of the hotel and tourism industry (Han et al., 2019; Kim and Hwang, 2020; Chi et al., 2021a,b). Specifically, Han et al. (2019) suggested that the variables of anticipated emotional, personal attitudes and social norms play a significant role in explaining the decision-making process involved in the consumer purchase of eco-friendly cruise products. Kim and Hwang (2020) used two theories to explain the creation of behavioral intentions for drone food delivery services in a pro-environmental background: the normative activation model (NAM) and the Theory of planned behavior (TPB). Chi et al. (2021a) effectively expanded the normative activation framework in festival tourism in the background of COVID-19, which once again verified its complex relationship with the NAM and explained the pro-social behavioral intentions of festival tourists. Whether in the field of hotel or tourism, the NAM has been proven to be an effective measurement model of pro-social/pro-environmental behavior/intention (Han, 2014; Kim and Hwang, 2020; Chi et al., 2021b). Every heritage tourist should be aware of the seriousness of the COVID-19 problem when visiting the heritage site, that everyone has a potential responsibility for pandemic prevention and that the individuals must regulate their behavior. As such, the NAM was utilized to explain the pro-social behavioral intentions in the COVID-19-related heritage tourism setting, and the following research hypotheses were developed:

H1. Problem awareness regarding COVID-19 influences the ascription of responsibility among the heritage travelers.

H2. Ascription of responsibility influences personal norms among heritage travelers.

H3. Personal norm influences pro-social behavioral intentions among heritage travelers.

TABLE 1 | Demographic characteristics of the respondents.

Variable	Category	Distribution	Valid percentage
Gender	Female	154	40.6
	Male	225	59.4
Age	Mean	29.4	
Occupation	Service/salesperson	41	10.8
	Official from government	31	8.2
	Technician/academician	53	14
	Student	130	34.3
	Others	124	32.7
Marital status	Married	189	49.9
	Single	171	45.1
	Other	19	5.0
Average monthly income	Under 5000 RMB	178	47
	5001-10000 RMB	135	35.6
	10,001-15000 RMB	52	13.7
	Over 15000 RMB	14	3.7
Education	High school or below	34	9.0
	Three-year college	47	12.4
	Bachelor's degree	226	59.6
	Postgraduate degree	72	19.0

Anticipated Feelings of Pride and Guilt

Anticipated emotions are frequently mentioned in NAM research. Anticipated emotions include anticipated feelings of pride and anticipated feelings of guilt, which are frequently seen as self-conscious feelings and are particularly important in understanding the pro-social or pro-environmentally responsible decision-making behavior within the NAM (Han et al., 2017; Chi et al., 2021a). In the existing studies, the moral norm is closely related to the anticipated positive and negative emotions. When evaluating certain individual behaviors related to pro-social and pro-environment, the anticipated emotion of pride inspires compliance with the moral norm, and an anticipated emotion of guilt promotes individuals to avoid violating a moral norm (Schwartz, 1977; Han, 2014). Numerous studies have pointed out that the anticipated emotions of pride and guilt could be well integrated with the NAM in different contexts (Onwezen et al., 2013; Han et al., 2017). The anticipated feelings of pride and guilt directly affect personal norms as emotional triggers, thereby triggering pro-social/environmental behaviors. The study findings showed the existence of the mediating relationship between anticipated emotions and NAM variables (Han, 2014; Chi et al., 2021a). Therefore, we employed the NAM as our basic framework, and the anticipated emotional constructs were integrated in the basic framework to examine the following related hypothesized associations.

H4. The anticipated feeling of pride influences personal norms among heritage travelers.

H5. The anticipated feeling of guilt influences personal norms among heritage travelers.

Theory of Planned Behavior

Due to its powerful predictive power, the theory of planned behavior (TPB) is often used in social psychology to predict human decisions or behavior (Rivis et al., 2009; Sommer, 2011). It is an extended theoretical model of the theory of reasoned action (TRA) (Ajzen, 1991). TPB has also been successfully applied to tourism and hospitality research with regard to the eco-friendly decision-making process (Han and Hyun, 2017; Kim and Hwang, 2020; Chi et al., 2021b). In the study of pro-social behavior in tourism and hospitality, many researchers have explored extended theoretical models for combining NAM and TPB to predict the development of pro-social behavior, within the contexts of festival tourism, cruise industry, drone food delivery services, etc. (Han and Hwang, 2016; Kim and Hwang, 2020; Chi et al., 2021b), in which two important elements of the TPB theory factors (i.e., attitude toward the behavior and social norm) are repeatedly emphasized when combined with NAM (Chi et al., 2021a,b; Kim and Hwang, 2020). However, little research has been done on integrating the TPB and the NAM in heritage tourism during the post-pandemic era. Therefore, it is essential to extract the significant variables of the NAM and TPB to predict the development of tourists' pro-social behavioral intentions while visiting a certain heritage tourism destination in the post-pandemic era.

TABLE 2 | Measurement items and results of confirmatory factor analysis.

Measures	Factor loading	CR	AVE
Problem awareness of COVID-19 (PAC)		0.921	0.796
PAC1	0.894		
PAC2	0.876		
PAC3	0.906		
Ascription of responsibility (AR)		0.939	0.838
AR1	0.921		
AR2	0.898		
AR3	0.928		
Personal norm (PN)		0.937	0.832
PN1	0.923		
PN2	0.903		
PN3	0.910		
Anticipated feeling of pride (AFP)		0.917	0.787
AFP1	0.902		
AFP2	0.874		
AFP3	0.885		
Anticipated feeling of guilt (AFG)		0.963	0.897
AFG1	0.959		
AFG2	0.934		
AFG3	0.948		
Attitude toward the pro-social behavior (APB)		0.949	0.822
APB1	0.897		
APB2	0.903		
APB3	0.907		
APB4	0.920		
Social norm (SN)		0.924	0.802
SN1	0.974		
SN2	0.848		
SN3	0.860		
Pro-social behavioral intentions (PBI)		0.936	0.708
PBI1	0.862		
PBI2	0.866		
PBI3	0.838		
PBI4	0.824		
PBI5	0.826		
PBI6	0.833		

Goodness-of-fit statistics:

χ^2 = 739.886, df = 322, χ^2/df = 2.298, $p < 0.001$, CFI = 0.962, IFI = 0.963, TLI = 0.956, RSMEA = 0.059.

CR, Composite Reliability; AVE, Average Variance Extracted.

Attitude Toward the Pro-social Behavior

At present, the prior studies have discussed the NAM and the TPB together to analyze tourists' attitudes toward pro-social behaviors in various contexts (Han and Hyun, 2017; Kim and Hwang, 2020; Chi et al., 2021a). The current study also integrated the NAM with two important variables of the TPB (i.e., attitude toward the pro-social behavior and subjective norm). Attitudes toward behavioral intentions are frequently discussed in the literature on pro-social/pro-environmental decision-making processes and behaviors, which include the studies by Bamberg and Möser, 2007, Han and Hyun, 2017, and Ritchie et al. (2021). Attitude toward the behavior is broadly defined as "the extent to which an individual's evaluation or appraisal of the act is favorable or unfavorable" (Ajzen, 1991). Attitudes toward the behavioral importance have been repeatedly emphasized in all the studies conducted on theories/models that are based on pro-social motivations, which include NAM, in order to investigate the impact of attitudes toward a certain behavior on the function of the personal norm in the decision-making process of adopting the pro-social/pro-environmental behavioral intentions (Morren and Grinstein, 2021). In the study of Thøgersen and Ölander (2006), the understanding of the relationship between attitude, norm, and behavior was further deepened by analyzing the interaction between attitude variables and eco-friendly purchase behaviors. In recent studies, the driving role of attitudes toward the behavior to arouse personal norms and activate pro-social and pro-environment behavioral intentions has also been continuously recognized (Kim and Hwang, 2020; Morren and Grinstein, 2021). Therefore, we proposed the following hypothesis in the background of heritage tourism:

H6. Attitude toward pro-social behavior influences personal norms among heritage travelers.

Social Norm

Subjective norms can be alternatively termed as social norms, with a definition of "perceived societal pressure to do or refrain from performing the action" (Ajzen, 1991; Chi et al., 2021a).

TABLE 3 | Correlations and values of square root of AVE among model constructs.

Constructs	PAC	AR	PN	PBI	APB	AFP	AFG	SN
PAC	**0.892**							
AR	0.589	**0.915**						
PN	0.387	0.317	**0.912**					
PBI	0.408	0.278	0.321	**0.842**				
APB	0.345	0.254	0.715	0.801	**0.907**			
AFP	0.348	0.285	0.638	0.727	0.631	**0.887**		
AFG	0.256	0.306	0.321	0.312	0.299	0.400	**0.947**	
SN	0.255	0.314	0.339	0.348	0.345	0.466	0.844	**0.896**

PAC, problem awareness of COVID-19; AR, ascription of responsibility; PN, personal norm; PBI, pro-social behavioral intentions; APB, attitude toward the pro-social behavior; AFP, anticipated feeling of pride; AFG, anticipated feeling of guilt; SN, social norm.
The values of square root of AVE are in the diagonal (bold).

The concept of social norms has been extensively studied to explore the influence that normative individual decision-making processes and the pro-social/pro-environmental behavioral intentions have (Budovska et al., 2020; Chi et al., 2021a). Empirical evidence provided by the recent studies in the field of hospitality and tourism suggests that social norms are widely recognized by many researchers as valid predictors of personal norms and pro-social/pro-environmental behavioral intentions (Han et al., 2019; Kim and Hwang, 2020; Chi et al., 2021a). According to Han et al. (2019), social norms play a prominent role in the decision process of buying eco-cruise products, which verified its direct and indirect positive effects on the environmentally buying intentions and personal norms. Similarly, Kim, and Hwang (2020) also asserted that a significant association existed between social norms and personal norms and pro-environmental behavioral intentions in the drone delivery services environment. Chi et al. (2021a) established that a person's moral norm is influenced by societal pressure and that this relationship stimulates the intention to behave pro-socially. Therefore, we proposed the following hypotheses in the background of COVID-19 heritage tourism:

H7. Social norm influences personal norms among heritage travelers.

H8. Social norm influences pro-social behavioral intentions among heritage travelers.

Moderator of Gender

Researchers pay particular attention to the factors in the study of demographics because they affect behavioral intentions, and gender is regarded as one of the moderators that influences an individual's development of pro-society/pro-environmental and pro-sustainable intentions and actions (Chi et al., 2021a). Gender differences could lead to different values and social expectations of certain intentions and behaviors due to the differing cultural and psycho-metric backgrounds (Han et al., 2018). In the existing tourism studies, Han et al. (2018) found a gender difference in the tourist' pro-environmental actions, such as waste reduction and recycling. Specifically, the pro-social behavioral intentions of men are more likely to trigger than women on driven by social norms. A most recent COVID-related festival tourism by Chi et al. (2021a) has utilized the NAM to evaluate the moderating impact of gender on the association between personal norms and pro-social behavioral intentions, which indicated that women were more likely to be driven by moral norms to adopt pro-social behavioral intentions, such as wearing masks, keeping social distance, and practicing sanitation. Therefore, the following hypotheses were proposed, and **Figure 3** shows the proposed conceptual model.

H9a. The impact of the personal norms on pro-social behavioral intentions significantly differs across male and female heritage travelers.

H9b. The impact of the social norms on pro-social behavioral intentions significantly differs across male and female heritage travelers.

METHODOLOGY

Measures and Data Collection

The measurement items that were designed for the eight study constructs in this current research were derived from existing studies regarding pro-sustainable tourism and pro-environmental behavior intentions (Ajzen, 1991; Han, 2014; Han and Hyun, 2017; Han et al., 2019; Kim and Hwang, 2020; Chi et al., 2021a,b). Specifically, our research to integrate and strengthen the NAM theory, including problem awareness, ascription of responsibility, personal norm, anticipated feelings, attitude toward the pro-social behavior, and societal norms, were cited from the currently existing research. More specifically, problem awareness regarding COVID-19 was measured using three items adapted from Han (2014) and Kim and Hwang (2020). Moreover, the ascription of responsibility was measured with three items used by Han (2014) and Kim and Hwang (2020). Personal norm was measured with three items borrowed from Han and Hyun (2017) and Han et al. (2019). Anticipated feelings of pride and guilt were measured with three items separately (Han, 2014; Chi et al., 2021a). Measurement items for some important structures of TPB, such as attitudes, social norms, and behavioral intentions, were borrowed from previous studies. Specifically, four items regarding attitude were extracted from Ajzen (1991), Han and Hyun (2017), and Kim and Hwang (2020). Three items on social norms were adopted from Han and Hyun (2017), Kim and Hwang (2020), and Chi et al. (2021b). Lastly, six items regarding the use of behavioral intentions were obtained from Han and Hyun (2017) and Chi et al. (2021a). All the study items employed slightly modified measures to fit the present research setting of a pro-social heritage tourism study. This study brought together graduate students majoring in hospitality, and a focus group of tourism scholars and hospitality industry experts to modify this measurement methodology process. After that, the study variables were then assessed using a seven-point Likert scale ranging from (1) strongly agree to (7) strongly disagree. The problem awareness regarding COVID-19, the ascription of responsibility, personal norm, social norm,

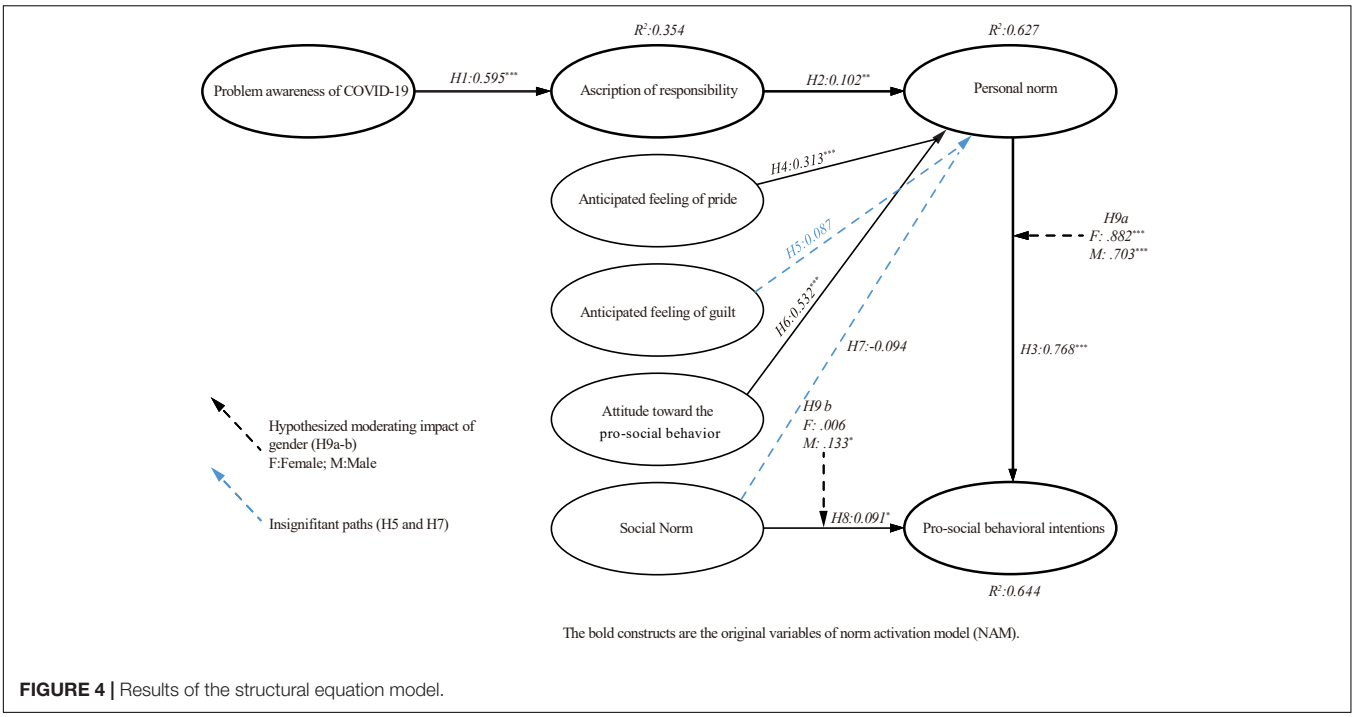

FIGURE 4 | Results of the structural equation model.

pro-social behavioral intentions, and anticipated feelings of pride and guilt were assessed using three items, while attitude toward the pro-social behavior was evaluated utilizing four items. The scholars thoroughly reviewed the survey questions (see **Appendix Table A1**).

The study adopted an online survey that was conducted in China after the COVID-19 outbreak. The participants participated in the questionnaire survey through Chinese social media apps, such as WeChat, Weibo, etc. For the sake of clearly explaining the role of pro-social behavior, the respondents in this study were first introduced to the idea of pro-social behavior, and only those who had visited the heritage sites at least once were invited to take part in the survey during the COVID-19 pandemic. In this study, 379 valid questionnaires were used for the subsequent analysis process through SPSS and AMOS 23 software. The sample profiles are summarized in **Table 1**.

RESULTS

Confirmatory Factor Analysis

The confirmatory factor analysis was used to estimate the measurement model, referred to hereinafter as CFA. The AMOS (Analysis of Moment Structures) program was used to assess the suggested conceptual model's measurement structure. As shown in **Table 2**, the results of the measurement model of CFA show that the data fits well (χ^2 = 739.886, *df* = 322, χ^2/df = 2.298, $p < 0.001$, *CFI* = 0.962, *IFI* = 0.963, *TLI* = 0.956, *RMSEA* = 0.059). The factor loadings were all in the range of 0.824–0.974, which were discovered to be statistically significant ($p < 0.001$). The specific variables employed in this analysis and their standardized factor loadings are presented in **Table 2**. Lastly, the composite reliability values ranged from 0.917 to 0.963, which indicated a high level of internal consistency for each construct, because the composite reliability values were above the minimum threshold value of 0.60 (Bagozzi and Pieters, 1998). The squared correlations between the variables ranged from 0.708 to 0.897 and are presented in **Table 2**. For all the study variables, the AVE values exceeded the recommended cut-off of 0.50 (Fornell and Larcker, 1981), and the results suggested that the square roots of AVE values were larger than the correlation values of the constructs, which implied the establishment of discriminant validity (Fornell and Larcker, 1981), and results are displayed in detail in **Table 3**.

Structural Equation Modeling

The results from the structural equation model (SEM) are shown in **Figure 4** and **Table 4**. The data is wellsuited to the proposed structural model (Goodness-of-fit statistics:χ^2 = 891.895, *df* = 332, χ^2/df = 2.686, $p < 0.001$, *CFI* = 0.950, *IFI* = 0.950, *TLI* = 0.943, and *RMSEA* = 0.067). The results of the SEM are presented in **Table 4**. Hypotheses 1, 2, and 3 suggested the existence of relationships between the NAM's original constructs. The results of the study found that the problem awareness of COVID-19 significantly affected the attribution of responsibility ($\beta = 0.595$ *and* $p < 0.01$). The personal norm was positively influenced by ascription of responsibility ($\beta = 0.102$ *and* $p < 0.01$), and personal norm had a significant effect on pro-social behavioral intentions ($\beta = 0.768$ *and* $p < 0.01$). Therefore, the results of Hypotheses 1, 2, and 3 were supported. The proposed relationships among attitudes toward the pro-social behavior, anticipated feelings of guilt and pride, social norm, and personal norm were evaluated. The study result showed that anticipated feeling of pride ($\beta = 0.313$ and $p < 0.01$)

TABLE 4 | Hypotheses testing and the structural model outcomes.

Hypothesized paths		Standardized coefficients	*t*-values	Results
Hypothesis1	PAC→AR	0.595	12.008***	Accepted
Hypothesis2	AR→PN	0.102	2.613**	Accepted
Hypothesis3	PN→PBI	0.768	16.076***	Accepted
Hypothesis4	AFP→PN	0.313	5.814***	Accepted
Hypothesis5	AFG→PN	0.087	1.194	Rejected
Hypothesis6	APB→PN	0.532	10.367***	Accepted
Hypothesis7	SN→PN	−0.094	−1.227	Rejected
Hypothesis8	SN→PBI	0.091	2.350*	Accepted

Total variance explained:

R^2 of AR = 0.354

R^2 of PN = 0.627

R^2 of PBI = 0.644

Goodness-of-Fit Statistics:

χ^2 = 891.895, df = 332, χ^2/df = 2.686, $p < 0.001$, CFI = 0.950, IFI = 0.950, TLI = 0.943, RSMEA = 0.067.

*PAC, problem awareness of COVID-19; AR, ascription of responsibility; PN, personal norm; PBI, pro-social behavioral intentions; AFP, anticipated feeling of pride; AFG, anticipated feeling of guilt; APB, attitude toward the pro-social behavior; SN, social norm. *p < 0.05, **p < 0.01, ***p < 0.001.*

and attitude toward the pro-social behavior (β = 0.532 and $p < 0.01$) showed a positive and significant effect on the personal norms. Thus, Hypotheses 4 and 6 were supported. However, anticipated feelings of guilt (β = 0.087 and $p > 0.05$) and social norm (β = −0.094, $p > 0.05$) did not have a significant influence on the personal norm. Therefore, Hypotheses 5 and 7 were not supported. The findings showed that social norms influenced the pro-social behavioral intention (β = 0.091, $p < 0.05$), which supported Hypothesis 8. **Table 4** displays the results of the SEM.

Structural Invariance Testing

The 379 valid responses were divided into two groups comprising male and female participants. There were 225 cases in the male group and 154 cases in the female group. The results of baseline model with these two groups were very satisfactory (χ^2 = 1276.650, *df* = 664, χ^2/df = 1.923, $p < 0.001$, *RMSEA* = 0.049, *CFI* = 0.945, *IFI* = 0.946, and *TLI* = 0.938). The nested models and the baseline model were then compared using a chi-square difference test, and between gender groups, the specific relation of interest between these two groups was equally restricted. As shown in **Figure 4** and **Table 5**, according to the findings, the relationship between the personal norm and pro-social behavioral intentions ($\triangle\chi^2$ [1] = 4.305, $p < 0.05$), and between the social norm and pro-social behavioral intentions ($\triangle\chi^2$ [1] = 3.029, $p < 0.05$) were significantly different across male and female heritage travelers, so Hypotheses 9a and 9b were supported.

DISCUSSION AND IMPLICATIONS

Theoretical Implications

The investigation of the role of the new normal in assessing tourists' pro-social intentions and achieving the sustainability of the tourism industry has become increasingly vital during and after the COVID-19 pandemic (Chi et al., 2021a). However, few studies have been devoted to the role of heritage tourism's pro-social behavior intentions and tourism sustainable development in the context of post-pandemics. From the theoretical aspect, the development process of the pro-social behavioral intentions and tourism sustainability was first described in the context of post-pandemic heritage tourism, and this research echoed the previous studies on pro-social behavior and sustainability (Han et al., 2019; Kim and Hwang, 2020; Chi et al., 2021a,b). The study enriched the current COVID-19 tourism research, focusing on tourists' moral norms and pro-social and pro-sustainable behavioral intentions during the post-pandemic period, which provides a critical theoretical basis for developing or adjusting pro-social and pro-sustainable tourism products in the post-pandemic era.

Consistent with the previous studies (Kim and Hwang, 2020; Chi et al., 2021a), NAM was successfully used to illustrate the formation of the pro-social behavioral intentions in the background of heritage tourism in the post-pandemic period. The variables of problem awareness, ascription of responsibility, and anticipated feeling of pride were efficiently examined as the contributors to promoting personal norms to practice pro-social/pro-environmental behaviors. It is worth mentioning that the study also combined the two important key concepts of TPB (i.e., attitude toward the behavior and social norm) with an extended NAM, to strengthen the theoretical framework and analyze the decision-making process of tourists' pro-social behavioral intentions (Thøgersen and Ölander, 2006; Han and Hyun, 2017; Kim and Hwang, 2020; Morren and Grinstein, 2021). Moreover, the mediating role of the research variables (i.e., ascription of responsibility, personal norm, and pro-social behavioral intentions) was confirmed within the proposed model, which was consistent with the results of previous studies that when the travelers develop pro-social behavioral intentions, they were directly and/or indirectly affected by these factors (Han et al., 2017; Chi et al., 2021a). Our research results have also proved and supported that the extended NAM model was more efficiently used to analyze the formation process of the pro-social behavioral intentions of heritage tourists and provided significant theoretical value for the pro-social and pro-sustainable heritage tourism industry.

Generally, numerous researchers agreed that social norms could directly or indirectly influence personal norms and pro-social/pro-environmental behavioral intentions in the previous studies (Han and Hyun, 2017; Kim and Hwang, 2020; Chi et al., 2021a). Non-etheless, this study differed from the previous studies that the personal norms were not positively affected by the social norms and that the social norms have a direct impact on pro-social behavioral intentions in the COVID-19 pandemic context of heritage tourism. In other words, social pressure does not play an important role in moral obligation. This indicates that when others say that pro-social behavior, such as wearing-mask, washing hands frequently, and keeping distance, is important, they are not likely to be socially pressured to act in a certain way. Moreover, the anticipated feeling of guilt has not stimulated the personal norm to induce tourists to take pro-social behavioral intentions. It can be inferred that the anticipated feeling of guilt

TABLE 5 | Results of the structural invariance models.

		Female		Male		Baseline model	Nest model
Paths		**β**	**t-value**	**β**	**t-value**	**Freely estimated**	**Equally restricted**
H9a	PN→PBI	0.882	10.788***	0.703	11.602***	χ^2 (664) = 1276.650	χ^2 (665) = 1280.955
H9b	SN→PBI	0.006	0.111	0.133	2.518*	χ^2 (664) = 1276.650	χ^2 (665) = 1279.679

Baseline model Goodness-of-fit indices:

χ^2 = 1276.650, df = 664, χ^2/df = 1.923; $p < 0.001$, CFI = 0.945, IFI = 0.946, TLI = 0.938, and RMSEA = 0.049.

Chi-square difference test:

$\Delta\chi^2$ (1) = 4.305, $p < 0.05$ H9a: supported

$\Delta\chi^2$ (1) = 3.029, $p < 0.05$ H9b: supported

*Structural invariance models for women (N = 154) and men (N = 225). PN, personal norm; SN, social norm; PBI, pro-social behavioral intentions. *p < 0.05, **p < 0.01, ***p < 0.001.*

cannot be a key concept in the background of heritage tourism in the post-pandemic period, which is consistent with Schwartz (1977). The study showed that when the personal norm was added in the multiple regression analysis, the effect of anticipated guilt on behavior was no longer significant for a variety of pro-social actions. Therefore, this study provides evidence for the relationship between these key structures in the heritage tourism context during the COVID-19 pandemic, which also enriches the sustainability of the literature.

Meanwhile, our study verified the moderating impact of gender factors on the connection between individual behavioral norms and societal behavioral norms in forming pro-social behavioral intentions. In the study of individual pro-environmental/pro-social behavioral differences, gender was a significant moderating influence, consistent with the previous results (Han et al., 2018; Chi et al., 2021a). Women were more likely to develop pro-social behavioral intentions driven by personal norms, but in terms of social norms, men were more likely than women to develop pro-social behavioral intentions, which was reflected in health protection, such as maintaining social distancing and conducting hygiene activities to avoid infection during the pandemic. The differences in activation with respect to individual behavior and social behavior in the practice of pro-social activities were further validated by examining the moderators of gender in an extended conceptual model, which provides new perspectives regarding the demographic and psychological predictors of the study of individual normative behavior, social normative behavior, and pro-social behavior in different domains.

Managerial Implications

The proposed research model based on the NAM has been successfully applied in the context of heritage tourism, where the personal norm was positively and significantly correlated with the individuals' pro-social behavioral intentions. For instance, in the heritage tourism domain post-pandemic, the individuals' moral obligation played a crucial factor in triggering the pro-social behavioral intentions. Therefore, the government can share real-time COVID-19 pandemic information by checking/certifying an individual's healthy code through apps, such as WeChat, Alipay, Kakaotalk, or Uber.

The management of the pandemic can be facilitated by promoting the cooperation between the inter-governmental agencies and providing government guidance, such as giving continuous updates about the pandemic situation and the promotion of pandemic circumstances. Various apps that can share real-time pandemic information (e.g., the upgrade of international travel constricts and policies) and check or prove individuals' health codes, to provide the heritage site managers and tourists with real-time updates on the pandemic can be operated. Tourism practitioners in heritage sites can correctly guide tourists to take health protection measures to practice pro-social behaviors in accordance with heritage site code of conduct requirements, which can include having the visitors provide proof of COVID-19 vaccination certificate or recovery, and they can also implement the recommendations of hygiene experts to provide adequate hand sanitizer and sanitation facilities in public areas with high tourist traffic at the heritage site's tourist attractions and check the physical health condition of visitors at the entrance of heritage sites, such as verifying individuals' health code and body temperature.

In addition, non-government organizations (NGOs) can establish a volunteer service system, where the pro-social and health-protective travel behaviors and the changes in the pandemic situation are easier to notice through platforms such as Weibo, Twitter, Instagram, TikTok, Facebook, etc. The NGOs can also promote the assistance procedure between the government and local communities, such as timely publicizing the documents related to pandemic prevention measures, enhancing the anti-infection knowledge about COVID-19, and improving moral obligation to practice pro-social behaviors. The heritage site managers could think about increasing the collaboration with the heritage site staff, and they can post signs about the social hazards of COVID-19 at the heritage sites, distribute safe and healthy travel guide brochures, and make regular announcements about pandemic-related health precautions and safety protocols, such as wearing masks, using hand sanitizer, and maintaining safe social distancing. They can also default the maximum visits in a certain period, monitor travelers at site entrances for COVID-19 symptoms, such as high temperatures, and require evidence of a negative COVID-19 test result, health travel codes, and the travel vaccination certificate. Additionally, electronic payment

methods, including WeChat pay, Alipay, and other smart payments, can be further efficiently used at the heritage sites.

This research revealed that positive anticipatory emotions and attitudes were important drivers of personal norms, which indirectly induced pro-social behavioral intentions. This can be explained by the fact that tourists' personal moral obligations during heritage tourism activities were strongly influenced by emotions and attitudes. This means that boosting the tourists' feelings and the attitude toward the personal norm is essential to obtain a thorough understanding of their pro-social decision for visiting heritage sites. Therefore, it is more important for tourism managers to consider taking into account the anticipated emotions and attitudes toward the behavior of tourists when prescribing safety and health precautions at the heritage sites. For example, the tourist guide booklet can use eye-catching pictures, and the official app can be used to promote COVID-19 safety and health knowledge and the regulations in tourism sites, to remind the visitors to observe what behaviors are pro-social, wise, and encouraged, and what behaviors are unfavorable, associated with high infectious risk, and be discriminated against by the public and local communities. These measures can promote the individuals' moral obligations on preventing pandemic spread by enhancing their anticipated emotions and attitude toward the pro-social behaviors.

Given that gender differences significantly affected the strength of the connection between personal norms and social norms with regard to pro-social behavioral intentions. Men and women exhibited different moral obligations and social norm levels to take pro-social behavioral intentions in the background of the post-pandemic. Therefore, different effective strategies should be developed to induce pro-social behavioral intentions according to the groups of female and male tourists.

LIMITATIONS AND FUTURE RESEARCH

The current research offers both theoretical and managerial implications, but several limitations need to be carefully illustrated, that is, the survey in this study was limited to just heritage travelers in China, so the later researchers were encouraged to perform cultural and cross-country surveys and apply the proposed framework to other hospitality and tourism fields to examine the broad applicability of our study results. On the other hand, the research scope was merely limited to one foremost and prevalent facet of tourists' pro-social performance in heritage tourism. Future scholars in the other sectors of tourism can utilize the framework proposed in the current study from other tourism perspectives to explore additional significant aspects that are related to the development of heritage tourists' pro-social performance while attending heritage tours. Lastly, the demographic characteristics of tourists visiting heritage sites show that there is an imbalance between the male and female participants in the particular background of the COVID-19 pandemic, and later scholars could adopt a database with higher validity to elaborate more comprehensive insights into tourists' pro-social behavioral patterns, from multiple perspectives such as health psychology and crisis management.

DATA AVAILABILITY STATEMENT

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

AUTHOR CONTRIBUTIONS

All authors contributed to conceptualization, formal analysis, investigation, methodology, writing, and editing of the original draft 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.

APPENDIX

APPENDIX TABLE A1 | Measurement items.

Problem awareness of COVID-19 (Han, 2014; Kim and Hwang, 2020)
PAC1- The COVID-19 outbreak and pandemic are more serious than what individuals think in the tourism industry
PAC2- I am concerned that COVID-19 and its negative impact on the tourism industry will last longer than I expected
PAC3- I am aware of the seriousness of COVID-19 and its negative influence on the tourism industry
Ascription of responsibility (Han, 2014; Kim and Hwang, 2020)
AR1- Every traveler is partly responsible for the COVID-19 outbreak and pandemic
AR2- Every traveler is jointly responsible for the COVID-19 outbreak and pandemic
AR3- Every traveler must assume responsibility for the COVID-19 outbreak and pandemic
Personal norm (Han and Hyun, 2017; Han et al., 2019)
PN1- I feel morally obliged to practice pro-social behaviors at a heritage site by closely following the COVID-19 safe and healthy travel guidelines for my next vacation trip
PN2- I feel personally obliged to practice pro-social behaviors at a heritage site by closely following the COVID-19 safe and healthy travel guidelines for my next vacation trip
PN3- I feel a moral obligation to engage in pro-social behaviors at a heritage site by closely following the COVID-19 safe and healthy travel guidelines for my next vacation trip
Anticipated feeling of pride (Han, 2014; Chi et al., 2021a)
AFP1- I would feel proud
AFP2- I would feel accomplished
AFP3- I would feel confident
Anticipated feeling of guilt (Han, 2014; Chi et al., 2021a)
AFG1- I would feel guilty
AFG2- I would feel remorseful
AFG3- I would feel sorry
Attitude toward the pro-social behavior (Ajzen, 1991; Han and Hyun, 2017; Kim and Hwang, 2020)
APB1- For me, practicing pro-social behaviors at a heritage site by closely following the COVID-19 safe and healthy travel guidelines for my next vacation trip is – Foolish (1), Wise (7)
APB2- For me, practicing pro-social behaviors at a heritage site by closely following the COVID-19 safe and healthy travel guidelines for my next vacation trip is – Bad (1), Good (7)
APB3- For me, practicing pro-social behaviors at a heritage site by closely following the COVID-19 safe and healthy travel guidelines for my next vacation trip is – Unpleasant (1), Pleasant (7)
APB4- For me, practicing pro-social behaviors at a heritage site by closely following the COVID-19 safe and healthy travel guidelines for my next vacation trip is – Unfavorable (1), Favorable (7)
Social norm (Han and Hyun, 2017; Kim and Hwang, 2020; Chi et al., 2021b)
SN1- Most people who are important to me think that for my next vacation trip I should practice pro-social behaviors by closely following the COVID-19 safe and healthy travel guidelines at a heritage site
SN2- For my next vacation trip, most people who are important to me would like me to practice pro-social behaviors by closely following the COVID-19 safe and healthy travel guidelines at a heritage site
SN3- People whose opinions I value would prefer that I practice pro-social behaviors for my next vacation trip by closely following the COVID-19 safe and healthy travel guidelines at a heritage site
Pro-social behavioral intentions (Han and Hyun, 2017; Chi et al., 2021a)
PBI1- I plan to wear a mask at a heritage site for my next vacation trip
PBI2- I will exert effort in order to wear a mask at a heritage site for my next vacation trip
PBI3- I plan to keep my social distance from others at a heritage site for my next vacation trip
PBI4- I will exert effort in order to keep my social distance from others at a heritage site for my next vacation trip
PBI5- I plan to wash my hands frequently at a heritage site for my next vacation trip
PBI6- I will exert effort in order to practice handwashing properly at a heritage site for my next vacation trip

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How Duty-Free Policy Influences Travel Intention: Mediating Role of Perceived Value and Moderating Roles of COVID-19 Severity and Counterfactual Thinking

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Counterfactual thinking is presumed to play a preparatory function in promoting people's behavioural intentions. This study specifically addresses the impacts of COVID-19 severity, tourists' counterfactual thinking about the pandemic, and tourists' perceived duty-free consumption value on the effect of a duty-free policy on travel intentions. Four hundred and ten participants took part in this study, which involved a 2 (duty-free policy: absent vs. present) × 2 (COVID-19 severity: high vs. low) design. Results reveal the following patterns: (a) compared to the absence of a duty-free policy in tourist destinations, enactment of a duty-free policy leads to stronger visit intentions through greater perceived value and (b) the effect of a duty-free policy on travel intention is moderated by tourists' counterfactual thinking and COVID-19 severity.

Keywords: duty-free policy, perceived value, COVID-19 severity, counterfactual thinking, travel intention

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INTRODUCTION

Global tourism has expanded rapidly in recent years, framing this industry as a growth point and an important aspect of various countries' economies (Richards, 2011). Duty-free shopping in particular has ballooned in tourist destinations and led to several benefits: wider employment, heightened consumption, and accelerated economic development (Sohn and Lee, 2017). Because duty-free shopping policies can promote the tourism economy's development and improve national welfare, many destinations have begun to attract tourists through such policies (Martín et al., 2019).

However, the tourism industry is inherently sensitive and subject to uncertainties (Sharma, 2013). The coronavirus disease 2019 (COVID-19) pandemic has brought incalculable losses to this economic sector that relies heavily on human mobility (Tong et al., 2021). Specifically, the COVID-19 pandemic has resulted in the loss of one billion tourists worldwide, causing the loss of 180 million jobs (56.7% of the total world travel and tourism contribution to employment) (Škare et al., 2021). Resultant pressure suggests that governments should leverage tools such as duty-free policies to stimulate tourism development. It is accordingly crucial to study the mechanisms behind the effects of these policies on tourists' travel intentions amid the pandemic. Specifically, more remains to be discovered about how tourists' psychological reactions to the pandemic shape the impacts of duty-free policies on tourists' willingness to travel. This article explores whether a duty-free policy has a greater or lesser effect on tourists' travel intentions if they exhibit counterfactual thinking

(i.e., imagining how things might have been different in the past), such as "I could have enjoyed my trip if there had not been a COVID-19 pandemic."

The literature on tourist destinations' duty-free policies has largely focused on qualitative analyses of policy implementation and associated shortcomings, demonstrating the role of duty-free policies in promoting travel intentions (e.g., Dimanche, 2003; Lin and Chen, 2013; Kim et al., 2019; Martín et al., 2019). However, there has been less discussion of the specific mediating mechanisms (e.g., consumer perceived value) through which duty-free policies affecting travel intentions, and there is a lack of behavioral theory (e.g., functional theory of counterfactual thinking) to explore the moderating variables.

The present paper is innovative in its empirical approach to investigating the effect of duty-free policies on tourists' destination visit intentions amid the pandemic. Specifically, we propose that counterfactual thinking plays a preparatory function in promoting people's behavioural intentions through the functional theory of counterfactual thinking (Epstude and Roese, 2008; Huang et al., 2021). More precisely, how tourists' behavioural intentions toward a destination are generated and which factors influence such intentions are of interest to destination marketers: behavioural intentions (e.g., travel intentions) can forecast tourists' travel behaviour. In essence, this paper considers the roles of COVID-19 severity, tourists' counterfactual thinking about the pandemic, and tourists' perceived duty-free consumption value on the impact of a duty-free policy on travel intentions. Results offer theoretical and practical insight related to duty-free policies in tourist destinations during the pandemic.

LITERATURE REVIEW

Duty-Free Policies

Research has shown that tourism is well suited to taxation given the industry's inherent diversity, mobility, and dependence on public resources (Gooroochurn and Sinclair, 2005; Cooper and Hall, 2008; Durán Román et al., 2020). Tourism taxation is notably relevant to governments, businesses, and tourists (Christie and Morrison, 1985; Gunn and Var, 2002). However, tourism taxation can have negative consequences (Mak, 1988; Jensen and Wanhill, 2002): excessive taxes may inhibit tourism demand and weaken destinations' competitiveness, heavily burdening both businesses and tourists (Hall, 2000; Ryan, 2002; Palmer and Riera, 2003).

Meanwhile, many destinations have started to implement duty-free policies to stimulate tourism development (Martín et al., 2019). A duty-free policy is a tax incentive intended to promote departing tourists' duty-free shopping. Tourists can purchase from duty-free stores or approved online sales portals and retrieve their products at designated areas in airports, railway stations, or ports when leaving (Camilleri, 2018). This type of policy reduces customs duty taxes, valued added tax, and consumption tax (Bouët et al., 2012). Duty-free policies also represent a typical tax policy to spark tourism consumption, meant to encourage tourists to shop in destinations and to consume products (Kim et al., 2019). Studies have shown that a duty-free policy can enhance individuals' travel intentions, tourism spending, and tourism revenue. For example, Facchini and Willmann (1999) examined the welfare benefits of duty-free shopping and discovered that a duty-free policy produced higher Pareto efficiency than a free trade policy. Christiansen and Smith (2001) observed that a duty-free policy contributed to socioeconomic welfare through positive effects on tourist spending, commodity pricing, and tourism revenue.

As another example, the enactment of a duty-free policy in Hainan, China has attracted empirical attention. Liu et al. (2015) performed multiplicative interaction analysis to compare second-hand data from China's Hainan and Guangxi provinces. The authors concluded that a duty-free policy could effectively foster economic growth in Hainan province. Other scholars have pointed out that, as individuals' disposable income increases, a duty-free policy can boost domestic tourism income (Qi et al., 2013). Luo and Tian (2016) studied the effects of a duty-free policy and found that raising duty-free limits, improving the shopping environment, and introducing more duty-free brands could significantly increase sales of duty-free products. Dimanche (2003) assessed international tourists' shopping behaviour during 10 years of duty-free policy implementation in the US state of Louisiana. Findings indicated that the policy incentivised tourists to purchase more products, while adjusted tax rates on duty-free products played a major role in the policy's impact.

Counterfactual Thinking

Counterfactual thinking is a thinking process in which individuals substitute unreal conditions or possibilities (Kahneman and Tversky, 1981). People often contemplate how things could have been different under other circumstances. For example, when people reflect on their lives, they sometimes realise how many of their dreams have gone unfulfilled and how many opportunities have passed them by. They may reflect about negative outcomes, thinking these may not have happened if only one or more aspects of the past had been different. This process of mentally generating better alternatives to a factual state of affairs is called upward counterfactual thinking (Roese, 1997; Epstude and Roese, 2008; Byrne, 2016; Broomhall et al., 2017). Its key feature is the juxtaposition of one's current status against an imagined better alternative state (Markman et al., 1993; Markman and McMullen, 2003; Epstude and Roese, 2008).

Specifically, consider a traveller who rushes to the train station only to find that their train left 5 minutes ago: they may think, "If I hadn't gotten caught in that traffic jam, I would have arrived at the train station on time." Similarly, when faced with the impact of the COVID-19 pandemic, a person may think, "I would have been able to travel and enjoy my trip if there were no pandemic." Counterfactual thinking is a mental simulation of alternatives to one's reality (Kahneman and Tversky, 1982; Roese, 1997). In this form of thinking, one compares actual outcomes with those that could have occurred (Roese and Olson, 2014). Counterfactual thinking is closely tied to emotions such as regret, guilt, and shame (Mandel and Dhami, 2005; Byrne, 2016). It is also functional in that it can guide future behaviour (Roese and Olson, 1997). Through counterfactual thinking, people can justify

failed attempts to explain the past and prepare for the future; the resulting behavioural intention helps to ensure better outcomes (Byrne, 2016).

The functional theory of counterfactual thinking, as proposed by Epstude and Roese (2008), focuses on how such thinking affects subsequent behaviour. Counterfactual thinking thus represents a useful and necessary part of behavioural regulation. When a situation does not align with one's ideal state, the person generally adapts their behaviour to achieve equilibrium (Russell, 2003). Behavioural regulation usually begins with a problem or other negative experience that defies expectations and in turn counterfactual thinking. Such thinking typically extrapolates the antecedents that would inspire a person to pursue change and different behaviour, hence the functional theory. Scholars (e.g., Krishnamurthy and Sivaraman, 2002; Page and Colby, 2003) have demonstrated that counterfactual thinking can facilitate behavioural intention.

COVID-19 Severity

Coronavirus disease 2019 refers to pneumonia caused by a novel coronavirus infection (Velavan and Meyer, 2020). At present, the pandemic continues to worsen, with recurrent and relatively uncontrolled outbreaks in many countries (Shi et al., 2020). This pandemic has intensified anxiety among the general public; for the tourism industry, COVID-19 has also greatly diminished individuals' willingness to travel (Fotiadis et al., 2021). As of April 2022, the COVID-19 has infected more than 500 million people and caused more than six million deaths (Johns Hopkins University COVID-19 Dashboard). In addition, the COVID-19 pandemic can affect the behaviour of tourists. For example, many tourists cancel their planned trips due to fear of risk because it is difficult to avoid COVID-19 infection during the trip (Abbas et al., 2021).

The ripple effect (e.g., Kasperson et al., 1988) can partly explain the impact of COVID-19 severity. This effect suggests that the closer one is to the centre of a crisis event, the higher one's risk perceptions and negative emotions about that event (Slovic, 1987; Kasperson et al., 1988; Barsade, 2002). "Ripple" is a metaphor depicting a risk event's impact within a risk amplification framework (Kasperson et al., 1988), such as a stone thrown into a calm lake (i.e., the point of contact is most volatile, and the surrounding water gradually becomes less volatile as the distance from the point of contact increases). Research has further shown that, when defining COVID-19 severity by geographic distance, residents closer to the pandemic centre exhibit stronger risk perceptions and anxiety than those in more distant areas (Wen et al., 2020).

Consumers' Perceived Value

Consumers' perceived value embodies the difference between the perceived worth of a good and its actual price (Sweeney and Soutar, 2001; Roberts et al., 2017). After perceiving the value of a product or service, a person's subjective evaluation of its value minus the cost paid represents the consumer perception effect (Yu and Lee, 2019). Consumers' *perceived* value differs from a product's or service's *objective* value (Morar, 2013). Perceived value is essentially the trade-off between perceived value and perceived costs (Sánchez-Fernández and Iniesta-Bonillo, 2007). Perceived value is also personalised; that is, consumers do not perceive the same product or service as having the same value. Further, due to the trade-off between value and cost, individuals' consumption decisions are based on perceived value rather than a single factor (Loureiro et al., 2012).

The money and other resources (e.g., time, energy, effort) that consumers expend to obtain a product or service affect perceived value (Chi and Kilduff, 2011). Reducing monetary expenditure increases perceived value for consumers with high price sensitivity; reducing time and energy expenditure is more noteworthy for those with low price sensitivity (Chua et al., 2015). Few consumers seriously consider price and benefits when assessing a product's value, instead relying on external cues to form value-related impressions (Beverland et al., 2008). Consumers therefore make purchases upon processing only a small amount of acquired information (Dodd et al., 2005). Perceived value depends on the reference system through which a consumer perceives value (i.e., the context in which the valuation takes place) (Wu et al., 2014). For instance, consumers perceive value distinctly at specific consumption locations and times.

Travel Intention

Travel intention refers to tourists' preferences to visit a destination based on relevant knowledge (Jang et al., 2009). Travel intention is mostly influenced by external stimuli, personal needs and desires, external factors, and destination characteristics. External stimuli spur one's desire to travel, for example, marketing campaigns, the promotion of destinations et al. (Reza Jalilvand et al., 2012). Needs and desires are a set of attributes such as personal attitudes (Mohsin et al., 2017), values, and traits (Tepavčević et al., 2021). External factors include destination image, past travel experience, time, and economic variables (Hsieh et al., 2016; Rasoolimanesh et al., 2021; Yao et al., 2021). Destination characteristics consist of elements such as destination services. The factors influencing travel intention can be categorised into push and pull motivations, in which push motivations are derived from tourists' desire and need to travel, whereas pull motivations arise from a destination's appeal to the tourist, stimulating tourists' interest in it (Klenosky, 2002).

Many researchers have also explored travel intentions in the context of COVID-19 pandemic. For example, Tepavčević et al. (2021) found that travel intention and fear of COVID-19 pandemic are influenced by different personality traits. In addition, different fears of COVID-19 (infection during travel, as well as lack of funds, and loss of job during the critical period of COVID-19 pandemic) reduce travel intention (Gajić et al., 2021). Besides, researchers have found that tourists' perceptions of COVID-19 severity had a significant and negative impact on willingness to travel by public transportation (Liu et al., 2022). This suggests that tourists tend to use safer (in terms of infection) modes of travel during the COVID-19 pandemic (De Vos, 2020). Also, during the COVID-19 pandemic, social media plays an important role for travel intention through destination image restoration and reputation repair, allowing

tourist destinations to use digital platforms to enhance the brand image of the destination and enhance the travel intentions of tourists (Rastegar et al., 2021). It has also been shown that more distant destinations are associated with more uncertainty in the COVID-19 pandemic, and are perceived to be riskier than nearby destinations. As a result, tourists show higher travel intention for short-haul travel plans than for long-haul travel plans (Williams et al., 2022).

Theoretical Basis and Research Model

Our proposed research model is grounded in perceived value theory. Zeithaml (1988) considered perceived value through the lens of consumer psychology, describing it as the perceived overall value of a product/service following a consumer's thorough assessment of associated costs and benefits. Best (2013) classified perceived value based on emotional benefits, economic benefits, and perceived benefits. Burns (1994) summarised perceived value across four dimensions—use value, product value, evaluation value, and possession value—and asserted that because value is consumer-specific, marketers should assume a consumer perspective. Put simply, consumers' perceived value moulds purchase behaviour.

Sheth et al. (1991) developed a broader theoretical framework of perceived value and distinguished the concept using five dimensions (i.e., functional value, social value, emotional value, satisfaction value, and conditional value). They stated that consumption decisions result from these five variables and that the effect of each on consumption choices differs contextually. Lai (1995) regarded consumers' perceived value from a product perspective, a social perspective, and a consumer perspective. The product view pertains to a product's functional value; the social view entails social value and ecological value; and the consumer view concerns experiential value, emotional value, aesthetic value, satisfaction value, and situational value. According to value model, perceived value is based on consumer preferences for a product and varies across consumers for the same product (Peloza and Shang, 2011). Depending on who benefits, consumers' perceived value is divided into self-directed value (where the consumer personally benefits) and social-directed value (where others benefit). When a product provides social-directed value, consumers perceive that self-directed value is impaired. When a product provides social-directed value, consumers perceive that self-directed value is impaired (Obermiller et al., 2009).

In the tourism field, perceived value theory initially focussed on the hotel industry (e.g., Bojanic, 1996). The theory has since expanded to domains such as leisure and entertainment (Petrick et al., 2001), travel agencies (Sánchez et al., 2006), and restaurants (Hyun et al., 2011). We developed our research model based on existing theory, taking a duty-free policy as the independent variable, COVID-19 severity and COVID-19 counterfactual thinking as moderators, consumers' perceived value as the mediator, and travel intention as the dependent variable (**Figure 1**).

HYPOTHESIS DEVELOPMENT

Consumers' Perceived Value Mediates the Effect of a Duty-Free Policy on Travel Intention

Research has highlighted the positive impact of perceived value on behavioural intention. For example, when studying the outlet market for Australian coffee, Chen and Hu (2010) discovered that perceived value significantly and positively influenced consumers' loyalty. Higher perceived value can shape consumers' future behavioural intentions in two ways: by informing product preferences and by encouraging word-of-mouth communication about the product. Wang and Wang (2010) examined users of hotel reservation systems and found perceived value to indirectly affect behavioural intention through the mediating role of satisfaction. In a cruise context, Duman and Mattila (2005) observed that perceived value shaped tourists' behavioural intentions more strongly than satisfaction. Gallarza and Gil Saura (2006) further found that perceived value promoted tourists' loyalty.

In the tourism domain, Petrick (2004) discerned that consumers' perceived value of tourism products through travel experiences positively contributed to recommendation intentions. Others have suggested that the higher the perceived value, the stronger one's intentions to purchase and recommend a tourism product (Duman, 2002; Kleijnen et al., 2007). We therefore presume that the higher a destination's perceived value, the stronger tourists' intentions to visit. More precisely:

> H1: Compared to the absence of a duty-free policy in a tourist destination, implementation of a duty-free policy will generate stronger travel intention through greater perceived value.

Moderating Role of COVID-19 Severity

The COVID-19 pandemic shares characteristics with other crisis events (e.g., earthquakes) such as abruptness, urgency, ambiguity, and widespread social impact (Jia et al., 2020). However, COVID-19 is highly infectious and has a long incubation period, amplifying its uncontrollability and posing a demonstrable threat to people's lives and health (Fang et al., 2020). The pandemic has thus elicited intense public fear (Zuo et al., 2020). From a self-protection standpoint, people in different areas face varying degrees of COVID-19 severity: residents in the epicentre of a COVID-19 outbreak will face more direct threats than residents in lightly affected or non-affected regions (Zhang et al., 2020). High threat perceptions lead people to pay more attention to pandemic-related information and to process information more rigorously in terms of availability and depth (Sarkees et al., 2021). Therefore, people at the epicentre of COVID-19 generally hold higher risk perceptions of pandemic severity than those far from the epicentre and may be susceptible to a ripple effect (Liang et al., 2020). We postulate that COVID-19 severity will moderate the effect of a duty-free policy on travel intention as follows:

> H2a: When consumers perceive low COVID-19 severity, tourist destinations with a duty-free policy

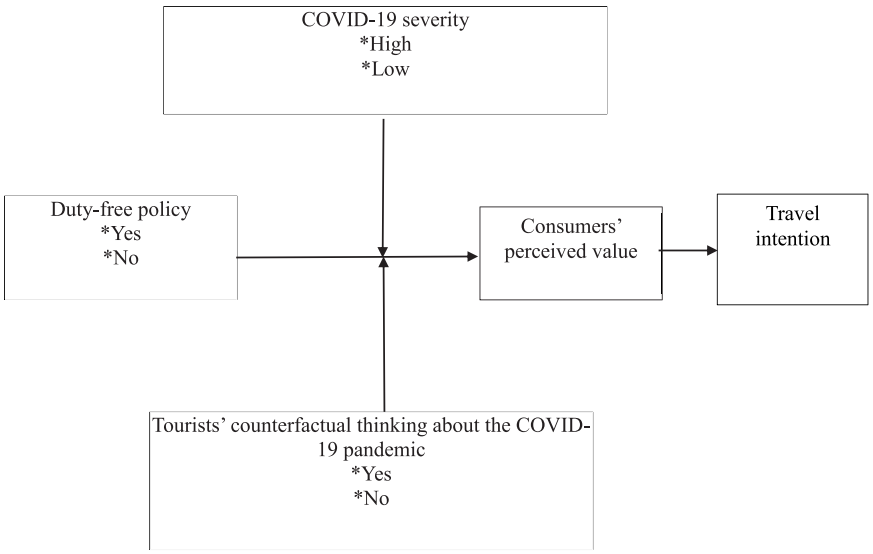

FIGURE 1 | Proposed research model.

will elicit stronger travel intentions than destinations without such a policy.

H2b: When consumers perceive high COVID-19 severity, tourist destinations with a duty-free policy will not elicit stronger travel intentions than destinations without such a policy.

Moderating Role of Counterfactual Thinking

Coronavirus disease 2019is an unprecedented infectious disease that people are still seeking to understand (e.g., how is it transmitted? What types of isolation can prevent and control it? What treatment options are available?). The pandemic primarily hindered tourists' travel decisions until self-quarantine or social distancing policies were publicised. Tourists were thus apt to engage in counterfactual thinking and evaluate their prior travel decisions (e.g., "If I had known about the COVID-19 outbreak earlier, I would not have scheduled my trip this summer.").

The functional theory of counterfactual thinking (Epstude and Roese, 2008) indicates that such thinking can inform behavioural intention. Specifically, if people do not obtain an expected outcome, they can easily experience emotions such as regret. These reactions promote counterfactual thinking (i.e., envisioning how things could have turned out differently). Such thinking further inspires people to consider how they might achieve their anticipated outcome, sparking behavioural intentions to do so. For example, if a person has counterfactual thoughts about failing to travel when pandemic severity is relatively low, the person may hedge against the negative effects of COVID-19 on travel intentions and be driven to travel. However, if pandemic severity is relatively high, this promoting effect of counterfactual thinking on travel intention may decline or cease to exist. The following hypotheses are put forth accordingly:

H3a: For tourists with strong counterfactual thinking about the COVID-19 pandemic, destinations implementing a duty-free policy will generate higher perceived value and travel intentions than destinations without such a policy.

H3b: For tourists with weak counterfactual thinking about the COVID-19 pandemic, destinations with and without a duty-free policy will demonstrate no difference in promoting perceived value and travel intentions.

EXPERIMENT

Design and Materials

Four hundred and ten participants took part in this experiment, which involved a 2 (duty-free policy: absent vs. present) × 2 (COVID-19 severity: high vs. low) design. Participants were assigned to one of four experimental conditions. We recruited our participants from a popular online survey platform in China, Wenjuanxing; this site is similar to SurveyMonkey and Amazon Mechanical Turk. The samples for the study reported in this paper were recruited from Wenjuanxing's more than one million members. Wenjuanxing has an equal proportion of male and female members who hail from all regions of China and have a variety of occupations. As a professional survey website, Wenjuanxing's sample is valid, diverse, and representative.

Our sampling plan is random and convenient sampling through the online subject pool. The questionnaire was posted to the online subject pool. The data was collected from November 24, 2021 to December 25, 2021. Participants are recruited from both areas of high and low COVID-19 risk using the online subject pool. As for the definition of COVID-19 risk areas, we used the updated information on the Chinese Epidemic Control Center, as the basis for defining high-risk and low-risk areas. According to the definition, low-risk areas are defined as areas

that have no new confirmed cases for 14 consecutive days; high-risk areas are defined as areas having more than 50 cumulative confirmed cases and an aggregated outbreak occurring within 14 days. During the data collection period, Liaoning province was the high-risk area of COVID-19 in China. On the other hand, the tourism destination elaborated in the experimental materials is Hainan Province, the only province in China that implements duty-free policy.

The independent variable (duty-free policy: absent vs. present) was manipulated by designing two reading materials about tourist destinations with or without a duty-free policy based on different conditions. The moderating variable (COVID-19 severity) was manipulated by recruiting participants who were or were not in a COVID-19 risk area. China's Liaoning province was experiencing a COVID-19 outbreak at the time of this experiment. Participants from this province were therefore assigned to the high COVID-19 severity condition, while those from other provinces were assigned to the low COVID-19 severity condition. Another moderating variable (high or low counterfactual thinking about the pandemic) was measured by participants' responses to a Likert scale rather than by experimental control. The mediating variable (consumers' perceived value) was assessed by simulating participants' purchase decisions as measured on an established scale. The dependent variable was evaluated by adapting a destination travel intention scale regarding tourists' satisfaction, involvement, destination image, and revisit intentions.

Procedures

First, all participants read a brief introduction to the COVID-19 pandemic and learned about the pandemic's adverse effects. Participants also read about associated travel problems and about pandemic control measures. Next, each participant reported their level of counterfactual thinking about travel inconvenience due to the outbreak (e.g., "If the COVID-19 outbreak had not occurred in the past year, I could have enjoyed very free travel/shopping").

Participants in the different experimental groups then read corresponding materials about a particular destination. Depending on the group, materials described a destination with or without a duty-free policy. All participants subsequently made simulated purchase decisions. Each participant was granted a travel shopping budget of 5,000 RMB and the freedom to choose from displayed options along with several featured products and duty-free items. Finally, participants reported their perceived transaction value regarding their simulated purchases and intentions to travel to the described destination.

TABLE 1 | Measurement items and sources.

Constructs	Measurement items	Sources	
Counterfactual thinking	1. If the COVID-19 outbreak had not occurred in the past year, I could have enjoyed very free travel/shopping	Allen et al., 2014	$\alpha = 0.893$
	2. If the COVID-19 outbreak had not been so severe in the past year, I could have enjoyed free travel/shopping		
	3. I would have been able to travel/shop freely without being restricted if COVID-19 controls had not been strict in the past year		
Consumers' perceived value	4. I consider my travel purchases very practical	Spotts and Stynes, 1985; Lee and Crompton, 1992; Oppermann and Chon, 1997; Jang and Feng, 2007; Gallarza et al., 2013	$\alpha = 0.872$
	5. I feel that the items I purchased during travel are fairly priced		
	6. I would have a similar purchase plan if I travelled again		
	7. To a large extent, I will share this travel experience with my friends and happily recommend my shopping experience		
Travel intention	8. The above tourist destination has elements that appeal to you	Oh and Mount, 1998; Chen and Tsai, 2007; Chi and Qu, 2008; Kim et al., 2011	$\alpha = 0.869$
	9. The above material inspires you to want to learn more about this tourist destination		
	10. I did not know anything about this tourist destination beforehand, but after reading the description, I plan to make this place my next travel destination		
	11. After completing this questionnaire, I will share the information I just read with my friends as a destination for future travel		

Table 1 lists all measurement items and their sources. **Table 2** summarises the sample's demographics, including participants' age (*M*: 28 years), monthly income in RMB (*M*: 8149.64 yuan), gender (64.63% women, 35.37% men), and education level (mainly undergraduate).

Mediating Role of Consumers' Perceived Value

To examine the potential mediating role of consumers' perceived value, we carried out causal stepwise regression (Wen et al., 2022) and bootstrap sampling (Hesterberg, 2011) for mediation analysis. Results revealed a full mediating effect of consumers' perceived value on the impact of a duty-free policy on travel intention. Causal stepwise regression and bootstrap sampling analyses are detailed in **Tables 3**, **4**, respectively.

In sum, these findings suggest that a duty-free policy significantly increased participants' intentions to travel to the specified destinations, with the effect being fully mediated by consumers' perceived value. Next, we tested whether this mediating effect was moderated by (a) participants' counterfactual thinking about COVID-19 and (b) whether a destination represented a COVID-19 risk area.

Moderating Role of Counterfactual Thinking

We developed three models to analyse the moderating effect of counterfactual thinking. The independent variable (duty-free policy) was treated as a virtual variable, the moderating variable (counterfactual thinking) was centralised, and the dependent variable (consumers' perceived value) remained unchanged. Model 1 considered the effect of a duty-free policy on consumers' perceived value; Model 2 added the moderating variable to Model 1; and Model 3 contained the interaction term from Model 2 and integrated the moderating and independent variables. The *F* values changed significantly from Model 2 to Model 3, and the interaction term was significant as well; we thus observed a moderating effect of counterfactual thinking on the main effect. Results are outlined in **Table 5**.

TABLE 2 | Sample demographics.

N = 410	Frequency (mean)	Percentage (standard deviation)
Age	28	5.42
Monthly income (RMB)	8149.64	8661.72
Gender		
Male	145	35.37
Female	265	64.63
Education level		
Less than bachelor's degree	32	7.81
Bachelor's degree	348	84.87
Master's degree	27	6.59
Ph.D.	3	0.73

Moderating Role of COVID-19 Severity

The independent variable (presence or absence of a duty-free policy) and the moderating variable (COVID-19 risk area or not) were each binary variables. As such, we conducted a two-way analysis of variance to test the moderating effect of COVID-19 severity. The interaction term was significant, indicating a moderating effect. COVID-19 severity hence moderated the main effect; that is, a duty-free policy had less impact on travel intention under high COVID-19 severity than under low COVID-19 severity. This analysis is summarised in **Table 6**. Overall hypothesis testing results are displayed in **Table 7**.

GENERAL DISCUSSION

Conclusion

Consumer behaviour studies represent a key area of tourism research; travel intention is a pillar of consumer behaviour in this context. Inspired by earlier work, we explored factors influencing individuals' travel intentions. The following conclusions can be drawn.

First, our experiments and data analysis demonstrated the impact and mechanism of a duty-free policy on individuals' intentions to visit a tourist destination. Implementation of a duty-free policy in tourist destinations positively influenced travel intention: destinations with a duty-free policy inspired stronger travel intention than those without such a policy. Tourists' perceived value also mediated the effect of a duty-free policy on travel intentions.

Second, COVID-19 severity and counterfactual thinking played moderating roles. When tourists faced low COVID-19 severity, destinations with a duty-free policy elicited stronger travel intentions than destinations without such a policy; when tourists encountered high COVID-19 severity, destinations with a duty-free policy did not elicit stronger travel intentions than destinations without this policy. Tourists with strong counterfactual thinking about the pandemic exhibited higher perceived value and travel intentions for destinations implementing a duty-free policy than for destinations without the policy. Tourists with low counterfactual thinking about the pandemic were indifferent (in terms of perceived value and travel intentions) about destinations that did and did not implement a duty-free policy.

Theoretical Contributions

This research extends the functional theory perspective of counterfactual thinking, linking counterfactual thinking's preparatory function for behavioural intention with tourists' travel intentions. Our work thus introduces a fresh theoretical perspective on travel intention. Prior studies mainly investigated the facilitating effect of tourists' perceived value on travel intentions vis-à-vis perceived value theory.

We have also expanded the application of perceived value theory. Few scholars have considered the impact of perceived value on tourists' travel intentions amid the pandemic. We identified perceived value as an antecedent

TABLE 3 | Causal stepwise regression analysis of mediating effect.

	Travel intention	Consumers' perceived value	Travel intention
Constants	5.586**	5.328**	2.552**
	−29.661	−28.829	−9.365
Duty-free policy	−0.267*	−0.346**	−0.07
	t = (−2.317)	t = (−3.060)	t = (−0.723)
Consumers' perceived value			0.569**
			−13.594
N	410	410	410
R^2	0.013	0.022	0.321
Adjusted R^2	0.011	0.02	0.318
F	F(1,408) = 5.369, p = 0.021	F(1,408) = 9.361, p = 0.002	F(2,407) = 96.286, p = 0.000

*$p < 0.05$.
**$p < 0.01$.

TABLE 4 | Bootstrap sampling method.

c Total effect	a	b	a*b Mediating effect value	a*b Boot SE	a*b z value	a*b p value	a*b 95% BootCI	c' Direct effect	Conclusion
−0.267*	−0.346**	0.569**	−0.197	0.001	−140.525	0	−0.140 to −0.028	−0.07	Full mediating effect

*$p < 0.05$ and **$p < 0.01$.

TABLE 5 | Analysis of counterfactual thinking moderating effect.

	Model 1	Model 2	Model 3
Constants	4.982**	4.921**	4.908**
	−59.046	−65.168	−64.987
Duty-free policy—1.0 [reference item]	–	–	–
Duty-free policy—2.0	−0.346**	−0.237*	−0.232*
	t = −3.060	t = −2.334	t = −2.295
Counterfactual thinking		0.383**	0.466**
		-10.27	-8.377
Duty-free policy—2.0* Counterfactual thinking			−0.150*
			t = −2.013
N	410	410	410
R^2	0.022	0.224	0.231
Adjusted R^2	0.02	0.22	0.226
F	F(1,408) = 9.361, p = 0.002	F(2,407) = 58.618, p = 0.000	F(3,406) = 40.722, p = 0.000
ΔR^2	0.022	0.201	0.008
ΔF	F(1,408) = 9.361, p = 0.002	F(1,407) = 105.479, p = 0.000	F(1,406) = 4.050, p = 0.045

* $p < 0.05$.
** $p < 0.01$.

of travel intention, echoing previous research (e.g., Kozak, 2001; Lee S. Y. et al., 2007). Travel intention is not simply dependent on perceived material value; more importantly, such intention arises from affective values such as pleasure and aesthetics (Petrick, 2004; Gallarza and Gil Saura, 2006; Lee C. et al., 2007). Tourists tend to travel in pursuit of these values (Kirillova et al., 2014).

Discussions about promoting travel intention based on perceived value theory have typically ignored the facilitating effects of negative emotions on travel intention and instead focused on positive perceived affective values (e.g., pleasure and joy). However, the COVID-19 pandemic continues to evoke negative reactions (Carstensen et al., 2020; Lades et al., 2020). Our research bridges this gap by considering the content-neutral

TABLE 6 | Analysis of COVID-19 moderating effect.

		df	*MS*	*F*	*p*
Correction Model	37.985a	3	12.662	10.224	0.000
Intercept	9123.723	1	9,123.723	7,367.078	0.000
COVID-19 severity × Duty-free policy	5.786	1	5.786	4.672	0.031
COVID-19 severity	22.245	1	22.245	17.962	0.000
Duty-free policy	10.357	1	10.357	8.363	0.004
Errors	502.809	406	1.238		
Total	9946.438	410			
Corrected Total	540.793	409			

R^2 = 0.070 (adjusted R^2 = 0.063).

TABLE 7 | Hypothesis testing results.

Serial Number	Research hypothesis	Result
H1	Compared to the absence of a duty-free policy in a tourist destination, the implementation of a duty-free policy will generate stronger travel intention through greater perceived value	Accepted
H2a	When consumers perceive low COVID-19 severity, tourist destinations with a duty-free policy will elicit stronger travel intentions than destinations without such a policy	Accepted
H2b	When consumers perceive high COVID-19 severity, tourist destinations with a duty-free policy will not elicit stronger travel intention than destinations without such a policy	Accepted
H3a	For tourists with strong counterfactual thinking about the COVID-19 pandemic, destinations implementing a duty-free policy will generate higher perceived value and travel intentions than destinations without such a policy	Accepted
H3b	For tourists with weak counterfactual thinking about the COVID-19 pandemic, destinations with and without a duty-free policy will demonstrate no difference in promoting perceived value and travel intentions	Accepted

pathway of counterfactual thinking's preparatory function for behavioural intention. Along this pathway, behavioural intention is derived from the mindset, emotions, and motivations resulting from counterfactual thinking (compared with behavioural intention arising from specific information in counterfactual thinking) which affect subsequent behaviour (Smallman and Roese, 2009; Roese and Epstude, 2017). Markman et al. (2008) found that the negative affect generated by counterfactual thinking can inspire people to change their behaviour: emotions such as sadness and regret (e.g., "I feel sad that I could have done better"; "I feel regret because I could have finished the task better") can lead people to work harder on subsequent tasks. Our results suggest that travel intention may be sparked by negative emotions brought on by counterfactual thinking (e.g., imagining potential travel plans if the pandemic situation had been different). This pattern supports a content-neutral pathway.

In addition, the identified moderating role of counterfactual thinking substantiates the preparatory function of counterfactual thinking for behavioural intention. This moderation especially reinforces the content-specific pathway of counterfactual thinking's preparatory function (Roese and Olson, 1997; Segura and Morris, 2005; Epstude and Roese, 2008). The pathway contains particular information for counterfactual thinking, thereby generating subsequent behavioural intention and spurring behaviour. "Content-specific" in this sense suggests that certain information directly affects behavioural intention: the more precise the intention obtained through counterfactual thinking, the more likely corresponding behaviour is to change. Counterfactual thinking research (e.g., Krishnamurthy and Sivaraman, 2002; Page and Colby, 2003) has demonstrated a positive role of such thinking on behavioural intention. Even so, it remains unclear whether this benefit is due to the content of counterfactual thinking (i.e., which influences behavioural intention) or to the negative emotions that stimulate behavioural intention (Morris and Moore, 2000; Sirois et al., 2010). Our experiments indicated that the specific content of counterfactual statements (i.e., about participants' travel intentions amid the pandemic) shaped travel intention. This outcome further verifies the content-specific pathway of counterfactual thinking's preparatory function.

Finally, our results confirm risk's impact on travel intention and enrich the body of knowledge regarding how moderators of risk influence this intention. The adverse effect of risk on travel intention has been well documented: the higher a

destination's risk severity, the weaker tourists' intentions to visit (e.g., Sheng-Hshiung et al., 1997; Fuchs and Reichel, 2006; Petrick et al., 2007). Our findings align with prior work in this respect. Conversely, research on moderators affecting travel intention has not addressed the moderating impact of counterfactual thinking arising from negative outcomes; such work has primarily discussed the moderating roles of positive psychological variables such as self-efficacy (e.g., Guo et al., 2016) and satisfaction (e.g., Yüksel and Yüksel, 2007). For example, Guo et al. (2016) found that tourists' self-efficacy moderated the negative effect of tourists' hostility on travel intentions. Our discovery—that counterfactual thinking (attributable to the COVID-19 pandemic) can positively moderate the negative impact of risk on travel intention—expands knowledge of the moderators of travel intention.

Managerial Implications

Our findings provide a foundation for tourism companies to segment markets, select target markets, conduct market positioning, and implement marketing strategies under the background of COVID-19. Several actionable implications follow.

First, our results can guide tourism resource development. By examining the factors influencing tourists' intentions to visit a destination, local governments and tourism companies responsible for developing tourism products can better understand affiliated locations. Comprehending tourists' travel intentions can also help local governments and tourism companies to enhance tourism infrastructure and to create innovative products. Destinations' tourism products can thus become more effective.

Second, this research reveals the direct effect of a duty-free policy on tourists' travel intentions. Whereas a duty-free shopping policy may discourage visitation from tourists who prefer shopping-oriented trips, destinations can still attract potential tourists through such a policy. Specifically, if tourist destinations wish to further expand the impact of a duty-free policy, they should continue easing policy restrictions (including constraints on the number of duty-free shopping trips, duty-free shopping quotas, and the types and quantities of duty-free goods) while improving the duty-free shopping system to stimulate prospective tourists' travel intentions. In addition, governments should plan to establish auxiliary facilities (e.g., cafes or leisure and entertainment sites) in duty-free stores' surroundings; doing so can create a shopping system based on duty-free shopping.

Lastly, we considered the indirect effect of a duty-free policy on travel intention through perceived value. Findings suggest that tourist destinations should increase their perceived value *via* appropriate marketing tools. Once destination marketers understand tourists' consumption needs based on perceived destination values, these personnel can develop and design tourism products tailored to target markets (e.g., by being market-oriented and implementing suitable marketing tools based on tourists' value preferences). Destination marketers should also bear in mind that the COVID-19 pandemic is not over; associated risk perceptions can undermine destinations' perceived value as well as tourists' travel intentions. Tourism marketers should thus ponder ways to assuage tourists' anxiety at different COVID-19 severity levels.

Future Research Directions

Several limitations of our research leave room for future work. Subsequent studies could further categorise counterfactual thinking about the pandemic, such as by examining the relationships among different types of counterfactual thinking and travel intentions along with other relevant variables. Counterfactual thinking could specifically be divided into upward counterfactual thinking (i.e., envisioning how past outcomes could have been better) and downward counterfactual thinking (i.e., envisioning how past outcomes could have been worse) (Roese, 1994). Structurally, counterfactual thinking can be classified as either additive counterfactual (i.e., imagining how past outcomes could have been different if some antecedents were added) or subtractive (i.e., imagining how past outcomes could have been different if some antecedents were subtracted) (Roese et al., 1999). Prior research (e.g., Sirois et al., 2010) indicated that upward counterfactual thinking is more likely to promote behavioural intention than downward counterfactual thinking. This supposition can be further scrutinised.

Furthermore, we focussed on COVID-19 severity in China during a certain period. Cross-cultural studies could more fully delineate the impact of pandemic severity on travel intention. For example, researchers can build statistical models informed by COVID-19 big data to quantify pandemic severity in different regions. Additionally, our findings offer evidence of a ripple effect and a psychological typhoon eye effect, consistent with risk perception studies (e.g., Burns and Slovic, 2012; Wen et al., 2020). Scholars can further explore the mechanisms by which these two psychological effects occur in response to the same crisis event.

Lastly, in this paper, we only collected data from a popular online survey platform in China, Wenjuanxing. Due to that users who register for Wenjuanxing survey platform are mainly college students as well as young adults. We acknowledge that this composition of participants undermines the representativeness of our sample. For future research, we hope to remedy this deficiency by collecting a wider range of data or by including second-hand data from other sources (e.g., public data on the internet).

DATA AVAILABILITY STATEMENT

The original contributions presented in this 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 and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

YJX and YBX conceived to the main idea of the experiment, collected the data, conducted the data analyses, and wrote the main draft of this manuscript. WM and XX discussed the results and revised the manuscript together. All authors contributed to the article and approved the submitted version.

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Factors of Airline Selection and Reflight Intention During the Pandemic/Case of Serbian Airlines Users

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The global pandemic coronavirus disease 2019 (COVID-19) has caused significant economic changes for all segments of the economy. Travel restrictions have landed several commercial airlines and significantly reduced their revenues. Safety measures are strict and very demanded, especially when it comes to food drinks and beverages served during flights. This article aims to discover the predictors that influenced the intention of the airline's passengers to travel long-distance flights in unusual conditions of the COVID-19 pandemic and differs from current studies on airline selection and passenger loyalty because it includes changes in the behavior of employees who regularly fly medium- and long-distance flights. Requirements for passenger's airline selection have been changed, which is why this study aimed to determine which factors influence the selection during reopening after lockdown. Determinants of food quality and safety during flights are a long-term challenge and could affect passengers' choice of the airline they want to fly. This study was conducted during the reopening period of airlines, during the COVID-19 pandemic, on a sample of 369 Serbian passengers and employees on medium- and long-distance flights, in the period from November 20, 2020 to January 15, 2021. Regression analysis concluded that certain predictors such as food service quality and safety significantly affect the attitude, subjective norms, and perceived behavioral control (PBC) of passengers and trigger the intention that affects behaviors in the choice of the airline during the COVID-19 pandemic, especially when it comes to the flights with medium and long durations. To better interpret the effects, a path analysis was performed in the SPSS Analysis of Moment Structures (AMOS) software, version 26.00 with the aim to examine the importance and significance of causal

relationships between groups of variables. The results confirmed the theory of planned behavior; that intentions are a significant mediator between the mentioned independent variables (attitudes about quality and safety of food, drinks and beverages, subjective norms, and perceived behavior control) and passenger behavior when rechoosing the same airline.

Keywords: airline selection, re-flight intention, COVID-19, airlines users, food quality and safety

INTRODUCTION

Coronavirus disease 2019 (COVID-19) has caused enormous damage to airlines globally. According to the International Civil Aviation Organization (ICAO, 2022), the extent of the effects of the tourism crisis is partly known and the severity varies at the level of different countries. Social distancing and closure have significantly affected the transport sector, especially the airline industry, which remains very fragile and one of the biggest victims of the COVID-19 pandemic. The International Civil Aviation Organization (2022) estimated actual results for 2020 and 2021, compared to 2019 levels, which showed a total reduction of 40–50% of airline supply. Fear appeal and social media fake news during COVID-19 have had a strong positive impact on impulse buying as mediating factors (Ahmed et al., 2020). When it comes to the decision of airline selection and reflight intention during the COVID-19 pandemic, the mentioned mediators had the opposite effect and they had a strong negative impact on the behavior of passengers. During the critical period of the COVID-19 pandemic, people were most afraid of infection during travel and lack of funds and job loss (Gajić et al., 2021a). Damage and uncertainty caused by the COVID-19 pandemic may have already permanently affected changes in passenger behavior (Song and Choi, 2020; Priem, 2021; Watson and Popescu, 2021), which is why it is necessary to pay attention to changes in behavior, especially when it comes to sensitive services such as food, drinks, and beverage services on long-distance flights.

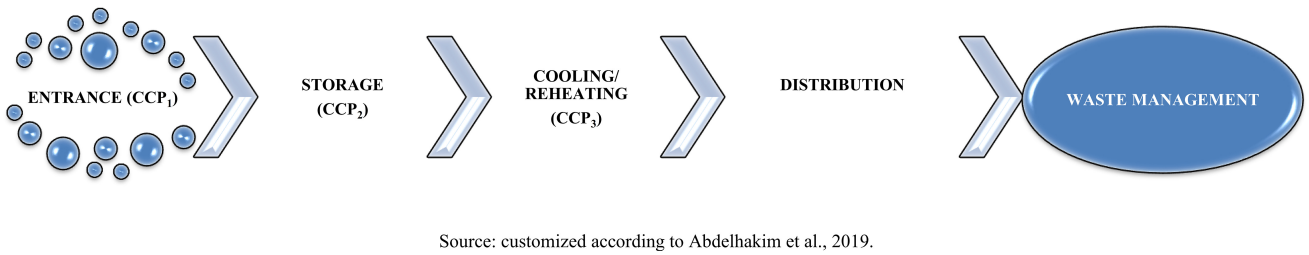
This study has been one of the pioneering studies that investigate the factors affecting the airline travel intention of Serbian passengers during the COVID-19 disease period and aim to provide a guide to the airline managers for future projections in the passenger traffic by discovering the airline passengers' behavior in the COVID-19 era, based on the Theory of Planned Behavior (TPB). The main objective of this study is to point out to the airlines' management how certain predictors with more or less significance affect the attitude, subjective norms, and perceived behavior control (PBC) of Serbian passengers and trigger an intention that then trigger refight behavior during a pandemic, especially when it comes to medium- and long-duration flights. Predictors of intention are important in predicting the planned behaviors of passengers whose reselection of the airline has a positive impact on competitiveness, business improvement, and financial benefits. In the second part of this study, hypotheses based on current literature will be set. After reviewing the literature and methodology, the results are reviewed and discussed.

LITERATURE REVIEW

To run a sustainable business in today's tough global competitive climate and create a long-term base of loyal customers, airlines should be able to continuously provide quality food, drinks, and beverages service to their customers. Satisfaction of service users and employees are key determinants of loyalty, necessary for the existence and sustainability of business (Özkul et al., 2020). Providing high-quality services to passengers and tourists can be crucial for the competitiveness, profitability increasing, and long-term growth of airlines in a highly competitive environment, which is why they must meet the expectations of their passengers to maintain business (Arasli et al., 2020; Gajić et al., 2021b; Bakır et al., 2022). The quality of service in air transport is summed up by the results of several studies and presented in a study by Fu (2019). The study says that in forming the experience of service provided by airlines, the following factors play an extremely important role: accuracy of service, flight check-in, cabin comfort, after-sales services, service of food, drinks, and beverages, and programs for frequent flyers [frequent flyer programs (FFPs)].

Thamagasorn and Pharino (2019) stated that there is a lack of adequate study on this topic and conclusions, which would greatly improve the concept of total quality management (TQM) in the aviation industry.

The quality of food drinks and beverages served on long-distance flights must be at the highest level. There are absolutely no exceptions to the quality of food served in relation to the circumstances before the COVID-19 pandemic. Therefore, staff must be educated in their knowledge of the basic segments of the Hazard Analysis Critical Control Point (HACCP) food safety system. The cabin crew handles risky foods on the flight, for example, fresh salads, meat and fish dishes, or beverages with milk. The quality of food drinks and beverages served on airplanes is significantly affected by the supply chain (Sundarakani et al., 2018). If food is not loaded on the plane with care and under rigorous criteria, microbiological, chemical, physical, or allergic risks can occur. Poor handling of food by the cabin crew resulted in eight of the twelve reported cases of food poisoning due to abuse and unhygienic behavior. Examples of such reported abuses include the consumption of a meal that the passenger brought in on the flight (Abdelhakim et al., 2019). In the context of this topic, **Figure 1** illustrates the general main steps [including critical control point (CCP)] during the handling of food, drinks, and beverages by the airline. These sequential steps are the same for different types of onboard food services.



Source: customized according to Abdelhakim et al., 2019.

FIGURE 1 | Food handling during flights and related critical control points (CCP). Source: Customized according to Abdelhakim et al. (2019).

Determining the quality of food, drinks, and beverages and services on the plane during the flight is one of the most important activities when planning meals for passengers on long-distance flights. This implies parameters such as: the time interval of service provision and meal consumption, different needs of passengers (changed diets, cultural habits, etc.), the capacity of the kitchen on the plane, season, and price-quality ratio of food, drinks, and beverages provided by catering (Jones, 2004; Gunardi et al., 2018; Fu, 2019; Han et al., 2020). The quality of food and beverage service is of great importance for attracting and retaining loyal customers (Chang and Yeh, 2002; Gursoy et al., 2005; Liou and Tzeng, 2007). It is extremely important for airlines not only to understand passengers' perceptions of their service offerings but also to find out what customers expect and what types of services customers consider most important (Chen and Chang, 2005). Most of the challenges related to the provision of food, drinks, and beverage services during the flight are related to safety and quality, while for determining the amount of food, the most common guidelines are the amounts of food waste that is not consumed during the flight. These include safe food delivery, safe storage, finishing, and serving food during the flight, planning balanced meals, adhering to standards and procedures in the operational process, and special training for employees regarding food safety and food waste management (Thamagasorn and Pharino, 2019). A useful technique for reducing food waste can be the implementation of various educational programs about the importance of food waste management from sociological, economic, and environmental aspects (Blešić et al., 2021b). The optimization of meals on the plane is viewed from two aspects. The first aspect is related to meeting the needs of passengers and on the other hand, food waste that is not consumed must be reduced as much as possible (Blanca-Alcubilla et al., 2018). Many airlines use outsourcing when it comes to catering. Given the aforementioned amounts of waste generated on unused food on flights, preordering meals when buying a ticket can significantly improve and facilitate the process of food optimization in the aviation industry, why do many companies rely on outsourcing food and beverage options. Outsourcing in the production of food that will be served on flights is one way to reduce costs, more efficient meal forecasting, and more stable meal quality. The main reasons for hiring external agencies include savings related to meal production costs, focus on basic work technology (in this case, attention to improving the provision of adequate transportation services), and maintaining management flexibility (Megodawickrama, 2018).

As a result of numerous omissions, the aviation industry has recorded several foodborne epidemics. Incidents have provided an opportunity to learn from past mistakes and the current practice is to introduce high safety standards and procedures to minimize the risk of food poisoning (McMullan et al., 2007). Quality and safe service of food, drinks, and beverages on medium- and long-distance flights rely on high standards of food preparation and storage, which applies to airport kitchens, onboard service stations, and food distribution vehicles. This is particularly challenging in certain countries that do not have developed food safety management systems or food distribution conditions are difficult due to climate and social conditions. Diseases and food poisoning on planes can be very dangerous. To ensure that foodborne illness does not incapacitate the entire flight crew, crew members should consume different meals prepared by different chefs (Eisenberg et al., 1975). Food preparation for the aviation industry is a particularly sensitive process. When talking about the application of the HACCP principle related to a certain topic, it is necessary to point out that this segment is mostly guided by certain examples, based on the guidelines of the International Flight Services Association (IFSA, 2016). The IFSA recommendations recognize the following hazardous raw materials used in food production: food recalled by the local regulatory authority or food involved in the investigation of foodborne illness; raw or undercooked food of animal origin; fresh or undercooked food of plant origin; toxic substances; locally identified potentially unsafe foods (e.g., repeated unacceptable microbiological findings or government warnings); and food ingredients that may be harmful to certain consumer segments like allergens. For people who have food allergies, consuming food outside the home carries more health risks, which requires detailed control of ingredients added to meals and dressings, and control of foods that may be cross-contaminated with allergens during the food preparation process (Ahuja and Sicherer, 2007; Aleksić et al., 2020). An entity engaged in the provision of food and beverage services whose management is focused on standardized and sustainable quality must pay attention to effective communication, which is the key to risk management of food allergens (Aleksić et al., 2020). Due to the high risk of allergic reactions, Seidenberg et al. (2020) state that it is necessary to provide information on the type and severity of allergies in time, before booking a flight. Therefore,

according to a study by Popov-Raljić et al. (2017), one of the primary tasks of management is to provide appropriate education to raise employee awareness of the risks that can be caused by allergenic ingredients in food and beverages.

The influence of external and internal factors on the behavior of modern consumers plays a key role in identifying needs and meeting them to achieve the goal of the sales market (Gajić et al., 2022). A recent study on large samples of respondents increases the importance and adds value to the results obtained (Durana et al., 2021a; Kovacova and Lewis, 2021; Valaskova et al., 2021a,b). Many theories such as the analytic hierarchy process (AHP) or the Dickinson model are often applied in solving complex problems that consist of numerous elements, which contain aims, criteria, subcriteria, and alternatives (Blešić et al., 2021a; Durana et al., 2021b). The Theory of Planned Behavior (TPB) is one of the most important theories used in studying consumer behavior, and predicting their future behavior and has had some success in explaining travel behavior choices, especially in explaining willingness to reduce car use (Bamberg and Schmidt, 2003; Abrahamse et al., 2005), followed by increased use of public transport (Heath and Gifford, 2002) and proenvironmental behaviors (Davison et al., 2014). However, researchers have also identified that individuals do not always act in their own rational self-interest and that a mixture of self-interest and prosocial motives may provide a better explanation for an individual's behavior (Bamberg and Möser, 2007).

Perspectives on the recovery processes of the Serbian aviation industry are based on two sides: passenger demand and supply. In the transition to the normalization process, airlines need to review their food and beverage service strategies to increase passenger traffic, reduce competitiveness, and undermine passenger refight intentions. Uncertainty in the behavior of passengers during the normalization process causes uncertainty regarding the future projections of the aviation industry. In this context, this study aims to uncover the predictors that influenced the airline's passenger intent to travel in the COVID-19 era, based on the Theory of Planned Behavior (TPB). The TPB explains the behavior with predictors that affect behavioral intention and states that the main driving force of the behavior is the intention to realize the behavior. Attitudes, subjective norms, intentions, and behaviors of Serbian passengers and employees on medium- and long-distance flights were examined to determine whether the quality of food, drinks, and beverages services during the flight can influence intentions that lead to airline reselection behavior through the Ajzen's Theory of Planned Behavior (TBP) (Ajzen, 1985, 1991).

Attitudes are expressed behavior-oriented positive or negative approaches (Ajzen, 1985) and subjective norms as opinions are a stronger predictor of intention to engage in physical activity among those who may be more sensitive to others' opinion (Latimer and Ginis, 2005). Therefore, the first and second hypotheses of this study are:

Hypothesis 1 (H1): Attitudes about food, drinks, and beverages quality and safety will significantly affect reflight intentions.

Hypothesis 2 (H2): Subjective norms will significantly affect reflight intentions.

According to a study by Ajzen (1991), perceived behavioral control is an additional determinant of intention and behavior and is defined as the composition of control beliefs of an individual about how easy or difficult it will be to perform a behavior. Therefore, the third hypothesis of this study is:

Hypothesis 3 (H3): Perceived behavioral control (PBC) will significantly affect reflight intentions.

In accordance with the aim of this study and to determine the importance and significance of causal relationships between groups of variables, three more following hypotheses were made:

Hypothesis 4 (H4): Intention mediates the relationship between attitudes and reflight behavior.

Hypothesis 5 (H5): Intention mediates the relationship between subjective norms and reflight behavior.

Hypothesis 6 (H6): Intention mediates the relationship between perceived behavioral control (PBC) and reflight behavior.

MATERIALS AND METHODS

Data Collection and Analysis

Two preliminary questionnaires were adjusted according to a study by Polat et al. (2021) and a pilot study was conducted according to a sample of 20 voluntary respondents to determine whether the questions were clear, understandable, and suitable for further statistical processing of the obtained data, after which some of the questions were reformulated and removed.

This study was conducted with two questionnaires from November 20, 2020 to January 15, 2021. The sample consisted of 316 passengers and 55 cabin crew representatives. In final processing, the answers received from 315 passengers and from 54 employees on medium- and long-duration flight routes were used. Two questionnaires designed by the authors were used for the purposes of the survey: The first questionnaire was intended for air passengers and the second questionnaire was intended for cabin crew. In the first part, respondents evaluated on the Likert scale ranged from 1 (strongly disagree) to 7 (strongly agree), their perception in terms of attitudes about food and beverage (13 questions), subjective norms (5 questions), perceived degree of control (4 questions), intentions related to the influence of food and beverages quality and safety on air flights on reflight choice (5 questions), and behavior (6 questions). For each of the mentioned aspects, the passengers were asked a series of questions through which the observed aspects were comprehensively considered. The second part of the questionnaire collected data on the demographic characteristics.

The measurement variables and measurement items used in this study are shown in **Table 1**.

The calculation of the reliability coefficient is performed based on knowledge of the matrix of variance and

TABLE 1 | Survey questionnaire and sources.

Costruct	Item (customized according to source)	References
Attitudes	The choice of food on plane is an important factor of passenger's satisfaction Food safety is an important factor of passenger's satisfaction on the plane The amount of food is an important factor of passenger's satisfaction The appearance of the meal served is an important factor of passenger's satisfaction The taste of the food is an important factor of passenger's satisfaction The variety of food is an important factor of passenger's satisfaction The frequency of service is an important factor of passenger's satisfaction on the plane The freshness of the food is an important factor of passenger's satisfaction on the plane Quality food supply is an important factor of passenger's satisfaction on the plane Meal choice for passengers with specific diets (vegetarian, gluten-free, halal, kosher, etc.) is an important factor of passenger's satisfaction The offer of local dishes is an important factor of passenger's satisfaction on the plane Wide choice of drinks is an important factor of passenger's satisfaction Wide choice of good quality drinks is an important factor of passenger's satisfaction	Cronin et al., 2000; Abbas and El Gamal, 2015; Río et al., 2019; Duda-Chodak et al., 2020
Subjective norms	My environment expects me to use flights with a good offer of food My family expects me to use flights with a good offer of food Friends expect me to use flights with a good offer of food My business partners expect me to use flights with a good offer of food Traveling on flights with a good offer of food is a measure of social status	Latimer and Ginis, 2005; Lien et al., 2019
Perceived behavioral control	Flight dates with a good food offer do not suit my needs Prices of flights with a good food offer are too high for me Flights with a good food offer are overbooked Information on food offerings on flights is not available	Polat et al., 2021
Intentions	I will pay attention to the food offer on the flight when choosing a flight I will set aside more money for a flight that I know includes good food I will avoid flights that do not offer any food I will avoid flights on which the food offer is not good I will avoid flights on which food supply is poor	Abbas and El Gamal, 2015; Mazura et al., 2020
Behavior	I choose flights on which there is a good supply of food I choose flights on which the food offer is diverse I choose flights that offer quality food I choose the flights with the lowest price I choose the flights with the shortest duration I choose the flights with the best price-quality ratio including food	Polat et al., 2021

covariance. The Cronbach's alpha value was measured for all the predictors in the SPSS Analysis of Moment Structures (AMOS) software, version 26.00. Path analysis was performed in the SPSS AMOS software, version 26.00.

Measurement Model

The path analysis method was designed by Wold (1974, 1985) for the analysis of high-dimensional data in a low-structure environment. Path models are defined by two sets of linear equations. First is the inner model that specifies the relationships between unobserved or latent variables, while the other model specifies the relationships between a latent variable and its observed or manifest variables. The path model is based on the least squares estimate with the primary goal of maximizing the explanation of the variance in the construction that depends on the model of the structural equation (Henseler et al., 2009).

The hypotheses were tested through path analysis in the AMOS using the endogenous variable intention (Abbas and El Gamal, 2015; Mazura et al., 2020) regressed on the variables attitude (Cronin et al., 2000; Abbas and El Gamal, 2015; Río et al., 2019; Duda-Chodak et al., 2020), subjective norms (Latimer and Ginis, 2005; Lien et al., 2019), and perceived behavioral control (Polat et al., 2021). The standardized path coefficients generated in the AMOS path analysis are shown in **Figure 2**.

RESULTS

Study Sample

Most of the respondents (86%) belonged to the working population and mostly ranged in age from 25 to 45 years. Among the passengers and employees who took part in the survey, women (65%) were more represented than men. Respondents from the cabin crew were employed by Air Serbia and were mostly engaged in long- and medium-duration flights where complex in-flight food, drinks, and beverages offerings are common.

Results of Path Analyses

The aim was to examine the importance and significance of causal relationships between the groups of variables. The calculation of the reliability coefficient is performed based on knowledge of the matrix of variance and covariance. According to some divisions, the measurement is reliable considering the value of the coefficient α (Cronbach's alpha). The Cronbach's alpha value

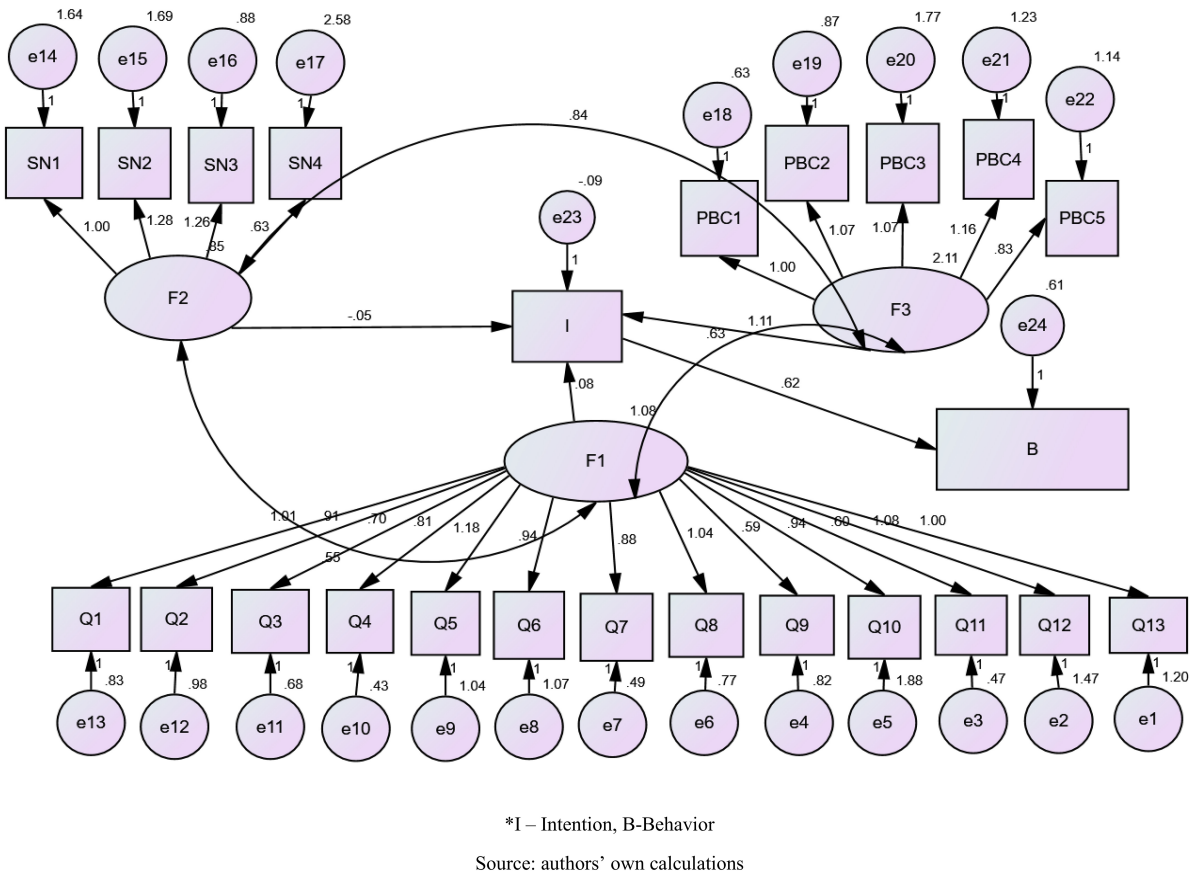


FIGURE 2 | Standardized path coefficients. *I, intention; B, behavior. Source: authors' own calculations.

was measured for all the predictors with the following values: Quality (α = 0.921) (13 items), attitudes (α = 0.878) (five items), subjective norms (α = 0.691) (four items), PBC (α = 0.909) (five items), intentions (α = 0.664) (six items), and behavior (α = 0.711) (four items).

Regression analysis concluded that certain predictors such as food service quality and safety significantly affect the attitude, subjective norms, and perceived behavioral control (PBC) of passengers and trigger the intention that affects behaviors in the choice of the airline during the COVID-19 pandemic, especially when it comes to flights with medium and long durations. The hypotheses were tested through path analysis in the AMOS using the endogenous variable intention regressed on the variables attitude, subjective norms, and perceived behavioral control. The standardized path coefficients generated in the AMOS path analysis are shown in **Figure 2**.

The path diagram (**Figure 2**) provides an insight into causal relationships. Arrows from one observed variable to another observed variable indicate the functional relationships between variables. Factor load (correlation coefficient between each variable, i.e., the question and the factor itself) is shown on the arrows. Questions of similar content can be linked to get a better fit of the model. In the given chart, for the sake of clarity of work, there will be no connection between errors.

Parameters showing the absolute fit indices of the model rely heavily on conventional limit values that are as follows: chi-square = 2161.218, *df* = 247, *p* = 0.00, Root Mean Square Error of Approximation (RMSEA) = 0.63, Comparative Fit Index (CFI) = 0.989 and Tucker-Lewis index (TLI) = 0.960, chi-square value (CMIN) = 3.753, Akaike information criterion (AIC) = 2267.218, and Bayesian information criterion (BIC) = 2474.490.

This model achieves compatibility with all the collected data. After the model has been fitted, parameter estimates are displayed in the table. Parameter estimates for the means structure model in **Table 1** show the statistical significance of the causal relationships of the variables, which indicates the fact that intention is a significant mediator between the variables of quality, perceived behavioral control (PBC), and behavior.

It is noticed that factor F2 (social norms) does not make a partial contribution to the influence on the variable intentions. The perception of the risk of the COVID-19 virus is individual, so family, immediate environment, and social status did not have a decisive influence on the intentions and behaviors related to the consumption of food and beverages during the flight.

Factor F1 (quality) significantly contributes to the impact on intentions with values: *p* = 0.03 and estimates = 0.80. Attitudes about the quality and safety of food, drinks, and beverages served

during the flight had a significant influence on intentions because of the high level of risk during the consumption and fear of cause in unusual circumstances of the COVID-19 pandemic. Also, factor 3 (perceived behavioral control) shows a correlation with intentions ($p = 0.00$, estimates = 1.11) because of the availability and timed information about the quality and safety of food and beverage services during medium- and long-distance flights.

Results shown in **Table 2** indicate a significant influence of intentions on behavior ($p = 0.00$, estimates = 0.618).

Table 3 shows good and positive correlations between all three factors. It can be noticed that factors F2 and F3 share 37.4% of the variance, F1 and F2 share 32.4% of the variance, and F1 and F3 share only 16.8% of the variance.

TABLE 2 | Parameter estimates for means structure model.

			Estimate	S.E.	C.R.	*P*	Label
I	<--	F2	–0.053	0.043	–1.245	0.213	
I	<--	F1	0.080	0.027	2.994	0.003	
I	<--	F3	1.114	0.035	31.959	***	
Q13	<--	F1	1.000				
Q12	<--	F1	1.078	0.088	12.203	***	
Q11	<--	F1	0.605	0.050	12.138	***	
Q9	<--	F1	0.586	0.058	10.144	***	
Q10	<--	F1	0.942	0.089	10.540	***	
Q8	<--	F1	1.043	0.075	13.865	***	
Q7	<--	F1	0.885	0.063	14.154	***	
Q6	<--	F1	0.941	0.076	12.334	***	
Q5	<--	F1	1.180	0.086	13.718	***	
Q4	<--	F1	0.806	0.057	14.029	***	
Q3	<--	F1	0.698	0.059	11.907	***	
Q2	<--	F1	0.909	0.073	12.407	***	
Q1	<--	F1	1.010	0.075	13.504	***	
SN1	<--	F2	1.000				
SN2	<--	F2	1.284	0.139	9.263	***	
SN3	<--	F2	1.263	0.128	9.876	***	
SN4	<--	F2	0.634	0.115	5.508	***	
PBC1	<--	F3	1.000				
PBC2	<--	F3	1.066	0.044	24.115	***	
PBC3	<--	F3	1.072	0.055	19.361	***	
PBC4	<--	F3	1.155	0.051	22.859	***	
PBC5	<--	F3	0.826	0.044	18.790	***	
B	<--	I	0.618	0.026	24.132	***	

*I, intentions; Q, questions; SN, subjective norms; PBC, perceived behavioral control; B, behavior; ***Statistical significance.*
Source: Authors' own calculations.

TABLE 3 | Correlations between factors.

			Estimate	%
F2	<-->	F3	0.628	38.4%
F1	<-->	F2	0.576	32.4%
F1	<-->	F3	0.419	16.8%

Source: Authors' own calculations.

DISCUSSION

The COVID-19 pandemic changed consumer eating habits (Polat et al., 2021; Bakır et al., 2022) and conditioned airlines to focus on improving the overall quality and safety of food drinks and beverages during medium- and long-distance flights. Consumer concerns about food safety have increased during the COVID-19 pandemic period, but there is no evidence that viruses that cause respiratory diseases are transmitted through food. This finding may be a direct consequence of the fact that food contact is not considered completely safe in the context of the COVID-19 pandemic (Duda-Chodak et al., 2020). Before the COVID-19 pandemic, passenger satisfaction with meals on the plane had a significant impact on their loyalty and intention to fly again and recommend the used airline services to others (Abbas and El Gamal, 2015). Perceived quality could have a positive impact on satisfaction, while satisfaction could have a positive impact on the image, intentions, and behavior of passengers related to the choice of the airline (Maeng and Park, 2015). Uncertainty in passenger behavior during the normalization process causes uncertainty about the future projections of the aviation industry, especially when it comes to high-risk services such as the consumption of food drinks and beverages during flights (Polat et al., 2021).

Previous authors (Cronin et al., 2000; Abbas and El Gamal, 2015) state that in the service industry, service quality and consumer satisfaction have been linked together. Previous experiences and attitudes of passengers related to air transport are approximately the same. Practices created in emergency situations, such as the COVID-19 pandemic, could lead to a significant change in attitudes related to the quality of food and beverage service in airplanes. Many airlines have improved the safety procedures and quality of food drinks and beverages, especially from the point of view of retaining satisfied passengers. People's attitude toward behavior, subjective norm, and perceived control of behavior initiates the intention of behavior (Ajzen, 1991). Results showed that attitudes about food and beverages service quality have a direct influence on intention and an indirect effect on customer behavior, which confirms hypothesis 1 (H1).

Subjective norms or beliefs about whether social circles that influence an individual's behavior will approve of that behavior emphasize the perception of social pressure to perform a certain action, which classifies them as a function of belief (Ajzen, 1991; Lien et al., 2019). So, references that an individual feels close to greatly influence the personal decision or behavior (Han et al., 2011). Traveling on flights with quality food can be a reflection of social status. The opinions of business partners, family, or expectations of the immediate environment can influence the decision to choose airlines that provides quality and safe food, drinks, and beverage services during the flight. When it comes to the choice of airlines in normal conditions, subjective norms can easily affect intentions for subsequent behaviors, but in the case of extreme conditions, the results showed the opposite, which denied hypothesis 2 (H2).

In the context of the quality of food, drinks, and beverage services provided onboard, the service environment also plays

TABLE 4 | Acceptability of the hypothesis.

Hypothesis	Hypothesis description	Acceptability of the hypothesis
Hypothesis (H_1)	Attitudes about food, drinks and beverages quality and safety will significantly affect re-flight intentions	Confirmed
Hypothesis (H_2)	Subjective norms will significantly affect to re-flight intentions	Denied
Hypothesis (H_3)	Perceived Behavioral Control (PBC) will significantly affect re-flight intentions	Confirmed
Hypothesis (H_4)	Intention mediates the relationship between attitudes and re-flight behavior	Confirmed
Hypothesis (H_5)	Intention mediates the relationship between subjective norms and re-flight behavior	Confirmed
Hypothesis (H_6)	Intention mediates the relationship between perceived behavioral control (PBC) and re-flight behavior	Confirmed

Source: Author's research.

a significant role. The passenger can be essentially satisfied with the food presented, but he does not have to like the service environment. Messner (2016) states that the perception of food quality is primarily influenced by the quality of cabin crew service and the specific environment. Perceived risk is defined as a consumer's perception of the possibility of unknown bad consequences from past experiences and it is influenced by individual psychological and environmental factors (Kim et al., 2008; Cho et al., 2018). According to a study by Ajzen (1991), perceived behavioral control can be used to predict the probability of a successful behavioral intention. Results indicated that perceived behavioral control significantly affects reflight intentions, which confirms hypothesis 3 (H3).

Cretan behaviors can be predicted from intentions with considerable accuracy. An individual's past experiences may affect his or her intentions and future behavioral performance (Ajzen, 1991; Ajzen and Fishbein, 2005). Good examples can be found in behaviors that involve a choice among available alternatives. According to the results, the intention is the key mediator between independent variables and attitudes about food quality and safety, subjective norms, perceived behavior control, and reflight behavior that confirm hypothesis 4 (H4), hypothesis 5 (H5), and hypothesis 6 (H6).

CONCLUSION AND LIMITATIONS

The main objective of this study was to improve the quality of food and beverages served in flight according to the circumstances in extreme conditions of COVID-19. Inflight food, drinks, and beverage services are a key element of the air transport value chain and to accommodate demands in a safe and efficient way. It can be concluded that a better understanding of passengers' intentions can make the airlines more sensitive and effective in operation management techniques and improve passengers' satisfaction and, also, gain reflight behavior. **Table 4** shows the following acceptability of the hypothesis.

This study provides new results related to consumers' reflight subsequent behavioral intentions in unknown conditions and indicates that they are not influenced by social norms but by individual perceptions of food and beverage quality and safety and perceived behavioral control. The significance of this study is in the qualification of factors that influence the intention of future behavior and shows how attitudes about the quality and safety of food and beverages consumed during the flight can influence the reselection of the airline in uncertain conditions caused by the COVID-19 pandemic. Building on global best practices regarding COVID-19, it is necessary to create protocols related to the provision of food and beverage services, which would prevent unforeseen risks through continuous implementation.

FURTHER STUDY

Recommendation for future study should be related to the recovery period where some, seemingly neglecting, factors may be crucial to differentiate from competing airlines and to introduce more factors that make up the extended model of the Theory of Planned Behavior. A larger number of respondents would provide more guidance on potential opportunities to improve and refine the operational processes of providing food and beverage services during the flight.

DATA AVAILABILITY STATEMENT

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

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

MA, JP, and TG contributed to study conceptualization, study design, leading statistical analyses and interpretation of results, and writing the original text. IB, MD, MP, and JB contributed to the study by providing comments to refine the manuscript. All authors have contributed to the article and approved the submitted version of the manuscript.

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The study on the impact of short video tourism Vloggers at social media platform on online sharing intention

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COVID-19 has caused significant damage globally, including tourism. This study adopts the quantitative research method, selects 588 samples from tourists watching short videos to investigate the antecedents and effects of parasocial interaction between tourists and short video tourism Vloggers, and analyses them with partial least squares. Based on parasocial relationship theory, this study investigates the antecedents of parasocial relationships between tourists and short video tourism Vloggers and their willingness to share short video tourism. Results show that the consistency of values, entertainment motivation, and emotional engagement positively impact the parasocial relationships between tourists and short video tourism Vloggers and affect the online sharing intention through the parasocial relationship. The consistency of values can directly affect sharing intention. As an intermediary variable, parasocial relationship positively impacts value congruence, entertainment motivation, emotional engagement, and sharing intention. This study introduces parasocial relationship into the research of tourism short video Vloggers, which enriches the literature. Furthermore, this introduction provides new marketing strategies and suggestions for the sustainable development of tourism.

KEYWORDS

short video Vloggers, emotional engagement, value congruence, entertainment motivation, parasocial intention, sharing intention

Introduction

As one of the most powerful online network tools, social media has been integrated into the social and economic life of the real world. Short videos are a new force suddenly gaining popularity. With the development of the Internet economy, XI GUA, TikTok, and other short video platforms have attracted many short video practitioners and audiences. According to the 46th statistical report on China's Internet Development released by China Internet Network Information Center in Beijing on September 29, 2020, the number of users of short videos reached 873 million, accounting for 88.3% of the total number of Internet users (CNNIC, 2020). Short videos have a wide range of applications, especially in the tourism industry. As a

mainstream form of social media, the information in short travel videos can guide visitors in their choice of destination. According to the research report on the demand trend of China's leisure tourism customers, jointly released by China Tourism Research Institute and Ctrip Travel Network, more than 40% of domestic tourists have used websites, BBS, or forums to obtain travel information, and The proportion of inbound visitors using online media is over 60% and the proportion of outbound visitors is over 50% (Net, 2020). In tourism, social media directly affects tourists' decision-making and changes their travel behavior (Xiang and Gretzel, 2010; Hudson and Thal, 2013). The most intuitive effect of social media in tourism is to increase the number of visits to destinations, which is beneficial to the sustainable development of tourism destination brands (Chen and Zhang, 2015). As a virtual platform for tourists to share their travel experiences and emotions, short videos have gradually become the reference basis for potential tourists to make travel decisions (Chen et al., 2013). Short video tourism Vloggers are content creators in online tourism who display tourism experiences and provide tourism suggestions through video-generated content no longer than 5 min, establishing an emotional connection with their followers through interactive communication (Gao, 2018). Videos bring new opportunities to tourism destinations (Hu and Guo, 2020). Using social media to market tourism has proved to be a good strategy (Fotis et al., 2012). Scholars (Tung and Ritchie, 2011; Munar and Jacobsen, 2014) believe that social media has fundamentally changed personal travel planning.

In reviewing previous studies on social media and tourism, most of them are based on hotel websites (McCarthy et al., 2010; Sparks and Browning, 2011), tourism websites (Milano et al., 2011), and blogs (Pan et al., 2007; Akehurst, 2009; Leung et al., 2011) on the types of social media, such as WeChat (Liang and Yang, 2018; Xiao, 2019; Jiang et al., 2020). For the sustainable development of tourism, sharing tourism information is also an important factor. Sotiriadis (2017) reviewed articles sharing travel experiences on social media. According to the literature on sharing intention, most are based on information content (Yang et al., 2017), emotion (Wang et al., 2017), attitude (Lee et al., 2016), perceived usefulness (Ma et al., 2018), EWOM (Jalilvand et al., 2012) and user group (Zhao et al., 2020). Su et al. (2021) supposed Tourism activity type is the key factor leading to different sharing content and Tourist well-being is an important mechanism for travel experience sharing. However, short videos have not been thoroughly studied as a sustainable online communication channel considering its current characteristics and the imagined intimate relationship through parasocial relationship. Furthermore, what attracts visitors to interact with tourism Vloggers and how this interaction leads to the promotion of tourists' sharing intention are still unclear. In the context of parasocial relationships, the influencing factors of short video tourism Vloggers' online sharing intention are a new direction. Based on the sustainable development of tourism, this study uses parasocial relationship theory and similarity attraction theory to fill the above research gap.

In other words, this study determines the role of short video tourism Vloggers, emotional engagement, value congruence, parasocial relations and entertainment motivation in influencing sharing intention. The following objectives guide this study: to explore the impact of emotional engagement, value congruence and entertainment motivation on parasocial relationships and examine the impact of parasocial relations on sharing intention and the intermediary role of parasocial relations.

This study has particular theoretical significance. Firstly, parasocial relationship theories in social media are based on websites or public accounts. This study takes short video tourism Vloggers on the social media platform as the research object, expanding the parasocial relationship theory application scope. Second, short video tourism blogging is a new research direction, which expands the factors of tourism sustainable development. This study expands the existing parasocial relationship literature by revealing the antecedents and consequences of parasocial relationship and online sharing intention. Finally, this study increases the existing parasocial relationship literature by revealing the antecedents and consequences of parasocial relations and online sharing intention.

Literature review

Emotion engagement and parasocial relationship

The definition of emotional engagement varies among different research backgrounds. Emotional engagement is mainly used in the field of research and learning. Marks (2000) believes that emotional engagement is a psychological state in which much energy and attention are spent to complete a learning task. Fredricks et al. (2004) define emotional engagement as "a person's emotional reaction when undertaking a specific task," which ultimately includes "positive and negative reactions to teachers, classmates, scholars and schools, and is considered to establish contact with an institution and affect work Willingness." Hilvert-Bruce et al. (2018) and Guo (2018) believe that emotional engagement refers to emotional connections and expressions of emotions of audience of live programs through responses to performers and other audience. Viewers interact with streaming media and other viewers through instant chat to obtain an alternative experience (Lim et al., 2020). Emotional engagement means that tourists can feel the emotional connection with short video tourism Vloggers. The feeling of emotional connection comes from the nature of fast-moving instant chat with other users, who will respond to each other's comments and questions, some of which include serious comments on streaming media. When the audience is in a fast-moving instant chat environment, they may experience the phenomenon of immersion or a "spiritual feeling of devotion," which promotes them to contact with others actively and participate emotionally; emotional connectivity (Guo, 2018; Hilvert-Bruce et al., 2018) and emotional expression (Lim et al., 2015) can lead to parasocial relationships. Researchers believe that the audience's ability to understand the emotional response of others is closely related to parasocial relationships (Davis et al., 1987). Kim (2012) support that Emotional involvement is a main driver affecting film

tourism experiences. Watching short videos may have a positive relationship with tourists. Thus, if users feel more emotional contact with their short video travel Vloggers, they will have a stronger sense of parasocial relationships. Previous studies by scholars emphasized the importance of emotional participation in changing people's behavior (Ramkissoon et al., 2013; Dewnarain et al., 2019; Majeed and Ramkissoon, 2022). Wang et al. (2017) explored the influencing factors of positive emotion on online sharing hospitals on microblogs. An online questionnaire survey was conducted among 341 microblog users. The results show that positive emotion has a positive impact on sharing intention. An increase of tourists' emotion may lead to the behavior or intention of sharing information to others. Based on previous studies, this study puts forward the following hypotheses:

> *H1*: Tourists' emotional engagement has a positive impact on social interaction.
> *H2*: Tourists' emotional engagement has a positive impact on sharing intention.

Entertainment motivation and parasocial relationship

People have the opportunity to communicate through potential motivation (Rubin and Step, 2000), and the motivation of social media users to use media may affect parasocial relationship (Rubin et al., 1985). Similarly, tourists using social platforms to watch tourism Vloggers also have the opportunity to generate parasocial relations. While watching short videos, people have a certain sense of entertainment (Haridakis and Hanson, 2009). Kawamura et al. (2009) believe that entertainment will promote the development of parasocial relationships because viewers prefer to pay attention to information that can meet their motivation (Rubin and Step, 2000). Viewers with entertainment motivation will pay more attention to the entertainment value of video (Sokolova and Kefi, 2020), which makes them feel closer to short video tourism Vloggers. Based on previous studies, this study puts forward the following hypothesis:

> *H3*: The entertainment motivation of tourists and short video tourism Vloggers positively impacts sharing intention.

Value congruence and parasocial relationship

Value congruence originates from the fit theory between humans and the environment (Audia et al., 1996). It describes how the environment meets human needs, values or references. Complementary adaptation occurs when a person "complements, modifies or has characteristics similar to those of other individuals in the environment" (Muchinsky and Monahan, 1987). The concept of value congruence first appeared in academia when it was applied to the study of organizational behavior and employee relations (Zucker, 1987). Later, in marketing, it refers to the personal values of consumers and the values they believe exist in the organization (Zhao et al., 2012). The degree of congruence between the main value of the video and the tourists in this study refers to the congruence of their values in tourism. Concerning the use of social media, Ayeh et al. (2013) found that user-generated content (UGC) contributors and focused customers affect perceived source credibility and subsequent attitudes and intentions to use UGC. The similarity between value congruence and social media speakers may lead to customers' positive attitudes and behavioral intentions. The attitude similarity between TV performers and viewers promotes parasocial relationships. Thus, we believe that tourists are likely to form a positive attitude and even have a sense of intimacy similar to that of short video travel Vloggers, who are considered to have personality. On the basis of the same values, customers are highly likely to have a good impression on short video tourism Vloggers and find their tourism information credible. Thus, customers will engage in collecting, forwarding, liking and other behaviors. Therefore, value congruence can change people's behavior intention to a certain extent.

Based on previous studies, this study puts forward the hypotheses:

> *H4*: Value congruence between the tourist and short video tourism Vloggers positively impacts parasocial relationships.
> *H5*: Value congruence between tourists and short video tourism Vloggers positively impacts sharing intention.

Parasocial relationship and sharing intention

Sharing intention is defined as the intention of online users to find the information useful to others, attract others' attention on the Internet and share this information with others (Erdelez and Rioux, 2000). Horton and Richard Wohl (1956) studied the performance and response of performers and audience in TV programs. It showed that an intimate relationship was established between performers and audience through this interaction. It also discussed how this "intimacy" was established through examples. In this study, parasocial relationships refer to imaginary intimate relationships, which is a sense of intimacy. Many parasocial relationships have been used to study the phenomenon of star chasing. The stronger their parasocial relationship with stars, the higher their positive emotions (Li, 2015). Previous studies have shown that the stronger the emotion aroused, the stronger the feeling of interaction, and the greater the possibility of sharing or sharing intention (Berger and Milkman, 2010; Berger, 2011; Nelson-Field et al., 2013; Hagerstrom et al., 2014). Based on previous studies, this study puts forward the following hypothesis:

> *H6*: The parasocial relationship between tourists and short video tourism Vloggers positively impacts online sharing intention.

Mediating effect of parasocial relationships

Parasocial relationships are an important factor connecting the relationship between people. Parasocial social interaction in social media mostly refers to imaginary intimate relationships (Haobin Ye et al., 2021). Many studies have shown that quasi-social interaction can affect people's behavior or attitude. In the study of social media, parasocial relationships have an intermediary effect. Zheng et al. (2020) in the research on the role of attraction and parasocial relationship in social shopping websites, using three variables, namely, physical attraction, social attraction and technology attraction, and using technology attraction theory and parasocial relationship theory, this study analyses how the three types of technology attraction affect parasocial relationships to affect users' social business intention. Ramkissoon and Mavondo (2015) supportive emotions can affect behavioral intention. Liu et al. (2019), in the research on virtual blogging and brand evaluation, the impact of parasocial interaction, through a short video survey, authors are interested in understanding which video blog (vlogger) can better help their marketers develop their brand image. In contrast, vlog viewers tend to evaluate the positive brand recognized by vloggers and how these effects occur. The results show that parasocial relationship has a complete mediating effect on the impact of physical attractiveness on perceived brand. In tourism, in the study of tourism websites, parasocial relationship plays an intermediary role in value consistency, perceived consistency and civic behavior. The above research shows that parasocial relationship has the possibility of mediation effect (Figure 1). Based on previous studies, this study puts forward the following hypothesis:

> *H7*: Parasocial relations have a mediating effect.

Research methods

Research context

This study uses quantitative research methods to take tourists who watch short video tourism Vloggers as the object. Most tourists prefer obtaining information through short video tourism Vloggers because it has the characteristics of vividness, interaction and authenticity. This study discusses the relationship between tourists watching short video tourism Vloggers and their willingness to share from the aspects of value congruence, entertainment motivation, emotion engagement and parasocial interaction.

Questionnaire development and measurements

A questionnaire was developed to obtain quantitative data. The questionnaire is divided into three parts. The first part includes screening questions to identify qualified participants for the current study. The respondents in this study are tourists who have watched short video tourism Vloggers' information in the past 6 months. The second part is 25 seven-point Likert scale questions, which evaluate the five structures of the proposed framework: value congruence, entertainment motivation, parasocial relationship, emotional engagement and sharing intention.

The study conducted a questionnaire survey using the existing measurement scales in the early study. Entertainment motivation was measured by items from Sokolova and Kefi (2020; e.g., "I watch video blog because it is entertainment"). Value congruence was measured by three items from Jung and Avolio (2000; e.g., "I have a clear understanding of what the core values of the influencer mean"). Parasocial relationships are measured using eight items from Rubin et al. (1985) and Kim et al. (2015; e.g., "I

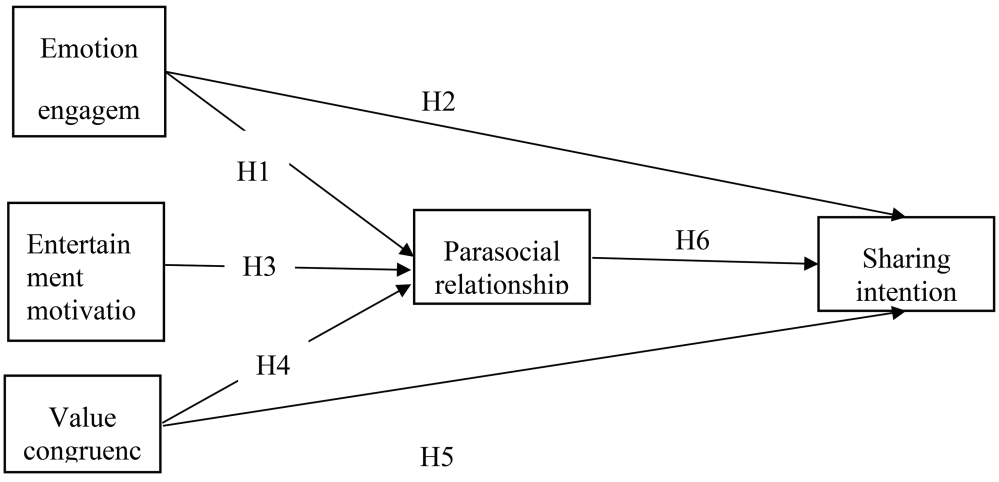

FIGURE 1
Proposed research model.

would like to meet the influencer in person"). Four items developed by Lim et al. (2015) and Lim et al. (2020) measured emotional engagement (e.g., "I quoted the live streamer or commentator when influencer said something good or witty"). Finally, willingness to share online is measured by three projects developed by Wang et al. (2017; e.g., "I have a strong desire to share the short-sightedness of the tour Frequency"). Previous studies have confirmed that all scales used in this study are reliable and effective. Preston and Colman (2000) and Lietz (2010) believe that the seven-point Likert scale is more reliable and differentiated than the five-point scale, and it is also the best way of data skew distribution (Bollen, 1989). All items are scored on a seven-point scale from "strongly disagree" (1) to "strongly agree" (7). The third part is the demographic characteristics of the subjects, including gender, age, education, marital status, occupation and income.

The questionnaire was originally designed in English. The questionnaire was translated into Chinese through reverse translation technology to facilitate the distribution of the questionnaire to online respondents. The Chinese and English versions were sent to English professors to verify the accuracy of content expression. To evaluate the validity of the content, a pilot test of 120 participants was conducted in October 2021 to confirm the content further, and the wording was slightly modified.

Sampling, data collection and analysis

Given the inability to grasp the information of those who watch short clips of tourism Vloggers' videos, this study used the convenient sampling method to issue the questionnaire. we were distributed the survey questionnaire online and the data was collected it from Nov.1 to Dec.28, 2021, on WEN JUAN XIONG[1] platform. To achieve the purpose of pre-investigation, the researcher asked questions before the investigation volume evaluation. Participants were 10 audiences who often used social media to watch short video travel blogger information. They were mainly asked to evaluate the reliability of five main concepts and modify the confusing description in the expression.

In terms of total sample size, Hair et al. (2011) pointed out that, for structural equation modeling, the sample size should exceed 10 times the number of estimated variables to produce reliable results. Considering that the questionnaire of Items is 25, the sample size of this survey is 588. Of the 588 questionnaires initially received, 46 were invalid. For 542 available answers, the effective rate was 92%.

This study uses the partial least squares SEM (PLS-SEM) analysis method for CFA and path analysis. PLS-SEM has significant advantages in dealing with complex models and exploratory research models (Hair et al., 2011). PLS-SEM adopts the square of step-by-step estimation parameters, covariance-based SEM and PLS-SEM. PLS-SEM calculation generally includes two stages. In the first stage, the score of the construct is estimated. In the second stage, the factor loads/weights of the measurement model and the path coefficients of the path model are calculated. Through descriptive analysis, the demographic characteristics of respondents and descriptive information of all variables are obtained. Composite reliability (CR) and ρ check the internal reliability of the structure. Convergence effectiveness and discriminant effectiveness are used to test the effectiveness of all structures. After testing the measurement model, SEM was used to test the hypothesis.

Results

Respondent demographics

In terms of gender, women account for 54.2%, and men account for 45.8%. Women are slightly more than men, but the two are balanced, reflecting the characteristics of the Internet. Young people account for more than the elderly. In terms of age distribution, subjects aged 18 to 25 account for the largest proportion, accounting for 62.4% of the whole sample, and subjects aged over 60 account for at least 1%, reflecting the characteristics of the Internet. Young people account for more than the elderly. In terms of education level, most of the population has received higher education, with undergraduate accounting for the most, accounting for 44.8% of the overall proportion, and 0.6% below the primary school. From this point of view, the audience of short video tourism Vloggers are mostly young people, especially students. From this point of view, the audience of short video tourism Vloggers is mostly young people, especially students. Regarding the nature of work, the proportion of bachelor's degree is the most, accounting for 39.9% of the overall proportion, and the proportion of retirees is the least, accounting for 0.4% of the overall proportion. These proportions show that the audience of short video tourism Vloggers are people who are relatively free in time. From the perspective of attention time, 144 people have been paying attention for more than 3 years, accounting for the highest proportion of 26.6 and 16.1% within 1 year, indicating that the audience watching short videos are long-term users and have a certain stability. From the perspective of personal monthly income, most of the audience are concentrated between 2000 and 8,000, proving that the audience can travel to a large extent (Table 1).

Measurement model

Harman's single factor score examines the variance of common methods to determine any potential deviation caused by the measurement method (Podsakoff et al., 2012). The total variance explained by the single factor was 43.67% for the sample,

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which was below the cut-off point of 50%, Indicates that there are no serious common method biases.

Table 2 shows that the ρAs values ranged from 0.817 to 0.904 and the CR values ranged from 0.879 to 0.929. The threshold of ρAs value is above 0.7 (Cronbach, 1951). The value of CR ranged from 0.7 to 0.95. Therefore, the internal consistency reliability of the measurement model can be confirmed. Evaluating the factor loading and extracted average variance (AVE) can show whether the convergent validity is up to standard. The threshold of factor loading is above 0.7 (Chin and Newsted, 1999), and the factor loadings of all items are higher than 0.7 (0.701–0.888), indicates good reliability and validity. As shown in Table 2, all AVE values ranged from 0.584 to 0.814, which are above the threshold of 0.5, showing a good convergent validity for this model.

Discriminant validity was tested using two approaches: Fornell–Larcker criterion analysis and the Heterotrait–Monotrait Ratio of Correlations (HTMT). Table 3 shows that the square roots of AVEs on each construct are greater than the correlations between constructs (Fornell and Larcker, 1981; Net, 2020). HTMT ratios, as shown in Table 4, were all lower than 0.85 (Henseler et al., 2015). These two approaches showed that satisfactory discriminant validity was established. Thus, the convergent validity of the measurement model can be confirmed.

TABLE 1 Respondent profiles (n=542).

	Category	Frequency	%
Gender	Male	248	45.8
	Female	294	54.2
Age	18–25	338	62.4
	26–30	129	23.8
	31–40	60	11.1
	41–50	13	2.4
	51–60	1	0.2
	Above 60	1	0.2
Education	High school degree or below	80	14.8
	College Diploma	150	27.7
	Bachelor's degree	243	44.8
	Master's degree or above	69	12.7
Personal	2,000 or below	160	29.5
Annual Income	2,001–4,000	118	21.8
(Unit: RMB)	4,001–6,000	91	16.8
	6,001–8,000	75	13.8
	8,001–10,000	47	8.7
	Above 10,000	51	9.4
Occupation	Student	216	39.9
	Private owners	30	5.5
	Enterprise staff	179	33
	retiree	2	0.4
	Freelancer	72	13.3
	Others	43	7.9
Focus on time	6 months or below	97	17.9
	1 year below	87	16
	2 years below	110	20.3
	2–3 years	104	19.2
	Above 3 years	144	26.6

Structure model

A total of 542 samples were used in this study to test the research model. The bootstrapping sample size is 5,000 to evaluate the statistical significance of entertainment motivation, value congruence, emotion engagement, parasocial relationship and sharing intention, with a 95% confidence interval. Test collinearity, test of the significance of path coefficients and examination of the level of coefficients of determination or R2 evaluation to model for evaluation. The variance inflation factor (VIF) was used to test for collinearity (Hair et al., 2016). The study results show that all VIFs are below 5, ranging from 1.542 to 2.516, suggesting that multicollinearity was not an issue in this study (Hair et al., 2011).

Table 5 reports the estimated path coefficients in the research model. Specifically, emotion engagement ($\beta = 0.297$, $t = 9.772$, $p = 0.000$), entertainment motivation ($\beta = 0.297$, $t = 9.772$, p = 0.000) and value congruence ($\beta = 0.166$, $t = 5.566$, $p = 0.000$) have positive effects on parasocial relationship. Parasocial relationship ($\beta = 0.337$, $t = 2.207$, $p = 0.000$) and value congruence ($\beta = 0.119$, $t = 19.143$, $p = 0.027$) have a positive effect on Sharing intention. Lastly, emotion engagement ($\beta = 0.034$, $t = 6.898$, $p = 0.617$) to sharing intention has no impact.

The bootstrapping resampling method was used to test the mediation role of emotional engagement. The interval is less than 0.05, which supports the mediation effect. In Table 6, parasocial relationship mediates the relationship between value congruence and sharing intention ($\beta = 0.056$, $t = 3.126$, $p = 0.002$); parasocial relationship mediates the relationship between entertainment motivation and sharing intention ($\beta = 0.100$, $t = 3.605$, $p = 0.000$), and parasocial relationship mediates the relationship between emotion engagement and sharing intention ($\beta = 0.151$, $t = 4.327$, $p = 0.000$). Therefore, all the hypotheses H1, H3, H4, H5 and H6 were supported, and H2 was not supported. Figure 2 shows the research model with all proposed relationship and their results. The determination coefficient (R^2) is used to measure prediction accuracy and represents the overall effect of all external variables on internal dependent variables. The R^2 values of 0.75, 0.50 and 0.200 can be classified as significant, moderate and weak explanatory power (Henseler et al., 2009; Hair et al., 2011). In Table 7, all R^2 values in this model sit between 0.203 and 0.636 (parasocial relationship $R^2 = 0.636$ and sharing intention $R^2 = 0.200$). Therefore, the results of the R^2 value in this study are satisfactory. These results indicated that the model had satisfactory prediction accuracy. Predictive relevance (Q^2)

TABLE 2 Results of confirmatory factor analysis.

Factor	Item	Standardized estimate	ρAs	Composite reliability	Average variance extracted (AVE)
Entertainment motivation	I watch short video tourism Vloggers to fill my free time	0.746	0.860	0.894	0.584
	I watch short video tourism Vloggers because it is entertaining	0.797			
	I watch short video tourism Vloggers pass time when I am bored	0.794			
	I watch short video tourism Vloggers because it is relaxing	0.708			
	I watch short video tourism Vloggers because it is cool to watch it	0.779			
	I am excited when I watch short video tourism Vloggers	0.758			
Value congruence	I really support the intent of the core values of the short video tourism Vloggers	0.888	0.847	0.907	0.766
	I agree with the core values of the short video tourism Vloggers	0.881			
	I have a clear understanding of what the core values of the short video tourism Vloggers mean	0.811			
Parasocial relationship	I look forward to watching the short video tourism Vloggers	0.789	0.904	0.921	0.593
	If the I look forward to watching the short video tourism Vloggers in short video appeared on another channel, I would watch	0.762			
	When I am watching the, I feel as if I am part of her group	0.776			
	I would like to meet the short video tourism Vloggers in person	0.755			
	If there were a story about the short video tourism Vloggers in a newspaper or magazine, I would read it	0.710			
	The short video tourism Vloggers makes me feel comfortable, as if I am with a friend	0.780			
	I find the short video tourism Vloggers attractive	0.822			
	Visiting the short video tourism Vloggers social media site makes me relax	0.762			
Emotion engagement	I quoted the live-streamer or commentator when short video tourism Vloggers said something good or witty	0.792	0.817	0.879	0.645
	I expressed my feelings about the short video tourism Vloggers or commentators in chats	0.834			
	sometimes use an emote when short video tourism Vloggers said something good or witty	0.806			
	When I participate in short video tourism Vloggers chat, I feel emotionally connected with users I am chatting with	0.780			
Sharing intention	I have had the urge to share short travel videos many times	0.902	0.887	0.929	0.814
	I have a strong desire to share this short travel video	0.912			
	I suddenly want to share this short travel video	0.892			

larger than zero indicates that the prospective variable has predictive relevance for a certain dimension (Chin, 1998; Henseler et al., 2009). Table 7 also reports that all of the Q^2 assessment results are larger than zero, indicating that the structural model in this study has adequate predictive capacity.

Conclusion

With the development of society, social media has increasingly become one of the main ways of communication. Under the influence of the COVID-19 crisis, short videos have been rapidly integrated into people's daily life and have been used in all walks of life, including tourism. People's sharing of tourism information has changed from blog graphics to short video sharing, which also adds a new way to disseminate tourism information and the publicity of tourism information. With the development of the times, the information communication of the tourism industry has kept up with the trend of the times to attract more tourists to pay attention to tourism information. This study takes tourism as the background and uses the theory of parasocial relationship. The results show that parasocial relationship is an important factor affecting people's ability to share tourism videos. Emotional engagement, value congruence and entertainment motivation are important preconditions, which affect the parasocial relationship between tourists and tourism Vloggers. Parasocial relationship has a positive impact on sharing intention. Parasocial relationship and willingness to share play an intermediary role.

TABLE 3 Latent variable correlation coefficients.

	Emotion engagement	Entertainment motivation	Parasocial relationship	Sharing intention	Value congruence
Emotion engagement	0.803				
Entertainment motivation	0.660	0.764			
Parasocial relationship	0.684	0.745	0.770		
Sharing intention	0.359	0.359	0.445	0.902	
Value congruence	0.555	0.618	0.606	0.344	0.875

TABLE 4 Heterotrait–Monotrait Ratio of Correlations (HTMT) analysis.

	Emotion engagement	Entertainment motivation	Parasocial relationship	Sharing intention	Value congruence
Emotion engagement					
Entertainment motivation	0.784				
Parasocial relationship	0.794	0.842			
Sharing intention	0.422	0.409	0.485		
Value congruence	0.667	0.723	0.692	0.396	

TABLE 5 Path coefficients in the structural model.

Path	β	t	p	Support
H1 Parasocial relationship←Emotion Engagement	0.296	6.224	0.000	Yes
H2 Sharing intention←Emotion Engagement	0.089	1.482	0.138	No
H3 Parasocial relationship←Entertainment motivation	0.448	9.234	0.000	Yes
H4 Parasocial relationship←Value congruence	0.166	4.099	0.000	Yes
H5 Sharing intention←Value congruence	0.119	19.143	0.027	Yes
H6 Sharing intention←Parasocial relationship	0.108	2.014	0.000	Yes

TABLE 6 Specific indirect effects in the structural model.

Path	β	t	p	Support
Value congruence→Parasocial relationship→Sharing intention	0.056	3.126	0.002	Yes
Entertainment motivation→Parasocial relationship→Sharing intention	0.100	3.605	0.000	Yes
Emotion Engagement→Parasocial relationship→Sharing intention	0.151	4.327	0.000	Yes

Emotional engagement, entertainment motivation and value congruence to parasocial relationship

The results show that the emotional engagement of tourists and short video tourism Vloggers will positively impact the parasocial relationship of the audience. That is, when the audience have emotional factors with the short video tourism blogger, when the emotional components are added, the audience build a stronger sense of quasi-social interaction with the short video tourism blogger, which means more recognition or trust in the tourism information introduced by the tourism blogger or the recommended tourist attractions. Previously, some scholars have studied the relationship between emotional engagement and parasocial relationship. The results are consistent with the results of this study. Emotional engagement can positively affect parasocial relationship (Lim et al., 2020). Schramm and Wirth (2010) and Tsiotsou (2015) have shown that positive emotional outcomes contribute to the development of parasocial relationship. Emotional engagement has become the most important phenomenon to distinguish short video programs from watching TV programs on YouTube and other non-interactive online platforms. The present study mainly uses the social media platform to study the audience's willingness to share short tourism videos. According to previous studies, emotion will affect people's attitude and behavior, and emotional engagement is an important factor affecting parasocial relationship.

Consistent with the research results of Bi et al. (2021), tourists' entertainment motivation has a positive impact on parasocial relationship. Bi et al. (2021) apply the concept of parasocial relationship (PSI) to TV programs to determine whether it will

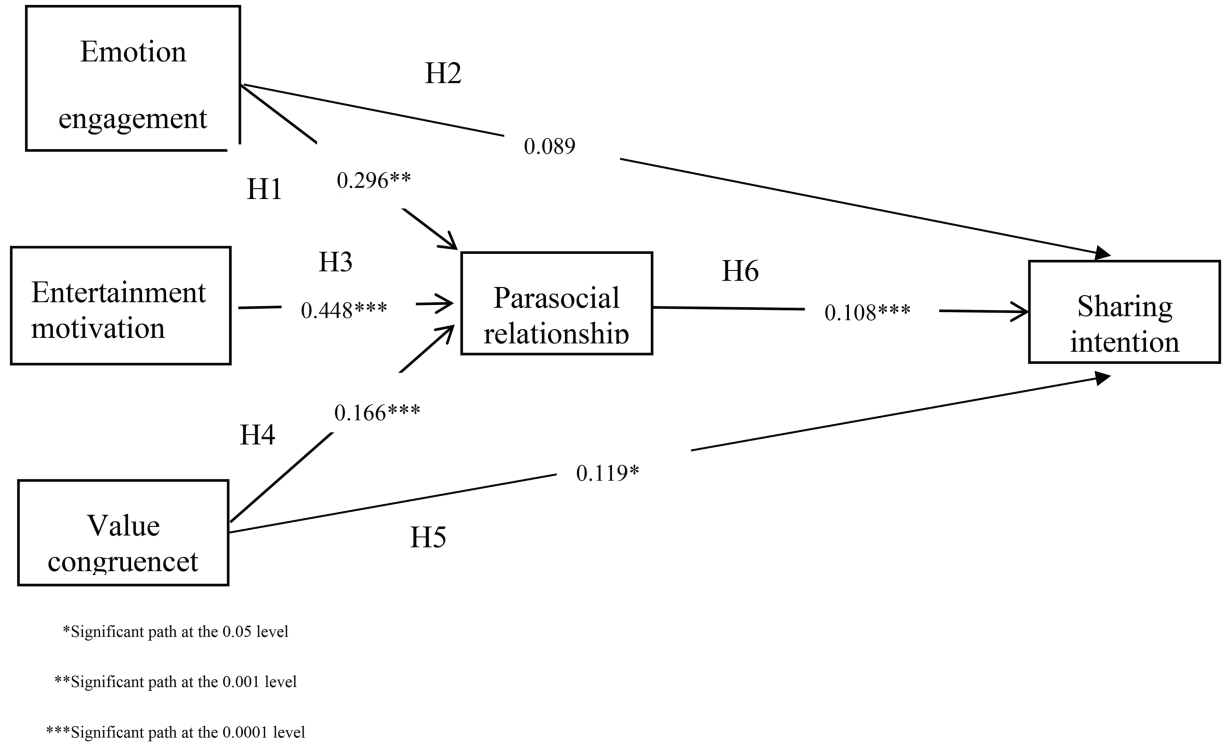

FIGURE 2
Final structural model with standardized path coefficients.

TABLE 7 R^2 and Q^2.

	R^2	Q^2
PSI	0.636	0.373
SI	0.203	0.153

trigger the travel intention of young viewers. The results show that three of the four dimensions (entertainment, information and relaxation) predict the audience's PSI and improve their perceived well-being and travel intention. Therefore, entertainment motivation will also affect the close relationship between tourists and tourism Vloggers to a great extent. Strong entertainment motivation will also improve the probability of interaction between tourists and Vloggers to increase their interest in tourism Vloggers.

Thus, establishing a strong parasocial relationship between the audience and the broadcaster is also accompanied by a closer relationship, improving the willingness to share. The value consistency of video tourism Vloggers has a positive impact on the parasocial relationship of the audience. Perhaps the previous research results of many scholars are consistent (Gong and Li, 2017; Haobin Ye et al., 2021; Jin et al., 2021). Shan et al. (2020) studied the common phenomenon of homogeneity in the context of dynamic social media in China, which is an important antecedent of parasocial relationship between audience and media roles (Rubin and Step, 2000; Tian and Hoffner, 2010; Lee and Watkins, 2016) Behavioral response shows that a celebrity with appearance consistency and value consistency to promote the brand, especially that value consistency is more influential than appearance consistency (Seomoon, 2019). In terms of tourism, in the research of tourism websites in communication media, Haobin Ye et al. (2021) discussed the antecedents and consequences of parasocial relationship between customers and social media spokesmen of tourism companies. Previous studies reveal that value consistency can positively impact social relations in different fields. From media spokesperson to tourism industry, value consistency and quasi-social interaction between tourists and short video tourism Vloggers is expanded.

Emotional engagement, entertainment motivation and value congruence to sharing intention

Tourists' parasocial relationship with the short video tourism blogger will affect tourists' willingness to share the short video. When the parasocial relationship components are added, tourists' intention to share the short video will be stronger, meaning they more agree with or believe in the tourism information introduced by the tourism blogger or the recommended tourist attractions. It may lead to a willingness to recommend the travel information

transmitted by the short video of the travel blogger with friends or people in need. In previous studies, few scholars have explored the relationship between parasocial relationship and willingness to share. The credibility of influencers and parasocial relationship have a significant positive relationship with purchase intention (Sokolova and Kefi, 2020). Bi et al. (2021) applied the concept of parasocial relationship to TV programs to determine whether it will trigger the travel intention of young viewers. All the above results show that parasocial relationship has an impact on intention. This study finds that parasocial relationship has a positive impact on sharing intention, which is also in line with the same research results as previous scholars. They all belong to intention.

The impact of value congruence on parasocial relationship is also obvious. Cazier et al. (2007) agree with the results of this study that value consistency has a direct impact on people's will. Values provide people with multiple functions and guide behavior and judgment in specific situations (Kahle and Lakes, 1983). To some extent, the consistency of values can determine whether people agree with the views of tourism Vloggers on the introduction of scenic spots. Tourists will share the information they think is good or useful. The study also found that values affect all aspects of consumer behavior. For example, the consistency of values significantly impacts brand attitude and purchase intention (Pradhan et al., 2016).

As for emotional participation and willingness to share, the results of this study show that emotional participation has no direct impact on willingness to share. The results of emotional engagement and willingness to share are contrary to those of Lata et al. (2021). The results show that the existence of emotion has a positive impact on willingness to share. This study shows that emotional engagement has no direct impact on sharing intention, possibly because of different research backgrounds. In the relationship between tourists and short video tourism Vloggers, a single emotion is not enough to become the reason for tourism information sharing. Many factors can cause sharing, such as the social status of the tourism blogger or the recognition of publishing information with the tourism blogger. Tamta and Rao (2017) shows a significant negative correlation between turnover intention and employees' cognitive and emotional engagement. Although having a different research background from the present study, the study also confirms no direct impact between emotional engagement and willingness.

The mediating role of parasocial relationship

Social interaction is of great significance as an intermediary variable between emotional engagement, value harmony and willingness to share. Compared with previous studies, the parasocial relationship between the audience and short video tourism Vloggers as the intermediary effect of emotional engagement and sharing intention has not been confirmed. Labrecque (2014) adopts the theory of parasocial relationship, which can be used as a theoretical perspective for designing successful social media strategies. The study used various methods to provide evidence of the role of PSI in developing positive relationship outcomes. Parasocial relationship has a full mediating effect on the impact of physical attractiveness on perceived brand and has a partial mediating effect on the impact of social attractiveness, entertainment motivation, relationship building motivation and time spent in the media on perceived brand quality (Liu et al., 2019). Parmar and Mann (2021) support that parasocial relationships mediate between celebrity image and purchase intention. This study takes short videos as an opportunity to study the relationship between short videos and tourism Vloggers' willingness to share short videos. Parasocial relationship is an important theory. This study verifies the intermediary relationship of parasocial relationship. Parasocial relationship is an intermediary between tourists' and short video tourism Vloggers' emotional engagement, value congruence and entertainment motivation. The results show that parasocial relationship also has mediating effect in the new disguised relationship.

Implications

Theoretical implications

This study has certain significance contributions to marketing theory. Firstly, although the photographers of short videos have been affected, some scholars have paid attention to short videos but discussed them in market media. However, the role of tourism-related short video Vloggers in parasocial relationships has not been discussed in tourism literature. From the perspective of social psychology, most people only stay on the surface of the relationship between the short video influencer and its tourists and lack an in-depth understanding of the relationship between the short video influencer and its tourists. Taking short videos as the background, this study discusses the important relationship between similarity attraction theory and parasocial relationship theory. This study contributes to future research to identify specific aspects of values related to social interaction.

Secondly, this study complements the study of parasocial relationship theory by exploring the relationship between tourists' values, entertainment motivation and emotional participation. In the field of media research, current research shows that two factors lead to parasocial relationship. Social and physical interaction are important factors affecting parasocial relationship (Kurtin et al., 2018). The study added that personality and values also produce parasocial relationships. We have extended the study of parasocial relationships by introducing theories of parasocial relationships based on websites or blogs into the field of short video tourism.

Third, most research on parasocial relationships has focused on their direct impact. We extend the literature

by exploring the mediating influence of parasocial relationships between emotional engagement, value congruence, entertainment motivation, and online sharing intentions. The findings suggest that the more substantial the parasocial relationship, the greater the likelihood of sharing short videos. Specifically, the stronger the parasocial relationship between tourists and travel Vloggers, the more likely they were to share travel information.

Finally, most studies on parasocial relationship and its consequences are based on purchase impact. This study takes tourism short video Vloggers as the research object to explore the impact of emotional engagement on the relationship between parasocial intention and sharing intention. The results show that parasocial intention has a direct effect on sharing intention. This study expands the existing literature on quasi-social interaction by revealing the antecedents and consequences of quasi-social interaction in tourism short video sharing intention. Previous studies mainly focused on websites and spokespersons (Gong and Li, 2017), but no study has been conducted on the correlation between quasi-social interaction based on tourism short videos and willingness to share. This study adds the theory of sharing intention, extends previous studies, and finds that parasocial relationships strongly impact sharing willingness in a new field. This study proves the instrumental utility of quasi-social interaction, which is helpful to the research in this field.

Practical implications

The study results are conducive to the sustainable development of the tourism industry and provide rich management inspiration for the development of tourism marketing after the COVID-19 pandemic. The current study will provide some development suggestions for the online publicity and sharing of tourism or scenic spots. According to our research results, we can make the following suggestions. Firstly, based on the conclusion that emotional engagement, entertainment motivation and value congruence will lead to more interactive behavior of the tourists, we suggest that scenic spots can enhance their popularity by strengthening audience interaction. For example, they can use short videos of tourism experts to promote scenic spots. Tourists can be invited to scenic spots to shoot short videos in the same scenic spot. Tourists can receive a lot of relevant information about scenic spots through the publicity of short videos and will also open it in the same place with tourism Vloggers to improve the popularity of the scenic spot.

Secondly, the research shows that parasocial relationships will enhance the tourists' willingness to share. In previous studies, the attractiveness of media roles will lead to more tourist parasocial relationships (Rosaen and Dibble, 2008). Therefore, strengthening the social relationship of the tourists is more important for the parasocial relationship on the scene. We can start from this aspect to develop the publicity and marketing of scenic spots. For example, when publishing short videos of scenic spot related information, you can use various functions of the short video platform, including direct message, comment, post, reply, like and lottery, so that tourists can experience closer parasocial interaction and feel a stronger sense of social existence. Tourist destinations can also invite short video tourism Vloggers to publicize some leisure tourism scenic spots around the tourist destinations, develop near outing tourism projects, attract some nearby tourists to travel and improve the tourism industry after the outbreak of the new pavilion epidemic.

Finally, emotional participation has a particular impact on social interaction. Scenic spots can improve quasi-social interaction by improving tourists' emotional participation. For example, under short videos, the audience's questions can be answered in the comment area under short videos, and some topics of interest can be said. Some tourism Vloggers can be invited to do some offline tourism sharing activities to improve the emotional communication between tourists and short video tourism anchors. Short video tourism Vloggers can also count the tourism knowledge they want to know most through the comment area, select several as representatives and shoot video for answers. Thus, the emotional communication between tourists and short video tourism Vloggers is increased, more parasocial relationships are promoted, and more sharing intention is increased. The above suggestions will help to improve the popularity of scenic spots or tourist cities and restore the tourism economy. Suggestions for the diversified development of tourism and the sustainable development of the tourism industry after the epidemic fluctuation are provided.

Conclusion, limitations and future research

Developing short video tourism is an important measure for the sustainable development of the network economy. Since the COVID-19 outbreak, tourism has witnessed the surge of social media in promoting the relationship between scenic spots and visitors. The potential mechanism of how social media can promote the construction of the relationship between scenic spots and audience has not been revealed. This study integrates parasocial relationship theory and sharing intention theory. The purpose is to explain how short video tourism Vloggers affect the relationship between online users' willingness to watch and share to narrow the gap in this research field. The results show that the similarity in entertainment motivation, emotional engagement and values between short video tourism Vloggers and tourists leads to the parasocial relationship between them, which affects their sharing intention. This study enriches the research theory in social media short video and provides reference suggestions for

online sales of the scenic spot industry. Although the conclusion of this study has a particular contribution to the existing theory, it provides some practical enlightenment for the online development of tourism destinations.

However, this study inevitably has many research limitations in research scope, research methods, research design and research depth; it also provides space and theoretical ideas for follow-up research, mainly including the following aspects.

Firstly, the research sample of this study has certain limitations. Internet economy will be different in different periods and countries. Therefore, in future research, samples can be collected in different countries and at different times to verify the applicability of the research model in different contexts.

Second, there are certain limitations in research methods, quantitative research can well deal with the "relationship, interaction and causal relationship between variables," but it cannot pay more attention to the relationship between phenomenon and background, the process of phenomenon change and the significance of phenomenon and behavior to behavior subjects as qualitative research.

Finally, the cross-sectional sampling method used in this study, which may affect the estimation of hypothesis relationships.

These limitations should be considered when interpreting the results of the current study. In the future, encourage more research on social media short video tourism Vloggers' antecedents in parasocial relationships. Future research can also compare different social media celebrities, which may produce profound findings aimed at parasocial relationships. Some boundary conditions should also be revealed, which may change the intensity of parasocial relationships.

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 were not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent from the participants was not required to participate in this study in accordance with the national legislation and the institutional requirements.

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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Reassessment of sustainable rural tourism strategies after COVID-19

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This study aimed to develop indicators that measure rural tourism destinations in a sustainable framework during the COVID-19 process. In order to achieve this goal, the A'WOT and TOWS hybrid method was used in the study. In line with this goal, the priority order was calculated by determining the factors for strengths, weaknesses, threats and opportunities. Once these factors have been identified, strategies have been developed to build on strengths and eliminate weaknesses, while taking advantage of the opportunities and countering threats. In the study, Gökçeada-Turkey, which has recently come to the fore with its rural tourism potential, has been considered as a destination area, and strategies have been developed that adopt sustainable and responsible tourism approaches and increase the roles and capabilities of local communities. The results obtained in the study are expected to be meaningful for other rural destinations that are similar to Gökçeada.

KEYWORDS

sustainable rural tourism, COVID-19 pandemic, decision-making, analytic hierarchy process (AHP), A'WOT, TOWS, Gökçeada/Turkey

Introduction

The tourism sector has been one of the sectors most affected by the COVID-19 outbreak due to economic uncertainty and travel restrictions (Higgins-Desbiolles, 2020; Jamal and Budke, 2020; Yang et al., 2020). UNWTO (2021) reported that in February 2021, there was a 90% decrease in international tourist mobility. Besides, UNWTO (2021) stated that there were 1.4 billion tourists worldwide in 2019, and further announced that the main destinations (i.e., France, Spain, and the United States) were the countries most affected by the pandemic in terms of the spread of the epidemic and economic damage (UNWTO, 2021). Despite these negativities, some researchers consider the post pandemic recession an opportunity to re-start the tourism industry, and develop more sustainable strategies by eliminating the negative consequences such as economic exploitation and overcrowding (Brouder, 2020; Niewiadomski, 2020; Farmaki, 2021; Vărzaru et al., 2021).

Similarly, some researchers have suggested that more localized forms of tourism will be the preferred alternative in the future (Higgins-Desbiolles, 2020). The increasing interest in accommodations and alternative tourism services in rural destinations for local tourists, along with the negative impacts of mass tourism in the 2020 summer season, confirms this idea. Visitors' preference toward destinations that have a lower density of tourist population, that are far from big cities, is considered an opportunity for the development of the economy for some rural areas. Even after the relaxation of movement restrictions in many European countries, there was a limited recovery in domestic tourism (Marques et al., 2021). In particular, activities such as second housing, cycling, hiking, nature visits, water sports, camping, etc., are the types of tourism people prefer (Seraphin and Dosquet, 2020). With these developments, the damage caused by mass tourism, which has been on the agenda for a long time, and calls to turn to alternative tourism types have come to the fore again during the epidemic process. Although the concept of sustainability appears in many different social dimensions, the common feature of all these concepts is that they focus on the future of people and aim to protect the resources of the areas considered as the living space of people. Sustainable tourism involves social responsibility, economic efficiency, and environmental sensitivity at every stage. In this context, various definitions such as soft tourism, ecological tourism, nature tourism and rural tourism are used (Beyhan and Ünügür, 2010). These types of tourism are developing in a direction of change that preserves ecological balances, protects future generations, brings social values to the fore and increases regional income. In this study, the focus is on rural tourism, which is one of the sustainable tourism types. Bringing examples of rural tourism from various parts of the world to the literature with their natural environment, architecture and cultural structure will make a significant contribution to the development and sustainability of rural tourism. Since tourism is an important tool for economic growth and diversification, the development of alternative tourism types, especially in rural areas, is important for national economies in terms of income and employment opportunities (Sharpley, 2002; Mugauina et al., 2020). Recently, an increasing number of scientists have been interested in rural heritage and communities (Gullino and Larcher, 2013; Zou et al., 2014; Gao and Wu, 2017). Some researchers have suggested that rural tourism destinations develop uncontrolled and they emphasize that this uncontrolled growth will cause environmental, social and economic problems (Cánoves et al., 2004). Therefore, it is important to focus on sustainability in tourism. Reasons such as the deterioration of the ecological balance due to global warming, the loss of social values, and the inability to protect natural, historical, social and cultural assets make sustainable tourism a necessity (Kişi, 2019; Filipiak et al., 2020).

In this context, the aim of the study is to raise awareness for the kind of development that will not damage the local architecture and texture, nor harm the nature in rural destinations mostly preferred by local tourists during the COVID-19 process. In order to achieve this goal, A'WOT hybrid methods were used in the study. In line with this goal, the strengths and weaknesses of bringing local architecture to tourism have been revealed, and the priority order has been calculated by determining the threats and opportunities that may be encountered. In the study, Gökçeada-Turkey, which has recently come to the fore with its rural tourism potential, has been considered as a destination area and strategies have been developed that adopt sustainable and responsible tourism approaches and increase the roles and capabilities of local communities. It is expected that the results obtained in the study will be an example for other rural destinations that are similar to Gökçeada.

Literature review

Sustainable rural tourism

In recent years, activities related to rural tourism have increased in many countries and rural tourism types have become an alternative to mass tourism (Busby and Rendle, 2000). Vaishar and Šťastná (2020) point out that the disaster scenarios in tourism after the COVID-19 pandemic are mainly related to urban destinations that focus on foreign tourism, and draw attention to the increase in rural destinations with their study in Czechia (Vaishar and Šťastná, 2020). In their study, Zhu and Deng (2020) and Li et al. (2021) test various hypotheses that the tendency to rural tourism has increased in China, considering both cost and safety in the context of the globally life-threatening COVID-19 pandemic (Zhu and Deng, 2020; Li et al., 2021). In their study, Wen et al. (2020) investigated the impact of the development of new tourism markets such as health tourism, slow tourism and smart tourism on the consumption patterns of Chinese tourists with the impact of COVID-19 (Wen et al., 2020). Likewise, Higgins-Desbiolles (2020), argues that COVID-19 offers an opportunity to shift the tourism paradigm toward sustainability and local interests. Moreover, they suggest that in order to build the future, special attention should be paid to increasing resilience and promoting sustainability at all levels. These and similar studies have increased the interest in rural tourism. Rural tourism has an innovative and sustainable approach that preserves the local texture and identity while targeting rural development (Akgün et al., 2015; Šťastná et al., 2020).

Rural tourism takes an innovative and sustainable approach that preserves local structure and identity while targeting rural development and it is a form of tourism based on natural resources and intertwined with rural settlements. Due to its many positive effects, its importance in tourism is better understood day by day. Different climates, natural environments

and different cultures all over the world guide this type of tourism. For this reason, it is seen that there are different approaches to the definition of rural tourism in the literature and there is no consensus on a common definition (Sharpley and Roberts, 2004; Aref and Gill, 2009; Carneiro et al., 2015; Lane and Kastenholz, 2015; Wegren, 2016; Ayhan et al., 2020). Although there are different definitions of rural tourism, they all have in common that it plays a major role in protecting and promoting the world's natural and cultural heritage. Thus, rural tourism is a form of tourism compatible with sustainable tourism. Rural tourism jointly evaluates rural areas' economic, social, and environmental components. It is closely linked to people, places, and products. It has unique impacts on the environment and economic growth (Yang et al., 2021). The development of tourism activities can have positive impacts such as creating jobs, improving the quality of life for local people, enhancing the public image of the region, preserving cultural heritage, and even developing business networks. However, negative impacts such as ecological damage, depletion of local resources, and infrastructure congestion must also be considered (Yang et al., 2021).

In her study, Topçu (2018) aimed to find the most appropriate planning strategy for the sustainability of Birgi's local character and identity by taking advantage of Birgi's strong natural environment and cultural identity (Topçu, 2018). She used A'WOT analysis, a combination of the Analytical Hierarchy Process (AHP) and SWOT analysis, to identify these strategies. Then, with the TOWS matrix, he presented suggestions for achieving a sustainable tourism industry in Birgi and preserving the local identity. Likewise, Kişi (2019) put forward strategies for the development of sustainable tourism in touristic destinations and used A'WOT analysis to emphasize the priority order of these strategies. In her work, she emphasized sustainability criteria such as minimizing negative environmental and social impacts, reducing carbon footprint, normalizing the behavior of visitors, reducing tourist overcrowding, compensating for negative effects caused by tourism, and considering the needs of local people (Kişi, 2019). Sulistyadi et al. (2017), used SWOT analysis and a quantitative strategic planning matrix to create a sustainable tourism development model with his case study at the Thousand Islands Tourism Zone in Jakarta (Sulistyadi et al., 2017). In examining the current studies, potentials, evaluations, expectations and strategies for rural tourism developed in different regions using various quantitative methods are considered. Tourism studies in this range show that he A'WOT analysis approach can be applied actively in order to determine the priorities of qualitative alternatives that are difficult to translate simply into quantitative figures, and that the approach can ultimately lead to more systematic and feasible showing decisions (Lee et al., 2021).

Rural areas with cultural, historical, artistic and architectural background are disappearing or being assimilated, especially in developing countries (Gao and Wu, 2017). This should be taken into account when determining new destinations. In developing rural destinations for tourism, an approach should be taken that preserves the ecological balance, protects future generations, prioritizes social values, and increases regional income. Unless this point of view is maintained, any new potential mass discovered will continue to be the victim of tourism exploitation. For this reason, the types of tourism proposed in rural areas should be developed following the shared knowledge and opinions of all stakeholders (professionals, locals, local governments, scientists, etc.). In this awareness, Gökçeada, whose natural and cultural values have not been discovered yet, was preferred as a research area. With the introduction of the local identity values of Gökçeada at the global scale, attention was drawn to its protection as a cultural heritage. In the study, the SWOT factors were determined based on expert opinions. Then, these factors were prioritized with the AHP method. Finally, the strategies for developing sustainable rural tourism are presented using the TOWS matrix in line with the region-specific vision and key sustainable tourism objectives (Kişi, 2019).

The relationship between rural architecture and rural tourism in Gökçeada (Turkey)

Rural architecture can be defined as architecture produced based on traditions, using natural environmental features, social and cultural structure, local materials, and local construction techniques (Singh et al., 2009). The local residence, which means the meeting of the rural culture bearing the traces of the past with architecture, exists with its own unique identities as it reflects the culture, social relations and habits of ordinary people in their daily life, and the ordinary tastes, beliefs and life priorities of the owner and master. Rural settlements attract attention with their preserved natural environments, architectural identities and original structures (Anna-Maria, 2009). These settlements are preferred to get away from the city, to rest, to visit, and to see. Gökçeada, which has the characteristics of Anatolian-Greek settlement, has preserved its culture and rural texture and brought it to the present day. In this context, Gökçeada has become one of the important points of Western Anatolia in terms of rural and cultural tourism for alternative holiday enthusiasts different from mass tourism (Karayel, 2019). On the other hand, its nature, history, calmness, architecture, festivals, sports activities and proximity to touristic canters further increase the touristic importance of Gökçeada. Stone houses, cobblestone streets, churches, laundries, squares where coffee and various shops are gathered form the architectural texture of the villages (Canan and Kürüm Varolgüneş, 2017).

The restoration of traditional houses and their reuse by converting them into lodging establishments, entertainment

facilities, and commercial spaces is an important approach to protecting these buildings (Dündar, 2012). It is seen that tourists who come to the region usually prefer these houses, which characterize the fabric of the island, as accommodation. Rural architecture, an accelerating factor in tourism development, has thus acquired another important role. As a result of the rapid increase in its touristic potential in recent years, olive growing, viticulture and wine making, which are the livelihoods of Gökçeada, have become important business lines that contribute to tourism (Çalışkan, 2010). The annual festivals during the grape harvest attract many local and foreign tourists to this region. Olive cultivation has also gained touristic importance. Olive oil, natural soaps, ceramics and porcelain related to olives are marketed as touristic products. In summary, the rural architectural heritage has enabled rural tourism development in Gökçeada. In parallel with the developing tourism phenomenon, all the settlement resources are used for tourism (**Figure 1**).

Materials and methods

The A'WOT method, first proposed by Kurttila et al. (2000), is a hybrid method that combines AHP and SWOT analysis. By incorporating the AHP technique into SWOT analyses, SWOT groups and factors are made measurable and their priorities are presented numerically (Kurttila et al., 2000; Akbulak and Cengiz, 2014). This is achieved by the pairwise comparisons of SWOT factors in the AHP technique and the eigenvalue calculations approach (Kurt, 2020). Thus, it becomes possible to consider a new alternative strategy that expresses an existing or expected situation in more detail. In the A'WOT technique, SWOT analyses are carried out in the first stage (Kajanus et al., 2004). For this, first of all, SWOT groups consisting of strengths, weaknesses, opportunities and threats are formed. The factors belonging to each SWOT group are then ranked as objectively as possible. The factors of the internal and external environment thus obtained are included in the SWOT analysis. Then, pairwise comparisons are made between the factors in each SWOT group. According to the information obtained from these comparisons, the relative importance (priorities) of the factors is calculated using the eigenvalue approach within the scope of the AHP technique. Pairwise comparisons are then performed between the four SWOT groups (Kurttila et al., 2000; Kajanus et al., 2004). This is done separately for each of the four SWOT groups. As a result, the overall priority values of all SWOT factors, whose total value is equal to one, are obtained (Güngör, 2018; Lee et al., 2021). The A'WOT method is applied with a systematic approach. Pairwise comparisons of the determined SWOT criteria are performed. This comparison is based on Saaty's 9-point scale for analytical efficiency (Saaty, 1987; **Table 1**). Pairwise comparisons of the generated criteria are arranged into an n × n square matrix. The diagonal elements of the matrix are equal to "1" (Wu et al., 2010). If the value of the element (i, j) is greater than 1, the criterion in row (i) is better than the criterion in column (j); otherwise, the criterion in column (j) is better than in row (i). The (j, i) element of the matrix is the inverse of (i, j). The base eigenvalue and corresponding normalized right eigenvector of the comparison matrix give the relative importance of the various criteria being compared. The elements of the normalized eigenvector are called "weights" according to criteria or sub-criteria, and "ratings" according to alternatives (Bhushan and Rai, 2004; Bafail and Abdulaal, 2021).

The consistency of the matrix of order "n" is evaluated. Comparisons made by this method are subjective and the AHP tolerates inconsistency through the amount of redundancy in the approach. If this consistency index fails to reach a required level, then the answers to comparisons may be re-examined (Thungngern et al., 2017). Where λ max is the maximum eigenvalue of the judgment matrix. This CI can be compared with that of a random matrix RI. The RI values are fixed numbers and determined by "*n*" values. Then, the ratio derived CI/RI is termed the consistency ratio (CR) (Kurt, 2020; Eryürük et al., 2021).

$$\text{Consistency Index (CI)} = \frac{\lambda_{max} - n}{n - 1} \quad (1)$$

$$\text{Consistency Ratio } (CR) = \frac{\text{Consistency Index(CI)}}{\text{Random consistency Index(RI)}} \quad (2)$$

Random Consistency Index (RI);

n	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.58	0.9	1.12	1.24	1.32	1.41	1.45	1.49

The result is considered reliable if the CR value is usually less than "0.1." Otherwise, minimization of errors is accomplished by repeating a pairwise comparison (Saaty, 1987, 1990; Razavi et al., 2011; Kamaruzzaman et al., 2018). This process is repeated until sufficient consistency is achieved. Some researchers have also benefited from the TOWS matrix together with A'WOT while determining strategies for tourism (Akbulak and Cengiz, 2014; Topçu, 2018; Kişi, 2019; Asadpourian et al., 2020; Özgeriş and Karahan, 2021). The TOWS matrix is a quantitative strategic planning matrix. The TOWS matrix (Weihrich, 1982) is formulated according to the SWOT factors with the highest priority values from each SWOT group. By using the priority of strengths with the TOWS matrix, strategies for eliminating weaknesses, obtaining the opportunity and eliminating the threat are presented. In this study, the A'WOT method, which is used to determine sustainable rural tourism goals, is

FIGURE 1
Examples of traditional architecture that add value to tourism from Gökçeada (photographs by Kürüm Varolgüneş, 2020).

TABLE 1 Saaty's 1–9 scale for pairwise comparison.

Weight intensity	Definition	Explanation
1	Equally important	Two activities contribute equally to the objective
3	Moderately important	Experience and judgment slightly favor one over another
5	Strongly important	Experience and judgment strongly favor one over another
7	Very Strongly important	An activity is strongly favored and its dominance is demonstrated in practice
9	Extremely important	The importance of one over another affirmed on the highest possible order
2,4,6,8	Intermediate weights	Used to represent compromise between the priorities listed above

strengthened with the TOWS matrix. TOWS analysis makes it possible to develop strategies on how to take advantage of positive situations to overcome the negative aspects of the current situation (Topçu, 2018). The structure of the applied method is summarized in **Figure 2**.

Results and discussion

There has been a substantial increase in interest in rural tourism after COVID-19. In the study, strategies for the development of sustainable tourism in Gökçeada, which was caught unprepared for this increase with various analyses, were presented. First of all, previous studies were reviewed, interviews were held with academicians, experts in institutions and local people, and SWOT factors were determined by taking personal professional experiences into account. Eight sub-factors for strengths, six sub-factors for opportunities, and seven sub-factors for weaknesses and threats were determined in the SWOT analysis and are presented in **Table 2**.

Once these factors have been identified, strategies have been developed that can build on strengths, eliminate weaknesses, take advantage of opportunities, and counter threats (Kurt, 2020). Strengths are features that add value to the area. They provide the environmental, social and cultural values of the island with a positive potential for rural tourism. Weaknesses are internal factors that can have negative effects for the region. The lack of information and market, the fact that the current potential has not been evaluated and supported until now have been accepted as the difficulties in front of the development of tourism. Opportunities, the island being untouched, preserving its natural texture and having cultural heritage are external positive factors for the development of rural tourism. Threats are external obstacles that are largely out of control. The SWOT analysis made provides an overview. The factors determined by the SWOT analysis form the basis for the quantitative techniques that are considered to develop sustainable strategies in rural tourism. AHP, which is a pairwise comparison method, was used to determine the importance of the resulting SWOT factors. In this section, which constitutes the second stage of the study, the importance levels of all sub-factors were

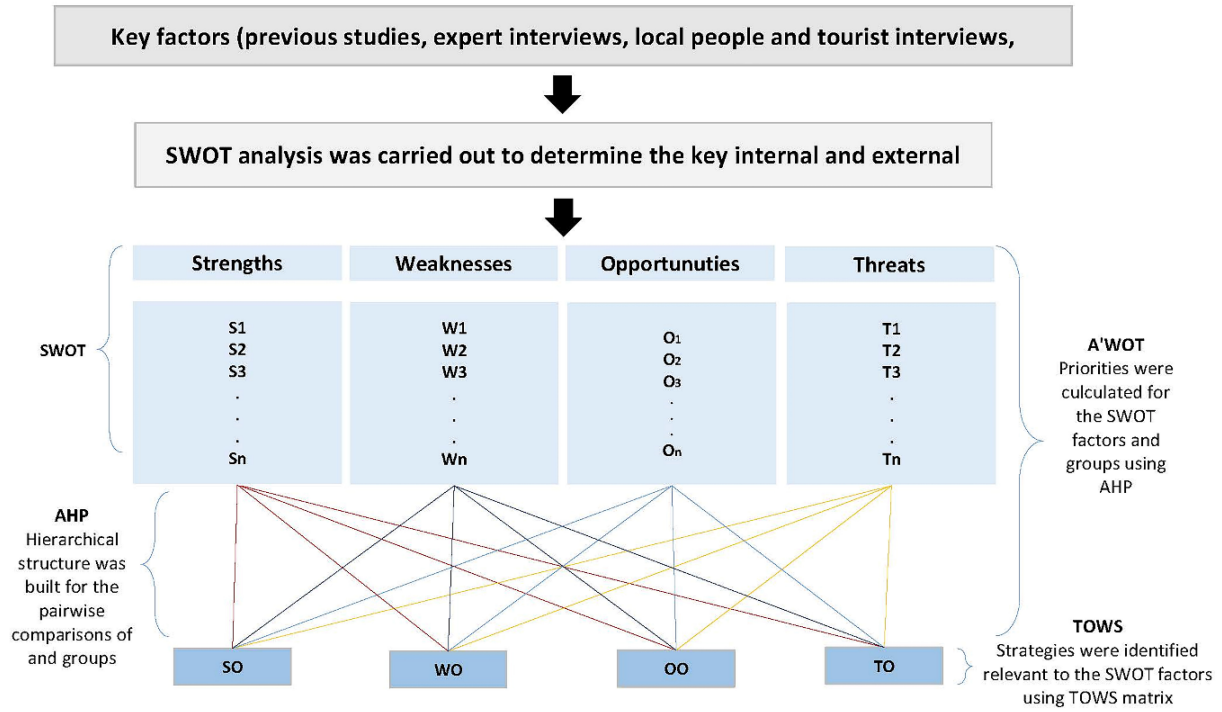

FIGURE 2
The structure of the applied method (edit by authors from Asadpourian et al., 2020).

calculated separately. For evaluations, an AHP comparison survey was conducted with 10 tourism experts, 7 academics, 3 local managers and 5 business owners in July and August 2020, when COVID-19 was effective. As a result of the evaluations made by the experts, the arithmetic mean of the results was taken to reach a common result. **Table 2** lists the results of the analysis of the relative importance among the SWOT factors and the consistency analyses for the development of sustainable strategies for rural tourism in Gökçeada.

The pairwise comparison matrix shows the importance levels of the criteria in comparison with each other within a certain logic. The criteria are converted into a matrix through pairwise comparisons (Eryürük et al., 2021). Then, the synthesis of the pairwise comparison matrices is done. In the synthesis process, each element of the matrix is divided by the sum of the column it belongs to and the normalized matrix is formed. The priority vector is obtained by taking the arithmetic average of each row of the normalized matrix. No matter how consistent the AHP is within itself, the realism of the results will naturally depend on the consistency of the one-to-one comparison between the criteria by the decision maker. AHP proposes a process for measuring consistency in these comparisons. With the Consistency Ratio obtained as a result, it provides the opportunity to test the consistency of the priority vector found and therefore the one-to-one comparisons (decisions) made between the criteria. AHP bases its calculation on the comparison of the number of criteria and a coefficient called the eigenvalue (λ). In order to calculate (λ), firstly the comparison matrix (A) and the priority vector (W) are multiplied. In the examination of the consistency ratios of the SWOT groups, it was determined that the decision matrix among the SWOT main factors was consistent with 0.0367 (CR), in pairwise comparisons of the SWOT sub-factors, the decision matrix was consistent with 0. 0935 (CR) for strengths, 0.0057 (CR) for weaknesses, 0.0953 (CR) for opportunities, and 0.0969 (CR) for threats. The most important priority was calculated as "Strengths" with a weight value of 0.5205, followed by "Opportunities" 0.2971, "Weaknesses" 0.1244, and "Threats" 0.058. The results of the analysis are presented in **Tables 3**, **4**. When the priorities of the factors belonging to the SWOT groups are examined, the strongest factor in the development of rural tourism is "Natural beauty (Desire to be within natural life) (S2)" with a weight of 0.2987, followed by "The effectiveness of traditional architecture (S1)" with a weight of 0.1767, "Popular destination (S6)" with a weight of 0.123 and a weight of 0.1093 "Continuation of intercultural interaction on the island (S5)" are listed as strong factors.

When examining the factors related to the weak aspects, it was found that the weakest factor with a weight of 0.2498 is "The

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TABLE 2 SWOT factors of the Gökçeada in terms of sustainable rural tourism.

SWOT groups		SWOT factors
Strengths (W)	S1	The effectiveness of traditional architecture
	S2	Natural beauty (Desire to be within natural life.)
	S3	The fact that the social and cultural identity of Gökçeada has not yet deteriorated
	S4	The friendliness and hospitality of the island people
	S5	The continuation of intercultural interaction on the island
	S6	Popular destination
	S7	Applicability of rural tourism for 12 months
	S8	Fertile soils that offer a variety of products
Weaknesses (W)	W1	Lack of knowledge and entrepreneurship of the locals
	W2	Lack of promotion and marketing activities in the region
	W3	Insufficient number of accommodation facilities
	W4	Inefficient use of existing agricultural potential
	W5	The fact that the carrying capacity for tourism on the island has not been determined
	W6	Lack of coordination and communication among stakeholders. (local people, non-governmental organizations, local government and public)
	W7	Lack of qualified workforce
Opportunities (O)	O1	Increasing the interest of local tourists to the region
	O2	High agricultural productivity
	O3	Having renewable energy sources
	O4	Potential to host festivals, summer schools, workshops and various events
	O5	Poor transport links that preserve the island fabric
	O6	Creating accommodation opportunities suitable for the natural and cultural texture of the region
Treats (T)	T1	Natural hazards such as earthquakes, floods, landslides
	T2	The tourism concept being more identified with the coastal tourism in Turkey
	T3	Losing the original cultural and social values of the villages
	T4	Political and economic instability on the island
	T5	The disappearance of unprotected examples of civil architecture on the island
	T6	Young population leaving the island
	T7	Insufficient investment for the island

TABLE 3 AHP factors and descriptions in SWOT-Matrix (weight of SWOT factors).

	S	W	O	T	λmax		S	W	O	T	Row averages
S	1.00000	5.00000	2.00000	7.00000	2.1431	S	0.5426	0.5357	0.5660	0.4375	0.5205
W	0.20000	1.00000	0.33333	3.00000	0.5017	W	0.1085	0.1071	0.0943	0.1875	0.1244
O	0.50000	3.00000	1.00000	5.00000	1.2209	O	0.2713	0.3214	0.2830	0.3125	0.2971
T	0.14286	0.33333	0.20000	1.00000	0.2333	T	0.0775	0.0357	0.0566	0.0625	0.0581
Total	1.84286	9.33333	3.53333	16.00000	4.0990	Total	1.0000	1.0000	1.0000	1.0000	1.0000

CR = 0.0367 < 0.1.

lack of knowledge of the locals and the lack of entrepreneurship (W1)" because they cannot evaluate tourism economically and are not aware of the existing potential. Accordingly, "The fact that the carrying capacity for tourism on the island has not been determined (W5)" by 0.2125 weight, "lack of promotion and marketing activities in the region (W2)" 01988, "Lack of coordination and communication among stakeholders. "Locals, non-governmental organizations, local government and public (W6)" 0.1261 weighted as the weakest factors.

The most important opportunities for the development of rural tourism on the island are again "Increasing the interest of local tourists to the region (O1)" with 0.3738 weight and "Creating accommodation opportunities suitable for the natural and cultural texture of the region (O6)" with 0.1811 weight. These sub-factors are followed by "potential to host festivals, summer schools, workshops and various events (O4)" and "Poor transport links that preserve the island fabric (O5)" with a very low weight of 0.1537 and 0.1510, respectively.

TABLE 4 Weight of SWOT sub factors.

	S1	S2	S3	S4	S5	S6	S7	S8	λmax	S1	S2	S3	S4	S5	S6	S7	S8	Row averages
S1	1.0000	0.2000	3.0000	2.0000	1.0000	4.0000	3.0000	2.0000	1.56742	0.11215	0.05172	0.26087	0.16000	0.12245	0.35294	0.18750	0.13333	0.17669
S2	5.0000	1.0000	3.0000	1.0000	3.0000	3.0000	3.0000	3.0000	2.57968	0.56075	0.25862	0.26087	0.08000	0.36735	0.26471	0.18750	0.20000	0.29872
S3	0.3333	0.3333	1.0000	2.0000	1.0000	0.5000	2.0000	2.0000	0.82410	0.03738	0.08621	0.08696	0.16000	0.12245	0.04412	0.12500	0.13333	0.08952
S4	0.5000	1.0000	0.5000	1.0000	0.5000	0.3333	1.0000	2.0000	0.78927	0.05607	0.25862	0.04348	0.08000	0.06122	0.02941	0.06250	0.13333	0.08813
S5	1.0000	0.3333	1.0000	2.0000	1.0000	1.0000	3.0000	3.0000	1.11793	0.11215	0.08621	0.08696	0.16000	0.12245	0.08824	0.18750	0.20000	0.10933
S6	0.2500	0.3333	2.0000	3.0000	1.0000	1.0000	2.0000	1.0000	0.98946	0.02804	0.08621	0.17391	0.24000	0.12245	0.08824	0.12500	0.06667	0.12314
S7	0.3333	0.3333	0.5000	1.0000	0.3333	0.5000	1.0000	1.0000	0.50385	0.03738	0.08621	0.04348	0.08000	0.04082	0.04412	0.06250	0.06667	0.05533
S8	0.5000	0.3333	0.5000	0.5000	0.3333	1.0000	1.0000	1.0000	0.55080	0.05607	0.08621	0.04348	0.04000	0.04082	0.08824	0.06250	0.06667	0.05914
Total	8.9167	3.8667	11.5000	12.5000	8.1667	11.3333	16.0000	15.0000	8.92251	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000000

CR = 0.0935 < 0.1

	W1	W2	W3	W4	W5	W6	W7	λmax	W1	W2	W3	W4	W5	W6	W7	Row averages
W1	1.0000	1.0000	3.0000	3.0000	0.5000	2.0000	7.0000	1.5837	0.1883	0.1439	0.2432	0.2645	0.1124	0.3457	0.4504	0.2498
W2	1.0000	1.0000	2.0000	5.0000	0.5000	0.5000	4.0000	1.3369	0.1883	0.1439	0.1622	0.4408	0.1124	0.0864	0.2574	0.1988
W3	0.3333	0.5000	1.0000	1.0000	0.2500	1.0000	3.0000	0.6438	0.0628	0.0719	0.0811	0.0882	0.0562	0.1728	0.1930	0.1037
W4	0.3333	0.2000	1.0000	1.0000	1.0000	0.1429	0.2000	0.5388	0.0628	0.0288	0.0811	0.0882	0.2247	0.0247	0.0129	0.0747
W5	2.0000	2.0000	4.0000	1.0000	1.0000	1.0000	0.2000	1.7321	0.3767	0.2878	0.3243	0.0882	0.2247	0.1728	0.0129	0.2125
W6	0.5000	2.0000	1.0000	0.1429	1.0000	1.0000	0.1429	0.9803	0.0942	0.2878	0.0811	0.0126	0.2247	0.1728	0.0092	0.1261
W7	0.1429	0.2500	0.3333	0.2000	0.2000	0.1429	1.0000	0.2299	0.0269	0.0360	0.0270	0.0176	0.0449	0.0247	0.0643	0.0345
Total	5.3095	6.9500	12.3333	11.3429	4.4500	5.7857	15.5429	7.0454	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

CR = 0.0057 < 0.1

	O1	O2	O3	O4	O5	O6	λmax	O1	O2	O3	O4	O5	O6	Row averages
O1	1.0000	5.0000	4.0000	3.0000	3.0000	3.0000	2.4638	0.4082	0.3125	0.3077	0.3448	0.3830	0.4865	0.3738
O2	0.2000	1.0000	1.0000	0.2000	1.0000	0.3333	0.4573	0.0816	0.0625	0.0769	0.0230	0.1277	0.0541	0.0710
O3	0.2500	1.0000	1.0000	0.5000	0.5000	0.3333	0.4466	0.1020	0.0625	0.0769	0.0575	0.0638	0.0541	0.0695
O4	0.3333	5.0000	2.0000	1.0000	0.3333	1.0000	1.0035	0.1361	0.3125	0.1538	0.1149	0.0426	0.1622	0.1537
O5	0.3333	1.0000	2.0000	3.0000	1.0000	0.5000	1.0371	0.1361	0.0625	0.1538	0.3448	0.1277	0.0811	0.1510
O6	0.3333	3.0000	3.0000	1.0000	2.0000	1.0000	1.1827	0.1361	0.1875	0.2308	0.1149	0.2553	0.1622	0.1811
Total	2.4500	16.0000	13.0000	8.7000	7.8333	6.1667	6.5909	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

CR = 0.0953 < 0.1

(Continued)

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TABLE 4 (Continued)

	T1	T2	T3	T4	T5	T6	T7	λmax	T1	T2	T3	T4	T5	T6	T7	Row averages
T1	1.0000	0.3333	0.3333	0.2000	0.3333	0.1429	0.2000	0.28396	0.0370	0.0339	0.0526	0.0278	0.0541	0.0187	0.0331	0.0367
T2	3.0000	1.0000	2.0000	1.0000	0.5000	0.5000	0.3333	0.95301	0.1111	0.1017	0.3158	0.1389	0.0811	0.0654	0.0552	0.1242
T3	3.0000	0.5000	1.0000	2.0000	1.0000	1.0000	2.0000	1.33890	0.1111	0.0508	0.1579	0.2778	0.1622	0.1308	0.3315	0.1746
T4	5.0000	1.0000	0.5000	1.0000	1.0000	1.0000	1.0000	1.05969	0.1852	0.1017	0.0789	0.1389	0.1622	0.1308	0.1657	0.1376
T5	3.0000	2.0000	1.0000	1.0000	1.0000	3.0000	0.5000	1.41990	0.1111	0.2034	0.1579	0.1389	0.1622	0.3925	0.0829	0.1784
T6	7.0000	2.0000	1.0000	1.0000	0.3333	1.0000	1.0000	1.22573	0.2593	0.2034	0.1579	0.1389	0.0541	0.1308	0.1657	0.1586
T7	5.0000	3.0000	0.5000	1.0000	2.0000	1.0000	1.0000	1.48645	0.1852	0.3051	0.0789	0.1389	0.3243	0.1308	0.1657	0.1899
Total	27.0000	9.8333	6.3333	7.2000	6.1667	7.6429	6.0333	7.76768	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

CR = 0.0969 < 0.1

The greatest threat was determined as "Insufficient investment in the island (T7)" with a weight value of 0.1899. The following threats are listed as "The disappearance of unprotected examples of civil architecture on the island (T5)" with a weight of 0.1784, "Losing the original cultural and social values of the villages (T3)" with a weight of 0.1746, "Young population leaving the island (T6)" with a weight of 0.1586, and "Political and economic instability on the island (T4)" with a weight of 0.1376.

After the A'WOT analysis, strategy recommendations for the sustainable development of the rural tourism destination were presented using the TOWS matrix. Although the study is examined specifically for Gökçeada, it also provides recommendations that suggest long-term and healthy development for rural tourism destinations developing in different regions.

When the TOWS matrix shown in **Table 5** is examined, the strategies were determined as follows:

- SO Strategy "Building a sustainable tourist management with low impact on the environment"

Rural tourism on the island, where organic products, rural lifestyle and clean nature can be presented together, as well as cultural tourism where rich architecture, historical, and cultural diversity will be presented, and sea tourism with underwater diving, windsurfing, angling and clean beaches are the leading alternative tourism types is on the plan. The activities determined while developing all these types of tourism should be created by considering the environmental effects. Tourism should not only focus on economic benefits, but should also consider environmental and social benefits. With sustainable development, a potential environmental threat assessment system should be established that could reflect the material and energy inputs and outputs in tourism, tourist capacity and the limits of environmental degradation in a certain range and to a certain extent (Zhang, 2012).

- WO Strategy "Improving the touristic infrastructure and determining the capacity"

Alternative tourism types on the island should be diversified and promotions should be made for the island (sea tourism, religious tourism, nature tourism (ecotourism) and historical tourism etc.). Tourist routes should be determined and the daily optimal tourist capacity and maximum tourist capacity should be evaluated at a touristic point. Efforts should be made to preserve the cultural and historical texture of the island. Policies should be established to protect the nature and resources of the island and to establish facilities in a way that does not hinder the economic and social development of the island. It will be an important strategy to make investments in cultural activities by

TABLE 5 TOWS Matrix for "sustainable rural tourism strategy"—produced for Gökçeada from Weihrich (1982).

Tows matrix	Strengths	Weaknesses
	S2- Natural beauty (Desire to be within natural life)	W1- Lack of knowledge and entrepreneurship of the locals
	S1- The effectiveness of traditional architecture	W5- The fact that the carrying capacity for tourism on the island has not been determined
	S6- Popular destination	W2- Lack of promotion and marketing activities in the region
	S5- The continuation of intercultural interaction on the island	W6- Lack of coordination and communication among stakeholders. (local people, non-governmental organizations, local government and public)
Opportunities	**SO strategy**	**WO strategy**
O1- Increasing the interest of local tourists to the region	"Creating a sustainable tourism management with low impact on the environment"	"Improving the touristic infrastructure and determining the capacity"
O6-Creating accommodation opportunities suitable for the natural and cultural texture of the region	Strategy 1	Strategy 2
O4- Potential to host festivals, summer schools, workshops and various events	(S2,S1,S6,O1,O6,O4,O5)	(O1,O6,O4, W1,W5,W2)
O5- Poor transport links that preserve the island fabric	To create an infrastructure to develop alternative tourism types. Preferring architectural designs suitable for the local texture. To evaluate the existing building stock as accommodation facilities.	More investments should be made in the development of tourism infrastructure and preserving the natural, cultural and historical texture of the island. National and international events promoting the island should be organized.
Threats	**ST strategy**	**WT strategy**
T7- Insufficient investment for the island	"Protection of social and cultural values"	"Developing tourism investment and improvement policies with the participation of local residents"
T5- The disappearance of unprotected examples of civil architecture on the island	Strategy 3	Strategy 4
T3- Losing the original cultural and social values of the villages	(S2,S1,S5,T5,T3)	(W1,W5,W2,W6,T7,T3,T6)
T6- The young population leaving the island		All stakeholders should take part together in activities for the development of the region. Business and entrepreneurship trainings should be organized for the island residents. The executive mechanism should be strengthened.

spreading the festivals to all seasons and to involve tourists in rural life with various activities.

- ST Strategy "Protection of social and cultural values"

The Greek culture, which was dominant on the island, was blended with the cultures brought by the Black Sea, Eastern Anatolia and Bulgarian immigrants who were later settled on the island, and a new cultural texture unique to the island was formed. This cultural richness and diversity of the island should be considered as a whole with its natural, socio-cultural, administrative and architectural aspects and strategies for protection should be developed. Residences, churches, chapels, mosques, shops, coffee houses, mills, olive oil and soap factories and laundries, which are the achievements of multiculturalism, should be protected and brought into tourism.

- WT Strategy "Developing tourism investment and improvement policies with the participation of local residents"

Suggestions should be developed to transform tourism activities into an economic contribution for the local people, and the living standards of the local people should be increased. In the development of tourism on the island, the involvement of all stakeholders who are affected or affected by tourism and their inclusion in the decision processes will ensure a sustainable development of tourism. This will encourage local people and

other community organizations to take ownership of the island's tourism resources.

Conclusion

The health and economic problems that came with COVID-19 have brought alternatives to tourism activities on the agenda again. Movement restrictions between countries have increased rural tourism activities at the local level, especially in developing countries. Making this mobility in domestic tourism permanent and using the potentials in rural areas correctly with the increase in infrastructure, organization and knowledge will turn the crisis experienced in this period into an opportunity. In the case study conducted in Turkey, they stated that tourists feel safer in unexplored coastal areas with less human density than in heavily used coastal areas, and in addition, they experience many new historical, cultural, natural and gastronomic discoveries. For this reason, Gökçeada, with its unspoiled nature, has started to attract the attention of those living in crowded cities, especially during the pandemic process. However, sustainable and credible strategies must be established on the island to seize new opportunities created by the devastating and changing impact of the pandemic. With the study carried out in Gökçeada, the following strategies are recommended for sustainable development for rural tourism.

- A more conscious and systematic development will be achieved by making the right investments in the island. Increasing employment opportunities will prevent the young population from leaving the island.
- Access to the island is limited and inconvenient. Although this situation may seem negative at first glance, it should be turned into an important opportunity for the island by contributing to the island becoming a center of attraction for people who want to be closer to nature and have adopted a healthy, peaceful and humble lifestyle.
- It is possible to minimize the damage to nature with the right decisions to be taken at the design stage in order to preserve the ecological identity of this newly developing island.
- The architectural textures of the traditional Gökçeada houses are the unique local values. Reflecting this texture in new buildings and preserving old buildings will make an important contribution to the sustainable development of the island by keeping the local structure and life identity alive. Many traditional stone houses in Gökçeada remain idle. It is very important for the protection of the ecosystem to use the existing houses by repairing instead of opening new settlements. For this reason, the restoration of these houses and their use as second houses, boutique hotels, hostels, cafeterias and bringing them to tourism will both keep the existing architecture alive and contribute to the development of tourism without disturbing the natural balance.
- The fact that the island has many alternative tourism types increases the interest in the region and it is seen positively in terms of spreading tourism to all seasons. The potential to host festivals, summer schools, workshops and various events increases the interest of tourists.
- The continuation of intercultural interaction on the island increases the diversity and cultural richness. Greek villages have a dominant place in Gökçeada culture. In particular, the fact that the first settled people were of Greek origin, and the Christian-Orthodox sects were represented on the island at the metropolitan level, which contributed to the increase in the importance given to religious ceremonies. Fairs held after religious ceremonies increase cultural fusion in the island.
- Continuous and balanced development as well as economic development guided by ecological principles should be adopted in the new planning of the island.

It is hoped that this study, which is carried out in Turkey, will be an example for new studies to be made for rural tourism destinations. During the Pandemic, international restrictions have occurred all over the world, and these restrictions will continue in case of new global epidemics. In order to turn this negative situation into an opportunity, a holistic perspective is needed for the sustainable development of tourism. Tourism development increases business sales revenues, stimulates local production, creates new job and investment opportunities, and increases government revenues through taxation. However, in addition to these benefits, uncontrolled development can also cause social and environmental problems. In order to minimize these problems, it is necessary for governments to create a number of new policies and provide financial support. The literature research and field study reveal that the problems identified for rural tourism, especially in developing countries, are similar. Therefore, it is thought that it will be beneficial to consider the following recommendations in the development of sustainable rural tourism strategies.

- First of all, rural accommodation opportunities should be increased and rural tourism should be marketed effectively, especially in developing countries.
- Most of those working in the tourism sector work part-time. Continuing tourism activities throughout the year and training employees in this sector is an important strategy in ensuring sustainability.
- Local people should be given active tasks by taking into account traditional culture and values in the studies for the development of rural tourism. All stakeholders should

act together in developing infrastructure, institutional framework, marketing and cooperation.
- The rural environment is fragile and vulnerable to potential damages that may result from the development of tourism. The natural environment may suffer while meeting the needs of large numbers of tourists. For this reason, tourist carrying capacities must be determined in advance and all planning should be made according to this capacity when opening rural areas to tourism.
- Conservation and development of natural resources should be recognized as an important component in the dynamics of the tourism industry.
- The inexperience of the local people has pushed the people of the region out of tourism earnings in rural tourism management. Raising awareness of the local people and focusing on the local workforce is an important strategy for the sustainability of rural tourism.

Data availability statement

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

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent from the participants was not required to participate in this study in accordance with the national legislation and the institutional requirements.

Author contributions

FK, FC, MD-R, and JÁ-G: conceptualization, investigation, methodology, formal analysis, writing—original draft, preparation and 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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Eco-destination loyalty: Role of perceived value and experience in framing destination attachment and equity with moderating role of destination memory

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This research article aims to evaluate the characteristics of ecotourism destination loyalty in light of destination attachment, destination equity framed by perceived value, and tourist experience. Thus, the attributes of ecotourism destination branding in formulating tourist loyalty are examined. The study is of significant importance for developing economies having natural tourist destinations. A total of 358 questionnaires were filled through wjx, and a SmartPLS-based structural equation modeling tool was used to analyze the data obtained from eco-tourists. The software is essential for complex structural models, including multiple indicators, and relationships. The empirical results exhibit that perceived value and tourist experience significantly contribute to destination loyalty and equity, eventually influencing tourist destination loyalty. Moreover, destination memory moderates the relationship between destination attachment, destination equity, and destination loyalty. Further, destination attachment and destination equity mediate the relationship between the perceived value, experience, and destination loyalty. Additionally, the study extends the tourist consumption theory to the ecotourism literature. Besides the theoretical contribution, the study makes a practical contribution to practitioners. For instance, perceived value is a prime contributor to tourist destination loyalty. In perceived value, the most important factor is good value for money. Such practical contribution will provide a pathway to the strategic formation of business.

KEYWORDS

ecotourism, perceived value, experience, destination attachment, destination equity, memory

Introduction

Ecotourism is an emerging format in the tourism industry. The ecotourism industry worldwide has shown enormous growth and has made $181.1 billion in 2019 (Statista, 2021). The segment is forecast to reach $333.8 billion by 2027, with an expected CAGR of 14.3% (Statista, 2021). United Nations declared 2002 the "international year of ecotourism" to encourage sustainable tourism development (Karst and Nepal, 2021). Ecotourism, as a tourism segment, is an industry that contributes to 10% of the world GDP, 7% of world tourism, and generates 10% of employment (World Health Organization, 2019). Furthermore, ecotourism accounts for one-third of the tourism crowd (World Health Organization, 2019). China is investing heavily in the ecotourism sector, as the country is ranked second in the world for travel and tourism contribution to the GDP and first in tourism-based employment generation (Statista, 2021). Directly or indirectly, the tourism industry contributes ∼10% of the country's GDP (Statista, 2021). Ecotourism (ET) has gained popularity in the Chinese environment since the 1990s. ET helps construct a strong bond between nature and humans with the prime objective of sustainable business development. Eco-tourist destinations generate socio-economic benefits for the local and rural populations regarding employment and business. Ecotourism is helping to reduce the unemployment that causes the population shift from rural to urban areas (Ramírez and Santana, 2019).

This causes fierce competition between the business organizers to give exceptional services to visiting tourists. Attracting and retaining existing customers is the backbone of any business and a vital ingredient of survival and development in the tourism industry. Perceived value (PV) and experience (EX) are the two essential contributors to behavioral intentions of attraction (Schenk et al., 2008; Ha and (Shawn) Jang, 2010). Destination attachment (DA) is one of the fundamental characteristics of revisit traveling behavior, which makes it an essential indicator of the tourist decision-making process regarding destination selection (Cifci, 2021). Moreover, destination equity (DE) derived from brand equity is a differentiating factor in tourist knowledge, influencing tourist preferences and behavior toward the destination (Kumail et al., 2021). Moreover, the tourist perception of value and prior experience contributes enormously to the destination attachment and equity, eventually leading to the revisit intention (Chang and Huang, 2014). The constructs of value perception and experience have led to several studies that explore the tourist experience and their revisit intention. This study considers the perceived value and experience as antecedents of destination attachment. It enhances destination equity simultaneously, and they eventually encourage tourists to revisit eco-destinations. Attachment and equity have led to numerous branding exploration icons and are recognized as essential factors in framing the consumer repurchase intention (Spry et al., 2011; Dwivedi et al., 2019), such as social media (Dwivedi et al., 2019), celebrity endorsement (Spry et al., 2011), and brand awareness (Chandon, 2003). But few studies have discussed destination attachment and destination equity in the ecotourism context. Moreover, this study offers the moderating role of destination memory. Destination memory is the primary factor in tourist intention studies (El Haj and Miller, 2017). In this study, we consider the memories in the context of the prior visit's unforgettable events. For tourists, memories have a pivotal role in motivating revisit intention (Kim, 2020).

Literature review

Ecotourism destination loyalty

In consumer behavior, loyalty means a commitment to a specific product (So et al., 2013; Hew et al., 2016; Chang, 2021). So, in a tourism context, destination loyalty means tourist commitment to a particular destination (Lee and Xue, 2020; Mirzaalian and Halpenny, 2021). Social scientists have two solid reasons for continuous exploration of destination loyalty and allied behavioral response. First, destination loyalty helps to generate economic activity for the local population through the general value perception and experiences associated with the natural sites (Kuo and Feng, 2013; El-Adly, 2019). Second, novelty-seeking influences tourist traveling motivation that guides the decision-making process (Ramírez and Santana, 2019). This means destination loyalty is more complex than customer loyalty, requiring more effort to develop understanding.

Social scientists continuously explore the characteristics that can influence tourist loyalty, considering the practical implication of destination loyalty. Tourist loyalty studies can be summarized as motivation factors (Suhartanto et al., 2020a), demographic characteristics (Stojanovic et al., 2017), past experiences (Chang et al., 2014), destination image (Lee and Xue, 2020), service quality (Alexandris et al., 2006), perceived quality (Shahijan et al., 2018), satisfaction (Quynh et al., 2021), and novelty (Chang et al., 2014). Based on these antecedents, the researchers have developed numerous theoretical frameworks to understand the formation process of tourist loyalty (Cossío-Silva et al., 2019; Lee and Xue, 2020; Quoquab et al., 2020). An assumption in the literature exists that when the perceived value and experience are found in a positive perspective, this leads to a higher level of inner motivation that eventually leads to eco-tourist destination loyalty (Mirzaalian and Halpenny, 2021). The study framework is developed by considering the perceived value and experience as two factors that motivate the inner state in destination equity and destination attachment (Cifci, 2021; Kumail et al., 2021), leading to destination loyalty in the ecotourism context.

Tourism consumption theory

Tourism consumption theory provides the theoretical base for studying the complex leisure system influenced by tourist value perception and experience associated with travel (Woodside and Dubelaar, 2002). TCT states that traveler choice, opinion, motive, and behavior are interrelated, influencing the decision-making process (Suhartanto et al., 2020a). The theory is enacted from Clawson and Knetsch (1966) five-phase model of recreation. Woodside and Dubelaar (2002) claim that leisure trip planning is a complex procedure that consists of multiple factors, such as the tourist's prior experience, prior decision-making process, and the tourist background. Woodside and Dubelaar (2002) believe that thoughts, decisions, and behavior are interdependent, and this leads to direct and indirect relationships between tourist behavioral perspectives. The prior literature has tested the theory and has shown considerable support for the study. The readers can track back the traces of earlier attempts to understand the TCT perspective on tourists, where researchers suggest that tourist decision-making prior, after, or during the travel depends on a diversified set of beliefs (Li et al., 2013; Suhartanto et al., 2021).

This makes TCT a suitable option to provide rationale between tourist perceived value and prior experience in providing the inner motivation in destination attachment and destination equity that forms the behavioral response in destination loyalty. TCT states that the prior experience of tourists results in developing destination evaluation, generating destination distinct position and bond between tourist and destination (Suhartanto et al., 2020a). In the present context, it is assumed that tourist assessment is based on the value perception and prior contact that develop attachment and destination equity, generating loyal tourists. In support of this argument, the empirical evidence (Kuo and Feng, 2013; Kim and Park, 2016; Ahn and Kwon, 2020; Suhartanto et al., 2020a) reinforces the statement that tourist value perception and experience develop the internal motives in terms of destination equity and attachment that subsequently lead to the destination loyalty.

Perceived value

The study of consumer value perception was initiated in the early 1980s (Dodds and Monroe, 1985; Porter, 1985), and this process evolved further in the 1990s (Woodruff, 1997). The literature review shows that perceived value (PV) was introduced in the Chinese tourism sector in the late 1990s (Xia and Chen, 2015). Primarily, PV is mainly discussed in terms of utility evaluation. The utility evaluation in terms of experience, facilities, and economic value. This study considers the PV in the context of the utility evaluation approach to study tourist expectations. Thus, the study defines the PV as an evaluation of the perception of experience, facilities, and economic value compared to ordinary tourist destinations.

Perceived value is the trade-off between the perceived acquisition and the cost incurred for a particular product or service (Chua and Banerjee, 2015). Therefore, consumer intention to consume a specific product or service depends on the perceived value they have received, such as the trade-off between the perceived benefits and cost analysis. Platania et al. (2016) framed the theory of perceived value. They defined the concept of perceived value as the collective evaluation of product or service performance in comparative nature between the perceived benefits and cost incurred, while Keller and Kotler (2015) consider the value a collective evaluation of the product or service performance. In ecotourism, perceived value is a tourist evaluation of the destination and incurred costs. The prior studies show the relationship between perceived value and behavior intention (El-Adly, 2019).

Tourist experience

The tourist experience is any event, while behavior, perception, rumor, cognition, emotion, words, gestures, or feeling is the tourism experience (Li et al., 2021). Furthermore, experience is the tourist destination interaction. During this interaction, tourists construct a unique experience (Huang and Hsu, 2009), which reflects their cognitive learning during the experience (Li et al., 2021). The construct is measured from various perspectives. Joseph and Gilmore (1998) advocate that the business market has transformed from production to service-based economies and considers the experience-defining dimension of consumer intention. Schmitt (1999) suggests studying the consumer in terms of rationale and emotions. He suggests studying consumer behavior in tourist destinations in terms of sensory, emotional, thinking, acting, and relationship perspective.

There have been limited studies to understand the tourist experience at eco-destinations. Chan and Baum (2009) defined the tourist experience in terms of hedonic, interactive, novelty, comfort, stimulation, safety, and security, creating a combination of Joseph and Gilmore's (1998) and Schmitt's (1999) studies. Wang et al. (2012) studied ecotourism in the context of aesthetic, emotional, and action perspective that is similar to the prior discussed frameworks. These empirical studies suggest that ecotourism is a blend of experiences, highlighting the importance of a singular scale to study all these perspectives. This study considers the shorter scale to study the consumer interaction with the destination (Shahijan et al., 2018).

Destination attachment

Ren et al. (2010) found that the concept of attachment came from childhood and believed it is an outcome of dependence on parents; as individuals move forward in life, they shift this attachment to other objects, places, and environments. Lee

et al. (2019) define destination attachment as the emotional bond between the place and tourist in terms of social and physical attachment. Yuksel et al. (2010) studied the tourist destination attachment and found that this concept consists of place dependence and place recognition. Prayag et al. (2018) found that tourist engagement with the place strengthens the destination attachment, leading to multiple outcomes in destination satisfaction, loyalty, and positive word of mouth. This study considers the destination attachment scale (Prayag and Ryan, 2012) due to its consistent reliability, confirmed by many other tourism studies. Based on the existing literature, Prayag and Ryan (2012) defined destination attachment as the psychological engagement with the destination, which later might generate destination-related emotional decision-making. The Psychological Continuum Model (PCM) model of Funk and James (2008) engages the destination attachment for mediating relationships to study the destination fascination and tourist loyalty. This study considers destination attachment as a mediating variable between tourist destination value and destination experience.

Destination equity

Aaker (1991) defines brand equity in the context of assets and liabilities associated with a brand, such as a name, logo, and symbols that enhance its value to its customers. This concept of brand equity developed by Aaker (1991) and Keller (2003) helps the destination managers to develop performance measures to position the destination properly in the market to enhance the value offered by the destination to visiting tourists. Few studies provide a comprehensive model to study the concept (Kumail et al., 2021). The literature provides help to study the dimensions that lead to destination equity. For example, Kladou and Kehagias (2014) studied brand equity with four dimensions: awareness, culture, quality, and loyalty. Chi et al. (2020) explain the concept in terms of the image, perceived quality, and familiarity by studying tourism destination loyalty and travel intention. Stojanovic et al. (2017) explain the role of social media-based awareness leading to higher consideration of destination equity, generating positive or negative word of mouth enacted from the tourist perception given in terms of feedback on social platforms. This study considers destination equity as the product of perceived value and experience and the mediating role between perceived value, experience, and destination loyalty.

Destination memory

Baddeley et al. (1999) define memory as a "systematic working alliance that helps us to learn from the past and predict the future." Episodic memory, the long-term storage of facts, is a concern in experiences (Schwartz et al., 2011). Episodic memory is the topic of interest in the tourist experience (Larsen, 2007). Tourist experience comprises complex psychological structures focused on memory (Larsen, 2007). Scholars have given multiple definitions for the tourist experience. The destination experience is studied in subjective and individual evolution of interaction and tourist experience at the destination in terms of events, activities, and many more happenings, thus leading to long-term memories (El Haj and Miller, 2017). Larsen (2007) considers tourist experience as the mic of past and personal travel experiences which are strong enough to enter the long-term memory of tourists. Considering the context of the present study, the positive memories of the tourist experience are more relevant, and this concept is of vital importance when it comes to ecotourism (El Haj and Miller, 2017). Kim et al. (2010) state that the emergence of positive, memorable experiences leads to revisiting intention, and this tendency is of vital importance in the tourist travel-related decision-making process.

Hypothesis development

Enacted to the existing body of literature, this study develops an analytical framework to study the variables that affect tourist destination loyalty. The graphical relationships are shown in Figure 1, and a detailed discussion is provided in this section.

Hypothesis development

The personal evaluation of received goods and services effectiveness is developed from the perception of what is received and what was expected. The PV has received considerable attention from marketing scholars and practitioners. PV is pivotal to obtaining a competitive advantage in the market and is the only way to build and hold this advantage for a longer time. PV is the overall evaluation of the product or service developed by comparing the perceived acquisition and cost incurred (Chua and Banerjee, 2015). That is why consumer intention is usually dependent on the value received against the cost. A simple trade-off between the perceived value and perceived cost (Platania et al., 2016) coined the theory of perceived value with a customer perspective and defined the PV as an overall evaluation of offers from a destination, consequently comparing perceived benefits and cost paid. Keller and Kotler (2015) regarded the PV as a tourist evaluation of the overall effectiveness of destination offering. Alexandris et al. (2006) found that the PV influences the tourist's internal decision-making process in many ways, such as destination attachment and utilitarianism. The study states that PV is an antecedent of eco-destination attachment. Considering this perspective of discussion, the study proposes the following hypothesis:

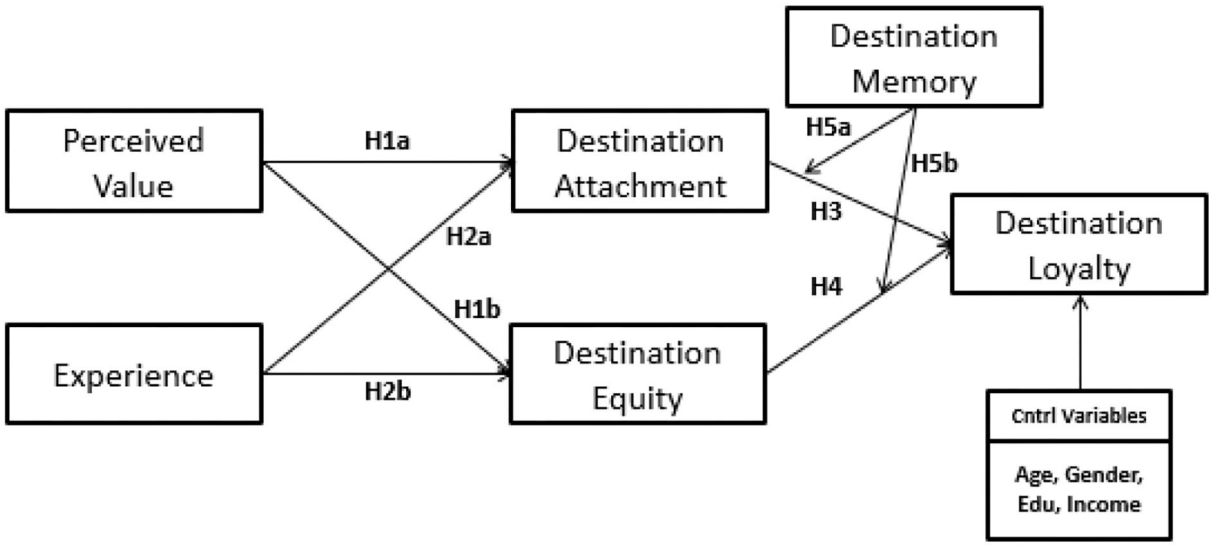

FIGURE 1
Analytical framework for the influential factors of destination loyalty.

H1a: Value perception increases tourist destination attachment.

Destination equity examination is a complex process in a marketing context. A marginal improvement in brand equity leads to the long-term generation of resources and tourist satisfaction (Kumail et al., 2021). Equity must be measured in terms of revenue, taxes to the government, employment, and better wages (Gartner, 2014). Any improvement in the brand is directly tied to destination equity. Ha and (Shawn) Jang (2010) found that perceived value leads to numerous behavioral outcomes, which consequently influence the internal state of mind. Ahn and Kwon's (2020) study of Malaysian green hotels states that value perception is the major factor that enhances the overall brand equity of the green hoteling concept and attracts the tourist with emotional attachment to the environment. Moreover, Chi et al. (2020) consider that the awareness of benefits associated with a destination in terms of naturalness, monitory benefits, and service quality leads to better destination equity. Similarly, Kladou and Kehagias (2014) consider brand equity an outcome of tourist perception of the value they will gain against the resources invested. Any increase in the tourist perception of the destination in terms of value results in improved visitation and spending more time at the destination. So, based on these facts, the study proposes the following hypothesis:

H1b: Value perception increases tourist destination equity.

The overall perception of the term experience is of vital importance in tourist-related marketing strategies, and this makes the tourism sector outperform the other industrial sectors (Shahijan et al., 2018). Moreover, eco-tourists look for up-to-date and modern services in order to enhance their traveling experience. The individual experience plays important role in the social and economic life of a tourist. Likewise, the tourist experience has gained the prime position to understand tourism. The tourist experience is a more explicit term to study the tourist destination experience in the past decade (Li et al., 2021). Tourist visit is all about the experience; they visit to experience the breadth and depth of the destination and experience its novelty (Huang and Hsu, 2009). Furthermore, experience is a mix of feelings, ideas, thoughts, and gossip taking place throughout the visit (Larsen, 2007). In the context of ecotourism, experience is defined as the "culmination of a given experience formed by tourist while they are traveling and spending time at a given destination" (Chan and Baum, 2009). Quynh et al. (2021) studied the role of experience in the context of emotions and their ability to influence the destination image, consequently affecting the destination satisfaction level. Chan and Baum (2009) consider the ecotourism experience as hedonic, interactive, novel, comforting, safe, stimulating, and vital in establishing the tourist attachment to the destination. El Haj and Miller (2017) define the tourist experience in terms of long-term memory that pushes the internal state in an emotional way and raises tourist intention to stay loyal to eco-destination tourism. This study considers that experience is a vital perspective of tourist attachment to the eco-destination. Considering this perspective, the study proposes the following hypothesis:

H2a: Prior experience increases tourist destination attachment.

The literature depicts that experience is a vital source of tourist satisfaction with the destination (Quynh et al., 2021). Li et al. (2021) studied the post-trip destination image and the role of destination satisfaction in forming ecotourism loyalty. Li et al. (2021) further state that the experience is of pivotal importance in framing the destination equity due to higher tourist satisfaction with eco-destination. The study found that post-experience satisfaction increases destination differentiation rather than destination equity. Moreover, Nella and Christou (2010) measured the impact of tourist experience on brand equity and market outcomes. The study highlights the important role of the tourist experience in terms of the wine industry and its role in enhancing the overall brand equity. The study elaborates on the post-visit and post-consumption experience of wine on tourist perception of brand differentiation. Gartner (2014) evaluated the post-visit destination equity of tourist resorts and found a positive link between destination equity and tourist visit that improves visitors' awareness level of tourism, eventually leading to loyalty. Based on the above-mentioned facts, this study proposes that the experience directly influences destination equity. So, the study proposes the following hypothesis:

H2b: Prior experience increases tourist destination equity.

Literature provides consistent evidence of a significant relationship between tourist destination attachment and their willingness to stay loyal and make revisits (Alexandris et al., 2006; Yuksel et al., 2010; Prayag and Ryan, 2012). Quynh et al. (2021) found that tourist is more likely to make revisit when they are having emotions attached, and the intention to stay loyal is higher when a strong bond exists between the tourist and destination. Prayag and Ryan (2012) state that tourist is more satisfied if they have prior attachment and affection with the destination, leading to continued loyal behavior in terms of positive word of mouth and peer recommendation. Alexandris et al.'s (2006) study explains the role of service quality factors in improving destination attachment and consequently gaining loyal tourist behavior. In terms of ecotourism, loyalty is of vital importance for the existence of business and local socio-economic activity. The existing literature has discussed ecotourism loyalty in diversified dimensions. For instance, Li et al. (2021) found that post-trip satisfaction develops a sense of attachment, leading to eco-tourist destination loyalty. Similarly, Xia and Chen (2015) state that tourist pro-environmental behavior leads to emotional attachment to eco-destination. Considering these facts, the study proposes the following hypothesis:

H3: Destination attachment enhances tourism destination loyalty.

Elements of destination equity are developed from the tourist perspective. Destination equity has a significant relationship with visiting tourist intentions (Kladou and Kehagias, 2014). Destination equity helps the tourist to differentiate between different destinations based on their personal perception of value and experiences during the visit (Gartner, 2014). In ecotourism, the tourist perception of destination equity plays a vital role in keeping the tourist loyal to the destination. Malik et al.'s (2021) study found that green attributes of destination matter for the tourist, and tourists with favorable attitudes will show an intent to stay loyal due to higher destination brand equity. Similarly, Nella and Christou (2010) studied the role of real-time experience in product manufacturing and suggested that tasting experience can contribute strongly to destination equity. Stojanovic et al. (2017) found the effective role of social media in developing higher destination equity. The study found that how tourist discusses the experience of eco-destination on social media leads to better awareness of peers, thus leading to destination equity. So, the study proposes the following hypothesis:

H4: Destination equity enhances tourism destination loyalty.

Joseph and Gilmore (1998) state that tourist experience gets stored in long-term memory. The experience that tourist has gained during interaction with the destination push them to recommend, develop positive word of mouth, and revisit a specific destination (Malik et al., 2021). Memory is thought to be the prime indicator of the tourist travel decision-making process, and destinations with positive experiences and emotions are more likely to be remembered and considered for the next holidays (El Haj and Miller, 2017; Kim, 2020). Not only do the positive experiences and memory contribute to the final decision, but also the negative experiences leading to negative thought process is also remembered for a long time (Kim, 2020). Considering this pivotal role of tourist memory of destination motivates to consider the moderating role between the destination attachment, destination equity, and destination loyalty. The study proposes the following hypothesis:

H5a: Destination memory improves the association between destination attachment and destination loyalty.

H5b: Destination memory improves destination equity and destination loyalty.

Recent studies show that destination attachment and destination equity play a mediating role between the behavioral antecedents and tourist intentions (Prayag and Ryan, 2012; Chi et al., 2020). Nasyat et al. (2020) used the destination attachment between the destination attractiveness and visit intentions. This study considers destination attachment as a mediating construct between perceived value, experience, and destination loyalty. Similarly, Liu et al. (2015) studied the mediating role of brand equity between the consumer intention to visit the museum and allied behavioral outcomes. This study considers the mediating role of brand equity between the perceived value, experience, and destination loyalty. So, the study proposes the final two hypotheses as follows:

H6a. Destination attachment mediates the relationship between perceived value and destination loyalty.

H6b. Destination attachment mediates the relationship between perceived benefits and destination loyalty.

H6c. Destination equity mediates the relationship between perceived value and destination loyalty.

H6d. Destination equity mediates the relationship between perceived benefits and destination loyalty.

Methodology

The prime objective of the present study is to evaluate the tourist intention to stay loyal to eco-destinations for the tourist decision-making process with a moderating role of destination memory and a mediating role of destination attachment and destination equity. The study is quantitative and descriptive in nature. Furthermore, the study considers the deductive approach, as the study is enacted on the existing body of literature. However, the study follows the cross-sectional approach to gather data from respondents. A questionnaire-based survey technique is adapted to attain the respondent response through online means.

Measurements

All the construct measurements are adapted from the existing body of literature that helps us to ensure the construct's reliability and validity in the current context. The construct items for perceived value are adapted from the study of Suhartanto et al. (2020a). The construct items for the tourist experience of a destination are adapted from the study of Shahijan et al. (2018). Furthermore, the construct items for the mediating variables of destination attachment and destination equity are adapted from the study of Reitsamer et al. (2016) and Baalbaki and Guzmán (2016). Moreover, the construct item for the eco-tourist destination loyalty is adapted from the study of Wu (2016), whereas, the scale items for the moderating role of destination memory are adapted from the study of Ali et al. (2014). The respondent's response is obtained with the help of a Likert seven-point scale, with "7" indicating strongly disagree and "1" indicating strongly agree.

Population and sample

The population sample of this study comprises tourists who have prior experience in visiting ecotourism destinations in China. To ensure this, the questionnaire had an opening statement asking the respondents whether they have visited an eco-tourist destination or not. The data are collected from the major cities of the country, such as Beijing, Shanghai, Guangzhou, Nanjing, Tianjin, Wuhan, and Hefei.

TABLE 1 The demographic detail of survey respondents.

Demographic analysis	Item	Total	%
Gender	Male	181	50.6
	Female	177	49.4
Age	Below 20	36	10
	21–25	125	34.91
	26–30	110	30.72
	31–35	80	22.34
	36 and above	7	2
Occupation	Students	95	26.53
	Professional	131	36.59
	Businessman	100	27.93
	Other	32	8.93
Income (RMB)	Below 50 thousand	131	36.59
	51–99 thousand	140	39.10
	100–199	29	08.10
	200+	58	16.20
Education	Graduation	152	42.45
	Masters	140	39.10
	Mphil/PhD	66	18.43

n = 358.

Before the data collection campaign, the pretesting was done and the questionnaire was handed over to 15 postgraduate experts. The minor adjustments were made according to the recommendations from experts. Considering the COVID-19 protocols, the data were collected through the online circulation of questionnaires (www.wjx.cn). The survey respondents were assured that the given information would be kept secret and used for research purposes only. Through wjx, 58 responses were attained, and all were found to be fit for further processing. Table 1 presents the demographic details of the survey respondents.

Table 1 presents a summary of the respondent profile. The table shows that out of 358 respondents, 181 are male respondents (50.6%) and 177 are female respondents (49.4%). Furthermore, the respondents are segmented on the basis of age group as follows: 20, 21–25, 26–30, 31–35, and 36 and above years with a percentage of 10, 34.91, 30.72, 22.34, and 2%, respectively. Similarly, respondents are divided into four occupational categories: students, professionals, businessmen, and others with percentages of 53, 36.59, 27.93, and 8.93%, respectively. On the basis of income, 36.59% earn below 50,000 RMB, 39.10% earn between 51,000 and 99,000 RMB, 8.10% earn between 100,000 and 199,000 RMB, and only 16.20% earn more than 200,000 RMB a year. Finally, respondents are classified based on their educational qualification as graduation, master's, and MPhil/Ph.D. with a percentage of 42.45, 39.10, and 18.43%,

TABLE 2 Construct items, factor loading, AVE, Cronbach's alpha, CR, R^2, and Q^2 values are presented.

Construct items		VIF	Loading	α	AVE	CR	R^2	Q^2
Perceived value								
PV1	The Eco destination has good value for money.	1.448	0.831	0811	0.635	0.874		
PV2	The eco-destination fee is reasonable.	1.663	0.778					
PV3	The eco-destination makes me accepted by others.	1.533	0.770					
PV4	The eco-destination makes me happy.	1.771	0.808					
Experience								
EX1	Eco destination experience was stimulating	1.881	0.779	0.842	0.612	0.887		
EX2	Eco destination experience was exciting	1.883	0.776					
EX3	Eco destination experience was enjoyable	1.642	0.790					
EX4	Eco destination experience was interesting	1.813	0.845					
Destination attachment								
DA1	Eco destination is the best place for what I like to do on holidays	1.773	0.684	0.704	0.528	0.816	0.518	0.256
DA2	I am very attached to Eco destination	2.059	0.746					
DA3	Holidaying in Eco destination means a lot to me.	2.991	0.652					
DA4	No other place can provide the same holiday experience as Eco destination.	1.987	0.814					
Destination equity								
DE1	Eco destination is an environmentally safe destination.	1.169	0.698	0.729	0.509	0.774	0.479	0.217
DE2	Eco destination is an environmentally responsible destination.	1.431	0.840					
DE3	Eco destination is a sustainable destination.	1.386	0.860					
DE4	Eco destination is a healthy destination.	1.602	0.649					
Destination loyalty								
DL1	I would recommend others to visit Eco destination.	1.987	0.789	0.758	0.674	0.861	0.569	0.374
DL2	I will visit Eco destination in the future	2.159	0.841					
DL3	Eco destination is my first choice among destinations	1.194	0.831					
Destination memory								
DM1	I have beautiful memories of this visit to Eco destination.	2.159	0.839	0.813	0.729	0.889		
DM2	I won't forget my experience visiting an Eco destination	2.151	0.822					
DM3	I will remember many positive things about Eco's destination visit.	1.500	0.677					

respectively. The rest of the demographic details are given in Table 1.

Results

To study the structural model of the study, structural equation modeling (SEM) is implied through the partial least method (PLS). The SmartPLS is the second-generation software that is used to run the measurement model and structural model simultaneously and estimate the regression and component factors together (Hair et al., 2010). The SmartPLS-based SEM is preferred over CB-SEM, as the software is empowered to run regression analyses along with the ability to run complex models having multiple variables (Hair et al., 2010). In SEM, the study model is tested through measures known as the measurement model (reliability, convergent validity, and discriminant validity), and the second procedure checks the interrelationship between the variables known as the structural model (Hair et al., 2010).

The study engages the SmartPLS 3.2.8 version for data analysis.

Measurement model

Social science studies have to ensure the construct's reliability and validity. The current study adopts the set of

TABLE 3 The discriminant validity.

	DA	DE	DL	DM	EX	PV
Destination attachment (DA)	**0.727**					
Destination equity (DE)	0.807	**0.686**				
Destination loyalty (DL)	0.662	0.684	**0.821**			
Destination memory (DM)	0.622	0.715	0.672	**0.854**		
Experience (EX)	0.656	0.571	0.634	0.565	**0.782**	
Perceived value (PV)	0.665	0.676	0.748	0.714	0.683	**0.797**

HTMT ratio in bold less than 1 is acceptable criterion (Henseler et al., 2014).

necessary measures, such as internal consistency, convergent validity, and discriminant validity, to ensure this. First, the study measures Cronbach's alpha (α), factor loading, composite reliability (CR), and average variance extracted (AVE). The results show that all the values are above the threshold levels of factor loading (0.7), CR (0.5), and α (0.6) (Hair et al., 2010; Hair, 2016). The results of Cronbach's alpha, factor loading, composite reliability and average variance extracted are given in Table 1. Furthermore, the study checks the discriminant validity to verify the internal variance between the convergent validity (Henseler et al., 2014). The statistical results show satisfactory findings as given in Table 3. The results exhibit valid discriminant validity.

HTMT criterion

The third way used in this study to check the discriminant validity is the heterotrait–monotrait ratio of correlations (HTMT). The threshold value is 0.9 to ensure suitable discriminant validity (Henseler et al., 2014). The outcome depicts that all the values are below the cut-off value.

Collinearity statistics

Collinearity posits that a predictor variable can predict another variable in multiple regression models. This happens due to the correlation measured through the variance inflation factors (VIF). The cut-off value of VIF ranges from 3.3. to 10 (Schlittgen et al., 2016). The VIF value for this study ranges from 1.014 to 2.991, which is within the cut-off value. So, we can claim that this study does not have a multicollinearity issue.

Common method variance

Common method variance is a vital concern when data are collected from a single source. This study performs HTMT and VIF tests to verify its existence. Besides these tests, the study performed the Harman single test via exploratory factor analysis through SPSS software. This process categorizes the all-construct items into six subgroups. The first factor explains only 23.80% of variance which is far less than the maximum point value of 40%. Furthermore, the study compares and evaluates the six-factor research model with the help of a single-factor and two-factor model with the SEM, where each factor has three variables and informants that deliver the data to these variables. The six-factor model results (X^2 = 1,255.51, df = 768) in a better fit then the single-factor model (X^2 = 4,821.35, df = 265) and the two-factor model (X^2 = 8,401, df = 813). Furthermore, the study uses the marker variable, the one that is not related to this study or any of the variables of the current study (Williams et al., 2010). The study outcome shows that the interrelationships between the latent variables are not influenced by the CMV. So, this study does not have any issues with CMV (Siemsen et al., 2009).

Structural model

The structural model is used to check the paths between the constructs and their allied influence. This study has a theoretical framework, as given in Figure 1, as the two-step model assessment was done through SmartPLS. Structural equational modeling is done through the collinearity and path significance coefficient.

Structural model and hypotheses testing

The study uses a structural path coefficient to measure the SEM with the help of SmartPLS. The path significance is cross-verified through the bootstrapping technique. Furthermore, we measure the R-square value along with the path analysis. The SmartPLS can predict around 5,000 sample sizes simultaneously. The coefficient of confidential internal is measured at 95% or t > 1.96 with the help of two-tailed tests (Schlittgen et al., 2016).

The coefficient of determination (R^2) represents the proportion of variation in the dependent variable. The value of R^2 > 0.2 is a suitable and reliable outcome (Henseler et al., 2009). The R^2 values for the current study are above the cut-off value of 0.2 (Urbach and Ahlemann, 2010). For destination attachment (R^2 = 0.518), results show that 51.8% of the variation in destination attachment is caused by the perceived value and experience. A value of R^2 = 0.479 for destination equity means that 47.9% of the variation in destination equity is caused by the perceived value and experience. A value of R^2 = 0.569 for destination loyalty means that 56.9% of the variation in destination loyalty is caused by the tourist destination attachment and destination equity. Figure 2 presents the R^2 values of the current study.

The outcome shows that perceived value contributes positively to destination attachment (β = 0.407, p < 0.001) and destination equity (β = 0.0.536, < 0.001). Hence, H1a and H1b are supported. Moreover, experience also contributes positively to the destination attachment (β = 0.377, p < 0.001) and

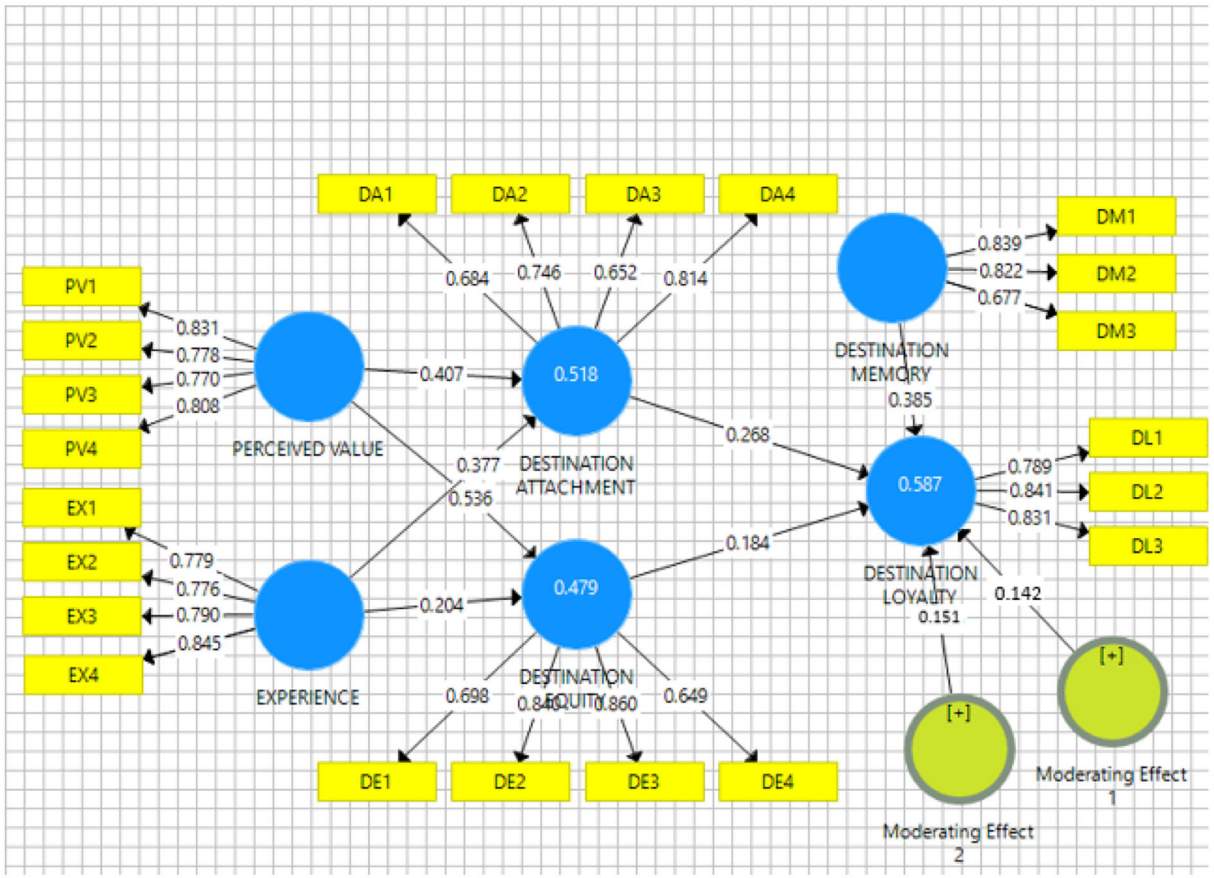

FIGURE 2
The path coefficients of the structural model are presented.

destination equity ($\beta = 0.204$, $p < 0.001$). So, H2a and H2b are also supported. Furthermore, the results show that destination attachment positively contributes to eco-tourist destination loyalty ($\beta = 0.268$, $p < 0.001$); therefore, H3 is supported. In addition, destination equity also contributes positively to eco-tourist destination loyalty ($\beta = 0.184$, $p < 0.001$). Hence, H4 is also supported. Table 4 presents the structural path analysis results along with the appropriate significance level.

Blindfolding

The blindfolding procedure measures the relevance between the exogenous variables to predict the structure's performance. It is just a reuse of the said procedure (Mikalef et al., 2017). Blindfolding is a mix of function fitting and cross-validation. This technique measures the constructability to predict the relevance by observing the change in criterion estimates (Q^2) (Hair et al., 2012). The results of Stone-Geisser's blindfolding show that destination attachment ($Q^2 = 0.256$), destination equity ($Q^2 = 0.217$), and ecotourism destination loyalty ($Q^2 = 0.374$) are acceptable, and all the constructs have suitable predictive relevance.

Moderation

The hypotheses H5a and H5b are about the moderating role of destination memories. The results show that destination memory moderates the relationship between destination attachment and destination loyalty. Rather, destination loyalty strengthens the positive relationship between destination attachment and destination loyalty ($\beta = 0.142$, $p < 0.05$). Furthermore, destination memory also moderates the relationship between destination equity and destination loyalty. The results exhibit that destination memory strengthens the positive relationship between destination equity and destination loyalty. So, H5a and H5b are supported. Furthermore, Figure 3 presents the graphical interpretation of the moderating relationship.

TABLE 4 Summary of structural path model results.

S.No.	Hyp.	Relation	Sample mean (M)	Standard deviation (STDEV)	*T*-Test (|O/STDEV|)	*P*	Outcome
1	H1a	PV-> DA	0.407	0.046	8.823	0.001	Supported
2	H1b	PV-> DE	0.536	0.040	13.439	0.001	Supported
3	H2a	EX->DA	0.377	0.042	9.075	0.001	Supported
4	H2b	EX->DE	0.204	0.043	4.696	0.001	Supported
5	H3	DA->DL	0.268	0.053	4.921	0.001	Supported
6	H4	DE->DL	0.184	0.061	2.881	0.001	Supported

PV, perceived value; EX, experience; DA, destination attachment; DE, destination equity; DL, destination loyalty; DM, destination memory, Hyp, hypothesis.

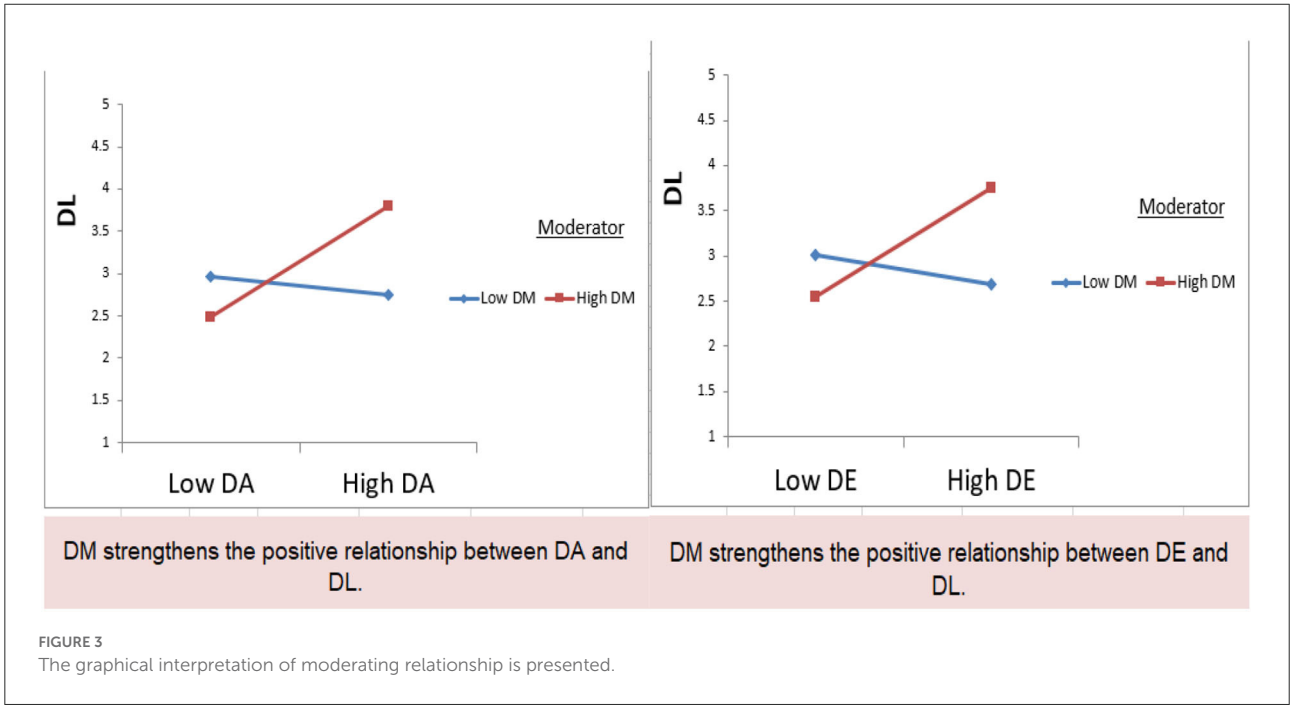

FIGURE 3
The graphical interpretation of moderating relationship is presented.

Mediation

This study shows the mediating role of destination attachment and destination equity between the perceived value, experience, and destination loyalty. The study offers four mediating hypotheses (H6a, H6b, H6c, and H6d). The mediation analysis is done with the help of variance accounted for (VAF). VAF is done by dividing the indirect effect by the total effect and multiplying it by 100 to measure the mediation effect (Hair et al., 2013). The total effect is measured by adding the direct and indirect path coefficients with the mediator and the addition of the mediator. We estimate the partial, no, or full mediation based on the criterion of a previous study (Hair et al., 2013). The mediation relationship is considered partially mediating between 20% and 80%. When average is more than 80% its fully mediating relationship (Hair et al., 2013). The mediating outcome of the study exhibits that all the mediating hypotheses partially mediate. This further enhances the credibility of our outcome. The mediation output is given in Table 5.

Discussion

The contribution of tourist loyalty to the success, progress, and prosperity of an eco-tourist destination is well-established in the literature. Therefore, investigating the destination loyalty antecedents and consequent behavioral response is of vital importance for academics and managers (Ali et al., 2014). A gap exists in the literature regarding the behavioral antecedents of the eco-tourist and their intention to stay loyal to ecotourism destinations (Quoquab et al., 2020). Although the literature provides ample evidence of ecotourism visitation intention, the concept of tourist loyalty to eco-destination is embedded in the tourism industry, which makes it essential to test the concept with different frameworks (Ali et al.,

TABLE 5 Mediation analysis.

Mediation outcome of perceived value and experience

Hyp.	Regression path	Direct effect	Indirect effect	Total effect	Variance accounted for (VAF)	Mediation results	Decision
H6a	PV->DA->DL	0.207	0.109	0.407	0.109/0.407*100 =26.78%	Partial mediation	Supported
H6b	PV->DE->DL	0.207	0.121	0.536	0.121/0.536*100 =22.57%	Partial mediation	Supported
H6c	EX->DA->DL	0.138	0.097	0.377	0.097/0.377*100 =25.72%	Partial mediation	Supported
H6d	EX->DE->DL	0.138	0.101	0.204	0.124/0.264*100 =49.50%	Partial mediation	Supported

PV, perceived value; EX, experience; DA, destination attachment; DE, destination equity; DL, destination loyalty; DM, destination memory; Hyp, hypothesis.

2014). The objective of the current study is to evaluate the influence of destination attachment and destination equity ability in developing destination loyalty in light of perceived value and experience. Furthermore, the study evaluates the mediating role of destination attachment and destination equity between the perceived value, experience, and destination loyalty. Moreover, the study offers the moderating role of destination memories between destination attachment, destination equity, and destination loyalty. To achieve these objectives, the study enacted a model from the existing literature in light of TCT to study tourist behavioral intentions.

The statistical results found a positive and significant relationship between perceived value, destination attachment, and destination equity, which supports H1a and H1b. The results are consistent with the previous findings of Ahn and Kwon (2020). The study of Ahn and Kwon (2020) found that green hotels' value perception positively contributes to the revisit intention of guests. Furthermore, they claim that perceived value contributes to the positive and negative emotions that ultimately develop the revisit intention. Moreover, perceived value makes a significant contribution to the dependents, as the same time factor loading (0.831) reveals that value for money is the prominent factor in shaping positive destination attachment and destination equity in comparison to the other construct items.

However, this study outcome shows that perceived value contributes to destination attachment and destination equity that lead to the consequent behavioral response in terms of loyalty to the eco-tourist destination. This study outcome highlights the important role of perceived value and its ability to influence the internal mental state of tourists. This outcome is further validated with the mediation role of destination attachment and destination equity between the perceived value and tourist destination loyalty, thus supporting H6a and H6b. The mediation findings are indirectly in line with the prior studies of Nasyat et al. (2020) who found the mediating role of destination attachment between user satisfaction and destination loyalty. Furthermore, destination equity (Kumail et al., 2021) mediates the relationship between brand authenticity and destination visit intentions. This alignment with the existing literature connects the current study with prior literature and validates the findings of the study.

In the same manner, the tourist experience positively contributes to developing destination attachment and destination equity, supporting H2a and H2b. These findings are in line with the prior literature. The study of Cifci (2021) found that memorable trip memories lead to greater post-visit satisfaction and destination attachment. Similarly, the study of Quadri-Felitti and Fiore (2013) shows the change of mind and consumption intention of wine tourists after experiencing the production facilities. Kladou and Kehagias (2014) highlight the vital contribution of brand equity in developing the brand image and brand attachment. Furthermore, in terms of eco-destination, a previous study (Gartner, 2014) found a strong contribution of brand equity in developing tourist intentions to visit the eco-destinations. This extends the destination equity literature and finds that the user experience of prior visitation to eco-destination is crucial in the decision-making process. In this context, this study's findings show that prior experience of tourists to eco-destination contributes positively to destination attachment and destination equity. The findings of this study are cross-checked through the mediating role of destination attachment and destination equity between the experience and destination loyalty to ecotourism destination, thus supporting H6c and H6d. Furthermore, the dominant factor in tourist experience is the tourist interest in the destination with a prominent factor loading value of 0.845. This outcome will help the policy-makers to make the tourist eco-experience interesting in terms of learning, excitement, and happiness.

Further, the tourist attachment to the destination and positive perception of the brand equity lead to ecotourism destination loyalty, thus supporting H3 and H4. Destination attachment makes a positive and significant contribution to destination loyalty in the context of ecotourism, and these findings are directly in line with the previous literature (Reitsamer et al., 2016). The factor loading reveals that the prominent factor that contributes to the destination attachment and its consequent result in terms of loyalty is the holiday experience (0.814) at the destination. These findings are in line with the prior literature that exhibits a strong

relationship between tourist holiday experience and revisit intention (Suhartanto et al., 2021).

Similarly, the perception of destination equity makes a positive and significant contribution as observed in a prior study (Gartner, 2014). The construct has four adopted items from the prior literature, and the sustainability of eco-destination (0.860) is the prime contributor. The prior literature shows that brand equity or destination equity is due to higher social recognition, emotions, or cognitive attachment (Dwivedi et al., 2019). The present study extends the equity literature in terms of ecotourism and suggests that policy-makers must highlight the sustainable conception of ecotourism. This study extends the destination attachment and equity findings to the ecotourism context.

In the end, the moderating role of memories of prior interaction with the tourist destination is important to motivate the tourist to stay loyal to a specific destination. The destination memory moderates between the destination attachment and destination equity. This extends the existing body of literature in terms of destination memory and its important role in the decision-making process. These findings support the argument of El Haj and Miller (2017), who find that memory and social cognition have a direct relationship. The tourist memory plays an important role in processing the information, remembering, and using the information to make future decisions. This finding is in line with the current study, which shows the vital role of destination memory and its ability to influence tourist decision-making in terms of eco-destination loyalty. However, among the construct items, the beautiful experience (0.876) of destination is the leading factor, closely followed by the experience (0.869).

Implications

Just like other studies, this study has some vital theoretical and practical implications for both academics and practitioners. The following section presents the theoretical and practical implications separately.

Theoretical implications

First, the present study makes an important contribution to the theory by introducing a robust framework to examine tourist loyalty to the eco-destination. Furthermore, this framework is embedded in the tourist consumption theory. This study extends the concept of TCT into the eco-tourist destination loyalty literature. The theory claims that tourist motivation for a destination is influenced by a diversified set of factors (McIntyre, 2007; Suhartanto et al., 2020b). This study finds that destination attachment and destination equity are prime antecedents of tourist loyalty to eco-destinations in light of perceived value and experience.

Second, the empirical framework of the study presents the important relationships in terms of mediating the role of destination attachment and destination equity. The study results show that destination attachment and destination equity mediate the relationship between the perceived value, experience, and ecotourism destination loyalty. This embeds the current study with the existing body of literature (Suhartanto et al., 2020b; Cifci, 2021).

Third, this study extends the existing body of literature by introducing the moderating role of destination memory. The results exhibit that destination memory strengthens the already existing relationship between destination attachment, destination equity, and ecotourism destination loyalty. Memory is the vital ingredient in revisiting and staying loyal to the eco-destination (El Haj and Miller, 2017).

Fourth, this study is vital considering the Chinese data, as China is one of the leading countries in terms of natural resorts covering 14.7% of the country's land or 147 million hectares (Daxueconsulting, 2016). The present study will act as a motivational tool for further exploration to understand the Chinese tourist loyalty toward eco-destinations.

Managerial implications

Despite the theoretical implications, this study has some suggestions for practicing managers and business owners working in the tourist industry, particularly the ecotourism destination business development sector.

First, the tourist perception of value in terms of monetary, social, and service perspective is an important factor in developing the emotions leading to destination attachment and enhancing destination equity. The ecotourism development managers must focus on enhancing the value perception of eco-destination to gain vital tourist loyalty to keep the sector financially sound.

Second, tourist experience in terms of prior interaction also helps the tourists to make future considerations of visiting a particular type of destination. The public and private institutions involved in ecotourism management must work together in a quest to make the eco-destination experience socially and financially acceptable to the tourists.

Third, destination attachment and destination equity play a decisive role in framing ecotourism destination loyalty. In this context, business managers must focus on enhancing the destination followers by offering improved services, sightseeing, nighttime activities, and other facilities to improve the destination experience and value perception to gain a larger and stronger loyal tourist base.

Forth, destination memories make a vital contribution to enhancing the relationship strength between destination attachment and destination equity. Furthermore, memories that are much recognized and appreciated by society are remembered for a longer period of time and make better contributions to future decision-making processes (El Haj and Miller, 2017). The business managers can enhance the social coverage of

tourist participation in ecotourism by sharing the key moments and destinations on social media during the visit to eco-destination.

Conclusion

The study highlights the important antecedents of destination attachment and destination equity in light of the perceived value and tourist experience, eventually improving tourist loyalty toward the eco-destinations. Furthermore, the study offers the mediating role of destination equity and destination attachment between the perceived value, experience, and eco-destination loyalty, along with the moderating role of destination memory. The study uses SmartPLS to support the empirical findings. Moreover, the study makes theoretical and practical implications for practitioners and theory.

Limitations

This study is quantitative research in nature. This study is limited to the possibilities of generalization of the findings to the ecotourism destinations of China only. So, the scope of the study is to be augmented with further datasets of different regions and destinations to confirm the findings of the framework. Furthermore, the study lacks the qualitative approach, to obtain an in-depth understanding of eco-destination loyalty. Hence, it is suggested that more qualitative research intervention should be done with the help of focus group discussions, interviews, observations, and content analysis. Moreover, future studies can opt for more psychological characteristics, such as emotional involvement with environmental stability, to study the consumer motivation toward eco-destination loyalty.

Ethical declaration: The ethical clearance was granted by the Tourism College, Inner Mongolia Normal University, Hohhot010022, Inner Mongolia, China, and informed consent was obtained from the participants prior to the study.

Data availability statement

The raw data supporting the conclusions 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 Ethical clearance granted by the Tourism College, Inner Mongolia Normal University, Hohhot010022, Inner Mongolia, China. The patients/participants provided their written informed consent to participate in this study.

Author contributions

MM is responsible to have the initial draft, data collection, and conceptualization. MN helped in data collection and analysis. MS designed research, revised draft, and analysis. 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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CONCEPTUAL ANALYSIS
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You Only Live Once! Understanding Indonesian and Taiwan Travel Intention During COVID-19 Pandemic

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Indonesia and Taiwan are two countries that have been affected by the tourism sector, although with different policies to control the COVID-19 pandemic. Taiwan is known as a country with pandemic policies that have been recognized around the world, although it has a high vulnerability to experiencing a high number of infections due to its geographical and political position close to the source of the pandemic. On the other hand, Indonesia is known for its controversial pandemic management and control policies. Indonesia and Taiwan have carried out various public policies to increase tourism activities during the pandemic, such as accelerating vaccination in tourist areas and for tourists, as well as various other stimuli to stimulate tourism. The debate over vaccination raises questions about attitudes toward vaccines in society. The lack of clarity on psychosocial and political conditions creates confusion among the public in perceiving the COVID-19 pandemic and in perceiving the risks of traveling. This can affect people's attitudes toward vaccines, travel anxiety, and travel intentions. This study aims to analyze traveling intention due to the COVID-19 pandemic through COVID-19 Risk Perception, Fear of COVID-19, Risk Perception to Travel, Vaccine Attitude, and Fear to Travel. The research in Indonesia involved 358 respondents while the research in Taiwan involved 283 respondents. The research analysis used multiple regression and simple linear regression to ascertain the role of each association. The results showed that the travel intention of Indonesian tourists was formed from the direct and indirect roles of covid 19 risk perception, fear of covid 19, risk perception to travel, vaccine attitude, and fear to travel. Meanwhile, the travel intention of Taiwanese tourists is not influenced by a fear of covid. The travel intention model of Taiwanese tourists is formed from the direct and indirect roles of covid 19 risk perception, risk perception to travel, vaccine attitude, and fear to travel. This research contributes to tourism risk management in the face of pandemics, particularly in terms of government policies that can reduce tourism anxiety to travel during disasters.

Keywords: COVID-19 risk perception, fear of COVID-19, fear to travel, Indonesia, risk perception to travel, Taiwan vaccine attitude

INTRODUCTION

The COVID-19 pandemic has hit many sectors, one of which is the tourism sector. Several countries that rely on foreign exchange from the tourism industry have experienced a slump due to the pandemic. This sudden situation makes people unprepared to deal with it both physically and psychologically (Sabir and Phil, 2016). The COVID-19 pandemic has brought people into situations in which they experience psychological problems such as fear and anxiety about contracting the virus (Fitria, 2020; Muslim, 2020). Research conducted by Le and Nguyen (2021), found that the COVID-19 pandemic increases the anxiety, worry, and feelings of discomfort felt by individuals, which results in avoiding people (Taylor, 2019). Fear is one of the hallmarks of infectious diseases (Ahorsu et al., 2020), and has the potential to be a stressor that affects an individual's life (Muslim, 2020).

The decline in mental wellbeing during a pandemic due to feeling fear as a result of risk perception of COVID-19. In regard to tourism, Luo and Lam (2020) conducted research in Hong Kong which found that people were aware of safety when traveling, therefore fear of COVID-19 can affect travel anxiety and risk. Additionally, risk perception in tourism can be associated with the evaluation of the situation regarding the risk in deciding on a trip (traveling), buying or consuming products, as well as travel experiences (Reisinger and Mavondo, 2005), relating to the possibility of the action of a hazard that can affect travel decisions (Chew and Jahari, 2014). The findings of a study by Neuburger and Egger (2021) showed a rapid rise in COVID-19 risk perception, travel risk perception, and travel behavior. However, its perception could vary between countries, as Dryhurst et al. (2020) revealed that the perception of COVID-19 risk was consistently correlated with several experiential and socio-cultural factors in various countries.

According to Artuger (2015) and Wang et al. (2021), travel and tourism are more vulnerable to risk, therefore, travelers are more sensitive to safety issues and risks. Thus, it was suggested that tourists must postpone or cancel their plans to anticipate risks during the pandemic. Moreover, risk perception among tourist has four dimensions, namely financial risk, time risk, social-psychological risk, and health risk (Fauzan, 2020; Utama and Setiawan, 2020). In terms of tourist mobility, the country situations should also be considered because each country's policy in handling the pandemic differ. For instances, Taiwan is an island with a population of 23 million people, and it is known around the world for its successful response to the COVID-19 outbreak. In contrast, Indonesia, a country with more than a thousand islands, is attempting to rebuild its economy while dealing with the pandemic by implementing a number of controversial policies.

During the pandemic's containment attempts in Indonesia, a discrepancy arose with the Minister of Tourism and Creative Economy for the 2020 period, Sandiaga Uno, when he issued an innovation called Work from Destination. This innovation is a strategy for increasing revenue in the tourism industry by encouraging workers to work in tourist areas (Tempo, 2021). The arrival of employment from the destination can encourage people who have already traveled to continue traveling, or encourage people who have not traveled to travel, which contradicts the attempts to mitigate COVID-19 by decreasing social mobilizations. Similarly, COVID-19 spokeswoman Achmad Yurianto warned the public not to travel unless it is necessary, as travel increases the danger of coronavirus transmission. Moreover, the source of transmission from those who have no symptoms is difficult to detect, thus confirmed positive cases continue to grow (Coverage 6, 2020). In addition, the lack of public awareness is one of the factors for the rising positive cases (Yatimah et al., 2020).

While public awareness helps to prevent the spread of infectious diseases, many people in Indonesia continue to travel during the pandemic. The number of domestic tourists in Indonesia has surged by up to 96 percent during the pandemic, according to Traveloka founder Albert Zhang (Business News, 2020). For example, domestic visitors in Jakarta, Yogyakarta, and Bali also experienced an increase (Cahya, 2020; Damarjati, 2020; Saputra, 2020; Sugiari, 2021). In addition, in Indonesia some individuals comply with health protocols, but some ignore government regulations and mingle in public places (Cori et al., 2020). Moreover, Setiyawati (2020) stated that there are still many people who violate health protocols when doing activities outside the home as a form of despair about their conditions or situations because the impact of the COVID-19 pandemic has been so great on their lives (Damarjati, 2020; Sugiari, 2021).

Conversely, Taiwan has successfully managed the epidemic because of early implementation of strong border controls and a very efficient tracing mechanism. The country has reported 18,041 cases to date out of a population of 23.5 million (Nugrahani, 2022). Closing the departure or entry gates from the beginning of the pandemic prevented an increase in COVID-19 cases, as well as access to travel or cross-country travel. Furthermore, when positive cases occur, extremely tight prohibitions are implemented in public transportations, restaurants, schools, and other areas. Taiwanese stakeholders, including institutions and individuals, follow the COVID-19 health protocol very rigorously, for instance fines are actually enforced to those who violate.

One of the measures to overcome COVID-19 is the provision of vaccines. In Indonesia, though the method has resulted in various reactions and still has pros and cons, this vaccine is expected to be given to all Indonesian people with determined priority stages, health workers, community leaders, teachers, ministry/institutional apparatus, vulnerable communities, ultimately the community, and other economic actors (Minister of Health of the Republic of Indonesia, 2021). As it could reduce COVID-19 risk, vaccination is also a new hope for the tourism industry, which has been sluggish for more than a year. Therefore, some areas with a focus on foreign exchange from the tourism industry such as Bali are preparing to vaccinate residents and workers in the tourism sector.

While in Taiwan, the government has intensively forced vaccination, and has been generating vaccines for locals since the outbreak began. Although the conflict with China had prevented Taiwan from getting the vaccine at the beginning of the Pandemic, the Taiwanese government has so far succeeded in

TABLE 1 | Differences in handling the COVID-19 pandemic in Taiwan and Indonesia.

Policy	Taiwan	Indonesia
Lockdown	Taiwan has never imposed a strict lockdown. The government also does not impose very strict restrictions on citizens' freedom.	Indonesia rejects the term lockdown and replaces it with various terms such as regional quarantine, PSBB, MIkro PPKM, Macro PPKM, and others.
Pandemic response	Taiwan handling focus on speed Taiwanese authorities began screening passengers on direct flights from Wuhan, where the virus was first identified.	Unclear between Health and economy There is no closure of Indonesia's entry and exit for several sectors such as foreign workers, diplomats and others. Flights from the country of origin of the virus are also not closed.
First Case Confirmation	Taiwan confirms first case of coronavirus on January 21	Indonesia only admitted the first case in March, the first 3 months (January to March) all state officials tried to deny the fact that the pandemic could enter Indonesia.
Close the entrance	Ban residents from Wuhan from visiting and entering Taiwan. All passengers arriving from mainland China, Hong Kong and Macau are required to undergo screening. Until March, Taiwan banned all foreign nationals from entering its territory, except for diplomats and those with special visas.	Entrances are open, closures are issued in policy but inflows at airports are still open.
Increase Outbreak Management Capacity	activate the Central Epidemic Command Center, which was built after SARS, for inter-ministerial coordination. The government has also increased the production of masks and protective equipment to ensure a stable domestic supply of PPE. Taiwan has firmly even banned the export of masks within weeks. This is to ensure that domestic stock is maintained.	Establishing a Task Force for Handling the Acceleration of COVID-19 (GTPP)
Contact Tracking and Quarantine	The government is also investing in rapid and effective mass testing and contact tracing. They are also carrying out coronavirus testing across the country, including re-testing people who previously had a history of pneumonia of unknown cause. Very careful contact tracing, and very strict close contact quarantine is the best way to contain COVID-19	Low contact tracing, low Covid test
information transparency	The Taiwanese government has always provided open and transparent information regarding the COVID-19 pandemic. The government also announced the latest pandemic situation and the source of each case, contacts, and the follow-up process (Pristiandaru, 2020).	Data is confusing, some cases show data that is not recorded
Smart app	Taiwan's Central Pandemic Command Headquarters uses mobile phones to track all passengers entering Taiwan and strictly enforces 14-day quarantine measures. In addition, the many applications that were developed for the public to check the stock of masks and alert the crowd have managed to control the pandemic.	No smart apps yet
sanction	Anyone who spreads disinformation about the virus is also subject to punishment.	Punishment for spreading hoaxes of Covid

providing more than 70% of people in Taiwan with two doses of the vaccine, and currently, the government is launching booster injections, so far around 10% of the population has received the third injection (Nugrahani, 2022). The Taiwan Epidemic Command Center (CEEC) recommended that local governments provide each individual who wishes to be vaccinated a gift of 200 Taiwan dollars (about 102 thousand rupiahs) to optimize vaccine coverage and encourage Taiwanese citizens' enthusiasm in COVID-19 vaccination (Erina, 2022).

The way Indonesia and Taiwan handled the COVID-19 outbreak has become a fascinating case study in travel behavior as can be seen **Table 1**. It is appealing in comprehending the theoretical model of travel intentions between Indonesia and Taiwan, as the protective activities taken after recognizing a high health risk are determined by the mitigation techniques available to the individual. These two countries offered different techniques, for example the Indonesian government released several tourism stimuli however Taiwan's government executed a lockdown system. These two Asian countries, which have distinct characteristics in terms of geography and policy system, are worth investigation in relation to tourist concerns during the COVID-19 period, with a focus on health risks. Individual decision-making is influenced significantly by risk perceptions, therefore, we examine the differences between these countries by addressing questions such as whether COVID-19 risk perception, fear of COVID 19, risk perception to travel, vaccine attitude, and fear to travel as independent variables contribute to travel intention as dependent variables. We take into account that these five elements could influence travel intensity since different travel patterns generate different types of individual

behavior, no research has been done to compare the tourist intensity between countries during COVID-19 pandemic. The present paper is divided into five sections, Section COVID-19 Risk Perception provides the data and methodology. Section Results describes the different test results of our hypothesis on how COVID-19 risk perception scenario contributes to travel intentions. Section Discussion presents the interpretation, rationale, and application of our findings to demonstrate the similarities and differences between Indonesian and Taiwanese. Last, Section Conclusion, Limitation, and Future Direction consists of conclusions, limitations, and recommendations for the future directions.

COVID-19 RISK PERCEPTION

The perceived risk of COVID-19 is defined as a measure of how threatened an individual feels about a health problem, the ratio between the benefits of taking a particular action and the barriers to it, and a marker that alerts individuals to certain healthy behaviors. Its level is influenced by perceptions of vulnerability and seriousness. Risk perception is an important issue in today's world, where the COVID-19 pandemic has yet to be resolved. Effective risk management is not enough with only physical programs such as procurement of goods or the development of certain infrastructure, but it is necessary to pay attention to the human aspect so that there is active involvement of the community (Durst et al., 2020). Subjectivity in perceiving risk can make people not aware of the objective risks that will be faced. The term risk refers to the probability of a hazard occurring (Denney, 2005). Knowledge or markers of risk help to avoid danger. In the condition of the COVID-19 pandemic, the psychological response of anxiety or worry emerges as a marker of risk perception. In relation to our research, the perception of risk felt by tourists varies, depending on the amount of experience a person has in making a trip (Fuchs and Reichel, 2011). The higher the risk perceived by an individual, the higher the prevention efforts that will be carried out by the individual (Khosravi, 2020). For instance, the increasing number of deaths resulting from COVID-19 led the public to perceive its risk (Bavel et al., 2020). The number of threats is not necessarily balanced with anticipatory behavior, as found in cases of natural disasters or health risks. An understanding of the community's risk perception is needed, for example about the factors that influence prevention behavior.

Fear of COVID-19

Fear is an emotion found in humans that appears naturally. The fear arises due to the biochemical response as well as the individual's high emotional response. When there is a threat or danger, fear arises and warns the individual to be careful. The threat or danger can be in the form of physical or non-physical threats According to Olsson and Phelps (2007), fear is an emotion that is formed due to danger or a threatening situation. Ahorsu et al. (2020) explained that the COVID-19 pandemic and its spread caused fear, worry, and anxiety in people around the world. One of the things that characterize infectious diseases with other health conditions is fear. The fear that arises is related to the speed and medium of its spread as well as its comorbidities and mortality. In addition, psychosocial aspects related to fear are the emergence of stigma, loss, and discrimination (Pappas et al., 2009).

Fear of COVID-19 is an unpleasant emotion felt by individuals due to a threat or unusual event, in this case, a disease outbreak or epidemic. There is a fear of being infected with a virus, losing a job, losing loved ones, and various other aspects of life during the COVID-19 pandemic (Pakpour and Griffiths, 2020).

Fear to Travel

According to Adolph (2013), fear is something that happens suddenly and is felt to be dangerous or threatening. Fear can also be interpreted as an unpleasant feeling that is triggered by the perception of danger, real, or imagined. Physiologically, symptoms of fear or anxiety can take the form of sweaty palms, shaking, dizziness, or heart palpitations when individuals are faced with challenging situations. Based on phenomenology, the expressions of human behavior and emotions because of fear are different from one another (Barlow, 2002). Beck and Emery (1979) define fear as a judgment because a situation is perceived as dangerous. In addition, fear can also be interpreted as an unpleasant emotional state and is triggered by the perception of a threatening design.

Fear can occur because an individual is unable to adapt to his environment, and that fear is also caused by threats that someone can avoid and so on (Gunarsa, 2008). When there is a danger or threat to the individual, then fear will arise and warn the individual to be careful. Individual responses to the results of challenging living conditions, in general, can be in the form of shock, panic, stress, and post-traumatic stress disorder (Aydin, 2020). Nurishaq (2020) explained in his research that the COVID-19 pandemic in addition to destroying the order of life also caused various psychological disorders in the form of stress including fear and anxiety. Moerti (2020) stated that the number of positive cases of COVID-19 was increasing day by day. The increasingly high number of cases of COVID-19 transmission in Indonesia indirectly makes people afraid of contracting the virus and afraid when traveling (Gunagama et al., 2020).

Risk Perception to Travel

According to Sjöberg et al. (2004), risk perception is an individual's subjective assessment of a particular situation and how much attention the individual pays to the consequences. In addition, Mullai (2006) added that risk perception is the result of interpretation of a person's assessment of risk, whether the risk faced is still tolerable or not. Bhasin (2018) defines risk perception as uncertainty or analyzing potentials that may occur in the future. Perceived risk is a negative consequence that is anticipated by consumers regarding the situation of purchasing a product or service. In addition, risk perception can be defined as a subjective evaluation of the situation that occurs or threatens the individual. Risk is considered to be different and can affect an individual's behavior (Weinstein, 1984). Perception of Risk in tourism can be associated with the evaluation of the situation regarding the risk in deciding on a trip (traveling), buying or consuming

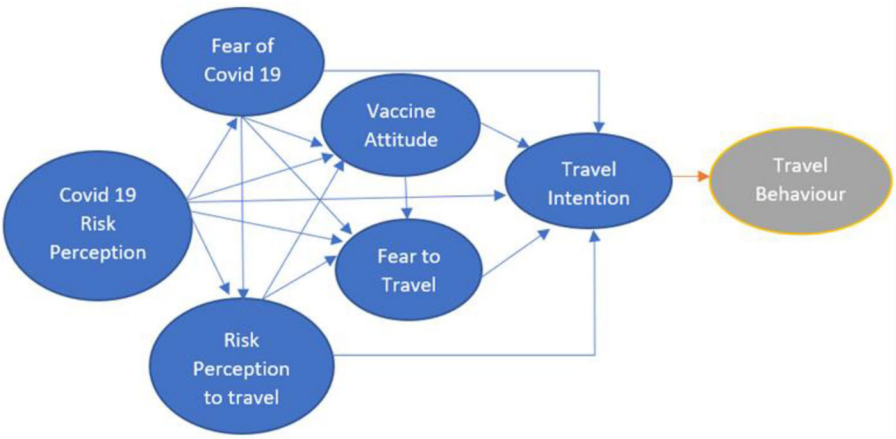

FIGURE 1 | Assumed model.

products, and travel experiences (Reisinger and Mavondo, 2005). Perception of risk in tourism is related to the possibility of the action of a hazard that can affect travel decisions (Chew and Jahari, 2014). Fuchs and Reichel (2011) suggest that tourists can experience different levels of risk, this depends on the amount of experience a person has in traveling. In addition, the experience of traveling to a certain destination not only affects the intention to visit these places but can also influence a person to avoid areas or places that he thinks are at risk.

Utama and Setiawan (2020) explained that risk perception has four dimensions including financial risk, time risk, social-psychological risk, and health risk. Financial risk is the possibility of tourists losing money or money benefits due to bad decision making. When individuals decide to travel, they have the potential to run out of money when traveling due to the economic uncertainty triggered by the COVID-19 pandemic. Time risk is the possibility that the person traveling considers their time wasted (Quintal et al., 2010). Social-psychological risk in this case is an uncomfortable feeling that arises from anticipated post-behavioral emotions such as worry, anxiety, or tension as well as an individual worries about getting a negative response from the people around them, such as humiliation, making the individual feel ashamed (Mowen and Minor, 2002). Health risk refers to the risk of contracting a disease due to COVID-19. Individuals who feel at risk of contracting a disease or virus will avoid travel to minimize the health risks that occur (Brewer and Fazekas, 2007).

Vaccine Attitude

Martin and Petrie (2017) attitudes toward vaccines are attitudes toward giving vaccines either individually or in groups. The factors that underlie a person's acceptance/rejection of vaccination are distrust of the application agency, receiving information about vaccines, distrust of crime, and vaccine safety. Zarobkiewicz et al. (2017) explain that there are differences in anti-vaccine attitudes between medical students with other non-medical students. This shows that one of the factors that cause people to have anti-vaccine attitudes is vaccine knowledge. Hornsey et al. (2018) found that the main problems with individuals who have anti-vaccine attitudes are lack of exposure to information and failure to digest information. Anti-vaccine attitudes are not only owned by less educated individuals (Larson et al., 2014). Educated individuals will tend to spend a lot of time searching for information on social media or the internet about vaccination (Jones et al., 2012).

Travel Intention

Intention is something that is involved with a person's behavior (Oliver, 1997). Meanwhile, according to Ajzen (2005) intention is an antecedent of a visible behavior. Supported by Shen et al. (2009), travel intention is an individual's readiness to enact a behavior and is considered to be directly affected by behavioral antecedents. Conner and Norman (2005) say that intention is a person's behavior representing one's decisions. As in Winarta et al. (2016) intention is an awareness that motivates a person's decision to complete a behavior. The intention is a subjective probability that a person has to perform a certain behavior (Fishbein and Ajzen, 1975).

Travel intention itself comes from the concept of "the intention," one of the dimensions in the Theory of Planned Behavior theory proposed by Fishbein and Ajzen (1975). Meanwhile, the intention concluded by Ajzen (1991) is to determine the motivational factors that can influence behavior, including an indication of how hard people try, how much effort they plan to exert to carry out the behavior. Travel intention refers to the possibility to visit a certain destination in a certain period and in the future (Whang et al., 2016).

Research Hypothesis

There is a direct or indirect partial role between COVID-19 Risk Perception, Fear of COVID-19, Risk Perception to Travel, Vaccine Attitude, and Fear of Travel on Travel Intention during the pandemic for Indonesian and Taiwanese tourists as designed in **Figure 1**.

TABLE 2 | Research scale.

Scale	Dimensions	Item	Reliability	Source
COVID-19 Risk Perception	perceived susceptibility	6	0.72	(Asefa et al., 2020)
	perceived severity	6	0.68	
Fear of Covid	Emotional fear reactions	4	0.82	(Montazeri et al., 2003; Ahmadzadeh et al., 2013; Ahorsu et al., 2020)
	Symptomatic expressions of fear	3		
Pandemic Anxiety Travel Scale (PATS)	Cognitive	2	0.93	(Zenker et al., 2021)
	Emotional	3		
	Behavioral	3		
Travel Risk Perception	Financial Risk	4	0.70	(Jun, 2020; Utama and Setiawan, 2020)
	Time Risk	3		
	Social Psychological Risk	7		
	Health Risk	5		
Vaccine Attitude (VAX)	Mistrust of vaccine benefits	3	0.94	(Martin and Petrie, 2017; Berman et al., 2020)
	Worries or unforeseen future effects	3		
	Concerns about commercial profiteering	3		
	Preference for natural immunity	3		
Travel Intention	Attitudes	9	0.84	Jehane et al., 2019
	Subjective norms	3		
	Behavioral control	2		

Participants were selected by using a purposive sampling technique, considering the determination of the sample is based on certain characteristics or criteria which are relevant to this present study. The youth criteria involved in this survey were Indonesian or Taiwanese citizens, at least 18 years of age, affected by the COVID-19 pandemic, and have had or presently have a strong urge to travel. The survey used was a Likert scale because it has several alternative answers from very positive to very negative answers where each choice has a score (Sugiyono, 2015). Respondents were given instructions to select the best answer of each statement which reflected their personal values from a list of scales or replies available on the online survey platform "google forms."

The study was conducted in Indonesia and Taiwan from September 19, 2021, to October 15, 2021, and obtained 358 Indonesian respondents and 283 Taiwanese respondents. After checking all existing responses, no errors were found in the results of the research scale. Researchers examined the descriptions of research respondents in order to describe their characteristic gender, age, area of origin, last education, and occupation.

RESULTS

The internal consistency of the questions in which Likert scale used to measure the personal report in our study was reliable, as indicated in **Table 2** by the Cronbach's alpha of the six variables were $\alpha > 0.6$.

The linearity test was carried out to determine whether or not there was a relationship between variables and whether the relationship showed a straight line or not. The linearity test was carried out by looking for linearity using the statistical program SPSS version 24. The linear assumption test for both Indonesian data and Taiwanese data showed that the linearity results were met as presented in **Table 3**.

The research was conducted using multiple and simple linear regression methods to test the proposed hypothesis. **Table 4** aims to prove the simultaneous effect of independent variables on the dependent variable. The simultaneous effect can be proven through a significant value of less than 0.05.

Based on **Table 5**, it is shown that the independent variables, namely Fear To Travel, Anti Vaccine Attitude, Covid Risk Perception, Fear Of Covid, and Risk Perception Of Travel can predict the dependent variables, namely travel intention in Indonesian tourists. **Table 5** shows that it is simultaneously proven that the variables Fear To Travel, Anti Vaccine Attitude, Covid Risk Perception, and Risk Perception To Travel can predict travel intention in Taiwanese tourists.

Table 6 is a partial test in Indonesian and Taiwanese research, proven to have a partial relationship between all independent variables such as Fear To Travel, Anti Vaccine Attitude, Covid Risk Perception, Fear Of Covid, and Risk Perception To Travel on the dependent variable, namely travel intention, and this can be seen from the sig value of less than 0.05. Meanwhile, the results of the partial test of the Taiwanese study showed that of the five dependent variables, fear of covid was not proven to form

TABLE 3 | Two-country partial linearity test results.

Association	Data		Information
	Indonesia	Taiwan	
Vaccine attitude–travel intention	0.00	0.00	linear
Covid risk perception–travel risk perception	0.00	0.00	linear
Fear to travel–travel intention	0.002	0.00	linear
Fear of covid–travel intention	0.709	-	Not Linear
Fear of covid–fear to travel	0.00	-	linear
Fear of covid–travel risk perception	0.00	-	linear
Fear of covid–covid risk perception	0.00	-	linear
Covid risk perception–vaccine attitude	0.01	0.00	linear
Covid risk perception–fear to travel	0.00	0.00	linear
Covid risk perception–travel intention	0.068	0.437	Not Linear
Travel risk perception–fear to travel	0.00	0.00	Linier
Travel risk perception–travel intention	0.00	0.00	Linier
Vaccine attitude –fear to travel	0.00	0.00	Linier
Vaccine attitude–travel risk perception	0.00	0.00	Linier
Vaccine attitude–fear of covid	0.01	-	Linier

TABLE 4 | Indonesia.

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	7,877,266	5	1,575,453	20,460	0.000[b]
	Residual	27,105.158	352	77.003		
	Total	34,982.425	357			

[a] *Dependent Variable: Travel Intention.*
[b] *Predictors: (Constant), Fear To Travel, Anti Vaccine Attitude, Covid Risk Perception, Fear Of Covid, Risk Perception To Travel.*

TABLE 5 | Taiwan.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4,848,005	4	1,212,001	15,416	0.000[b]
	Residual	21,856,787	278	78.622		
	Total	26,704.792	282			

[a] *Dependent variable: travel intention.*
[b] *Predictors: (Constant), fear to travel, vaccine attitude, risk perception Covid, risk perception travel.*

a travel intention model in Taiwan, so only four variables formed Taiwan's travel intention, namely Covid Risk Perception, Risk Perception to Travel, Anti Vaccine Attitude, and Fear to Travel.

Based on the table of results of hypothesis testing, Indonesian data shows a significance level or p-value of 0.001 <0.05 ($p = 0.001$), which means that the alternative hypothesis proposed by the researcher is accepted. The table can also explain that there is a correlation or relationship between the independent variable (X) and the dependent variable (Y) with a relationship value of 0.225. The results of the coefficient of determination can also show that all of the independent variables, namely Fear To Travel,

TABLE 6 | Partial test of the independent variable on the dependent variable.

		B		Sig	
		Indonesia	Taiwan	Indonesia	Taiwan
1	(Constant)	20.147	27,876	0.000	0.000
	Covid risk perception	0.202	0.044	0.014	0.540
	Fear of Covid	0.186		0.041	
	Risk perception to travel	−0.106	−0.079	0.010	0.079
	Anti vaccine attitude	0.439	363	0.000	0.000
	Fear to travel	−0.239	−0.403	0.003	0.000

Dependent variable: travel intention.

Anti Vaccine Attitude, Covid Risk Perception, Fear Of Covid, and Risk Perception To Travel, can predict the dependent variable, namely travel intention with an effect of 22.5%, while 77, the other 5%, is the influence of external variables which are not the focus of this research.

On the other hand, the Taiwan research data shows the results of the hypothesis test of a significance level or p-value of 0.000 <0.05 ($p = 0.001$), which means that the alternative hypothesis proposed by the researcher is accepted. The table can also explain that there is a correlation or relationship between the independent variable and the dependent variable with a relationship value of 0.182. The results of the coefficient of determination can also show that all independent variables namely Fear To Travel, Anti Vaccine Attitude, Covid Risk Perception, and Risk Perception To Travel can predict the dependent variable, namely travel intention with an effect of 18.2%, while the other 81.2% are the influence of external variables that are not the focus of this study.

These values indicate that the regression model can be used to predict the travel intention variable, in other words, there is an effect of the variables Fear to Travel, Anti Vaccine Attitude, Covid Risk Perception, Fear of Covid, Risk Perception to Travel on the travel intention variable (Y). The diagram of the results of testing the Indonesian data hypothesis can be seen in the image below.

The model test shows a significant role between Fear of Travel, Anti Vaccine Attitude, Covid Risk Perception, Fear of Covid, and Risk Perception to Travel on the travel intention variable, but the findings of the study show some partial results for each correlation between each variable (see **Figure 2**). Of the four independent variables, COVID-19 risk perception and risk perception to travel do not have a direct role in travel intention. However, the two variables can play a role in the travel intention variable when calculated simultaneously with the other three variables. In addition to COVID-19, risk perception and risk perception to travel can play an indirect role in travel intention. COVID-19 risk perception can play an indirect role through the variables Fear to Travel, Anti Vaccine Attitude, Fear of Covid, and Risk Perception to Travel.

Different results are shown from the Taiwan data test as illustrated in **Figure 3**. The Taiwan research shows that the variable fear of covid cannot be included in the theoretical model that builds travel intention. The figure below shows the results of the Taiwan study.

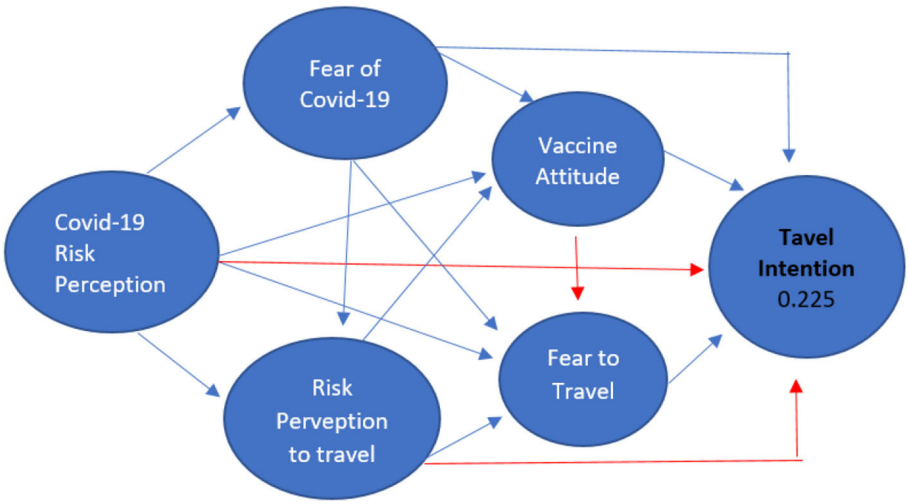

FIGURE 2 | Indonesia travel intention research results.

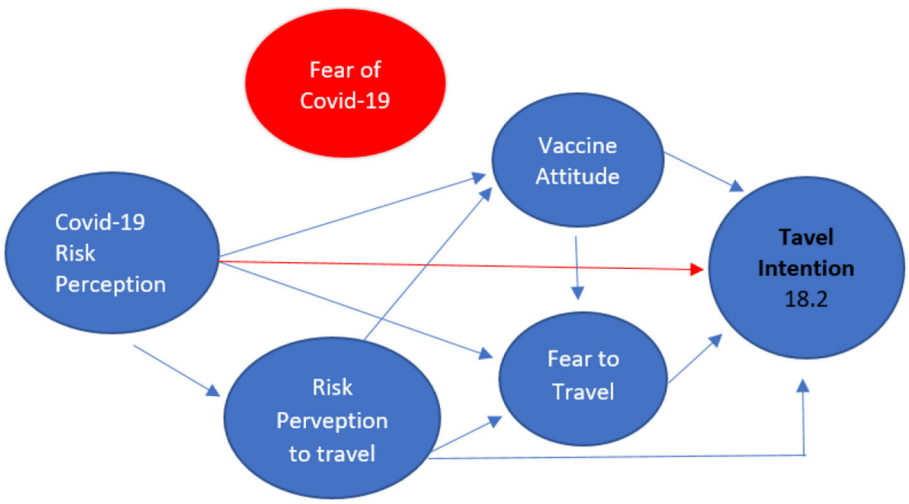

FIGURE 3 | Taiwan travel intention research results.

Similar to the results of the Indonesian study, the results of the Taiwanese study show that there is no direct role of Covid Risk Perception on Travel Intention, but the indirect role of Covid risk perception on travel Intention can occur through Travel Risk perception, Fear to travel, and vaccine attitude.

DISCUSSION

Indonesian respondents totalled 358, while Taiwanese respondents amounted to 283. Each of the research respondents and regions—Indonesia and Taiwan—had their own discussion. Our research has shown that during the pandemic, Indonesian travel intentions were predicted by COVID-19 risk perception, fear of COVID-19, risk perception to travel, attitude toward vaccination, and Fear of Travel. In Taiwan, however, outcomes of Travel Intention are influenced by COVID-19 Risk Perception, Risk Perception to Travel, Vaccine Attitude, and Fear to Travel. It's interesting to note that among Taiwanese travel intentions were not significantly correlated with Fear of COVID-19.

The results of testing the partial role of Indonesian research directly or indirectly proved significant between COVID-19 Risk Perception, Fear of COVID-19, Risk Perception to Travel, Vaccine Attitude, and Fear of Travel on Travel Intention during a pandemic. However, the direct role of risk perception, both covid risk perception and travel risk perception, on travel intention is not proven. Covid risk perception and travel risk perception are only proven through intermediary variables such as fear of covid, fear of travel, and vaccine attitude. Taiwanese respondents proved a partial role between Vaccine attitude and Fear of Travel.

Travel Intention in Indonesia is built by covid risk perception, travel risk perception, fear of covid, vaccine attitude, and fear to travel. The five independent variables simultaneously play a role in shaping travel intention. Although the pandemic period has had a major impact on the tourism industry, humans still need tourism activities amidst the limitations and disasters of the pandemic. Farmaki (2021) states that there is a process of forgetting about crises such as a pandemic in tourism behavior. Even though the pandemic has had a bad impact on the tourism industry after the crisis has passed, people tend to forget the crisis and return to tourist behavior quickly. It becomes a separate question for the formation of travel intentions. Several studies state that travel intention is shaped by risk perception, Reisinger and Mavondo (2005), Li and Ito (2021), Sujood and Bano (2021) explained that covid risk perception affects travel intention. However, Luo and Lam (2020) through their research results state that covid risk perception cannot directly affect travel intention, but has an indirect affect through fear of travel. As mentioned, fear of travel can play a direct role in travel intention and will be stronger when a traveler has high self-efficacy (Klabi, 2021). The same thing is explained by the research of Luo and Lam (2020); Reisinger and Mavondo (2005), Zheng et al. (2021) found that fear to travel has a direct role in travel intention. Another form of travel intention is vaccine attitude, according to Gursoy et al. (2021), Poulos et al. (2018) vaccine attitude can affect travel intention.

Of the five independent variables, only vaccine attitude and fear to travel have a direct role on travel intention without the role of intermediary variables. Research conducted by Martin and Petrie (2017) found that there are several forming factors of vaccine attitude that can be identified, namely vaccine behavior intention, sensitivity to medicines, current health, and media. This study also found that there are four dimensions of vaccine attitude, namely mistrust of vaccine benefits, worries about unforeseen future effects, concerns about commercial profiteering, and preference for natural immunity. Mass media coverage of vaccines has a positive and significant impact on the knowledge of the consequences of vaccines and intentions to vaccinate before traveling abroad. Research conducted by Radic et al. (2021) further explains that the mass media can convey the effectiveness of vaccines, provide accurate information, and increase public knowledge about the COVID-19 vaccine program. This is so that the message conveyed by the mass media is built on people's hopes and enthusiasm for the COVID-19 vaccine and has a positive impact on people's intentions to vaccinate before traveling abroad. Research conducted by Zheng et al. (2021) found that fear to travel has a negative relationship with tourist attractions to be visited due to the severity of the pandemic. The results of this study indicate that the severity of threats and vulnerabilities can lead to travel fear which can ultimately affect motivation related to health risk behaviors (smoking, HIV, vaccines) and protective behavior for travel. This is under the research of Zheng et al. (2021) regarding the prediction of travel behavior in the post-pandemic community, which found that public fear significantly increases travel avoidance.

Li et al. (2021) mention that global health emergencies evoke three types of tourism patterns: from general to complex, from open to closed, and from radical to conservative. These categories provide a conceptual basis for empirical research, taking into account contextual and individual stimuli. Practically speaking, this paper highlights strategies for reducing individual risk perceptions and encouraging certain types of tourism. The recommendations also encourage crisis recovery analysis and relevant market analysis by tourism professionals and marketers. Risk perception is said to have a big role in the formation of travel intention. The results of this study indicate that risk perception, neither covid risk perception nor travel risk perception has been shown to have a direct role on travel intention. However, the two independent variables can influence the travel intention variable through other intermediary variables such as fear of covid, vaccine attitude, and fear to travel. Following the results of this study, the perception of risk alone is not enough to influence travel intention, this is confirmed by the results of research by Qiu et al. (2020) that residents perceive the risks posed by tourism activities, and estimate their willingness to pay to reduce public health risk based on a hypothetical scenario, using a triple-bounded dichotomous choice contingent assessment method. Social costs in the three urban destinations were assessed and compared. Based on the findings, suggestions are made for appropriate post-pandemic recovery actions by local authorities and tourism organizations. Li and Ito's (2021) research on the people of Sapporo and Wuhan found that people in Sapporo's perception of COVID-19 risk negatively affected their travel intention at the start of the pandemic period. However, data in Wuhan shows that although there is a negative influence of perceived COVID-19 risk on travel intention, this influence may be temporary until the restrictions or lockdowns are terminated. This shows that various other factors mediate the covid risk perception of travel intentions.

Variables that have a direct role in travel intention are fear of covid, vaccine attitude, and fear of travel. Research conducted by Klabi (2021) states that anxiety about COVID-19 has a negative influence on intentions to travel by air. Research conducted by Zheng et al. (2021) states that if the high severity and magnitude of the threat from COVID-19 is a factor that can cause a person to experience travel fear, it directs a person to increase motivation toward protection and protective attitude when traveling after a pandemic outbreak. Fennell (2017) explains that the concepts of fear to travel are formed from various factors such as obstacles, shock, panic, risk, anxiety, and worry. This fear to travel will affect travel intention. In addition, media coverage related to the impact of mobility on the severity of the pandemic and vaccinations being promoted has a significant influence on travel intentions. Similarly, the results of research conducted by Zheng et al. (2021) on tourists in China showed that tourists were fearful, as 34.6% of the total respondents stated that there was the highest perceived fear and threat to post-pandemic travel. However, they also showed the highest levels of motivation toward protection and travel avoidance intentions. In addition to fear of both

covid and travel, vaccine attitude has been proven to have a role in travel intention. Research conducted (Gursoy et al., 2021) explains the relationship between vaccine intention and travel intention. The initial vaccination program initially resulted in vaccine intention having a negative relationship with travel intention. However, this negative impact subsequently decreased as the number of individuals vaccinated increased significantly, closing the gap between the two groups. The findings in this study also show that socio-demographic factors such as age, gender, marital status, education level, region of residence, race, religion, and occupation affect COVID-19 vaccination intentions and vaccine doubt.

Fear of covid can also convey an indirect message to travel intention through vaccine attitude, travel risk perception, and fear to travel. The results of this study are supported by one of the results of research from Angguni and Lenggogeni (2021), the results of this study reveal that health crises that occur such as the Covid 19 Pandemic can be explained through psychological factors such as anxiety, mediated between tourists' perceptions of travel risks during the Covid 19 period and travel intentions. Several other studies explain that fear of covid can play an indirect role on travel intention through other variables. Research conducted by Luo and Lam (2020) states that fear of covid does not have a direct influence on the desire to travel, however, fear of covid has an indirect influence through travel anxiety and risk attitude as a mediator variable on travel intentions. The overall results of the study state that fear of covid has a significant influence on travel anxiety and risk attitude so it makes a person afraid to travel. In addition, research conducted by Rather (2021) shows that fear of COVID-19 and perceived risk have a significant negative impact on travel attitudes, which makes people afraid to travel.

This research is relevant to the findings of Rahman et al. (2021) that the impact of the COVID-19 pandemic is very large and affects the risk management process, including service delivery, travel patterns, and avoiding tourist destinations that have excess population or visitors. Cleanliness and safety in risky trips are also perceptions that are considered by tourists. Travelers believe that this pandemic creates risky travel and reduces their travel plans. This study also found that travel risk and management perception were closely related to managing risk. Risk management is one of the significant factors that influence individual beliefs regarding how to control threats during a pandemic. On the other hand, tourist behavior can lead to risk management for the destination infrastructure, health facilities, image of the destination, and travel planning. Travel patterns lead to independent or group trips. Nature-based tourists or outdoor activities are also findings that are perceived by the public. This is done to reduce the risk of travel and enable tourists to feel comfortable in traveling during the COVID-19 pandemic.

Covid risk perception can play a role in travel intention only through intermediary variables such as fear of covid, travel risk perception, vaccine attitude, and fear of travel. In a different pandemic context, the research of Cahyanto et al. (2016) examines the factors influencing Americans' avoidance of domestic travel due to confirmed cases of Ebola in the United States in late 2014. The Health Belief Model serves as a theoretical framework for research showing that risk perception is not the only variable that plays a role in travel intention, some results found that perceived vulnerability and self-efficacy significantly influence domestic travel avoidance. These findings also support the significant role of perceived risk, subjective knowledge, age, and gender. Given the possibility that Ebola outbreaks could re-emerge in the future and the emergence of additional health-related crises (e.g., the Zika virus), these findings could also assist the tourism industry in planning and responding to other health pandemics. Most respondents take Ebola seriously and will take protective measures in response to the outbreak. The adapted Health Belief Model helps us understand this phenomenon. As predicted by the model, those with higher risk perceptions, perceived vulnerability, and subjective knowledge were found to be more likely to avoid domestic travel, while those with higher levels of self-efficacy showed lower tendencies to avoid travel due to Ebola. Similar to the covid pandemic, many variables influence the covid risk perception of travel intention, such as fear of covid (Luo and Lam, 2020; Klabi, 2021; Rather, 2021), travel risk perception (Han et al., 2021; Rahman et al., 2021), vaccine attitude (Martin and Petrie, 2017; El-Elimat et al., 2021; Gursoy et al., 2021; Radic et al., 2021), and fear to travel (Reisinger and Mavondo, 2005; Luo and Lam, 2020; Zheng et al., 2021).

The results of research conducted in Hong Kong show that Hong Kong residents are increasingly aware of safety in travel. This supports an increase in intention to travel even though there is a fear of COVID-19 and is causing anxiety in marriages, risk perception harms travel intention, but there is an indirect relationship between fear of COVID-19 and travel intention. Risk and safety are the main things that tourists pay attention to. When anxiety and attitudes toward risk decrease, the intention to travel will increase. In a previous study, it was explained that travel anxiety and risky attitudes were mediating variables between the fear of COVID-19 and the intention to travel. On the other hand, the fear of COVID-19 positively affects travel anxiety, and anxiety risk attitudes also positively affect risk perception. The impact of travel anxiety and risk perception on travel intention is negative. On the other hand, the fear of COVID-19 on travel intention is not significant. This proves that there is no evidence to show that fear of disease reduces an individual's intention to travel.

Travel risk perception can play a role in travel intention if it is through the variable vaccine attitude or fear to travel. The COVID-19 pandemic can lead to a perception of travel risk that can affect travel intention, but in the research of Angguni and Lenggogeni (2021), it is explained that there are other intermediary variables such as fear to travel. Furthermore, Fennell (2017) explains the identification and better understanding of factors and conditions related to travel fear. A literature review of concepts such as constraint, shock, panic, risk, anxiety, and worry formulates the Travel Fear Model. Meanwhile, research by Ruiz and Bell (2021) explains that demographic characteristics, knowledge of vaccines, perceptions of susceptibility to COVID-19, risk factors for COVID-19, and

politics may contribute to vaccination doubts and will indirectly influence travel intentions. In the research of Poulos et al. (2018), it is explained that tourists are not unaware of the risks of traveling during a pandemic, they choose to vaccinate before traveling and bear the risk of traveling during a pandemic. In a study conducted in Italy, a group that does not believe in vaccines affects perceptions of risk, including influencing travel behavior (Williams et al., 2020). Other findings also show that the perception of vaccines related to efficacy and protection is also correlated with the risk of travel during a pandemic (Qiao et al., 2021). In addition, the level of trust in vaccines is also influenced by age, gender, and income, where men who are older and have higher incomes tend to believe in the vaccine (Danis et al., 2010). In making travel plans, tourists tend to prefer local locations due to lower perceived risks, and increasing confidence in vaccines will make them willing to travel more broadly in this case regionally (Moya Calderón et al., 2021).

In contrast to the theoretical model of Indonesian travel intention, which has been proven to be supported by all independent variables assumed by the researcher, the results of the Taiwan study show that travel intention is only formed by four independent variables, namely covid risk perception, travel risk perception, vaccine attitude and fear to travel. The fear of covid variable was proven to be unable to be included in the theoretical model of travel intention. The geographical location of Taiwan is quite different from Indonesia, where Taiwan is a country with one large island so policies and supervision related to the procedures for handling COVID-19 can be carried out more effectively and efficiently. The COVID-19 pandemic affected several characteristics such as Taiwan's tourism consumption despite a decline in the frequency of domestic travel, length of travel, and spending during the pandemic, no difference was found between domestic travel expenses and travel plans before and after the pandemic. Travel using public transport for tourism is lower than it was before the outbreak. This is relevant to the results of the study that the fear of traveling does not occur, but most tourists prefer to shorten travel time during the pandemic and are not willing to use public transportation (Li et al., 2021). What is more influential in making decisions to travel is sanitation, the health system in tourist destinations is one of the influential factors (Ivanova et al., 2021). Travel using public transport for tourism is lower than it was before the outbreak.

Although it has a partial role with other variables, covid risk perception is not proven to have a partial role on travel intention. Covid risk perception can affect travel intention through intermediary variables such as travel risk perception, vaccine attitude, and fear to travel. The theoretical model of Travel Intention Indonesia is built by covid risk perception, travel risk perception, fear of covid, vaccine attitude, and fear to travel. The five independent variables simultaneously play a role in shaping travel intention. Although the pandemic period has had a major impact on the tourism industry, humans still need tourism activities amidst the limitations and disasters of the pandemic. Farmaki (2021) states that there is a process of forgetting about crises such as a pandemic in tourism behavior. Even though the pandemic has had a bad impact on the tourism industry after the crisis has passed, people tend to forget the crisis and return to tourist behavior quickly. It becomes a separate question for the formation of travel intentions. Several studies state that travel intention is shaped by risk perception, Bae and Chang (2020), Li and Ito (2021), Sujood and Bano (2021) explained that covid risk perception affects travel intention, but Reisinger and Marvando explained that it is travel risk perception that shapes travel intention. However, Luo and Lam (2020) through their research results state that covid risk perception cannot directly affect travel intention, but must be through fear of travel. As mentioned, Fear of travel can play a direct role in travel intention and will be stronger when a traveler has high self-efficacy (Klabi, 2021). The same thing is explained by the research of Luo and Lam (2020); Reisinger and Mavondo (2005); and Zhang et al. (2020) who found that fear to travel has a direct role in travel intention. Another aspect of travel intention is vaccine attitude, as according to Gursoy et al. (2021), Poulos et al. (2018), vaccine attitude can affect travel intention.

Different from the results of the Indonesian study, travel risk perception has been shown to play a direct or indirect role in travel intention. The indirect role of travel risk perception is through vaccine attitude and fear to travel. Of the five independent variables, vaccine attitude, and fear to travel only have a direct role on travel intention without the role of intermediary variables. Research conducted by Martin and Petrie (2017) found that there are several forming factors of vaccine attitude that can be identified, namely vaccine behavior intention, sensitivity to medicines, current health, and media. This study also found that there are four dimensions of vaccine attitude, namely mistrust of vaccine benefits, worries about unforeseen future effects, concerns about commercial profiteering, and preference for natural immunity. Mass media coverage of vaccines has a positive and significant impact on knowledge of the consequences of vaccines and intentions to vaccinate before traveling abroad. Research conducted by Radic et al. (2021), further explains that the mass media can convey the effectiveness of vaccines, provide accurate information, and increase public knowledge about the COVID-19 vaccine program, so that the message conveyed by the mass media is built on people's hopes and enthusiasm for the COVID-19 vaccine and has a positive impact on people's intentions to vaccinate before traveling abroad. Research conducted by Zheng et al. (2021), found that fear to travel has a negative relationship with tourist attractions to be visited due to the severity of the pandemic. The results of this study indicate that the severity of threats and vulnerabilities can lead to travel fear which can ultimately affect motivation related to health risk behaviors (smoking, HIV, vaccines) and protective behavior for travel. This is following the research of Zheng et al. (2021) regarding the prediction of travel behavior in the post-pandemic community, which found that public fear significantly increases travel avoidance. The results of this study indicate that the severity of threats and vulnerabilities can lead to travel fear which can ultimately affect motivation related to health risk behaviors (smoking, HIV, vaccines) and protective behavior for travel.

This is the same as the results of the vaccine attitude, in contrast to the results of Indonesia in the Taiwan study, the

vaccine attitude not only has a direct role on travel intention but also has an indirect role through fear to travel. Li et al. (2020) mention that global health emergencies evoke three types of tourism patterns: from general to complex, from open to closed, and from radical to conservative. These categories provide a conceptual basis for empirical research taking into account contextual and individual stimuli. Practically speaking, this paper highlights strategies for reducing individual risk perceptions and encouraging certain types of tourism. The recommendations also encourage crisis recovery analysis and relevant market analysis by tourism professionals and marketers. Risk perception is said to have a big role in the formation of travel intention. The results of this study indicate that risk perception, both covid risk perception, and travel risk perception, is not proven to have a direct role on travel intention. However, the two independent variables can influence the travel intention variable through other intermediary variables such as fear of covid, vaccine attitude, and fear to travel. Under the results of this study, the perception of risk alone is not enough to influence travel intention, this is confirmed by the results of Qiu et al. (2020) that residents perceive the risks posed by tourism posed by tourism activities, and estimate their willingness to pay to reduce public health risks based on hypothetical scenarios, using the triple-bounded dichotomous choice contingent assessment method. Social costs in the three urban destinations were assessed and compared. Based on the findings, suggestions are made for appropriate post-pandemic recovery actions by local authorities and tourism organizations. Li and Ito's (2021) research on the people of Sapporo and Wuhan found that people in Sapporo's perception of COVID-19 risk negatively affected their travel intention at the start of the pandemic period. However, data in Wuhan shows that although there is a negative influence of perceived COVID-19 risk on travel intention, this influence may be temporary until the restrictions or lockdowns are terminated. This shows that various other factors mediate the covid risk perception of travel intentions. Social costs in the three urban destinations were assessed and compared. Based on the findings, suggestions are made for appropriate post-pandemic recovery actions by local authorities and tourism organizations. Li and Ito's (2021) research on the people of Sapporo and Wuhan found that people in Sapporo's perception of COVID-19 risk negatively affected their travel intention at the start of the pandemic period. However, data in Wuhan shows that although there is a negative influence of perceived COVID-19 risk on travel intention, this influence may be temporary until the restrictions or lockdowns are terminated. This shows that various other factors mediate the covid risk perception of travel intentions. Social costs in the three urban destinations were assessed and compared. Based on the findings, suggestions are made for appropriate post-pandemic recovery actions by local authorities and tourism organizations. Li and Ito's (2021) research on the people of Sapporo and Wuhan found that people in Sapporo's perception of COVID-19 risk negatively affected their travel intention at the start of the pandemic period. However, data in Wuhan shows that although there is a negative influence of perceived COVID-19 risk on travel intention, this influence may be temporary until the restrictions or lockdowns are terminated. This shows that various other factors mediate the covid risk perception of travel intentions. Suggestions are made for appropriate post-pandemic recovery actions by local authorities and tourism organizations.

Meanwhile, fear of travel only has a direct influence on travel intention. Variables that have a direct role in travel intention are fear of covid, vaccine attitude, and fear of travel. Research conducted by Klabi (2021) states that anxiety about COVID-19 has a negative influence on intentions to travel by air. Research conducted by Zheng et al. (2021) states that if the high severity and magnitude of the threat from COVID-19 is a factor that can cause a person to experience travel fear, it directs a person to increase motivation toward protection, and a protective attitude when traveling after a outbreak. Fennell (2017) explains that the concepts of fear to fear to travel are formed from various factors such as obstacles, shock, panic, risk, anxiety, and worry. This fear to travel will affect travel intention. In addition, media coverage related to the impact of mobility on the severity of the pandemic and vaccinations being promoted has a significant influence on travel intentions. Similarly, research conducted by Zheng et al. (2021) on tourists in China showed that fearful tourist as much as 34.6% of the total respondents stated that there was the there was the highest perceived fear and threat to post-pandemic travel. However, they also showed the highest levels of motivation toward protection and travel avoidance intentions. Besides Fear, both covid and travel, vaccine attitude is proven to have a role intention. Research conducted (Gursoy et al., 2021) explains the explains the relationship between vaccine intention and travel intention. The initial vaccination program initially resulted in vaccine intention having a negative relationship with travel intention. However, this negative impact subsequently decreased as the number of individuals vaccinated increased significantly, closing the gap between the two groups. The findings in this study also show that socio-demographic factors such as age, gender, marital status, education level, region of residence, race, religion, and occupation affect COVID-19 vaccination intentions and vaccine doubt. The initial vaccination program initially resulted in vaccine intention having a negative relationship with travel intention. However, this negative impact subsequently decreased as the number of individuals vaccinated increased significantly, closing the gap between the two groups.

Although it has a partial role with other variables, covid risk perception is not proven to have a partial role on travel intention. Covid risk perception can affect travel intention through intermediary variables such as travel risk perception, vaccine attitude, and fear to travel. The findings of this study are in line with research conducted by Zhu and Deng from Sichuan University, who said that knowing the risk of contracting COVID-19 has the potential to harm the intensity of domestic tourist travel (Zhu and Deng, 2020). Furthermore, the research conducted to examine the effect of risk knowledge on travel intention in rural tourism during the pandemic in China explains that this is influenced by risk perception and risk aversion attitude which must be considered together in travel intention activities. This risk perception also affects the number of public transportation users in Taiwan (Kuo, 2021), which causes Taiwanese people to choose to travel short distances instead

of long distances (Yang et al., 2021). Moreover, the COVID-19 pandemic affects the level of anxiety when traveling (Zenker et al., 2021), so this fear to travel is generated from the anxiety of traveling that arises from mixed feelings of anticipation, the desire to leave, the unknown, and the fear of leaving a safe home.

Different from the results of the Indonesian study, in Taiwan, travel risk perception has been shown to play a direct or indirect role in travel intention. The indirect role of travel risk perception is through vaccine attitude and fear to travel. Psycho-social risk, such as being afraid of being infected with COVID-19, is an important factor in the lack of confidence in deciding to travel, and this can change if it is known that the health risk reduction while traveling is due to having received the vaccine (Williams et al., 2021). Belief in information on reduced health risks after the vaccine is a triggering factor for voluntary willingness to get the vaccine. Citing the results of his research on people in Italy who were involved in tourism activities. Although this is contrary to the research conducted by Ram et.al., using a three-time cross-sectional study using an online survey (LINE and Facebook) Israeli society stated that the factor for continuing to travel influenced the desire to travel not because it had gotten the vaccine (Ram et al., 2021). In general, the results showed that risk perception accounted for the biggest factor in predicting travel intention among Taiwanese (Sang-Hee et al., 2018; Falahuddin et al., 2020). Regarding Taiwanese society, research by Wong et al. (2021) emphasized that risk perception and fear to travel affect travel intentions abroad and the choice to travel domestically which takes relatively less time. Furthermore, only about 5% stated that they wanted to go abroad for vacations and work assignments, but as many as 48% planned to travel domestically for vacations. Vaccines play an important role in the intention to travel to another country, as this can increase confidence and reduce worries about international travel, such as concerns about time, cost, vulnerability, access, and resilience (Wang et al., 2021).

Similar results were found on the topic of vaccine attitude. In contrast to the results of Indonesia, in the Taiwan study, vaccine attitude not only had a direct role on travel intention but also had an indirect role through fear to travel. Taiwanese tourists who do not travel independently or do not use the services of a travel agent tend to travel for a long time and for a higher number of days (Yang et al., 2021), and during the pandemic, the tourist destinations and tourism plans of the Taiwanese community turned into conservative tourism within the country (Kuo, 2021). In addition, after the pandemic, the number of tourists going abroad decreased because people reduced travel plans that took multiple days. Kuo (2021) added that the level of confidence of the Taiwanese people to travel takes into account state policies related to border control and pandemic prevention, one of which is vaccine services for all people in the territory of Taiwan. As stated in previous research, Taiwanese respondents reduced the desire to travel long distances during the pandemic, unless the country had good policies for prevention, one of which is the administration of vaccines (Ram et al., 2021). This opinion is in line with the research conducted by Wang et al. (2021) who concluded that the desire to travel long distances or abroad had an impact on the high desire to get the vaccine. In another form, it is also conveyed in research that examines the Protection Motivation Theory (PMT) and the role of the government regarding the travel intention of the millennial group. It was stated in the results of this research that state policies during the pandemic to reduce the fear of the risk of contracting COVID-19 had a partial role obtained from the self-efficacy and response efficacy of the Millennial group in their intention to travel (Gengeswari et al., 2021; Williams et al., 2021). In the end, vaccines are one of the most important factors in strengthening self-confidence for travel intention. For this reason, government intervention related to vaccines to increase public protection contributes to travel intention.

Meanwhile, fear of travel has a direct influence on travel intention. In marketing, word of mouth is one of the forces that can influence consumer decisions, which also applies in the world of tourism. As stated by Badreldin and Elbaza (2016) and Filieri and McLeay (2014), there is a change in consumer behavior in the tourism business when receiving scary news, some of which is obtained through eWOM on social media or news available on the internet (blogs, Twitter, and WhatsApp groups) which have become some of the most trusted media to find information for consumers to consider when deciding to travel. Furthermore, in a study in the context of Egypt, travel intention to visit Egypt was strongly influenced by messages of political instability in this country which are exposed to the media causing fear to travel to increase. This is because the media have a significant influence on the perception of the risk of traveling (Scrima et al., 2022). Currently, people have easy access to information because of information technology, which results in the process of obtaining information and knowledge from sources (travel influencers, peer groups, significant others, media) which can have an impact on the fear of traveling which affects travel intention. The results of a case study conducted in three countries in Europe (Germany, Austria, Switzerland) show that Risk Perception and Travel behavior during COVID-19 have an impact on travel intention, this is not only a decrease in the frequency of travel outside Europe but also in countries within the EU mainland (Neuburger and Egger, 2021) and also influences travel intention in Portugal (Magano et al., 2021).

The tourism industry has a vulnerability to crises, and crises have long-term effects on travel patterns, tourist demand, and destination image (Rittichainuwat and Chakraborty, 2009; Chew and Jahari, 2014; Cró and Martins, 2017; Rossell et al., 2017). This is a note of the importance of resilience-based crisis management strategies in the tourism industry (Paraskevas and Quek, 2019). Seçilmi et al. (2021) according to his research, travel influencers (IT) can have a different impact on cognitive reactions and beliefs, which in turn can have an impact on visit intentions, even in pandemic situations. This study aids influencer agencies and the travel industry in developing marketing communications plans to increase travel using social media. In particular, the existing literature recognizes that tourists' perceptions and attitudes of risk toward destinations are heavily influenced by crises, leading to changes in travel plans by avoiding visits to

certain destinations or not traveling at all (Sönmez and Graefe, 1998; Lutz and Lutz, 2020). However, in disaster conditions, the intention to travel may decrease but not completely disappear. There are several factors that can cause demand to end, including access changes, environmental hazards, health issues, political unrest, and concerns about the safety of tourists (Morakabati et al., 2012).

Global health emergencies evoke three types of tourism patterns: from general to complex, from open to closed, and from radical to conservative (Li et al., 2020). These categories provide a conceptual basis for empirical research taking into account contextual and individual stimuli. Strategies are needed to reduce individual risk perceptions, encouraging certain types of tourism. The recommendations also encourage crisis recovery analysis and relevant market analysis by tourism professionals and marketers.

CONCLUSION, LIMITATION, AND FUTURE DIRECTION

In conclusion, this study indicated that Travel Intention during the Indonesian pandemic was built from COVID-19 Risk Perception, Fear of COVID-19, and Risk Perception to Travel, Vaccine Attitude, and Fear to Travel. Meanwhile, Travel Intention during the Taiwan pandemic was built from COVID-19 Risk Perception, Risk Perception to Travel, Vaccine Attitude, and Fear to Travel. The simultaneous role of Indonesian respondents was proven between COVID-19 Risk Perception, Fear of COVID-19, and Risk Perception to Travel, Vaccine Attitude, and Fear of Travel, on Travel Intention during a pandemic. Taiwanese respondents showed the simultaneous role of COVID-19 Risk Perception, Risk Perception to Travel, Vaccine Attitude, and Fear of Travel on Travel Intention. In the Indonesian research a partial role was found directly or indirectly between COVID-19 Risk Perception, Fear of COVID-19, Risk Perception to Travel, Vaccine Attitude, and Fear of Travel on Travel Intention during a pandemic. However, the direct role of risk perception, both COVID-19 risk perception and travel risk perception, on travel intention is not proven. COVID-19 risk perception and travel risk perception are only proven through intermediary variables such as fear of covid, fear of travel, and vaccine attitude. In Taiwanese respondents, it was proven that there was a partial role between Vaccine Attitude and Fear of Travel on Travel Intention, but there was no direct partial role between COVID-19 Risk Perception and Travel Intention.

This study has certain limitations, for example, firstly we were unable to control the respondents' Social Economic Status (SES), and therefore travel intentions in terms of distances may differ. Second, the transportation systems in Indonesia and Taiwan differ significantly, which influences risk perception in a way that we did not consider. Finally, considering context and culture differences in travel, we would like to analyse gender differences in our study, which is likely to have major variances between Indonesia and Taiwan. We proposed that future studies include the COVID-19 conspiracy theory in order to examine the emotion that contributes to the urge to travel, as media plays an essential role in influencing mental well-being during pandemics, due to individuals receiving information primarily via digital media.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the ethics committee of Faculty of Social Science and Political Science, Brawijaya University. The patients/participants provided their written informed consent to participate in this study.

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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COVID-19 certificate as a cutting-edge issue in changing the perception of restaurants' visitors—Illustrations from Serbian urban centers

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As one of the first European cases of the introduction of COVID-19 certificates, the Serbian Government initiated the measure of limited working hours of restaurants for unvaccinated visitors. Due to such actions and frequent bans on working during the pandemic, many restaurants in Serbia had to lay off workers or close. At the end of October 2021, the certificate for entering restaurants and all catering facilities for all the visitors became mandatory. It is interesting to note that earlier findings suggested that some personality characteristics determine the specific behaviors during the pandemic, but there is still a small number of results related to restaurants' visitors. This study aimed to investigate the predictive strength of the Big Five Factors (BFF) to attitudes toward visits to restaurants in Serbia during the pandemic, depending on the attitudes toward accepting COVID-19 certificates. A survey was conducted on a total sample of 953 visitors of restaurants in three major cities in Serbia. The results of hierarchical regression analysis showed that Openness and Extraversion positively predict attitudes toward visits to facilities during a pandemic, while Conscientiousness and Neuroticism were negative predictors. However, in the second step of hierarchical regression analysis, attitudes toward a COVID-19 certificate as a mediator variable significantly reduced the negative effect of Neuroticism on

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the attitudes toward visits. It seems that, by obtaining the certificate, the fear of unsafe stays in restaurants can be reduced, and that making decisions about (no) visiting restaurants during the pandemic does not necessarily have to be compromised by emotional lability.

KEYWORDS

COVID-19, BFF, restaurants, consumer, behavior, Serbia

Introduction

Due to the global pandemic of COVID-19, and the closing of borders, tourism and catering suffered great damage during 2019 until today. National and local authorities have assessed various sanctions on their citizens, involving restraining orders, travel bans, stay-at-home orders, self-isolation, and other daily limitations, and more recently COVID-19 passes for all facilities and movements (Gössling et al., 2021; Podra et al., 2021; Xiang et al., 2021; Aleksić et al., 2022). Epidemiologists in Serbia have identified cafes and restaurants as the riskiest places for the spread and transmission of the coronavirus (Gajić et al., 2021a,b). In the period of October 2021, the idea came from the authorities and the crisis medical staff, to introduce COVID-19 certificates and thus ensure the operation of restaurants and cafes in safer conditions (Gajić et al., 2020). The problem arose due to numerous theories and ignorance, whether the vaccinated transmit the pandemic, and whether it makes sense to introduce such permits to enter catering facilities. Many restaurants were closed at exactly 8 pm, so as not to differentiate between vaccinated and unvaccinated visitors. In accordance with numerous studies of the impact of the pandemic on the development of tourism and services, the authors conducted a study of visits to restaurants in several cities in Serbia during the pandemic, using the BFF (OCEAN) model of personality traits. The study aimed to identify personality profiles that better predict visits to tourism and hospitality facilities during COVID-19, with or without passes.

The global hospitality sector has been hit hard by the crisis brought about by COVID-19. It can be seen that the economic sector of consumption has suffered damage, and there have been major changes in consumer behavior, which is essential for the recovery of the hospitality sector (Gajić et al., 2020). The hospitality industry took the hardest hit, resulting in the current closure of many restaurants or adaptation to new concepts to make it easier for consumers to return as easily as possible after the pandemic (Gursoy and Chi, 2020; Nepal, 2020; Oliveira et al., 2020; Sigala, 2020; Božović et al., 2021). It is most necessary to determine the behavior of consumers in risky situations, and based on this, to determine measures for better and smooth operation of the restaurant (Toubes et al., 2021). Some of the measures for recovery after emergencies can be implemented through increased flexibility and creativity, investing in a communication platform, and selling gift cards (Warerkar, 2020; Norris et al., 2021), as well as through certain consumer preferences such as special rooms in restaurants (Kim and Lee, 2020). There are studies where the results indicate that a pandemic negatively moderate the effect of cultural experience and introduce novelty on the intention to consume (Dedeoğlu et al., 2022).

A study conducted by Hakim et al. (2021) points out that consumers' propensity to visit restaurants during a pandemic is influenced by risk perception and different levels of trust. According to the results, the component with the greatest effect is trust in restaurants and brands. In addition, denial of the disease has a positive effect on restaurant visits during the pandemic.

The Big Five model (OCEAN) has been extensively discussed in management research and consumer behavior in specific situations, monitoring of job performance, especially when it comes to unforeseen and crisis situations (Lauriola and Levin, 2001; Saihani et al., 2009; Power and Pluess, 2015; Chien, 2019; Blešić et al., 2021). Each of the basic dimensions includes a number of specific personality traits and preferences for certain patterns of behavior: neuroticism, extraversion, openness, agreeableness, and conscientiousness (Black, 2000; John et al., 2008). The openness trait describes people who have a wide range of interests, curiosity, aspirations for independence, and are readier to take risks (Jamrozy et al., 1996; Card et al., 2003). Extraversion is characterized by irritability, sociability, talkativeness, assertiveness, and a large amount of emotional expressiveness (Rice, 1997; Copley, 2004; Cobb-Clark and Schurer, 2012; Khalil, 2016), with confirmed theories that greater extroversion is associated with lower rational style of decision—making (El Othman et al., 2020). Conscientiousness could predict job performance of frontline employees of restaurants (Tracey et al., 2007), because they will better manage multiple requests (Teng, 2008; Young and Corsun, 2009). In consumer behavior, agreeableness largely predicts self-esteem when making important decisions, where they very easily exchange information with each other and thus form their decision (Oh, 1997; Litvin et al., 2008; Deniz, 2011).

Neuroticism is a trait characterized by sadness, low mood and emotional instability, with a high tendency for high neuroticism scores to contribute to lower risk in decision making (Lauriola and Levin, 2001; McCrae et al., 2005; Tanasescu et al., 2013).

A huge number of studies link the Big Five model with consumer purchasing behavior and leisure activities, which include choice of a brand, trips to restaurants, and tourist trips (Horton, 1979; Church and Katigbak, 2002; Barnett, 2006; Barnett and Klitzing, 2006; McCrae, 2010). People with a higher degree of agreeableness and conscientiousness, had negative direct effects on the perception of readiness for health risk and acceptance of health—risky behaviors (Vollrath et al., 1999). Research has confirmed that people with pronounced extraversion and conscientiousness traits, make important decisions easier and faster, both at work and in certain specific situations (Erjavec et al., 2019), while those with openness choose special services (Kvasova, 2015; Verma, 2017).

In many businesses, owners need to be able to understand the profile and desires of their customers, in order to tailor their business to meet customer needs during crises, especially in tourism and hospitality sector (Wee and Chia, 2012; Tran et al., 2015; Köşker et al., 2018; Chien, 2019). Knowledge of personality traits has a marketing role in creating products for consumers in tourism and hospitality, but they are also important for determining job satisfaction among hotel and restaurant workers (Young and Corsun, 2009; Jani, 2014; Yildirima et al., 2016). The dimensions of extraversion and openness have been observed to be weak predictors, between personality traits and job satisfaction among hotel workers (Yildirima et al., 2016). It is very important to study the behavior of potential visitors for the selection of services. Openness, extroversion and neuroticism can predict the psychographic positions of tourist destinations (Amet, 2017).

When looking at the relationship between personality types and going to destinations during a pandemic, there is recent research that claims that neuroticism and conscientiousness negatively influenced travel intentions, but are positively correlated with extroversion and openness (Tepavčević et al., 2021). Greater openness, conscientiousness and neuroticism showed the most consistent associations when talking about destinations during a pandemic, and pointed out that the pattern of connections between personality traits and precautionary behaviors varied depending on specific behavior (Airaksinen et al., 2021). The same results revealed that personality explains only a small fraction (between 0.6 and 3.8%) of variance in the four outcomes, perception of infection risk, behavior change to prevent infection, belief in the effectiveness of policies to combat further coronavirus spread and trust relevant policy makers and institutions. Agreeableness and its aspect of trust have shown the strongest associations (Rammstedt et al., 2021). However, it must be pointed out that there is a lack of literature on research on people's attitudes toward vaccination that uses OCEAN theory. Only a few studies have investigated the impact of personality traits on their attitudes toward vaccination (Guidry et al., 2021; Shmueli, 2021; Suess et al., 2022), but nothing concrete can be concluded about their intention to visit a restaurant, and whether that visit implied the obligation of having a certificate. The largest percentage of respondents, more than two—thirds of Americans, believe in the health benefits of vaccination, while about one—tenth of respondents are concerned about its safety (Lin and Wang, 2020). The results obtained in the study by Halstead et al. (2020), indicate that in five personality types, there are large differences in the perception of the importance of vaccination. For neuroticism they received different results, from completely positive to completely negative answers, while for some personality traits they did not get the expected results at all. The use of vaccines from different manufacturers that were on the market (BioNTech, Sinovac, Moderna, Sputnik V) is considered to have created a sense of security in people, and they are trying to free themselves and adapt to new living conditions or so-called new normalcy (Contreras, 2020). In this context of the new way of life, the attitude of tourists is implied that they want to go on vacation even though the infection still reigns and despite the risk of COVID-19 infection. Also, some theorists claim that the decisions and intentions of tourists to visit restaurants are influenced by a specific combination of fear of infection and the desire to travel and visit restaurants (Dedeoğlu et al., 2022). So, the assumption is that the personality traits of the guests will influence their perception of a safe visit to a restaurant, which we observe through the prism of immunization (Blešić et al., 2021). Seçilmiş et al. (2021) in their research on the impact of consumer confidence in vaccines, claim that there are no significant results which confirm that trust in vaccines creates a strong decision to visit a tourist destination or a restaurant. They further argue that conscientiousness and openness are significantly positively correlated with attitudes toward the health benefits of vaccination. Attitudes toward services and consumers of tourist and hotel services vary depending on the type of personality (Tekin and Kalkan, 2017). One major critique of the theory is highlighted by MCrae (2010), who argues that the existence of dynamic processes is quite prominent in the theory but not explained in detail. Some research indicates that the intention of consumers, in the COVD-19 situation, to visit restaurants is influenced by: fear of disease, trust in health surveillance, marketing, consumer perception and demographic characteristics (Hakim et al., 2021). A large part of the respondents were in favor of introducing certificates for travel purposes, but they were against mandatory certificates in other work activities (Drury et al., 2021).

Given the importance of personality traits in making decisions and specific behavior in crisis situations, based on the above literature, the main goal of this study was to investigate how certain psychological groups of people perceive the risk

during their stay in restaurants in the period of a pandemic. The starting hypothesis is that personality traits significantly describe the percentage of positive attitudes toward restaurants during a pandemic. Moreover, the study examines whether a COVID-19 certificate has a role in reducing fear in making decisions about visiting restaurants, which is another hypothesis of the research. Also, one of the important assumptions in the research is that vaccination could be a significant mediator when it comes to certain psychological groups, such as neuroticism. The assumption is that in some groups the vaccine would have an effect on reducing fear, while in some groups it would have absolutely no effect.

Materials and methods

Sample and procedure

The authors of the manuscript, together with 50 scientific associates—students of tourism and catering and psychology, conducted a trial pilot study, in the period from October to December 2021. They distributed questionnaires through online surveys, to the respondents from three cities in Serbia: Belgrade, Novi Sad, Niš. The required sample size was calculated using G*power (Faul et al., 2009). Taking into account that there was a total of 6 predictors (5 independent in the first step, and 1 inserted in the second step of the applied analysis) and 1 criterion, the required effect size was set to $\eta^2 = 0.15$, with a statistical power of 0.95, and it was calculated that a sample size of 472 respondents may be appropriate for this research. However, out of the distributed number of questionnaires, which was 3,000, we received answers from 953 respondents, although for the representativeness of the sample, the number of respondents should have been much higher due to number of citizens from three town which were included in this research. The sample was voluntary, i.e., we had no other criteria for collecting respondents, due to pandemic, so we collected a certain number of people from all three cities. We could not examine people live, because of the pandemic, since we did not want to put anyone at risk of infection, neither the members of our team, nor the people who participated in the research. The distribution of respondents is as follows: 350 from Belgrade, 314 from Novi Sad, and 289 from Niš. According to the results of the chi-square test ($x^2 = 5.774$, $p = 0.0566$), there is no statistically significant difference in the representation of respondents from the three urban centers. Of the total sample, 45.8% were male and 54.2% were female. There were 31.8% of the participants in 18–25 age range, 38.7% in 26–30 age range, 14.9% in 36–50 age range, and 14.6% of participants were more than 50 years old. The study was anonymous and no confidential details that could identify the respondents were gathered. All the items were exemplified on a 5-point Likert scale by answering from 1 = absolutely disagree to 5 = completely agree.

Measures

Personality traits

The authors used the BFF measurement model (OCEAN questionnaire) with 22 statements, proposed by John and Srivastava (1999). OCEAN questionnaire is aimed to measure Big Five personality traits: Extraversion (5 items; $\alpha = 0.76$), Neuroticism (3 items; $\alpha = 0.74$), Openness (4 items; $\alpha = 0.64$), Conscientiousness (5 items; $\alpha = 0.78$), and Agreeableness (5 items; $\alpha = 0.73$).

Attitudes toward COVID-19 vaccination certificates

These attitudes were measured through the assessment of participants' answers to the situation of usability and cost of COVID-19 certificates. Questions for assessing these attitudes in this research were: "The rule with having a COVID-19 certificate is very useful," "Everyone should have a COVID-19 certificate, so that we can return to normal life as soon as possible," "People should not be allowed into enclosed spaces if they do not have a COVID-19 certificate," "COVID-19 certificates will contribute to a faster end of the pandemic," and "I think that COVID-19 certificates are the best measure to fight against the pandemic." These questions form a unique score of positive attitudes toward COVID-19 certificates ($\alpha = 0.68$).

Visiting restaurants during the pandemic

Questions for assessing these attitudes in this research were: "The pandemic doesn't stop me from visiting restaurants," "My daily life is accompanied by going to restaurants, even during a pandemic," "Most people should visit restaurants during a pandemic," "I can't imagine going to a restaurant at least once a week even though it's a pandemic," and "A pandemic should not prevent restaurants from having the typical flow of people on a daily basis." Those 5 questions form a unique score of positive attitudes toward visiting restaurants during COVID-19 pandemic ($\alpha = 0.76$).

Data analysis

The calculations were completed in IBM SPSS 21 statistical software. With the aim to test the mediating role of attitudes toward COVID-19 vaccination certificates between personality traits and attitudes toward visiting hospitality facilities during the COVID-19 pandemic, we conducted a hierarchical multiple regression analysis.

The predictors in the first step of the analysis were personality traits, while in the second step we included attitudes toward COVID-19 vaccination certificates. All effect sizes were interpreted according to Cohen's report (1988). Hierarchical regression was chosen because it is the best way to show if our predictor variables (personality traits) explain a statistically significant amount of variance in attitudes toward visiting restaurants after accounting for attitudes toward COVID-19 vaccination certificates. Although we could use multiple dependent variables SEM analysis, which allows variables to correlate, regression analysis adjusts for other variables in the model, which is in line with our aim to examine the partial, individual effects of personality traits, controlling the remaining traits. Besides that, descriptive statistics and correlation analysis were performed in order to get an insight of the distribution and relationship between the variables. We decided to conduct hierarchical regression, since the SEM model could not converge toward a solution in relation to the collected data. The collected data are completely anonymized and are available on the OSF repository, and can be obtained at the request of the authors. Since all data (dependent and independent variables) were collected using the same method, there were potentially the risk of common method bias (CMB). Using the Harman's single factor test, we got the result that all the items explain 7.45% of single-factor solution, so CMB was not a pervasive issue for this research due to small amount of shared variance among the variables due to the method (Fuller et al., 2016).

Results

Descriptive statistics and correlation analysis

Basic descriptive statistics parameters for all measurements are presented in **Table 1**, as well as the correlation between measures and gender differences. The frequency distribution of numerical features was examined with skewness and kurtosis indicators. Given that all the variables are normally distributed, parametric statistics methods were used. According to Tabachnick and Fidell (2013), all the variables were normally distributed (Sk and Ku are in range −1.5 to 1.5). Significant gender differences in favor of women were shown. There were no gender differences on measures of attitudes toward visits and certificates.

Attitudes toward visiting restaurants during COVID-19 pandemic made positive, but modest, correlations with Openness and Extraversion, and also with attitudes toward COVID-19 vaccination certificates. On the other hand, attitudes toward COVID-19 vaccination certificates made a negative and modest correlation only with Neuroticism. It seems that people with higher Openness and Extraversion are actually more inclined to have more positive attitudes toward visiting restaurants during the COVID-19 pandemic, i.e., that the needs for socialization, sensations, and new experiences are actually potential predictors of approachable behavior in the context of visiting restaurants despite the global pandemic. On the other hand, it seems that people who are less inclined to intensely experience unpleasant emotions such as fear, sadness, etc., are also more inclined to see the positive sides of vaccination as a protective factor in the fight of hospitality sector against the pandemic. When interpreting correlations, it must be borne in mind that, due to a potential problem with sample representativeness, relationships between variables may suffer from the effect of overinflation.

Hierarchical multiple regression analysis

Results suggested that personality traits could explain a significant, although small percentage (2%) of the attitudes toward visiting restaurants during the COVID-19 pandemic. Openness and Extraversion predict attitudes toward visiting restaurants during the COVID-19 pandemic in a positive way, while Neuroticism and Conscientiousness have negative relations with those attitudes. After the inclusion of attitudes toward COVID-19 vaccination certificates in Step 2, personality traits could still explain a significant percentage (7%) of the attitudes toward visiting hospitality facilities during the COVID-19 pandemic, but the role of Neuroticism declines, which means that the positive attitudes toward the COVID-19 vaccination certificates represent a protective factor for people with high Neuroticism who have expressed a need for visiting restaurants during the pandemic. Therefore, it seems possible to form a specific profile of people who have a positive attitude toward visiting restaurants during the pandemic, which consists of traits such as a tendency to socialize, experiencing sensations, openness to new experiences, and less conscientious forms of behavior, but at the same time who are prone to protective behaviors like getting a vaccine that inhibits unpleasant emotional responses like sadness, fear, etc. in the context of the COVID-19 pandemic. However, bearing in mind that the sample did not, in a representative manner, include residents of these three cities, these findings should be taken with caution and interpreted partially as a random effect that may not represent a fully adequate reflection of the real situation. This is partially indicated by the low degree of explanation of the criterion variance by the included predictors in both steps.

Discussion

Depending on the psychological group of respondents, motivation may be increased or decreased by the impact of a vaccination certificate for visiting a restaurant. This study

TABLE 1 Descriptive statistics, gender differences and intercorrelation of variables.

	O	C	E	A	N	AtC	AtV	Males	Females
O	–							3.00	3.01
C	0.09**	–						3.52	3.50
E	−0.10**	−0.13**	–					4.28	4.23
A	−0.09**	−0.17**	0.08*	–				3.36	3.44*
N	−0.13**	−0.17**	0.12**	0.02	–			3.88	4.04**
AtC	0.04	0.01	0.01	0.04	−0.07*	–		3.50	3.57
AtV	0.09**	−0.06	0.08*	0.02	0.06	0.11**	–	2.98	2.94
M	3.00	3.51	4.25	3.40	3.97	3.54	2.96		
SD	1.02	0.75	0.76	0.62	0.78	0.62	0.54		
Sk	0.01	−0.05	−1.17	0.20	−0.68	0.00	0.09		
Ku	−1.06	−0.41	0.88	−0.23	−0.20	−0.45	0.04		

O, Openness; C, Conscientiousness; E, Extraversion; A, Agreeableness; N, Neuroticism; AtC, Attitudes toward COVID-19 vaccination certificates; AtV, Attitudes toward visiting hospitality facilities during COVID-19 pandemic; M, mean; SD, standard deviation; Sk, skewnees; Ku, kurtosis.
*$p < 0.05$. **$p < 0.01$.

tried to hypothesize the answer to how certain psychological groups perceive the attitude toward visiting restaurants during the pandemic, in relation to having a vaccination certificate. A modified Big Five personality traits model was used (John and Srivastava, 1999). There are few studies that show that vaccines can reduce fear in people and encourage them to return to normal life. The topic of vaccination is on the very margins of social communication or a topic on which no one speaks freely. However, some research shows that human fear and mental instability caused by the pandemic will have no impact on further life and that everything will be normalized very quickly. Also, some research claims that fear of a pandemic does not influence decisions about visiting restaurants. Seçilmiş et al. (2021) found no evidence that trust in the vaccination moderates the association between cognitive response with trust, and the intention to visit a destination. Bremser et al. (2021), proved that, despite the potential for excitement and confusion associated with this contagious disease, people were willing to travel during periodic restrictions on entry and exclusion of travel and that the benefits of such travel outweighed barriers such as wearing masks, social distancing, and other restrictive measures. With this pilot study, the authors tried to examine the relationship of psychological groups to the decision to visit restaurants during the pandemic, depending on the importance of the certificate. The obtained results can be rather interpreted as initial assumptions (due to small sample size, compared to the population of the country) that personality traits, which were investigated according to the Big Five model, explain a significant percentage of attitudes toward visiting restaurants during the pandemic. It is a preliminary pilot study, where a total of 3,000 surveys were distributed in three cities of Serbia, and a total of 953 responses were received. The sample taken is entirely voluntary, as it is a pilot study. Another way of collecting the sample would be risky for the groups of respondents, but also for the researchers themselves, due to the possibility of infection with the corona virus during that period, and because of the restrictions that existed. For the statistical model of data processing, the authors chose Hierarchical Regression, because this model can best see the strength of the predictor variable (personality traits) in explaining statistically significant variance in attitudes toward restaurant visits. Attitudes toward restaurant visits during the pandemic were shown to have positive but modest correlations with Openness and Extraversion, as well as attitudes toward COVID-19 vaccination certificates. However, attitudes toward COVID-19 vaccination certificates had a negative and modest correlation only with Neuroticism. **Table 2** provides an insight into the results of hierarchical regression analysis, where the results show that five personality traits according to the Big Five personality traits (OCEAN) theory could explain a small, but significant percentage of attitudes toward restaurant visits during the COVID-19 pandemic. In the following paragraphs, the results and confirmations of the hypotheses from the given tables will be described in a little more detail, for each type of person separately, with reference to their character traits.

The Openness feature showed statistical significance in predicting restaurant visits during the pandemic. People who are high in Openness tend to have many of the following characteristics: creative, intelligent and knowledgeable, give great attention to mental imagery, interested in new things, enjoy hearing new ideas, like thinking about abstract concepts, usually more liberal and open to diversity, interested in artistic endeavors, adventurous (Weisberg et al., 2011). They may also be more willing to engage in risky behaviors, including visits to destinations and restaurants during crisis situations (Sutin et al., 2013). However, it is necessary to keep in mind that a convenient, voluntary sample of respondents participated in this research, and it is not possible to assume with certainty whether the same results would have been obtained if the sample included people who do not use the Internet, who are less open

TABLE 2 Hierarchical multiple regression analysis for attitudes toward visiting hospitality facilities during COVID-19 pandemic.

Variables	Attitudes toward visiting hospitality during COVID-19 pandemic			
	β	95% CI		*P*
		Lower	Upper	
Step 1				
O	0.10	0.02	0.09	0.00
C	−0.07	−0.10	−0.01	0.04
E	0.09	0.02	0.11	0.01
A	0.01	−0.04	0.07	0.67
N	−0.07	−0.09	−0.01	0.04
$R = 0.15$; Adjusted $R^2 = 0.02$**; $\Delta R^2 = 0.02$**				
Step 2				
O	0.10	0.02	0.08	0.00
C	−0.07	−0.10	−0.01	0.04
E	0.08	0.01	0.10	0.01
A	0.01	−0.05	0.06	0.77
N	−0.06	−0.09	−0.01	0.08
AtC	0.11	0.03	0.14	0.00
$R = 0.28$; Adjusted $R^2 = 0.07$**; $\Delta R^2 = 0.05$**				

O, Openness; C, Conscientiousness; E, Extraversion; A, Agreeableness; N, Neuroticism; AtC, Attitudes toward COVID-19 vaccination certificates; β, standardized partial contruibution of predictor; R, multiple correlation coefficient; R^2, multiple determination coefficient; ΔR^2, change of multiple determination coefficient after AtC introduction into model; CI, confidence interval.
**$p < 0.01$.

to new technologies and who, perhaps due to computer illiteracy or computer anxiety, did not dare to participate in this research.

Statistical significance was also observed in the predictor of Conscientiousness, but its correlation was in the negative direction. It turns out that the more conscientious people are, the less they will visit restaurants during the pandemic. When someone is conscientious, they are able to apply self-discipline and self-control in order to follow and eventually achieve their goals. Conscientious people may become too serious and may need a gentle push to cheer up and have fun (Denissen et al., 2018). They can also burn out by overwork, become overly rigid or inflexible, and struggle to be spontaneous. If someone scores high in conscientiousness, they are likely to carefully consider all the facts before making decisions. They tend to think through most things and consider the consequences before finally acting (Martin et al., 2007), which can be linked to behavior during the pandemic. Nevertheless, bearing in mind the characteristics of a potentially unrepresentative sample, it is possible that these effects can be compared to random ones, considering that most of the research involves highly conscientious people, who have the need to contribute to scientific results through their engagement. It is not excluded that the representativeness of the sample may have been compromised by the fact that the sample does not include those people who are less conscientious about their obligations, are less informed about current events such as the pandemic, and are less inclined to order and discipline.

When looking at the predictor of Extraversion, there is statistical significance in predicting restaurant visits during a pandemic, in a positive direction. It means that the more extraverted visitors are, the more will they visit restaurants regardless of the pandemic. People who have a high level of extroversion need social stimulation to feel full of energy (Mccabe and Fleeson, 2012). They simply gain energy by engaging in social interaction. Extraversion significantly contributes to the anticipation of going to restaurants without a certificate. Additionally, bearing in mind that the sample may include those people who are more open to social engagement and the need for stimulation, as well as that there are fewer older people in the sample who have a less pronounced need for openness to socializing due to aging, these findings should interpret with caution.

Agreeableness is a person's ability to put other people's needs above their own and struggling in situations that require difficult decisions. They can also be slow in judging other people and often care about people unconditionally. The agreeableness predictor does not show statistical significance in predicting restaurant visits, and even after the introduction of the COVID-19 certificate, the significance does not change.

Neuroticism is a negative personality trait that includes maladaptation and negative emotions, poor self-regulation, or the ability to manage instincts, problems coping with stress, a strong reaction to perceived threats, and a propensity to complain (Costa and McCrae, 1999). For the predictor of Neuroticism, statistical significance is at the very limit of acceptable value. With the introduction of mediators, the role of neuroticism is declining, which means that a positive attitude toward vaccination gives strength to people with high neuroticism when visiting restaurants during a pandemic. Neuroticism is also associated with such precautions in general in many studies during the pandemic period (e.g., Airaksinen et al., 2021). The results showed that Neuroticism is related to current mental health and decisions during a pandemic. It is concluded vaccines can play a great role in making decisions in people with high Neuroticism (Shokrkon and Nicoladis, 2021). Considering that the sample is potentially unrepresentative, because it does not include, for example, computer-anxious people in whom neuroticism is higher, or it does not include people who have a pronounced fear of viruses, which can be one of the manifestations of neuroticism, these findings should rather be taken with caution in the context of a pilot study, rather than as final conclusions regarding this personality trait.

Limitations

There were some limitations during the research. Some of the limitations are procedural and analytical, and others are

theoretical. Considering the type of analytical research, one of the key procedural limitations is the inability to go out on the field and survey restaurant visitors. Questionnaires were distributed online, because it was the safest way of research and, in general, a way of communicating with people, due to the prevailing a pandemic, and of course to reduce the risk of infection, both for the respondents and the researchers. The sample used in the research (953) is entirely voluntary, due to the limited way of communication with the respondents. In this way, an almost equal number of questionnaires was obtained from all the three cities (although the cities are significantly different in size and number of inhabitants), which allows us to assume and give freedom of choice to this number of samples as a type of representative sample. The research is pilot in type, and for that reason, a smaller number of respondents was used than it should be according to the total population from these cities. A limiting circumstance is the access to respondents (a certain number of people are of an older age, and do not have the necessary knowledge and skills to use social networks and computers). We believe that this sample is sufficient for a pilot study. Field research reduces the number of missing values, and increases the number of valid answers. Online research takes more time, gives low response rates, as many ignore the emails and surveys they receive. In the field research, the possibility to get all the answers is greater, because it depends on the personal contact of the interviewers and respondents. Many potential participants in the research who belong to old age group are reluctant to participate precisely because of their poor knowledge of technology, lack of access to online services, inaccessibility of computers, and a version to technology. Analytic the limitation is also the fact that we do not have data on who of the respondents was vaccinated and who was not, and we do not have data on whether they went to some visits to restaurants during the pandemic, and how often did it. In this context, we could not segment respondents into vaccinated and unvaccinated. It is assumed that there are limitations in terms of obtaining socially desirable answers in the research. The topic or question of vaccination is something that few would be free to comment on. Both sides are subject to condemnation, both vaccinated and unvaccinated. Therefore, getting a valid and honest answer, especially in written online form, is almost impossible. So, we can consider all this as a pilot study, i.e., some initial step of considering the profile of people who are inclined to take risks or not take risks in pandemic situations in relation to their dispositional factors, i.e., in relation to personality traits. Also, it can be argued that there are limitations in theoretical terms, as there is not much research on specific issues. Very few studies have dealt with the topic of vaccination during COVID-19, and the influence of personality theory on the assessment of their perception of the vaccine, and whether the vaccine affects their determination to visit restaurants and travel. It can be said that there are almost no such studies, which with this model, the theory of personality, investigates the position on the impact of vaccination certificates on decision-making and intentions. Future research should relate to the wider area of research, not only in Serbia, and they should relate to other factors, not only the ones that influence the intention to visit restaurants.

Conclusion

The COVID-19 pandemic has caused great damage to the global industry, including tourism and hospitality industry. It is considered to be a global health, social, and economic emergency (Fonseca et al., 2021). Tourism and hospitality industry suffered a major decline during the pandemic of the last 2 years in the world and in Serbia. Restrictions and social distancing policies have had a dramatic effect on the industry. Tourism completely collapsed at some point, and the hospitality industry was at risk, maintaining itself barely enough not to close facilities completely. Many restaurants and cafes have been forced to limit working hours, close facilities due to unprofitability and high costs, and distribute layoffs to employees. At a time when the idea of COVID-19 certificates was developed, there seemed to be some salvation for the operation of catering facilities. It is believed that the restaurant sector will recover in the next 3 years. Motivation is just one of the factors that helps in making decisions (Abbacete et al., 2012). Previous studies point to the fact that when people see high risk, trust has a stronger effect on creating intentions in their behavior (Anderson and Karunamoorthy, 2003). According to a recent study, travelers are more inclined to avoid travel during the pandemic owing to perceived health risks (Zheng et al., 2021).

As the virus spread across the countries, there was a huge distribution of new information. Anxiety and agony have reigned among rumors and true knowledge (Torales et al., 2020). Guidry et al. (2021) consider that the attitude toward the vaccine is subjective and that people decide to take it if they could receive some benefits from the vaccine and obtaining a certificate. However, no research uses OCEAN theory to investigate the impact of vaccine certification on the decision to visit restaurants and similar facilities. The model was used in research to determine whether some personality types would want to get vaccinated or not, but the model was not used to determine the impact of vaccines and certificates on restaurant intentions (Shmueli, 2021). In their study, Suess et al. (2022), give results on how much tourists are willing to be vaccinated so that they can travel, but not through the Big Five model. They proved that the model of health beliefs defines the future activity of tourists. It is assumed that similar results would be obtained when visiting restaurants. The obtained results assume that personality traits explain a good percentage of attitudes toward visiting restaurants during a crisis or pandemic. Openness and Extraversion positively predict the attitude toward restaurant visits during pandemic, while

Neuroticism and Conscientiousness have a negative attitude toward restaurant visits. After the introduction of the mediator variable, the importance of neuroticism decreases, which means that having a vaccination certificate is a protective factor for people with high neuroticism. However, it is necessary to keep in mind that this is a plot study and that the observed effects are potentially random, which may call into question the validity of the conclusions, but at the same time it provides a suitable basis for further research in the context of this topic. The pilot research can contribute to the field of economics and the health sector. The study assumes that having a vaccination certificate affects the intention of visitors to go to restaurants during a pandemic. On the other hand, the perception of risk and some kind of trust in the certificate also affects the intention of consumers.

Research can contribute to the development of personality psychology, in terms of starting assumptions for more significant research. It is possible that such a pilot study will contribute to the understanding of the needs of restaurant visitors during the pandemic. Based on the understanding of their needs and expectations, it would be possible to spot the main problems, and on that basis determine some business measures to avoid situations like losing visitors and closing restaurants. In this way, restaurants will enable the time and principle of work during the crisis, but also the possibility of avoiding conflicts with spheres of interest and government organizations. So far, there are great differences in attitudes in society, which lead to discrimination against people of different understandings. The study contributes to and enhances the existing research and new results, providing empirical knowledge on the impact of risk on restaurant visits. This pilot study can complete to the lack of literature on consumer behavior in crisis situations and pandemic periods, and science will benefit validly from this and similar research in studying the behavior of certain personality types. Therefore, based on these assumptions, future research can focus precisely on specific groups of visitors. Also, many restaurants can direct their business more toward certain groups of visitors. The study can also contribute to the practical implications, as it highlights the way restaurants will operate in the future. Of course, every restaurant will have to change the way it does business and adapt it to unforeseen situations, including the possible return of the pandemic. The way of doing business means finding solutions for non-contact business, online management, as well as improving the system of security measures and protection in restaurants. Knowledge of the existence of risks and the way consumers behave will dictate the future business of restaurants in the world. Thus, the business will be under controlled conditions, ready to take all security measures and reduce the level of risk to a minimum, but also to maintain business during crisis situations. It will create a feeling for visitors and their needs, which are changing in relation to the development of the pandemic. Therefore, they will not lose customers and there will be no closure of facilities. However, research on this topic will prove the practical implications in the segment of destination and business development management, because based on the information obtained from the research, it will deal more with market segmentation and visitor needs. Some of the changed ways of doing business, which were created during the pandemic, will remain in use even after the situation calms down. An example of this is online business and maintaining contact with visitors.

Data availability statement

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

Author contributions

TG, IB, MP, and IM contributed to the conception and design of the study and contributed to statistical analysis and data processing. MR and DBV wrote the first draft of the manuscript. DV, MK, and NV planned and coordinated. 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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