

Study on the Impact of Perceived Travel Risk on Guangxi Tourists' Outbound Tourism Intention: An Application of the Extended Theory of Planned Behavior

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Abstract—This study extends the Theory of Planned Behavior by incorporating perceived travel risks associated with COVID-19 to investigate potential Guangxi tourists' overseas travel intentions in the next two years. The empirical results of Structural Equation Modeling show that attitude, subjective norms, and perceived behavioral control have significant positive effect on respondents' intention to travel overseas. Perceived travel risks regarding COVID-19 exert significant negative impact on intention, as expected. Moreover, it is verified that the extended TPB model has better explanatory ability than the TPB one. Implications and suggestions for tourism sectors and tourism marketers to reduce tourists' risk concerns and formulate appropriate marketing strategies for tourism restart are included in the study.

Index Terms—COVID-19, perceived travel risks, Theory of Planned Behavior (TPB), overseas travel intention.

I. INTRODUCTION

Tourism has developed rapidly and become a true driving force for global economic growth and development. However, tourism is vulnerable to pandemics, epidemics, or any risks or crisis that threaten the safety of tourists [1], [2]. One of the most shocking media reports in 2020 was the outbreak of novel coronavirus (COVID-19). Prior to this, the world witnessed a series of global outbreaks of infectious diseases, for instance, SARS, H1N1 influenza and Ebola virus.

Several studies (e.g., [3], [4]) have unanimously found that epidemic has aggravated people's worries about international travel. Responses to disease outbreaks usually affect people's willingness to travel. Lee *et al.* stated that H1N1-associated perception was not an important factor affecting international travel intention [3]. Nevertheless, Reisinger and Mavondo [5] believed that diseases perceptions were significant indicators of altering travel patterns. Therefore, tourists perceive and react to an undesirable feature differently. Risk and safety/health perceptions may influence the possibility of tourist traveling [5]-[8].

Perceived risks and threats of Asian tourists are higher than those of Western tourists [1]. Then, what are the impacts

of COVID-19 outbreak on Chinese tourists' travel behaviors? Will risk of infection be the most concerned for them? Will their perceptions of risks affect their travel intentions? These are questions that need to be answered. At present, the virus has left millions of potential Chinese tourists at home. Countries and regions which regard China as their main inbound market segment have felt the loss of Chinese tourists most. Predicting tourists' behavior becomes a major concern for tourism marketers, especially when there are unfavorable factors such as COVID-19 epidemic affecting traveling.

Although scholars have studied the impact of public health emergencies (e.g., SARS, H1N1 and Ebola) on tourism industry or travel intention, few studies have been conducted to understand potential Chinese tourists' reactions and behaviors when they make overseas travel decisions during the COVID-19 outbreak. To fill the gaps, the perceived travel risk regarding COVID-19 was classified as an obstacle that may hinder tourists from traveling overseas. The study would like to know to what extent travel risk perceptions regarding COVID-19 may affect the intention of traveling overseas.

The Theory of Planned Behavior (TPB) [9] is a powerful and commonly used tool for studying behavioral intention and behavior in tourism and hospitality [10] and other various fields and industries [11]. However, several studies (e.g., [10], [12]) proposed to add extra constructs to enhance its predictive or explanatory ability. Nowadays, risk has become a main concern for tourists when considering international travel [13]. Therefore, perceived travel risk is incorporated into the TPB model in this study.

The research objectives include: (1) examining the predictive ability of the extended TPB model when perceived travel risk is integrated as an antecedent; (2) testing the proposed hypotheses with a sample of potential Guangxi tourists; (3) comparing the predictive ability of TPB model and ETPB model to identify which model is more accurate in prediction.

Potential contributions of the study are theoretical and managerial. Generally, this study helps theoretically enhance the existing literature on travel intention during the COVID-19 outbreak. While explaining tourists' decision-making behavior effectively, the applicability of TPB in a Chinese setting is also verified. Besides, the study provides practical enlightenment for tourism sectors and tourism marketers to reduce tourists' risk concerns and formulate appropriate marketing strategies for tourism restart. Understanding potential Guangxi/Mainland Chinese tourists' travel intention is not only helpful to maintain a sustainable tourism destination, but also useful in designing tourist

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products to better attract them. Chinese tourists' interests and priorities may be reshaped after COVID-19 crisis. Finally, findings of this study help public health authorities educate outbound tourists, in particular, those who show great concerns about the pandemic.

II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

A. The Theory of Planned Behavior (TPB)

The TPB [9] assumes that one's behavioral intention depends on three conceptually antecedents: attitude, subjective norms, and perceived behavioral control. Attitude (AT) is an individual's favorable (positive) or unfavorable (negative) evaluation of a behavior [9]. Subjective norm (SN) is the social pressure that a person feels when deciding whether to implement the behavior or not [9]. Perceived behavioral control (PBC) refers to an individual's confidence or ability to perform an act, such as having necessary or enough resources (e.g., time, opportunity). Behavioral intention (BI) refers to the subjective probability of a person engaging in a certain behavior [9].

TPB has been widely applied in various fields and industries, and its ability to predict behavioral intention is strongly supported by numerous empirical studies in tourism context (e.g. [10], [12], [14], [15]). In terms of detailed evidence, Spark and Pan assert that subjective norms and perceived behavioral control have a positive influence over Chinese tourists' behavioral intention to visit Australia [10]. Lam and Hsu believed that attitude and perceived behavioral control significantly affect Taiwanese tourists' destination choices [12]. Quintal *et al.* revealed that attitude, subjective norms, and perceived behavioral control have a significant impact on visiting intention [14]. Park *et al.* found that attitude, subjective norms, and perceived behavior control show a significant effect on Chinese college students' intention to travel to Japan [15]. Therefore, given the extant literature, it is hypothesized that:

- 1) H1: Attitude has an influence on outbound travel intention of potential Guangxi tourists.
- 2) H2: Subjective norm has an influence on outbound travel intention of potential Guangxi tourists.
- 3) H3: Perceived behavioral control has an influence on outbound travel intention of potential Guangxi tourists.

As previously mentioned, TPB can be further extended by incorporating extra predictors that are imperative to decision-making behavior (e.g., travel motivation, past behavior, destination image, travel constraints, perceived risk) to enhance the predictive or explanatory power [12], [13], [15], [16]. This study thus broadens the TPB by integrating perceived travel risk.

B. Perceived Travel Risk

Risks are usually expressed as shocks, threats and crises which may negatively affect tourism [1]. Political instability [7], epidemic [8], natural disaster [17], and terrorism [18] lead to potential losses which may result in perception of travel risks. Maser and Weiermair identified a series of travel-related risks, including diseases, crimes, natural

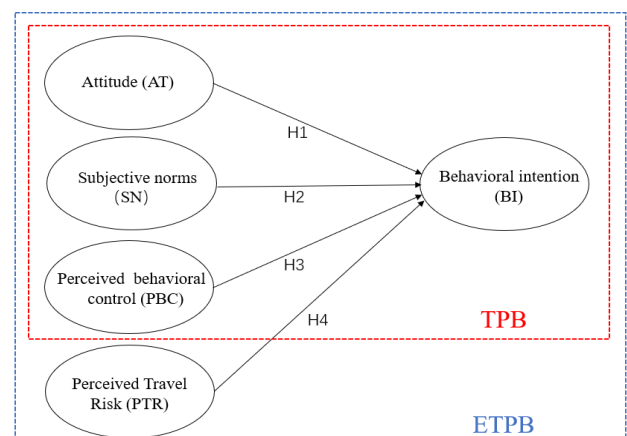
disasters, hygiene, language barriers, and uncertainty of destination laws/regulation [19]. Risk has been regarded as the most concerned issue for international tourists [20]-[22]. Tourists are likely to perceive one or more travel risks when they travel.

Several TPB-based studies consider the role of risk in tourist decision making (e.g., [3], [23]). Lee *et al.* extended the Model of Goal-directed Behavior (MGB), an extension of the TPB, by introducing non-pharmaceutical intervention for influenza and perception of 2009 H1N1 to explore tourists' international travel intention [3]. Hsieh *et al.* incorporated perceived risk into the original TPB model and found that perceived risks negatively affected young Taiwanese tourists' attitudes towards traveling to Japan, which subsequently affected their intention [23]. Overall, it is feasible to extend the TPB model to test the influence of risk perception on behavioral intention.

Perceived risk significantly affects travel intention [18], [24], [25], especially after events that are considered dangerous [8], [25]-[27]. Besides, perceived international travel risks significantly affect safety perception and travel intention [13], [28]. When realizing that the potential risks outweigh the benefits, tourists tend to change their plans or behaviors, such as canceling trips, or evacuating from destinations that are risky [17], [19]. Accordingly, the hypothesis below is proposed.

- 4) H4: Perceived travel risk has an influence on outbound travel intention of potential Guangxi tourists.

Fig. 1 depicts the proposed conceptual framework and hypothesized relationship.



TPB means the Theory of Planned Behavior; ETPB means the extended TPB.

Fig. 1. Proposed conceptual model and hypothesized relationship.

III. METHODOLOGY

A. Study Instrument

In response to the research objectives, a quantitative approach with utilizing a structured and self-administered questionnaire was applied. After extensively reviewing the literature, measurement items were generated, measuring on a five-point Likert scale (from 1= strongly disagree to 5 = strongly agree). The items were mostly adopted from previous studies and were slightly adjusted to fit the study

context. Specifically, there are: five items on attitude (AT) [9], [29]; six items on subjective norm (SN) [9], [29], [31]; three of six items on perceived behavioral control (PBC) [9], [23], [29], the remaining three developed by the researcher according to the literature review; and five items on behavioral intention (BI) [3], [23], [29]. Perceived travel risk (PTR) regarding COVID-19 was measured with nine statements, adopting from previous studies [3], [13], [30], [31] and adjusting to fit the context.

The original questionnaire was written in English. To make sure that the questionnaire was accurate, a blind translation-back-translation method [32] was employed. Then the Mandarin questionnaire was pretested on a group (N=65) of potential Guangxi tourists. The Cronbach's alpha values of the five constructs were above 0.85, indicating that the scales were reliable. Given that the ratio of observed variables to sample size should be 1:10-1:15; 200-400 samples would be appropriate [33], this study was supposed to collect at least 400 valid survey.

B. Data Collection

Considering the accessibility and availability of data, the study area was reduced to Guangxi, an autonomous region (provincial administrative region) in China. Accordingly, the research sample was limited to potential Guangxi outbound tourists. They could be those who have ever/never traveled abroad before and may have intention to travel overseas in the next two years. The primary data were collected through an online Mandarin questionnaire, which was distributed by snowballing via WeChat and QQ (popular Apps among Chinese) when many countries were struggling to contain soaring infections and China's economy and tourism demand were moving past COVID-19. A total of 450 questionnaire were collected, of which 33 were deemed invalid because of incomplete responses or neutral/extreme values throughout the entire case. Finally, 417 complete surveys were available for this study, yielding a valid response rate of 92.67%. The data collected were computed with SPSS 22.0 to generate descriptive statistics and AMOS 23.0 to test hypotheses.

IV. DATA ANALYSIS AND RESULTS

A. Profiles of Respondents

Regarding characteristics of the investigated samples, 50.1% were male, 49.9% were female. Respondents aged 18-35 accounted for the largest proportion, which was 47.7%. More than 55% of respondents had bachelor and above degree. Respondents earned more than RMB 10,001 (US\$ 1547) represented 20.1%. Concerning travel behaviors, 82% of respondents had travelled overseas before. More than 65% of the respondents stayed abroad for 3-7 days. 39.8% of the respondents liked to travel with their families for holidays, while 35.7% liked to travel with friends. As for the most desirable overseas destination in the next two years, respondents preferred Hong Kong, and Macao (28.3%), Asia (25.9%), Europe (15.3%), and North American (10.8%).

B. SEM Analysis

SEM analysis in this study followed the two-stage procedure proposed by [34]. Individual CFA was first

performed for each latent variable (AT, SN, PBC, PTR, and BI). The standardized factor loading for each observed variable was greater than the suggested value of 0.6 [33], and significantly loaded on its own construct. Despite that, three items (SN6, PBC5, PBC6) were eliminated to make the individual measurement model and overall measurement model better fitted. As a result, measurement model of each construct demonstrated good model fit. The χ^2/df value was lower than the recommended value of 3.0 [35], the GFI, AGFI and CFI were all above the critical value of 0.9 [35] while RMSEA was smaller than 0.08 (acceptable) or 0.05 (ideal). Then, a merged CFA was run simultaneously with all latent variables, and 29 observed variables were loaded. Table I summarizes the testing results of CFA analysis.

Construct validity was estimated by evaluating all factor loadings and their associated t-values, squared multiple correlations (SMC), composite reliability (CR), and average variance extracted (AVE). The t-values for all loadings in the final CFA were significant at the 0.001 level. Moreover, all the SMCs were over 50% [36]. The CR was between 0.870 and 0.952, greater than the recommended value of 0.7 [37]. The AVE was between 0.627 and 0.689, above the suggested value of 0.5 [37]. The convergent validity of the proposed measurement model was confirmed. Besides, if all square roots of AVEs are greater than the absolute correlation between pairs of constructs, as suggested by [37], then the construct exhibits discriminant validity. Here, the square roots of AVEs (ranging from 0.79 to 0.83) were above the correlation coefficients of 0.217 to 0.649. As a result, the discriminant validity was well confirmed.

C. Hypothesis Testing

Using the optimized observed variables and constructs from the measurement model analysis, the structural model was built and tested. The results indicated that the model fitted well, with overall goodness-of-fit indices of $\chi^2/df=1.115$, $p=0.070 > 0.05$, GFI= 0.939, AGF= 0.927, CFI= 0.995, RMSEA= 0.017, SRMR= 0.034 (See Fig. 2).

Table II gives the hypotheses test results. The standardized coefficients of causal hypotheses (H1-H4) indicated that there were significant positive correlations between attitude and behavioral intention ($\beta_{H1}= 0.26$, $p < 0.001$), subjective norms and behavioral intention ($\beta_{H2}= 0.22$, $p < 0.001$), perceived behavioral control and behavioral intention ($\beta_{H3}= 0.23$, $p < 0.001$). However, perceived travel risks and behavioral intention ($\beta_{H4}= -0.39$, $p < 0.001$) were supported with a significant negative relationship.

Moreover, the R^2 values of TPB model and ETPB model were compared so as to verify which model had better predictive or explanatory ability for travel intention. The variance of overseas travel intention explained in the TPB model was 56%, and that of the ETPB model was 69%. Obviously, the ETPB model could better explain participants' overseas travel intention than the TPB model.

V. CONCLUSION AND DISCUSSION

A. Conclusion

The present study extended the TPB model to explore potential Guangxi tourists' overseas travel intention in the

next two years. Four hypotheses (H1-H4) were proposed and verified by structural equation modeling (SEM). The data fitted well with the model, and the prediction was basically supported.

Extended TPB has been proved to be superior to the original TPB model in predicting overseas travel intention, as evidenced by other existing studies on Chinese outbound

tourists [10], [12], [14], [16]. This was in line with the revised TPB criteria [9] that TPB is open to add extra predictors as long as the key antecedent variables are considered and the modified model captures a considerable part of the total variance of intention. Under the background of COVID-19 pandemic, taking perceived travel risks into consideration when explaining tourists' behaviors is contributory.

TABLE I. RESULTS OF CONFIRMATORY FACTOR ANALYSIS (N=417)

| Constructs and observed variables | M | SD | Estimation of model parameters | | | | Convergent validity | | | | |
|--|------|------|--------------------------------|------|---------|-----|---------------------|------|------|------|------|
| | | | Unstd. | S.E. | t-value | P | FL | SMC | CR | AVE | |
| <i>Attitude (AT)</i> | | | | | | | | | | 0.91 | 0.66 |
| 1-I think that traveling overseas is positive. | 3.61 | 0.99 | 1.00 | | | | | 0.96 | 0.92 | | |
| 2-I think that traveling overseas is beneficial for me. | 3.61 | 1.12 | 0.90 | 0.04 | 21.74 | *** | 0.77 | 0.59 | | | |
| 3-I think that traveling overseas is attractive. | 3.62 | 1.15 | 0.95 | 0.04 | 22.50 | *** | 0.78 | 0.61 | | | |
| 4-I think that traveling overseas is enjoyable. | 3.57 | 1.20 | 0.99 | 0.04 | 22.67 | *** | 0.78 | 0.62 | | | |
| 5-I think that traveling overseas is necessary. | 3.56 | 1.16 | 0.93 | 0.04 | 21.28 | *** | 0.76 | 0.58 | | | |
| <i>Subjective Norms (SN)</i> | | | | | | | | | | 0.90 | 0.65 |
| 1-People who are important to me think it is okay for me to travel overseas. | 3.56 | 1.07 | 1.00 | | | | 0.86 | 0.75 | | | |
| 2-People who are important to me understand that I travel overseas. | 3.56 | 1.12 | 0.96 | 0.05 | 19.84 | *** | 0.80 | 0.63 | | | |
| 3-People who are important to me agree with me about traveling overseas. | 3.59 | 1.16 | 1.01 | 0.05 | 19.97 | *** | 0.81 | 0.65 | | | |
| 4-People who are important to me support my decision to travel overseas. | 3.58 | 1.13 | 0.97 | 0.05 | 19.62 | *** | 0.79 | 0.63 | | | |
| 5-Social media, newspapers, magazines, television and so on recommend me to travel overseas. | 3.53 | 1.12 | 0.93 | 0.05 | 18.25 | *** | 0.76 | 0.58 | | | |
| <i>Perceived Behavioral Control (PBC)</i> | | | | | | | | | | 0.87 | 0.63 |
| 1-Whether or not I travel overseas is completely up to me. | 3.68 | 1.14 | 1.00 | | | | 0.84 | 0.71 | | | |
| 2-If I want to, I feel nothing will prevent me from traveling overseas. | 3.61 | 1.13 | 0.89 | 0.05 | 16.80 | *** | 0.75 | 0.57 | | | |
| 3-I have enough money, time and opportunities to travel overseas. | 3.59 | 1.11 | 0.87 | 0.05 | 16.94 | *** | 0.75 | 0.56 | | | |
| 4-I have good health to travel overseas. | 3.59 | 1.18 | 1.01 | 0.05 | 18.55 | *** | 0.82 | 0.67 | | | |
| <i>Perceived Travel Risks (PTR)</i> | | | | | | | | | | 0.95 | 0.69 |
| 1-COVID-19 is a very frightening disease. | 2.95 | 1.27 | 1.00 | | | | 0.82 | 0.67 | | | |
| 2-COVID-19 is a danger in overseas destinations. | 2.98 | 1.30 | 1.06 | 0.05 | 20.87 | *** | 0.84 | 0.71 | | | |
| 3-It is dangerous/risky to travel overseas in the next two year because of COVID-19. | 2.91 | 1.30 | 1.05 | 0.05 | 20.78 | *** | 0.84 | 0.71 | | | |
| 4-I am concerned about contracting COVID-19 if traveling overseas. | 2.83 | 1.34 | 1.10 | 0.05 | 21.40 | *** | 0.86 | 0.73 | | | |
| 5-Because of COVID-19, overseas travel should be avoided within the next two years. | 2.85 | 1.24 | 0.94 | 0.05 | 19.00 | *** | 0.79 | 0.63 | | | |
| 6-People around me seem to refrain from overseas travel due to COVID-19. | 2.87 | 1.26 | 1.02 | 0.05 | 20.74 | *** | 0.84 | 0.70 | | | |
| 7-Hygiene and environmental conditions of facilities (such as, public transportation, recreation sites, hotels and restaurants, etc.) in overseas destinations concern me. | 2.77 | 1.26 | 0.99 | 0.05 | 20.05 | *** | 0.82 | 0.67 | | | |
| 8-Ability of preventing and controlling the COVID-19 epidemic or other emergencies in overseas destinations concern me. | 2.82 | 1.29 | 1.04 | 0.05 | 20.82 | *** | 0.84 | 0.71 | | | |
| 9-Standards of medical and health care in overseas destinations concern me. | 2.87 | 1.27 | 0.99 | 0.05 | 19.86 | *** | 0.82 | 0.67 | | | |
| <i>Behavioral Intention (BI)</i> | | | | | | | | | | 0.91 | 0.66 |
| 1-Overseas travel is my first choice for traveling within the next two years. | 3.47 | 1.14 | 1.00 | | | | 0.86 | 0.75 | | | |
| 2-I intend to travel overseas within the next two years. | 3.53 | 1.15 | 0.91 | 0.05 | 19.36 | *** | 0.78 | 0.61 | | | |
| 3-I am willing to travel overseas within the next two years. | 3.51 | 1.15 | 0.92 | 0.05 | 19.45 | *** | 0.79 | 0.62 | | | |
| 4-I will make an effort to travel overseas within the next two years. | 3.51 | 1.17 | 0.95 | 0.05 | 20.33 | *** | 0.80 | 0.65 | | | |
| 5-I will certainly invest time and money to travel overseas within the next two years. | 3.52 | 1.20 | 0.99 | 0.05 | 21.18 | *** | 0.82 | 0.68 | | | |

Notes. FL: factor loading; SMC: squared multiple correlations; CR: composite reliability; AVE: average variance extracted; ***p < 0.001.

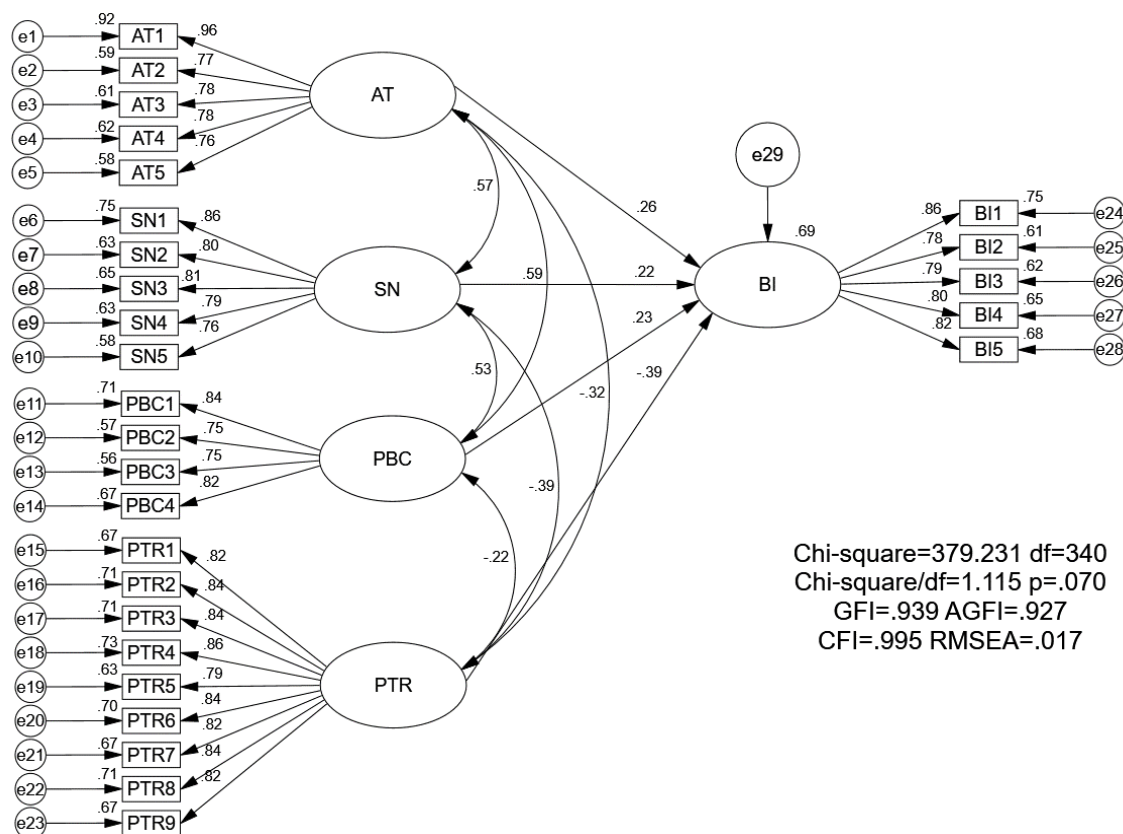


Fig. 2. Results of SEM analysis.

Notes. Recommended value: $\chi^2/df < 3$ [35]; CFI (comparative fit index) ≥ 0.90 [38]; GFI (goodness-of-fit index) ≥ 0.90 [39]; RMSEA (root mean square error of approximation) < 0.07 [40].

TABLE II: SUMMARY OF THE TESTED HYPOTHESES H1—H4

| Research hypothesis | Hypothesized path | Path coefficient | Results |
|---------------------|---|------------------|-----------|
| H1 | Attitudes → Behavioral intention | 0.26*** | Supported |
| H2 | Subjective norms → Behavioral intention | 0.22*** | Supported |
| H3 | Perceived behavioral control → Behavioral intention | 0.23*** | Supported |
| H4 | Perceived travel risks → Behavioral intention | -0.39*** | Supported |

Notes. *** $p < 0.001$.

Empirical results indicated that tourists’ attitude, subjective norms, and perceived behavioral control had a significant positive impact on potential Guangxi tourists’ overseas travel intention, supporting previous research (e.g., [3], [15]). Unsurprisingly, perceived travel risks regarding COVID-19 were negatively associated with overseas travel intention and played the most important role (PTR = -0.39, AT= 0.26, SN= 0.22, PBC= 0.23). Previous studies have reported consistent results on the relationship between perceived risks and behavioral intention. Risk perception negatively affects travel intention [25] and future travel behavior eventually [6], [18].

Meanwhile, what we have found was also contrary to several previous studies. Leggat *et al.* stated that although travelers in Queensland expressed concerns about the H1N1 influenza and even if they had H1N1-like symptoms, most of them would not postpone their travel plans [41]. Besides, Lee *et al.* found that H1N1-associated perception had no effect on travel desire and intention. Because there were some adaptive behavior in tourists’ minds, reducing their infection threats to an acceptable level [3]. Our results indicated that respondents with higher perception of risk regarding COVID-19 were

more likely to avoid traveling overseas. One possible explanation is that the infection rate of COVID-19 is high, and the pandemic situation has not been well controlled internationally. For Chinese, China is the safest place where they prefer to stay and travel. Besides, travel restrictions and border closures have hindered people from traveling overseas. Therefore, tourism authorities need to place special emphasis on reducing perceived travel risks so as to boost intention.

B. Implications

Several salient implications drawn from the findings are provided for destination managers and marketers. Our research findings imply that potential Guangxi tourists’ favorable attitudes toward overseas travel strongly stimulate them to make decisions on travelling overseas, while their perceived opinions from important referents about traveling overseas and their perceived ease of traveling overseas are beneficial to establish their overseas travel intention. As such, governments of overseas destinations, travel agencies and other tourism institutions need to cooperate closely to publicize the benefits of overseas tourism (e.g., unique landscape, safe travel environment, etc.) via multiple channels to attract tourists. Most of the respondents in this

study have traveled overseas before. Increasing their favorable experiences in overseas destinations will encourage them to actively participate in the word-of-mouth publicity of destinations, and eventually lead to the improvement of subjective norms, because they may become important referents for other potential tourists. Chinese tourists with tourism satisfaction are usually happy to share their travel photos and feelings on social media like WeChat moments, or Douyin, which have great social impacts on their peers. Furthermore, developing unique, tailored travel packages (such as short-term, cost-effective travel packages) based on tourists' needs, wants, and expectations will help them perceive the ease of traveling overseas. Guangxi employees usually take no more than one week's official holiday and their average personal annual incomes are often lower than that of neighboring provinces, such as Guangdong, Hunan. These efforts are helpful to attract tourists to travel overseas.

According to the empirical results, tourists would perceive more travel risks when they were concerned about the COVID-19. From the perspective of destination competitiveness, it is critical for tourists to feel safe before and during travel, with little risk concern. It is suggested that public department, destination managers and marketers take effective measures to reduced perceived risks.

Implications for destination management organization. As travel risks hinder overseas travel intention, the government or DMO (Destination Management Organization) should concentrate on:

- 1) Eliminating travel risks by communicating risk and safety to the public. There must be a special organization responsible for issuing up-to-date and reliable risk information, and providing responsible travel advice to the public. Potential outbound tourists can obtain information, such as safety tips for travel, quarantine requirements to reduce the uncertainty of outbound tourism.
- 2) Improving destination infrastructures. Hygiene and environmental conditions of facilities (such as public transportation, recreation sites, hotels and restaurants, etc.) in overseas destinations concerned the potential tourists. Therefore, implementing COVID-19 prevention measures is a must. For example, reservations policies should be carried out on a regular basis, with visitor cap and staggered access in place. Safe and reliable health system certification, and Clean & Safe label can be launched to require providers of tourism services to formulate strict protection regulations and take specific measures to ensure tourists' health and safety during their travels. Destinations with high-level health and hygiene infrastructures make tourists comforting.
- 3) Developing a competitive destination with creativity and favorable destination image. During a crisis, a long-term project focusing on maintaining good conditions and services quality of natural and cultural attractions will help rejuvenate destinations and increase tourists' satisfaction. Besides, governments of overseas destinations should eliminate the adverse influence of anti-Chinese sentiment through positive publicity and

diplomatic relations so as to advance their destination reputation. The first case of COVID-19 was found in China, and some countries become hostile to China. The role of local communities will be crucial for embracing first visitor flows, with precautions. In addition, governments have a duty to put the health of their citizens first, persuading and guiding them to comply with official pandemic prevention measures. After all, the restart of tourism is closely connected to the progress of international epidemic prevention and control.

Implications for tourism-related industries/marketers. To meet people's travel needs on the premise of ensuring safety, tourism destinations should strive to turn the "threat" of epidemic situation into an "opportunity" to promote the transformation and upgrade of tourism consumption. Tourism enterprises should make full use of modern scientific and technological means such as virtual technology, online live broadcast and voice navigation to actively promote tourism innovation. For example, launching "cloud tour" or digital virtual tour projects on social media to achieve "remote on-site" tourism and virtual tourism. The demand for virtual access to museums, theaters, performance and so on has reached unprecedented levels.

It is worth noting that scientific and technological means provide public health guarantee for the recovery of tourism. In order to minimize personnel contact, tourism industry should accelerate the digital transformation. Online booking, real-name electronic ticketing and electronic tour guide systems could be used in scenic spots. Quick but rigorous testing at ports and airports, together with tracing and tracking applications, are likely to drive the safe restart of tourism. In brief, embracing technology and innovation to make travel and tourism safer, smarter and easier for all.

The outbreak does not change people's love for tourism, but generates a decentralized, personalized, customized and reserved tourism innovation model, opening up a new opportunity for tourism restart and economic recovery. After experiencing quarantine during the epidemic, eco-tourism and rural tourism, which are close to nature and far away from the crowd, are becoming more popular and will be directions of tourism transformation in the post-epidemic era. Eco-tourism is not only a sustainable way of traveling, but also an educational and interactive way for families with children. Tourism enterprises and marketing personnel can tailor tourism products to meet customer' needs.

Implications for potential tourists or tourists. Tourists' personal risk awareness and preventive behavior are very important in tourism risk management. Measures to reduce risks could be: pay close attention to the epidemic risk situation and the latest epidemic prevention and control measures released by local government at the destination; purchase personal insurance or COVID-19-specific insurance; avoid traveling to destinations with medium or high-level risk; get vaccinated (if possible), etc.

More importantly, people who are eager to travel should prepare for health procedures when traveling [5]. If there is no vaccine protection, they should voluntarily implement personal NPI (non-pharmaceutical interventions) measures (e.g., wearing face masks, practicing social distancing, using serving chopsticks) to reduce the transmission of respiratory

viruses from person to person as effective as possible. In short, tourists are urged to do their best to keep themselves healthy and safe.

Potential tourists still have the desires to travel overseas, but they are restricted by the risks of outbound travel and the restrictions on travel. Therefore, it is a feasible strategy to transfer tourists who are intended to travel abroad to domestic markets. However, this alone is not enough for most countries. Creating a "Travel Bubble" program could be another choice. One of its challenges is that the COVID-19 epidemic has not been well controlled by most economies yet. As a result, the feasibility of "Travel Bubble" program is quite controversial.

While developing the economy, China has been strictly controlling the epidemic and resisting the risk of importing cases. Chinese tourism-related departments have also called on citizens to avoid all unnecessary overseas travel. Although news of vaccine boosts people's confidences, and even if there is a reliable COVID-19 vaccine now, it does not mean that everyone will be vaccinated immediately, but by stages. Therefore, unless mass vaccinations become a reality or the epidemic situation is basically eliminated, otherwise, the overseas travel intention and behavior of potential Guangxi tourists may remain vigilant and cautious in the next two years.

C. Limitations and Directions for Future Research

Aside from important insights yielded, several limitations are extracted to provide opportunities for future studies. The first one is sampling, including targeting potential Guangxi tourists as the research population, and the sampling period (two months in 2020). The population might not represent the general population of Guangxi. Although most of the research findings are basically consistent with previous studies, attention should be paid to if generalizing them to all potential mainland Chinese tourists. Tourists' perceptions of travel risk will be different as pandemic alert levels vary over time, too. While a person might perceive higher risk during the pandemic, the same person might feel lower risk during the post-pandemic period. Thus, it is suggested to use a wider range of samples and different data collection timing in future longitudinal research to obtain more comprehensive results.

Secondly, the influencing factors of travel decision-making need further exploration. The current study was limited to Guangxi, China, which is collectivist. It will be interesting to explore the influence of perceived risks of people from individualistic cultures on their travel decisions. People from more individualistic cultures may act according to their own preferences and feelings. As such, we expect to see whether the relationships between travel risks and behavioral intention perceived in individualistic cultures is stronger/lower than that in collectivist cultures. Moreover, the perceived travel risks in this study were associated with COVID-19. There is also an opportunity to discuss more risk dimensions related to overseas travel so as to further understand tourists' concerns.

Thirdly, the actual behavior of overseas travel can be studied in future research through observation and/or interview so as to narrow the gap between behavioral

intention and actual behavior. The dependent variable of this study is intention, not actual behavior. Although the usefulness and applicability of behavioral intention has been verified, the actual behaviors of tourists are not consistent with their declared behavior all the time. What's more, the study did not specifically investigate the travel intention of potential tourists to a certain place. In the future research, one or more specific destinations or countries can be selected as the research objects to compare and analyze the differences and similarities of the influencing mechanism behind potential tourists' outbound tourism behavior.

Nowadays, the insurance industry has gained more opportunities following the development of tourism industry and has developed various types of short-term or long-term travel accident insurance, even COVID-19-specific insurance. On the other hand, the vaccination gradually eliminated the fear of infection. Therefore, it is recommended that tourism insurance or vaccination could be added to the future research to see if there are different effects on travel risk perception and travel intention.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Xiaoyan Chen conducted the research and analyzed the data; Jaratchwahn Jantararat was responsible for supervising and editing the paper. All authors had approved the final version.

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