

Is this the time to brace for the return of Chinese tourists? Focusing on different risks and uncertainty perceptions

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Abstract: During the COVID-19 pandemic, multiple preventative measures and abundant news regarding the pandemic contributed to negative attitudes toward travel, which resulted in a lasting impact on the international tourism market. However, constant emotional strain resulting from the pandemic can trigger a strong desire to travel internationally. As China announced that beginning January 8, it would no longer require inbound tourists to undergo quarantine, Trip.com saw a three-year high in searches for overseas travel and lodging. It is crucial to keep in mind that the effect of this policy change on international travel to China may vary depending on several variables, such as the general health of the local and global economies, a person's mental state, and the incidence of COVID-19 in other nations. This study examined possible factors impacting international travel intention and focused on risk and uncertainty perceptions that may impede Chinese outbound travelers from being interested and engaging in travel behavior given the current circumstances. The findings may offer insights for implementing strategies aimed at revitalizing the tourism industry by identifying contrasting perceptions of uncertainty and the role of perceived risk in the decision-making process. Additionally, findings of our study encourage self-management within China's domestic tourism industry and offers guidance to countries seeking to tap into the market by addressing the concerns of Chinese tourists.

Keywords: COVID-19, perceived risk, perceived uncertainty, TPB, international travel intention, discrimination

1. Introduction

Prior to COVID-19, travel and tourism had become one of the most vital sectors in the global economy; the COVID-19 pandemic breakout has exposed societal concerns, hazards, and risks that have had a significant influence on the travel and tourism industry. By 2023, it was projected that international tourism would not fully recover to levels observed pre-COVID-19 (UNWTO, 2020). Although international arrivals were expected to reach 65% of pre-pandemic levels in 2022 (UNWTO, 2022), revitalizing tourist numbers to pre-COVID times still remains a significant challenge (Rolleston, 2023). The economic downturn caused by the pandemic has led to a decrease in disposable income for many individuals, which has also contributed to a decrease in international travel. It is likely that the travel industry will continue to be affected by the pandemic for the foreseeable future (Dauderstädt, 2022).

China has consistently ranked among the leading countries in terms of outbound tourists and has remained a bustling hub for inbound tourism. (UNWTO, 2020; Shambaugh, 2013). Chinese visitors spent \$227 billion on outbound travel in 2018 (UNWTO, 2019) before the pandemic. However, outbound travel preferences in China may have shifted (Huang et al., 2021), especially when Chinese tourists prepare to travel again. Some countries closed their borders, raising concerns about the possibility of a new variant emerging due to a high number of infections occurring in China within a short period of time (CNN, n.d.). Additionally, domestic travel or shorter, closer-to-home trips may appeal to Chinese tourists rather than longer international trips (Author, 2023).

Therefore, it is crucial to investigate the extent to which these factors affect attitudes of Chinese individuals on international tourism, particularly regarding the recent announcement by the Chinese government that it would no longer subject inbound travelers to quarantine as of January 8, 2023. Moreover, searches for international flights and accommodations immediately surged to a three-year high on Trip.com (reporters, n.d.), but the immediate influx of Chinese tourists upon re-opening is not anticipated (Yu & Hall, 2022).

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Enhancing customer travel intentions in the post-pandemic world is a formidable challenge faced by tour operators. Existing research on this issue is constrained by the urgency of the current situation in China as the Chinese government recently revoked the COVID-19 quarantine requirement effective from Jan. 8th (Cheng, 2023). However, tourism destinations must address the significant psychological elements influencing Chinese tourists' travel intentions before developing efficient ways to promote tourism and travel. Tourism locations may develop various marketing strategies to target Chinese tourists by taking into consideration such predictors.

Limited research has examined the possible psychological variables that influence Chinese attitudes toward international travel since the announcement by the Chinese government that quarantine is no longer required. Many studies on Chinese tourists have sought to understand how the pandemic has affected their living patterns and travel preferences (Huang, Shao & Zeng, 2021; Cheng & Fountain, 2021) or the detrimental impact of perceived risk on their travel intentions (Huang et al., 2022; Kim, Seo, & Choi, 2021).

The enforcement of various regulations by tourism nations has resulted in Chinese visitors experiencing a range of travel attitudes and intentions towards the respective travel destinations. Chinese tourists have expressed frustration due to the differing regulations imposed by various countries. For instance, Thailand does not require COVID-19 tests for Chinese tourists, however several other countries have implemented additional measures for Chinese travelers. This inconsistency in requirements has led to dissatisfaction among Chinese tourists (Pitrelli, 2023), claiming that the new restrictions are "unfair". This sentiment may reduce their willingness to visit certain countries that are popular tourist destinations.

However, limited immediate focus has been directed towards intentional travel intention and travel concerns after the recent policy announcement during the ongoing pandemic situation. A study conducted by Li et al. (2021) revealed that Chinese individuals are less inclined to participate in international travel, primarily due to the ongoing pandemic. Furthermore, Chen (2023) highlighted that policy changes not only took place abruptly but also caught the Chinese people unprepared for its implementation. There appears to be an overall absence of analysis on factors influencing Chinese tourist travel intention immediately after the Chinese government announced that quarantine was unnecessary. There is a lack of research examining the impact of placing restrictions on Chinese tourists' outbound travel intentions under the present global scenario. The present study aims to fill this knowledge gap.

This study aims to investigate the impact of the ongoing pandemic on the international travel intentions of Chinese tourists, by employing an extended Theory of Planned Behavior (TPB) model to examine the potential factors influencing these travel intentions, and is guided by the following research questions:

- 1) Which factors influenced the international travel decision-making of Chinese travelers in the current pandemic situation?
- 2) What are the roles perceived risk and uncertainty play on travel decisions to international destinations during the current situation? Does the perceived risk and uncertainty negatively influence their international travel intention?
- 3) How do Chinese tourists perceive psychological risk and psychical risk differently in the current global pandemic situation?

This study may assist tourism destinations, particularly those frequently visited by Chinese tourists, in preparing to welcome Chinese tourists by disclosing critical factors which may positively or negatively impact Chinese tourists' travel intentions during the current global and local pandemic situation. The findings hold practical significance as they provide strategies to reinvigorate the tourism industry and offer a theoretical foundation for future scholars to address similar circumstances.

2. Literature Review

2.1 The Theory of Planned Behavior

The Theory of Planned Behavior (TPB), which is based on the Theory of Reasoned Action (TRA), has been widely used to predict individual behavior in both social and commercial settings (Schmiede & Bryan, 2009). TPB has been used to study visitor behavior for decades and has received considerable attention in substantial tourism studies (Lam & Hsu, 2004); thus, it was applied as a foundational framework in this study. Attitude can have a negative or positive impact on a travel decision (Quintal et al., 2010); Subjective norms are the notion that a significant individual or group of people would approve and support a specific behavior. Subjective norms are established by perceived social pressure from others to behave in a specific way, as well as an individual's motivation to conform to those beliefs (Ham et al., 2015); Perceived behavioral control explains the difficulty people associate with a future action while also influencing final behavioral intention (Lam & Hsu, 2004); Intention refers to an individual's anticipation of a possible future trip to a destination (Lam & Hsu, 2004).

Ajzen (1991) proposed that attitude, subjective norms, and perceived behavioral control directly impact behavioral intention. The significant positive correlations between attitude and subjective norms have been demonstrated in existing literature (Greene, Hale, & Rubin, 1997). Based on the findings of previous research (Han, Hsu, & Sheu, 2010; Kim, Kim, & Shin, 2009), subjective norms about foreign travel may impact attitude. Similarly, the substantial link between attitude and perceived behavioral control (Lin et al., 2021) supports another hypothesis suggesting that stronger perceived control is positively associated with attitude. Moreover, perceived behavioral control is defined as an individual's subjective degree of control over the execution of a probable activity (Ajzen, 2002), which could lead to increased confidence or psychological resistance, consequently influencing attitude.

As a result, the following hypotheses have been proposed.

H1: Attitudes towards international travel during the current pandemic situation have a strong impact on Chinese tourists' intentions of international travel.

H2-1: Perceived behavioral control of international travel during the current pandemic situation has a strong impact on Chinese tourists' intentions of international travel.

H2-2: Perceived behavioral control of international travel during the current pandemic situation has a strong impact on Chinese tourists' attitudes toward international travel.

H3-1: Subjective norms about international travel during the current pandemic situation have a strong impact on Chinese tourists' intentions of international travel.

H3-2: Subjective norms about international travel during the current pandemic situation have a strong impact on Chinese tourists' attitudes toward international travel.

As an individual's perceived risk and perceived uncertainty can both significantly impact their attitude and perceived behavioral control during a pandemic (Trifiletti, Shamloo, Faccini, & Zaka, 2021; Quintal, Lwin, Phau & Lee, 2019), we expanded the model to include the two additional variables.

2.2 Risk

2.2.1 Perceived risk

According to Fuchs and Reichel (2006), perceived risk refers to the likelihood of a negative outcome associated with a journey, which may impact an individual's decision to travel under certain conditions. Existing risks have led potential visitors, who are unsure or fearful of traveling abroad, to reconsider their plans (Williams, 2022). Perceived risk has always been an important focus for academic research (Zhang & Yu, 2020). Bauer (1960) defined perceived risk as the danger that consumers actively perceive due to a lack of product knowledge. Bauer later applied consumer behavioral analysis to perceived risk. Tourists' risk perception plays a vital role in the travel decision-making process and subsequent behaviors; tourists' risk perceptions negatively influence

tourism demand and the intention to visit tourist destinations (Choe et al., 2022). Therefore, this study is designed to investigate tourists' risk perception toward COVID-19 and its effect on purchasing travel insurance. However, the current study does not take into account the major concerning risk, which is time risk (Chan, 2021), as Chinese tourists no longer need to be concerned about extensive quarantines after Jan. 8th.

Due to the COVID-19 restrictions in certain countries, Chinese tourists are increasingly concerned about potential discrimination while traveling, especially as the mainstream media refers to these procedures as "discriminatory" (Orr & Latona, 2022). Moreover, Chinese tourists exhibit increased concerns regarding potential risks and are more reluctant to travel abroad due to complex international relations and social status ("BBC," 2023).

2.2.2 Risk dimensions

Different types of risk have gained attention in the context of consumer behavior models. Decades of research has revealed several risk perception dimensions. However, some unique risks should be taken into account regarding the current pandemic crisis (Zaman et al., 2022), particularly following the Chinese government's decision to reduce quarantine regulations.

The COVID-19 pandemic may have long lasting effects on individual's physical, mental, and social welfare (Dai et al., 2021). The related risk perceptions may have a significant impact on Chinese tourist's travel intention considering the current circumstances. In the context of a typical pandemic situation, this study focused on examining risks in terms of potential losses of both physical and psychological aspects (Zhong et al., 2021) to comprehensively evaluate Chinese international travel intention during the ongoing COVID-19 pandemic. Some studies indicated that psychological risks associated with the COVID-19 pandemic could play a significant role in daily life and that psychological resilience and status can influence travel intentions during and after a pandemic (Han et al., 2022; Atkeson, 2020). Physical risk refers to general health risks and the possibility of contracting an illness (Köchling et al., 2022), the spread of pandemics, or the emergence of novel viruses. Concerns related to physical harm and socio-political dangers have also been demonstrated to have a substantial impact on consumers' purchase behavior in the travel and hospitality industry (Torres et al., 2021). Physical risks, a subset of perceived risks, have gained much more attention in the current COVID-19 pandemic (Isaac & Keijzer, 2021).

Overall, the attitude and behavioral control towards an action are likely to be influenced by perceived risk, which is also known as the expectation of loss. To summarize, if a person perceives a higher likelihood of potential losses associated with a trip, their attitude toward taking that trip is likely to be unfavorable. The subjective norms that arise are predominantly social norms, which include influence and pressure exerted by friends, family, and relatives (Lewis et al., 2003; Taylor & Todd, 1995). These social norms have a prominent association with individual risk perception. Even though little attention has been paid to the potential link between perceived risk and subjective norms, the high coefficient value assessed in a prior study cannot be ignored (Ho et al., 2017). The more risk an individual perceives, the less likely that their friends, family, or relatives will approve of their future behavior. As a result, the following hypotheses are given based on the findings of previous studies applying TPB (Quintal et al., 2010; Sandra et al., 2020).

H4-1: The perceived risk of international travel during the current pandemic situation has a strong impact on Chinese tourists' attitudes towards international travel.

H4-2: The perceived risk of international travel during the current pandemic situation has a strong impact on perceived behavioral control of international travel among Chinese tourists.

H4-3: The perceived risk of international travel during the current pandemic situation has a strong impact on Chinese tourists' subjective norms concerning international travel

2.3 Uncertainty

2.3.1 Perceived uncertainty

Uncertainty refers to the lack of certainty or sureness of an event or the state of being uncertain (Definition of UNCERTAINTY, n.d.). We defined perceived uncertainty in this study as an individual's unease about a future international trip regarding the unpredictable travel policies or local travel status, or an unsure state of mind given the current global situation. Uncertainty perception refers to the degree of uncertainty or lack of confidence an individual experiences due to a perceived lack of knowledge (Kreye et al., 2012). Due to humans' natural inclination towards seeking predictability and the potential innate nature of reducing uncertainty, uncertainty avoidance plays a crucial role in every social environment (Hogan, 1983). Because individuals may have different motivations to reduce their perceived uncertainty, it is worthwhile to explore the types of variables that can influence this process.

Uncertainty perception can be caused by a lack of knowledge and might arise from an inability to predict environmental impact that is difficult to regulate in a specific setting (Kristen, 2003). This notion aligns with the concept of external events in business that may not originate internally but can still impact customer behavior, such as shifts in law (policy), economic conditions, or climate (Holtom, 2001). To clarify, an ideal example of uncertainty may be, "I'm not sure if I'll face discrimination if I travel internationally. / I am uncertain about the extent of travel restrictions currently imposed on Chinese travelers in the chosen destination. / I have doubts about the accuracy of the reported news indicating discrimination against Chinese visitors in certain tourist destinations."

2.3.2 Uncertainty differs from Risk

The distinction between risk and uncertainty can be traced back to a study by Knight (1921), which focused on measuring probabilities. Uncertainty appears when the optimal option is unknown or unpredictable. Savage (1954) stated that in some cases of uncertainty, the best option could not be made without forecasting relative outcomes. On the contrary, risk is often viewed as a negative outcome, and people may become risk-averse as a result of this perception. Stone and Gronhang (1993) indicated that perceived uncertainty, as opposed to perceived risk, is a period in which anything can happen. Building on the notions of possibility theory (Zadeh, 1978), in situations of unpredictability, the outcome of a decision cannot be predetermined and has the potential to be any of several conceivable possibilities. Therefore, our objective is to examine the factors that positively influence international travel intentions of Chinese tourists who experience uncertainty resulting from an inability to adapt or accurately predict environmental circumstances (Volz, ISchubotz & Cramon, 2003). Moreover, the behavioral immune system theory (Murray & Shcalller, 2016) further suggests that an individual's attitude towards a particular behavior is more susceptible to perceived uncertainty.

However, information seeking is a key component of the uncertainty management theory (Rains & Tukachinsky, 2014) which is concerned with the methods through which individuals cope with health-related uncertainty. The higher the level of uncertainty perceived by an individual, the more they strive to achieve a sense of control (Usher, Durkin & Bhullar, 2020).

In contrast to the observation that greater perceived risk tends to decrease the likelihood of friends, family, or relatives approving of future behavior, uncertainty is not inherently a negative feeling, and does not impact subjective norms in the same way that risk does.

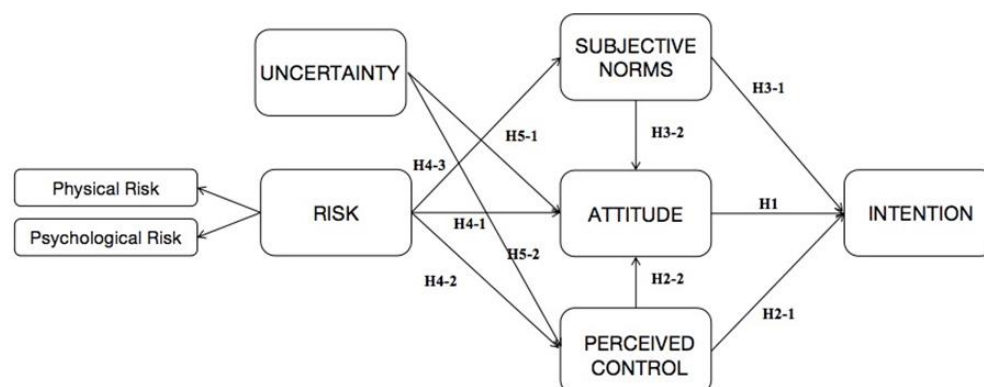
We hypothesize that attitudes and perceived behavioral control will be affected by an individual's perception of high uncertainty:

H5-1: The perceived uncertainty of international travel during the current pandemic situation has a strong impact on Chinese tourists' attitudes toward international travel.

H5-2: The perceived uncertainty of international travel during the current pandemic situation has a strong impact on Chinese tourists' perceived behavioral control concerning international travel.

Along with the assumptions above, the study model is proposed as follows.

Figure 1. Proposed conceptual model



3. Methodology

Five hundred and fifty adults residing in China voluntarily participated in this study. The self-reported questionnaire was conducted online and offline to take demographic factors into account and obtain a large sample. 120 questionnaires were collected at Hangzhou Airport, and the remainder were collected online. We utilized an experienced online research organization called Fengniao in China to collect data since internet-based surveys provide benefits such as access to a particular demographic (Wright, 2017). Convenience sampling was employed in this study, however the survey accounted for gender and age distribution based on the population ratio in China. The questionnaire was initially developed in English and then translated into Chinese. Subsequently, it was back-translated into English to ensure accuracy and compatibility.

The study was conducted in 2023 over two weeks, from March 7 to March 28. 550 (95.16%) of the 578 distributed questionnaires were collected, and questionnaires containing multivariate outliers were removed from the final sample. As a result, 517 (89.45%) questionnaires of respondents from 26 provinces were included in the study and data were analyzed using Mplus 8 and SPSS.

The original four components of the TPB model include attitude, subjective norms, perceived behavioral control, and intention. Building on previous research that established valid and reliable measurement variables for measuring the conceptual model's constructs, the four aspects were assessed using three items adapted from prior research (Shahar et al., 2014; Trifiletti, 2020). Perceived risk and perceived uncertainty are key factors that were introduced into the TPB model used in this study. Perceived risk is assessed based on two dimensions: physical risk and psychological risk (Zhong et al., 2021). The measurement of perceived uncertainty involves three items selected from studies conducted by Milliken (1987) and Kahneman & Tversky (1982) (Table 1).

Additionally, the number of trips under prior travel experience was measured to test whether prior travel experience played a moderating role within the TPB model. All measurement items were rated using a 7-point Likert-type scale ranging from “strongly disagree” (1) to “strongly agree” (7). In comparison to the 5-point scale, the utilization of a 7-point scale encourages respondents to engage in slightly more self-reflection, enabling them to provide feedback that is more detailed and accurate (Jotform, 2023).

Table 1. Examples of Questions

Factors	Example of Questions	Literature	Likert
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		Review	scale
Attitude	I think traveling outside of China during the current pandemic situation is good.		
Perceived Behavioral Control	I feel confident that I will have a great time if I travel outbound during the current pandemic situation.	Shahar et al. (2014); Trifiletti (2020)	
Subjective Norms	Some people that I perceive important to me think I should not travel outbound under current pandemic situations.		1= strongly disagree 7= strongly agree
Intentions	I would like to conduct an international tour.		
Physical Risk	I am worried that COVID-19 will cause serious harm to my body.		
Psychological Risk	I am worried that traveling internationally during the current circumstances may make me feel unsafe.	Zhong et al. (2021)	
Uncertainty	I am not sure that some countries discriminate against Chinese tourists, as has been reported.	Milliken (1987); Kahneman & Tversky (1982)	

4. Results

4.1 Descriptive statistics

The percentage of female respondents (52.2%) was slightly higher than that of male respondents (47.8%). The majority of respondents reported higher education from a university (50.9%), a college (27.5%), or graduate school (10.3%). The age group of individuals 26-35 years old (48.9%) accounted for the highest proportion, followed by the age group of 36-45 years (48.9%). Individuals who had never married outnumbered those who had married (59.4% to 31.9%), and almost half of the respondents (50.9%) were corporate employees, with the rest being professionals (15.0%) and students (11.8%).

4.2 Confirmatory factor analysis

4.2.1 CFA of Risk

The goodness-of-fit of the data indicated that the measurement model significantly aligned with the data (Table 2). The composite reliability (CR) ranged from 0.707 to 0.831, meeting the criterion that the CR of the latent variables should be greater than 0.6. (Fornell & Larcker, 1981). The average variation extraction (AVE) value is ideally higher than 0.5 (Hair et al., 1998), and all variables exceeded this threshold. The CR of the two variables was calculated based on standardized factor loadings and error variances according to the CR formula (Raykov, 1997).

The construct showed an overall construct reliability value of ≥ 0.7 (0.750, 0.768), which implies that the whole construct can be considered reliable.

Table 2. Reliability and Confirmatory Factor Analysis (Risk)

Dimensions				Factor loading	AVE	Cronbach's Alpha		
Physical Risk		r1		0.75		0.501	0.862	
		r2		0.737				
		r3		0.631				
		r4		0.782		0.527		
Psychological Risk		r5		0.613				
		r6		0.771				
Model.	x²	df	x²/df(<5)	RMSEA(≤.08)	CFI(>.9)	TLI(>.9)	SRMR(≤.08)	
Fit indices	27.230	17	1.602	0.034	0.996	0.993	0.030	

Note: Total Cronbach's alpha= 0.958. All standardized factor loadings are significant ($p < 0.001$).

4.2.2 CFA of Uncertainty

A similar analysis was performed for the uncertainty dimensions. The results indicated a good fit (Table 2). The CR was 0.763, which meets the criterion that the CR of the latent variables should be greater than 0.6 (Fornell & Larcker, 1981). The AVE of “external uncertainty” was 0.518, which is acceptable, therefore we concluded that the whole construct is reliable.

Table 3. Reliability and Confirmatory Factor Analysis (Uncertainty)

				Factor loading	AVE	Cronbach's Alpha	
Descriptions							
Uncertainty	Un 1			0.696	0.518	0.74	
	Un 2			0.721			
	Un 3			0.742			
Model.	x²	df	x²/df(<5)	RMSEA(≤.08)	CFI(>.9)	TLI(>.9)	SRMR(≤.08)
Fit indices	27.23	17	1.60	0.034	0.996	0.993	0.030

Note: Cronbach's alpha= 0.804. All standardized factor loadings were significant ($p < 0.001$).

4.2.3 Reliability and Validity for Measurement Model

Furthermore, the validity of all constructs was tested using convergent and discriminant validity. The results revealed that the factor loadings for each item were greater than 0.5, the AVE was higher than 0.5, and the CR exceeded 0.7 (Hair et al., 2006), indicating appropriate convergent validity for the measurement model (Table 4). The model meets the discriminant validity requirement (Fornell & Larcker, 1981) since the square root of the AVE of each latent variable is greater than the correlation coefficients between the latent variable and other latent variables in the measurement model (see Table 3).

Table 4. Reliability and Validity for Measurement Model

Variables	Uncertainty	Risk	Subjective norms	Attitude	P.B.C	Intention
Uncertainty	0.518(0.720)					
Risk	0.514	0.514(0.717)				
Subjective norms	-0.545	-0.448	0.525(0.724)			
Attitude	-0.017	-0.255	-0.037	0.485(0.696)		
P.B.C.	-0.134	-0.219	0.002	0.65	0.627(0.791)	
Intention	-0.050	-0.271	0.072	0.51	0.621	0.857(0.925)
C.R	0.763	0.863	0.768	0.727	0.834	0.947

Note: Numbers on the diagonal indicate the average variable extracted (AVE) of the latent constructs.

Numbers in the parenthesis indicate squared root of AVE.

C.R. = Composite Reliability

4.3 Testing of the SEM Testing of the SEM

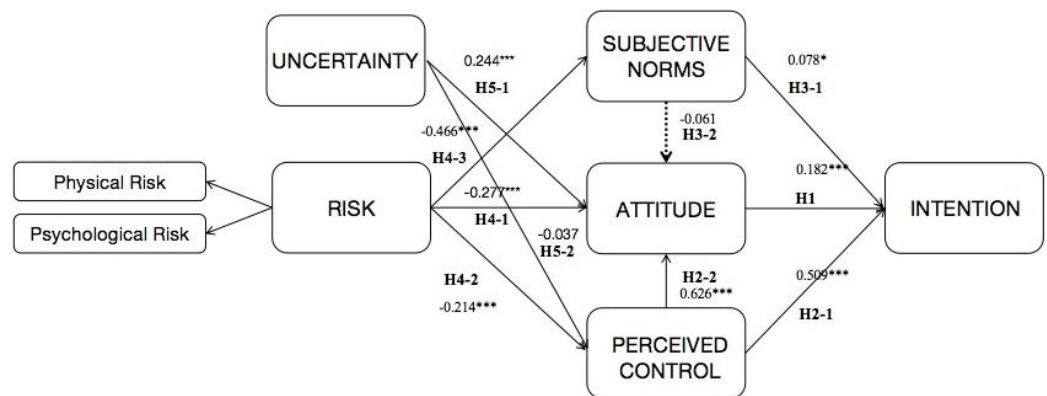
4.3.1 SEM model comparison

SEM using Mplus 8 was used to assess the whole model. The standardized coefficient of Mardia was a critical criterion for determining whether the data violated the premise of multivariate normality. Mplus computes the multivariate skewness and kurtosis definitions proposed by Mardia (1970). Before estimating the latent structure models, the normality of all scales for the sample was investigated, and the distributions of all observed variables were found to be within the level recommended for SEM, using a maximum likelihood estimation procedure (skewness < 2 and kurtosis < 7) (West, Finch & Curran, 1995).

To assess the suitability of the proposed structural model for the observed data, the parameter estimates and goodness-of-fit of the SEM were analyzed. The proposed structural model fit the data well based on the results of the SEM analysis ($\chi^2=146.251$, $df=37$, CFI =0.968, TLI= 0.952, RMSEA=0.076, SRMR=0.054). The proposed hypotheses were tested by assessing the path relationships among the constructs. Risk and uncertainty were the most highly explained visible variances, and perceived behavioral control was the most highly explained latent variance. The results of hypotheses testing (Fig.2) indicated that perceived risk had a significantly positive influence on subjective norms and attitude ($\beta_{R \rightarrow SN} = -0.466$, $P < 0.001$; $\beta_{R \rightarrow A} = -0.277$, $P < 0.001$), and perceived uncertainty surprisingly had a positive influence on attitude ($\beta_{U \rightarrow A} = 0.244$, $P < 0.001$). Furthermore, perceived behavioral control impacted attitude and intention ($\beta_{PBC \rightarrow A} = 0.626$, $P < 0.001$; $\beta_{PBC \rightarrow I} = 0.509$, $P < 0.001$), and subjective norms and attitudes had a significant positive influence on travel intention ($\beta_{SN \rightarrow I} = 0.078$, $p < 0.05$; $\beta_{A \rightarrow I} = 0.182$, $p < 0.001$).

Overall, we found that perceived uncertainty and perceived risk were both significant factors in forming attitude and perceived behavioral control toward international travel and perceived behavioral control was a powerful predictor of attitude and final intention. According to our findings, the majority of respondents (71.2%) and (83.1%) were exposed to a high level of physical and psychological risk.

Figure 2. Result of SEM



Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

5. Discussion and Conclusion

The analysis suggested that perceived risk and perceived uncertainty are distinct constructs that have different impacts on Ajzen's (1985, 1991) TPB. Perceived risk had a considerable detrimental effect on both perceived norms and attitudes (Jing et al., 2019; Boguszewicz-Kreft, 2022). Of the two dimensions of perceived risk, Chinese individuals were most concerned about psychological risk. To clarify, increased risks perceived by Chinese tourists concerning overseas travel was correlate with unfavorable subjective norms and Chinese tourists were less likely to maintain a positive attitude. These results are consistent with findings from previous studies (Sandra, 2020; Elena, 2021; Sarah, 2009). When considering traveling outside of China, Chinese tourists experienced greater psychological stress than physical danger. Previous studies revealed that Chinese tourists' desire to travel abroad is being hampered anxious internal state as a result of the pandemic (Chua et al., 2020; Maulana et al., 2022). This study suggests that the perceived risk associated with COVID-19-related tourism regulations and the current travel status of the destination had a substantial impact on the travel intentions of Chinese visitors. These findings are consistent with previous news reports (Pitrelli, n.d.). Psychological concerns related to the current situation and negative news reports are likely to deter Chinese tourists from traveling. Moreover, the pandemic continues to have global impacts, with several mutations and strains of the virus spreading worldwide. This is a concern for Chinese tourists due to the unknown side effects of the illness (Dr. Yong Chen, n.d.). Furthermore, persistent infection is known to severely impair the human body. Individuals who have been infected previously were twice as likely to die and three times as likely to be hospitalized, have heart problems or develop blood clots as people who had only been infected once (Willyard, 2023). According to local health officials, 90% of individuals in China have been infected with COVID-19 (Agencies, 2023). This contributes to the sustained high psychological risk experienced by Chinese tourists during the current pandemic situation, even though the situation is showing signs of significant improvement.

Similarly, perceived uncertainty had a strong positive effect on attitude. In the context of the current COVID-19 situation, individuals may face uncertainty regarding specific travel regulations being imposed on Chinese tourists, leading to ambiguity regarding information related to perceived discrimination. For example, some individuals tend to accept the alleged discrimination against Chinese travelers in certain countries as factual, while some critical thinkers remain skeptical (Anderson & Rainie, 2017). Additional external determinants, such as education attainment, sociodemographic variables, and social skills can enhance an individual's self-assurance and contribute to their perceptions of uncertainty (Karl, 2018). As individuals perceive uncertainty differently, perceived uncertainty about the current global situation may positively influence

decision-making. Seeking additional information can aid individuals in diminishing their perception of uncertainty, however it is not always successful. (Ahmad & Murad, 2020). To better predict human behavior and help deal with uncertainty, gaining insight into the internal states of potential visitors may be beneficial.

In contrast to attitude and perceived control, subjective norms exhibited a relatively weak positive influence on intention. Similar to the work of Tsai (2010), the current study identified that perceived behavioral control and attitude were significant positive predictors of intention to travel abroad. Based on our findings, the most influential factor determining the final intention is perceived behavioral control. Even in a crisis, an individual's confidence in their ability to protect themselves or obtain adequate resources may be more significant than the opinions of those around them.

6. Implication

6.1 Theoretical implications

This study makes significant theoretical contributions to the existing literature. First, incorporating perceived risk and perceived uncertainty into the original TPB model provides a creative way to investigate an individual's psychological features during the decision-making process. Second, according to our findings, uncertainty is a distinct variable influencing people's attitudes which may be formed by experiences, the environment, and the likelihood of making accurate predictions. This distinction allows researchers to gain a better understanding of the decision-making process. Third, the current study revealed that under such crises or challenging situations, perceived behavioral control emerges as a crucial factor in predicting an individual's behavioral intention by reexamining the links between perceived risk, perceived uncertainty, and the conceptions of TPB. In the proposed model, perceived risk and perceived uncertainty both influence attitude and behavioral control, with the perception of risk having a notably adverse impact on the final behavioral intent. Psychological risk can have a more significant impact on final intention. Therefore, assisting travelers in gaining confidence and reducing psychological tension may enhance the final intention.

These findings may assist future researchers in gaining a better understanding of how individuals assimilate and process unfamiliar risks and their responses to uncertainty perception in similar situations. Understanding the different influences of perceived risk and perceived uncertainty when dealing with crises and pandemic situations can provide valuable insights for future studies in this area.

6.2 Practical implications

Given the support local governments offer to the tourism industry and the potential impact of reduced COVID-19 restrictions in China on the revival of Chinese outbound travel, it is highly advisable to undertake effective marketing communication efforts. The psychological risk linked to the current global travel situation might adversely affect visitors' attitudes, indicating that many Chinese tourists might be hesitant to travel internationally due to widespread reports and information about stricter policies being imposed on Chinese tourists in various destinations. Some countries have continued to adhere to a strict policy to inhibit the spread of COVID-19, requiring extra COVID-19 testing for Chinese tourists. Chinese tourists responded furiously due to the news publicized through mainstream media (Pitrelli, n.d.), even though these countries declare they do not discriminate against Chinese visitors (Cheng, n.d.). Therefore, it is advisable for countries wishing to uphold a favorable image among Chinese tourists to promote a welcoming and inclusive attitude. Additionally, nations relying on Chinese tourists to bolster their tourism sectors could focus on disseminating credible and relevant information regarding crisis management which would serve as a viable strategy to instill confidence and attract Chinese tourists. It is preferable to

utilize multiple marketing strategies to achieve effective marketing results. This can be accomplished by including content that is appealing to Chinese tourists through booking engine websites or social media and promoting a welcoming atmosphere which can help build confidence and enhance the prospects of an enjoyable trip.

Given that psychological and psychological risks continue to have a significant negative impact on outbound travel attitudes resulting in a delayed trip intention, it would be beneficial to assist tourists in taking preventive measures during traveling. Practitioners can offer a free hygienic face mask and alcohol-based hand sanitizer, which can be included in the cost of a travel package. Such suggestions may be effective in reducing psychological anxiety and enhancing confidence. It is also critical to investigate the underlying psychological processes in the face of current pandemic and global conditions, which may have a significant impact on the decision-making process of tourists.

Finally, the current pandemic situation presents an opportunity for the government to maximize the distribution of tourism resources. There is still a need to promote travel on local and national levels. By providing effective solutions for boosting tourists' confidence during and after a global crisis, practitioners and policy makers can obtain a greater portion of the tourism market. Chinese tourists may come to realize that the situation is not as severe as initially reported when they gain access to additional information from sources outside China. Furthermore, this study also serves as a reminder to practitioners in the service and tourism industry that effective marketing and engagement with the public through We-media platforms can reduce people's reliance on a single news source, leading to a more nuanced perception of uncertainty regarding the severity of a crisis.

6.3 Limitations and future studies

As the sampling of this study was limited to Chinese individuals, additional research is needed to confirm whether the results can be generalized to other regions. Some individuals might have doubts about the severity of the reported policies at their target destinations, and others might be unclear about whether their perception of risk is the result of unnecessarily elevated anxiety.

These findings can assist healthcare workers managing the psychological stress associated with COVID-19 and other future health emergencies by emphasizing the importance of psychological procedures, public health initiatives, and future standards. Individuals often harbor concerns about the risks related to traveling, as tourism involves deliberate and displaced consumption, even when it takes place in unfamiliar environments that may be prone to natural disasters or emergencies. The pandemic scenario will eventually come to an end, and the physical risk may begin to diminish as a result of effectively improved health and outbreak avoidance action, as well as the natural fadeaway phenomenon of COVID-19. However, the psychological risk will be apparent. Chinese tourists may be susceptible to reported news regarding the destination country's travel policies, relations between the two countries, and local people's attitudes. Future research could investigate whether types of psychological risks can impede travel intention in similar crises, as well as the causes of those risks, or if these psychological risks persist in the post-pandemic environment. In conclusion, future researchers could explore additional variables that could potentially have a significant influence in an expanded model, taking into consideration the unique characteristics of the specific crisis.

References

- Ajen, I. (1985). From intentions to actions: A theory of planned behaviour . In J. Kuhl & J. Beckmann (Eds.), *Action control: From cognition to behavior*. Heidelberg: Springer, 11-39.
- Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin*, 84, 888-918.
- Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behavior and Human Decision Process*, 50(2), 179 -211.
- Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, 32, 665-683.
- Ajzen, I. (2005). Laws of human behavior: Symmetry, compatibility, and attitude- behavior correspondence. In A. Beauducel, B. Biehl, M. Bosniak, W. Conrad, G. Schönberger, & D. Wagener (Eds.), *Multivariate research strategies* (pp. 3-19). Aachen, Germany: Shaker Verlag.
- Ajzen, I. (2008). Consumer attitudes and behavior. In C. P. Haugtvedt, P. M. Herr & F. R. Cardes (Eds.), *Handbook of Consumer Psychology* (pp. 525- 548).
- Ajzen, I. (2012). The theory of planned behavior. In P. A. M. Lange, A. W. Kruglanski & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (Vol. 1, pp. 438-459).
- Agencies, G. staff and. (2023, January 9). 90% of people in China province infected with Covid, says local health official. The Guardian. <https://www.theguardian.com/world/2023/jan/09/life-is-moving-forward-china-enters-new-phase-in-covid-fight-as-borders-open>
- Ahmad, A.R. & Murad, H. R. (2020). The impact of social media on panic during the COVID-19 pandemic in Iraqi Kurdistan: Online questionnaire study. *Avancing Digital Health & Open Science*, 22(5).
- Arikkatt, R. M. & Mohanan, S. A. (2021). Social distancing intention during the COVID-19 pandemic: The theory of planned behavior in Thai cultural context. *Indian Journal of Health & Well being* . 12(1), p93-99.
- Anderson, J. & Rainie, L. (2017). The future of truth and misinformation online. *Pew Research Center*.
- Asparouhov, T., Hamaker, E. L., & Muthén, B. (2018). Dynamic structural equation models. *Structural Equation Modeling*, 25(3), 359–388.
- Atkeson, A. (2020). What Will Be the Economic Impact of COVID-19 in the US? Rough Estimates of Disease Scenarios. <https://doi.org/10.3386/w26867>
- Author, N. (2023, January 7). *China's deep-pocketed tourists are staying home, for now*. The Japan Times. <https://www.japantimes.co.jp/news/2023/01/07/business/china-tourists-stay-home-coronavirus/>
- Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*. 50(2), p248-287
- Bandura, A. (1998). Health promotion from the perspective of social cognitive theory. *Psychology & Health*. 13(4).
- Bentler, P. M., & Wu, E. J. C. (1995). Validity of the emotion regulation of self scale among runners. *Psychology*, 2(6).
- Bin, S., Rubina, N., Bhatti, N. & Khan, A. (2020). An exploration of how fake news is taking over social media and putting public health at risk. *Wiley Public Health Emergency Collection*. 38(2), 143-149.
- Bourque, L. B., Regan, R., Kelley, M. M., Wood, M. M., Kano, M., & Mileti, D. S. (2012). An examination of the effect of perceived risk on preparedness behavior. *Environment and Behavior*, 45(5), 615–649.
- Boguszewicz-Kreft M, Kuczamer-Kłopotowska S, Kozłowski A (2022). The role and importance of perceived risk in medical tourism. Applying the Theory of Planned Behaviour. *PLoS ONE* 17(1): e0262137.
- Bloomberg News. (2022). *China Cuts Travel Quarantine in Biggest Covid Zero Shift Yet*. <https://www.bloomberg.com/news/articles/2022-06-28/china-cuts-quarantine-in-half-for-travelers-and-close-contacts#xj4y7vzkg>
- Bloomberg News. (2023). *Nearly Half of Chinese Tourists Don't Plan to Travel Overseas This Year*. Bloomberg.com. <https://www.bloomberg.com/news/articles/2023-01-19/cost-of-covid-is-main-reason-stopping-chinese-traveling-overseas>
- Byrne, B. M. (2006). *Structural equation modeling with EQS: Basic concepts, applications, and programming* (2nd ed.). Mahwah, NJ: Erlbaum.
- Byrne, B. M. & Stewart, S. M. (2009). TEACHER'S CORNER: The MACS approach to testing for multigroup invariance of a second-order structure: A walk through the process. *Structural Equation Modeling: A Multidisciplinary Journal* .13(2).
- Briñol, P., & Petty, R. E. (2012). A history of attitudes and persuasion research. In book: *Handbook of the history of social psychology*. Chapter: The history of attitudes and persuasion research. New York: Psychology Press. W. Kruglanski & W. Stroebe (Eds.)
- Brouquet et al. (2009). Risk factors for chemotherapy-associated liver injuries: A multivariate analysis of a group of 146 patients with colorectal metastases. *Surgery*. 145(4), 362-371.
- Chang, M. K. (1998). Predicting unethical behaviour: a comparison of the Theory of Reasoned Action and the Theory of Planned Behaviour. *Journal of Business Ethics*, 17, 1825-1834.
- Chao, W., Zhang, J., Morrison, A.M., & Coca-Stefaniak, A.J. (2020). The effects of risk message frames on post-pandemic travel intentions: the moderation of empathy and perceived waiting time. *Current Issues in Tourism*. 24(23).
- Chan, C.-S. (2021). Developing a conceptual model for the post-COVID-19 pandemic changing tourism risk perception. *International Journal of Environmental Research and Public Health*, 18(18), 9824.
- BBC. (2023, January 10). *China blocks visas for S Korea and Japan over Covid restrictions*. BBC News. Retrieved from <https://www.bbc.com/news/world-asia-64220149>
- Chinese travelers say new restrictions are "unfair" — but they're angry at some countries more than others. (n.d.)*. Flipboard. Retrieved January 19, 2023, from <https://flipboard.com/topic/seoul/chinese-travelers-say-new-restrictions-are-unfair-but-they-re-angry-at-some-a-Rh1r35h5Q1uC9oIlrrozGQ%3Aa%3A2133612304-e7e02607d0%2Fncbc.com>
- Choe, Y., Kim, H., & Choi, Y. (2022). Willingness to pay for travel insurance as a risk reduction behavior: health-related risk perception after the outbreak of COVID-19. *Service Business*. <https://doi.org/10.1007/s11628-022-00479-8>
- Cheng, M. P., Evelyn. (n.d.). *South Korea shares eye-opening Covid statistics to defend its new rules for travelers from China*. CNBC. Retrieved January 19, 2023, from <https://www.cnbc.com/2023/01/11/south-korea-covid-rules-not-discriminatory-to-chinese-travelers.html>
- Cheng, L. H., Juliana Liu, Cheng. (2023, January 7). *What the return of Chinese tourists means for the global economy* | CNN Business. CNN. <https://edition.cnn.com/2023/01/06/economy/china-tourist-boom-post-covid-impact-intl-hnk/index.html>
- Cheng, D. & Fountain, J. (2021) Mainland Chinese Generation Y tourists to Tibet: Travel constraints, revisit intention and their negotiation. *Journal of Hospitality and Tourism Management*. Vol. 48, Pages 128-137.
- Chen, Y. (2023, March 25). Why Chinese tourists are not totally ready to make a revenge comeback. *The Straits Times*. <https://www.straitstimes.com/asia/se-asia/why-chinese-tourists-are-not-totally-ready-to-make-a-revenge-comeback>
- Conner, M., Kirk, S.F., Cade, J. E. & Barrett, J. H. (2001). Why do women use dietary supplements? The use of the Theory of Planned Behaviour

- to explore beliefs about their use. *National Library of Medicine* .52(4),621-33.
- CNN, B. J. Y. (n.d.). *Chinese tourists are ready to travel abroad again. Here's why some countries are hesitant*. CNN. <https://edition.cnn.com/travel/article/china-covid-travel-restrictions-intl-hnk/index.html>
- Dai, J., Sang, X., Menhas, R., Xu, X., Khurshid, S., Mahmood, S., Weng, Y., Huang, J., Cai, Y., Shahzad, B., Iqbal, W., Gul, M., Saqib, Z. A., & Alam, M. N. (2021). The influence of COVID-19 pandemic on physical health–psychological health, physical activity, and overall well-being: The mediating role of emotional regulation. *Frontiers in Psychology*, 12.
- Das, S.S. & Tiwari, A.K, (2021). Understanding international and domestic travel intention of Indian travellers during COVID-19 using a Bayesian approach. *Tourism Recreation Research*.46(2).
- Dauderstädt, M. (2022). International inequality and the COVID-19 pandemic. *Intereconomics*, 57(1), 40–46. <https://doi.org/10.1007/s10272-022-1026-9>
- Devakumar, D., Shannon, G., Bhopal, S.S. ,& Abubakar, I.(2020). Racism and discrimination in COVID-19 responses. *The Lancet*.395(10231), Page 1194.
- Definition of UNCERTAINTY. (n.d.). *Www.merriam-Webster.com*. <https://www.merriam-webster.com/dictionary/uncertainty>
- Dwyer, L., Forsyth, P. and Dwyer, W. (2010) Tourism and employment spillovers in a small island developing state: A dynamic investigation. *Theoretical Economics Letters*, 6(2).
- Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Fan, X., Lu, J., Qiu, M., & Xiao, X. (2022). Changes in travel behaviors and intentions during the COVID-19 pandemic and recovery period: A case study of China. *Journal of Outdoor Recreation and Tourism*, 41, 100522.
- Fong, W. E., & Markham, W. T. (2002). Anti-Chinese politics in California in the 1870s: An intercounty analysis. *Sociological Perspectives*, 45(2), 183-210.
- Gao, Z. (2021). Unsettled belongings: Chinese immigrants' mental health vulnerability as a symptom of international politics in the COVID-19 pandemic. *Journal of Humanistic Psychology*, 61(2), 198-218.
- Gover, A. R., Harper, S.B., & Langton, L.(2020). Anti-Asian hate crime during the COVID-19 pandemic: Exploring the reproduction of inequality. *American Journal of Criminal Justice*,45, 647–667.
- Greene, K., Hale, J. L. & Rubin, D. L. (1997). A test of the Theory of Reasoned Action in the context of condom use and AIDS. *Communication Reports*, Vol(10), Issue-1
- Hair Jr., J. F. et al. (1995). *Multivariate data analysis with readings*. 4th ed.
- Han, S., Yoon, A., Kim, M. J., & Yoon, J.-H. (2022). What influences tourist behaviors during and after the COVID-19 pandemic? Focusing on theories of risk, coping, and resilience. *Journal of Hospitality and Tourism Management*. <https://doi.org/10.1016/j.jhtm.2022.02.024>
- Holtom, M. (2001). "The partnership imperative: Joint working between social services and health", *Journal of Management in Medicine*, 15(6),430-445.
- Her, Y.W., Shin, H.Y., & Pae, S.S, (2019). A multigroup SEM analysis of moderating role of task uncertainty on budgetary participation-performance relationship: Evidence from Korea. *Asia Pacific Management Review*. 24(2),140-153
- Huang,S.S., Shao,Y.H., Liu, X. & Z.Y., Li.(2021). Impacts of COVID-19 on Chinese nationals' tourism preferences. *Tourism Management Perspectives*.40.
- Hyland-Wood, B., Gardner, J. Leask, J. & Ecker, U. (2021). Toward effective government communication strategies in the era of COVID-19. *Humanities and Social Sciences Communications* ,8(30).
- Han, H., Hsu, L.-T., & Sheu, C. (2010). Application of the Theory of Planned Behavior to green hotel choice: Testing the effect of environmental friendly activities. *Tourism Management*, 31(3), 325–334
- Harvey, J.H. & Miller , E.D. (1998),Toward a psychology of loss. *Psychological Science*.9(6), 429-434.
- Hayes, Adam (2016). "Decentralized Banking: Monetary Technocracy in the Digital Age." In: Paolo Tasca, Tomaso Aste, Lorian Pelizzon, and Nicolas Peronyal, eds., *Banking Beyond Banks and Money: A Guide to Banking Services in the 21st Century*. *Switzerland: Springer International Press*, 121-131.
- Han, H.S. (2020). Theory of Green Purchase Behavior (TGPB): A new theory for sustainable consumption of green hotel and green restaurant products. *Busienss Strategy and Environment*.29(6). 2815-2828
- Heesup, H. et al. (2020). The Post-Coronavirus world in the international tourism Industry: Application of the Theory of Planned Behavior to safer destination choices in the case of US outbound tourism. *Int. J. Environ. Res. Public Health*, 17(18), 6485.
- Huang, C.-C.; Wang, Y.-M.; Wu, T.-W.; Wang, P.-A. (2013) An empirical analysis of the antecedents and performance consequences of using the moodle platform. *International Journal of Information and Education Technology*, Vol.3(2): 217-221.
- Hogan, R. (1983). A socioanalytic theory of personality. In M. M. Page (Ed.), *Nebraska symposium on motivation*, 1982 (pp. 55–89). Lincoln: University of Nebraska Press.
- Hofstede's Cultural Dimensions Uncertainty Avoidance. (n.d.). <https://www.jmu.edu/global/iss/resources/global-campus-toolkit/files/hofstede-uncertainty.pdf>
- Ho, SM, Ocasio-Velazquez, M, Booth, C. (2017). Trust or consequences? Causal effects of perceived risk and subjective norms on cloud technology adoption. *Computers & Security*, Vol 70, pp581-595.
- International tourism on track to reach 65% of pre-pandemic levels by the end of 2022. (n.d.). https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2022-11/UNWTO_Barom22_06_November_EXCERPT.pdf?VersionId=kNOL3rNMSaYFz0XizmRo0EU8x3cVZpOk
- Isaac, R. K., & Keijzer, J. (2021). *Leisure travel intention following a period of COVID-19 crisis: a case study of the Dutch market*. 7(3), 583–601. <https://doi.org/10.1108/ijtc-08-2020-0158>
- James, C. (2020). *Investopedia*.<https://www.investopedia.com/terms/p/politicalrisk.asp>
- Joseph F. Hair, et al. Terbitan: (1984); Multivariate data analysis 5th ed oleh: Anderson, Rolph E. Terbitan: (1998).
- Jotform. (2023, May 2). *5-point vs 7-point Likert scale: Which is better?* The Jotform Blog. <https://www.jotform.com/blog/7-point-likert-scale/>
- Kahneman, D., & Tversky, A. (1982). The psychology of preferences. *Scientific American*, 246(1), 160–173. <https://doi.org/10.1038/scientificamerican0182-160>
- Karl, M. (2018). Risk and uncertainty in travel decision-making: Tourist and destination perspective. *Journal of Travel Research* 57(1):129-146.
- Kathryn, G., Jerold, H., & Donald, R.(1997). A test of the Theory of Reasoned Action in the context of condom use and AIDS. *Communication reports*. 10(1).

- Kaplan, L. B., Szybillo, G. J., & Jacoby, J. (1974). Components of perceived risk in product purchase: A cross-validation. *Journal of Applied Psychology*, 59(3), 287–291.
- Kidwell, B. & Jewell, R. D.(2003). An examination of perceived behavioral control: Internal and external influences on intention. *Psychology and Marketing* 20 (7), 625 - 642.
- Kim, U., Joanne,D.,& Navjot B. (2020). The COVID-19 pandemic and mental health impacts. *Int J Ment Health Nurs*. 29(3), 315–318.
- Kirsten, G. Volz, R. Schubotz, & Cramon, D. V. (1974). Predicting events of varying probability: uncertainty. *NeuroImage*. 19(2), 271-280.
- Kim, E.E.K.; Seo, K.; Choi, Y. (2021). Compensatory travel post COVID-19: Cognitive and emotional effects of risk perception. *Journal of Travel Research*, 61(8), 1895-1909.
- Kim, H. B., Kim, T. T., & Shin, S. W. (2009). Modeling roles of subjective norms and eTrust in customers' acceptance of airline B2C eCommerce websites. *Tourism Management*, 30(2), 266-277.
- Köchling, A., Engeset, M. G., Reif, J., Yazar, N., Ritalahti, J., Holmberg, E., & Velvin, J. (2022). Between fearful homebodies and carefree travel lovers: identifying tourist segments during the Covid-19 pandemic in Finland, Germany, and Norway. *Current Issues in Tourism*, 1–14. <https://doi.org/10.1080/13683500.2022.2026304>
- Frank, H. (1921). *Risk, Uncertainty and Profit*. Boston: Beard Books.
- Kristen, C. (2003). *School Choice and Ethnic School Segregation: Primary School Selection in Germany*. Munster: Waxmann Verlag.
- Kreye, M. E., Newnes, L. B., & Goh, Y. M. (2012). Uncertainty in competitive bidding – a framework for product–service systems. *Production Planning & Control*, 25(6), 462–477. <https://doi.org/10.1080/09537287.2012.705354>
- Kuo, A., Kao, M.S., Chang, Y.C. and Chiu, C.F. (2012). ‘The influence of international experience on entry mode choice: Difference between family and non-family firms’. *European Management Journal*, 30(3), 248–263.
- Law, M. & Rudnicka, A. R. (2005). Statin safety: A systematic review. *The American Journal of Cardiology*. 97(8), S52-S60.
- Lau, Y. Y., Sun, X. D., Yang, W. Y. & K, M. (2022). Chinese cruisers’ preference, travel constraints, and behavioural intention: Experience from the Arctic Cruise market. *Journal of Marine Science and Engineering*, 10, 156.
- Lam, T. & Hsu, Cathy. H. C. (2004). Theory of Planned Behavior: Potential travelers from China. *Journal of Hospitality and Tourism Research* 28(4):463-482.
- Lewis W., Agarwal R., Sambamurthy V. (2003). Sources of influence on beliefs about information technology use: an empirical study of knowledge workers. *MIS Q*. 27 657–678. [10.2307/30036552](https://doi.org/10.2307/30036552)
- Lou, C. & Kim, H. K. (2019). Fancying the new rich and famous? Explicating the roles of influencer content, credibility, and parental mediation in adolescents’ parasocial relationship, materialism, and purchase intentions. *Psychol*, 15
- Lin et al. (2021). Perceived behavioral control as a mediator between attitudes and intentions toward marine responsible environmental behavior. *Water* 2021, 13(5), 580; <https://doi.org/10.3390/w13050580>
- Liu, J., Gill, S. N., Teodorczuk, A., Li, Z. J. & Sun, J. (2019) . The efficacy of cognitive behavioural therapy in somatoform disorders and medically unexplained physical symptoms: A meta-analysis of randomized controlled trials. *Journal of Affective Disorders*. 245, pp. 98-112.
- Li, X., Nguyen, T. T., & Coca-Stefaniak, A. (2021). Understanding post-pandemic travel behaviors – China's Golden Week. *Journal of Hospitality and Tourism Management*. V(49), 84-88.
- Li, J.,Y, B.,&Z, G.(2020). The attitude towards E-cigarettes, disengagement belief, E-cigarette health literacy and susceptibility among youths and adolescents *International Journal of Adolescence and Youth*. 25(1).
- Machete, P. & Turpin, M. (2020). The use of critical thinking to identify fake news: A systematic literature review. *Lecture Notes in Computer Science book series LNCS*, 12067.
- Marija, H., Marina, J., & Anita, F. I.(2015) The role of subjective norms in forming the intention to purchase green food, *Economic Research-Ekonomska Istraživanja*, 28(1), 738-748.
- Milliken, F. J. (1987). Three types of perceived uncertainty about the environment: State, effect, and response uncertainty. *The Academy of Management Review*, 12(1), 133–143.
- Miniard, P. W., & Cohen, J. B. (1981). An examination of the Fishbein-Ajzen behavioral intentions model's concepts and measures. *Journal of Experimental Social Psychology*, 17(3), 309–339.
- Mousavi, S. and G. Gigerenzer (2017). Heuristics are tools for uncertainty. *Journal of Homo Oeconomicus*,34, 361-379.
- Myung,J. K., Choong-K, L., Petrick, J., Kim, Y.S. (2020). The influence of perceived risk and intervention on international tourists’ behavior during the Hong Kong protest: Application of an extended model of goal-directed behavior. *Journal of Hospitality and Tourism Management*. 45, 622-632.
- Marion , K. (2018). Risk and uncertainty in travel decision-making: Tourist and destination perspective. *Journal of Travel Research*. 54(3),271-287.
- Mardia, K. V. (1970). Measures of multivariate skewness and kurtosis with applications. *Biometrika*, 57, 519-530.
- Murray, D. R. & Schcaller, M. (2016), The behavioral immune system: Implications for social cognition, social interaction, and social influence. *Advances in Experimental Social Psychology*.53,75-129.
- Miao, C. et al.(2018). Early chest computed tomography to diagnose COVID-19 from suspected patients: A multicenter retrospective study, *Am J Emerg Med*. 44,346–351.
- Novellia, M., Burgess, G. L., Jones,A., & Ritchied , B.W.(2018). ‘No Ebola...still doomed’ – The Ebola-induced tourism crisis. *Annals of Tourism Research*. 70, 76-87.
- Nie, X., Feng, K., Wang ,S. & Li ,Y.. (2021). Factors influencing public panic during the COVID-19 pandemic. *Front. Psychol*. 12,576301.
- Nisco, A.D., Riviezzo,A. & Napolitano, M.R..(2015). An importance-performance analysis of tourist satisfaction at destination level: Evidence from Campania (Italy). *European Journal of Tourism Research*,10.
- Oliver, R. L., & Bearden, W. O. (1985). Disconfirmation processes and consumer evaluations in product usage. *Journal of Business Research*, 13(3), 235–246.
- Orr, B., & Latona, D. (2022, December 30). COVID travel curbs against Chinese visitors “discriminatory”- state media. Reuters. <https://www.reuters.com/business/healthcare-pharmaceuticals/covid-travel-curbs-against-chinese-visitors-discriminatory-state-media-2022-12-30/>
- Pavlic, I., Svilokos, T., & Tolic, M. S. (2015). Tourism, real effective exchange rate and economic growth: Empirical evidence for Croatia. *International Journal of Tourism Research* ,17(3), 282-291.
- Pitrelli, M. (n.d.). Chinese travelers say new restrictions are “unfair” — but they’re angry at some countries more than others. CNBC. Retrieved January 19, 2023, from <https://www.cnbc.com/2023/01/10/covid-travel-rules-chinese-are-angry-at-south-korea-and-japan.html>
- Perugini, M., & Bagozzi, R. (2001). The role of desires and anticipated emotions in goal-directed behaviours: Broadening and deepening the

- Theory of Planned Behaviour. *British Journal of Social Psychology*, 40, 79-98.
- Pennington-Gray, L., Schroeder, A. & Kaplanidou, K. (2011). Examining the influence of past travel experience, general web searching behaviors, and risk perceptions on future travel intentions. *International Journal of Safety and Security in Tourism/Hospitality* 1(1), 64-92.
- Pitrelli, M. (n.d.). *Chinese travelers say new restrictions are "unfair" — but they're angry at some countries more than others*. CNBC. <https://www.cnbc.com/2023/01/10/covid-travel-rules-chinese-are-angry-at-south-korea-and-japan.html>
- Quintal, V.A., Lee, J.A., Soutar, G.N. (2010). Risk, uncertainty and the Theory of Planned Behavior: A tourism example. *Tourism Management* 31(6), 797–805.
- Quintal, V. A., Lwin, M. , Phau, I. & Lee, L. (2019). Personality attributes of botanic parks and their effects on visitor attitude and behavioural intentions. *Journal of Vacation Marketing*. 25(2),176-192.
- Quinlan Cutler, S., & Carmichael, B. (2010). The dimensions of the tourist experience. In M. Morgan, P. Lugosi & B. J. R. Ritchie. (Eds.), *The tourism in leisure experience: Consumer and managerial perspectives*. (pp. 3–26).
- Reichel, A , Fuchs, J & Uriely, N.(2007). Perceived risk and the non-institutionalized tourist role: The case of Israeli student ex-backpackers. *Journal of Travel Research*, 46, 217–226.
- Reichel. (2006). Tourist destination risk perception: The case of Israel. *Journal of Hospitality & Leisure Marketing* ,14(2).
- Rolleston, T. A. (2023, January 6). *Tourist numbers still "a long way off" pre-Covid times, says Waikato operator*. Stuff. <https://www.stuff.co.nz/waikato-times/news/300779023/tourist-numbers-still-a-long-way-off-precovid-times-says-waikato-operator>
- Roselius, T. (1971). Consumer rankings of risk reduction methods. *Jornal of Marketing*, 35(1), 56-61.
- Ryu, K., & Jang, S. (2006). Intention to experience local cuisine in a travel destination: The Modified Theory of Reasoned Action. *Journal of Hospitality & Tourism Research*, 30(4), 507-516.
- Raykov, T. (1997). Estimation of composite reliability for congeneric measures. *Applied Psychological Measurement*, 21(2),173–184.
- Rains, S. A. & Tukachinsky, T.(2014). Information seeking in uncertainty management theory: Exposure to information about medical uncertainty and information-processing orientation as predictors of uncertainty management success. *Journal of Health Communication International Perspectives*. 20(11).
- Reporters, G. staff. (n.d.). *Searches for overseas trips hit three-year high on some Chinese platforms amid relaxed travel rules - Global Times*. www.globaltimes.cn. Retrieved January 7, 2023, from <https://www.globaltimes.cn/page/202212/1282744.shtml>
- Roberts,S.(2021).*Marsh*.<https://www.marsh.com/us/about/media/2021-political-risk-map.html>.
- Revill, J., More, R., Plucinska, J., & Plucinska, J. (2023, March 20). Europe's hopes for busy post-COVID summer dim as Chinese tourists stay away. *Reuters*. <https://www.reuters.com/world/europe/europes-hopes-busy-post-covid-summer-dim-chinese-tourists-stay-away-2023-03-20/>
- Stone, R.N. & Grønhaug, K. (1993), Perceived risk: Further considerations for the marketing discipline. *European Journal of Marketing*, 27(3),39-50(12).
- Sonmez, S. F. and Graefe, A. R. 1998. Determining future behavior from past travel experience and perceptions of risk and safety. *Journal of Travel Research*, 37: 171–178.
- Songshan (Sam)Huang, S. S., Shao, Y. H., Zeng, Y., Liu, X. Y. &Li, Z. Y. (2021). Impacts of COVID-19 on Chinese nationals' tourism preferences.*Tourism Management Perspectives*, Vol 40, 100895.
- Schmiege, S. J. , Bryan, A., Klein,W. (2009). Distinctions between worry and perceived risk in the context of the Theory of Planned Behavior. *Journal of Applied Social Psychology*. 39(1),95–25.
- Sarah, J. S. & Anglala, B. (2009). Distinctions between worry and perceived risk in the Context of the Theory of Planned Behavior. *Jornal of Applied Social Psychology*.39(1),95-119.
- Sánchez-Cañizares, S. M., Cabeza-Ramírez, L. J., Muñoz-Fernández, G., & Fuentes-García, F. J. (2021). Impact of the perceived risk from Covid-19 on intention to travel. *Current Issues in Tourism*, 24(7), 970-984.
- Savage, L.J. (1954) . The Foundations of Statistics. *John Wiley & Sons, New York*.
- Shambaugh, D. L. (2013). *China goes Global: The Partial Power*. Oxford : Oxford University Pres.
- Shahar, S., Ahmad, M. H., Mohd Fahmi Teng, N. I., Mohd Sakian, N. I., Omar, B., & Abd Manaf, Z. (2014). Applying Theory of Planned Behavior to predict exercise maintenance in sarcopenic elderly. *Clinical Interventions in Aging*, 9, 1551. <https://doi.org/10.2147/cia.s60462>
- Sniehotta, F. F., Presseau, J., & Araújo-Soares,V. (2014). Time to retire the Theory of Planned Behaviour. *Health Psychology Review*, 8, 1–7.
- Sun, T., Zhang, J. J., Zhang, B., Ong, Y. X. & Ito, N. Y. (2022). How trust in a destination's risk regulation navigates outbound travel constraints on revisit intention post-COVID-19: Segmenting insights from experienced Chinese tourists to Japan. *Journal of Destination Marketing & Management*, Vol 25, 100711
- Taylor S., Todd P. A. (1995). Understanding information technology usage: a test of competing models. *Inform. Syst. Res.*6 144–176.
- The Japan Times. (2022) <https://www.japantimes.co.jp/news/2022/08/03/asia-pacific/xi-covid-zero-years/>
- These Countries Are Imposing COVID-19 Restrictions on China*. (n.d.). Time. Retrieved January 3, 2023, from <https://time.com/6243967/covid-travel-restrictions-china/>
- Tormala, Z. L. (2016). The role of certainty (and uncertainty) in attitudes and persuasion. *Current Opinion in Psychology*, 10, 6–11.
- Torres, E. N., Wei, W., & Ridderstaat, J. (2021). The adventurous tourist amidst a pandemic: Effects of personality, attitudes, and affect. *Journal of Vacation Marketing*, 135676672110632. <https://doi.org/10.1177/13567667211063208>
- Trifiletti,E., Shamloo,S.E., Faccini,M. & Zaka, A. (2021).Psychological predictors of protective behaviours during the Covid-19 pandemic: Theory of Planned Behaviour and risk perception. *J Community Appl Soc Psychol*. 2021 Mar 7 : 10.1002/casp.2509.
- Tsai, C.Y. (2010). Applying the Theory of Planned Behavior to explore the independent travelers' behavior. *African Journal of Business Management* 4(2)
- UNWTO (2018). UNWTO Tourism Highlights: 2018 Edition. Spain: UNWTO.
- UNWTO (2019). Guidelines for Success in the Chinese Outbound Tourism Market. Madrid: UNWTO.
- UNWTO (2020). *International Tourist Numbers Could Fall 60–80% in 2020*. Available online: <https://www.unwto.org/news/covid-19-international-tourist-numbers-could-fall-60-80-in-2020> (accessed on 18 February 2022).
- UNWTO. (2022, November 23). *Tourism Recovery Accelerates to Reach 65% of Pre-Pandemic Levels*. [Www.unwto.org. https://www.unwto.org/news/tourism-recovery-accelerates-to-reach-65-of-pre-pandemic-levels](https://www.unwto.org/news/tourism-recovery-accelerates-to-reach-65-of-pre-pandemic-levels)
- Usher, K., Durkin, J. and Bhullar, N. (2020). The COVID-19 pandemic and mental health impacts. *International Journal of Mental Health Nursing*, 29, 315-318.
- Volz KG, Schubotz R, von Cramon DY. Predicting events of varying probability: uncertainty investigated by fMRI. *Neuroimage* 2003; 19: 271–

80.

- Williams, A. M. & Balaz, V. (2015). Tourism risk and uncertainty. *Journal of Travel Research*, 54(3), 271-287.
- Williams, A. M., Chen, L. J., Gang, L. & Baláz V (2022). Risk, uncertainty and ambiguity amid Covid-19: A multi-national analysis of international travel intentions. *Annals of Tourism Research*. Vol. 92, 103346
- Willyard, C. (2023). Are repeat COVID infections dangerous? What the science says. *Nature*, 616(7958), 650–652.
<https://doi.org/10.1038/d41586-023-01371-9>
- Wu, T., Wu, H., (2018). Tourism and economic growth in Asia: A bootstrap multivariate panel Granger causality. *International Journal of Tourism Research* 21(2), <https://doi.org/10.1080/19388160.2020.1824836>
- Weaver, P.A., Weber, K. & McCleary, K.W. (2007). Destination evaluation: The role of previous travel experience and trip characteristics. *Journal of Travel Research*, 45(3), 333-344
- West, S. G., Finch, J. F., & Curran, P. J. (1995). Structural equation models with nonnormal variables: Problems and remedies. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 56–75).
- Wang, H. (2020). The Global Pandemic and China's Relations with the Western World. <https://www.cigionline.org>.
- Wright, K. B. (2017). Researching internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of Computer-Mediated Communication*, 10(3).
<https://doi.org/10.1111/j.1083-6101.2005.tb00259.x>
- Yang, J. Z., Aloe, A. M. & Feeley, T. H. (2014). Risk information seeking and processing model: A meta-analysis. *Journal of Communication*, 64(1), 20-41.
- Yu, S., & Hall, C. (2022, December 27). No immediate surge of Chinese tourists expected after re-opening. Reuters.
<https://www.reuters.com/world/china/no-immediate-surge-chinese-tourists-expected-after-re-opening-2022-12-27/>
- Zadeh, L. (1978). Fuzzy sets as a basis for a theory of possibility. *Fuzzy Sets and Systems*, 1, 3-28.
- Zaman, K., Bashir, S., Afaq, Z., & Khan, N. (2022). Covid-19 risk perception of travel destination development and validation of a scale. *SAGE Open*, 12(1), 215824402210796. <https://doi.org/10.1177/21582440221079622>
- Zheng, Y., Goh, E. & Wen, J. (2020). The effects of misleading media reports about COVID-19 on Chinese tourists' mental health: a perspective article. *An International Journal of Tourism and Hospitality Research*, 31(2), 337-340.
- Zhang, J.H., Huang, R., Chen, Q. & Zhao, G. Q. (2022). Post-pandemic outbound travel intentions and preparations of Chinese residents: The effects of media coverage and risk perception. *Journal of Hospitality and Tourism Management*, Vol. 51, 156-164
- Zhang, X., & Yu, X. (2020). The impact of perceived risk on consumers' cross-platform buying behavior. *Frontiers in Psychology*, 11.
<https://doi.org/10.3389/fpsyg.2020.592246>
- Zhong, Y., Oh, S., & Moon, H. C. (2021). What can drive consumers' dining-out behavior in China and Korea during the COVID-19 pandemic? *Sustainability*, 13(4), 1724.