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# The Effect of Perceived Susceptibility of COVID-19 on Health Risk Perception, Risk Aversion and Travel Intentions: The Moderating Effects of Trust in Government

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**Abstract:** This study examined the relationship between perceived COVID-19 susceptibility, health risk perception, risk avoidance, and travel intentions, and explored the moderating role of government trust. The study data were collected through both Tencent Questionnaire (113) and field research (507) methods. The results showed that perceived susceptibility significantly influenced health risk perception and risk avoidance, which in turn significantly influenced travel intentions. Health risk perception and risk aversion partially mediated the effect of perceived susceptibility on travel intentions, respectively, and the chain mediation relationship between them was supported. Government trust had a significant moderating effect between perceived susceptibility affecting health risk perception, and health risk perception and travel intentions. This study provides new insights into the factors influencing tourists' travel intentions in a global public health context and contributes to the recovery of the tourism economy and the development of marketing strategies for destinations in the post-pandemic era.

**Key words:** perceived susceptibility; perceived health risk; risk aversion; travel intentions; trust in government

## 1 Introduction

The COVID-19 pandemic (hereinafter referred to as COVID-19), is considered to be the most significant global public health security event in the 21st century, and it created a long-term high-risk situation that greatly threatens the sustainable development of the global tourism economy (Crouch, 2011). Travel destinations worldwide are seeking strategies to sustain tourism amidst the high risks posed by COVID-19. The development and prosperity of a tourist destination heavily depends on its ability to provide tourists with a healthy and safe environment (Crouch, 2011) and a

pleasant travel experience (Zhang et al., 2021b).

Perceived susceptibility is an important concept in health behavior theory (McQueen et al., 2010). The theory states that once people perceive themselves as vulnerable to health risks, they develop intentions to take preventive measures, or to abandon risky health behaviors (Ranby et al., 2010). In the field of tourism research, a traveler's perceived susceptibility to disease means that a traveler may be negatively affected by a health-related crisis while traveling (Chua et al., 2021), referring to individual belief(s) about the risk of contracting an illness (Brewer and Fazekas, 2007). It is critical to understand their compliance and behavioral adoption of

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protective measures (Chi et al., 2021), thereby potentially influencing tourists' travel decisions, behaviors, experiences, and satisfaction at a fundamental level (Cahyanto et al., 2016; Huang et al., 2020; Mao et al., 2022). In the context of COVID-19, how tourists form travel avoidance in relation to health risk perceptions is a key task for destinations, to maintain tourist safety, restore a safe image, and improve confidence in the tourism market, which also causes us to focus on tourists' perceived susceptibility issues. In this context, the relationship between perceived susceptibility and travel intention has become an important topic of tourism research in respect of the major public security crises. However, few studies have examined the mediating and moderating mechanisms of the relationship between perceived susceptibility and travel intention. There are three key gaps in this particular field of research.

First, scholars believe that public crisis events reduce individuals' willingness to travel (Hajibaba et al., 2015; Duan et al., 2022). However, studies have found that some tourists believe that destinations will be safer after major crisis events (Wolff and Larsen, 2014) and try to justify their behavioral travel decisions to these destinations and even rationalize their risk-taking behavior and seemingly irrational travel decisions (Fuchs et al., 2013). This is because they believe that the destination has become safer owing to strict measures taken after a major security incident. There are even some tourists who are driven by factors such as curiosity, responsibility, respect, and knowledge (Isaac and Çakmak, 2016; Yan et al., 2016) to travel to black tourism destinations (Biran et al., 2014). Therefore, tourists' travel decisions in crisis situations present uncertainty and inconsistency (Karl, 2018). The factors influencing travel intention in the context of a global public safety crisis appear to be more complex, and more empirical research from different perspectives is urgently needed.

Second, the potential mediating mechanism between perceived susceptibility and travel intention lacks empirical research. Although perceived susceptibility may have a negative effect on tourists' travel intention (Chinazzi et al., 2020; Golets et al., 2023), few studies have examined the mediating role of the relationship between them. During major health and safety crises, perceived susceptibility triggers tourists' assessment of health risk perceptions and risk aversion, which in turn influences their travel decisions (Chua et al., 2021; Zhang et al., 2021b). Tourist health risk perceptions and risk aversion represent the cognitive and responsive states that tourists usually possess in high-risk or threatening situations (Binder et al., 2011; Stefánsson and Bradley, 2019), and may mediate the effect of perceived susceptibility on travel intentions. However, these possible moderating effects have not been empirically confirmed in the context of major crises.

Third, in the context of global public crises, government performance becomes an important influencing factor in the formation of people's perceptions of these events, and its

moderating role in the effect of perceived susceptibility on travel intention is unclear. Tourists' perceived susceptibility and travel intentions, in a high-risk context, may be influenced by the extent of trust in the government (Shin et al., 2022). As a special organizational form, the government cannot maintain social stability and effective operation of various systems after a crisis event, without the support and trust of the public (Newton, 2001). Trust in government means trusting that the government's actions (e.g., carrying out its duties, public communications) will be right and fair (Brewer and Sigelman, 2002), reflecting individuals' overall evaluation of the government's performance in high-risk situations based on their perception of risk and their expectation that future performance will be in line with their own desires (Chen et al., 2019). Once formed, trust in government means that it is able to stimulate supportive behavior in situations of crisis and uncertainty (Mueller, 1970). Thus, increased trust in government can reduce the level of risk perception of the public in crises (Dryhurst et al., 2020; Dedeoğlu and Boğan, 2021). It has been found that individuals with increased trust in government are more inclined to government-recommended protective measures (Van der Weerd et al., 2011), while individuals with decreased trust in government may not support government-promoted policies (Nunkoo and Ramkissoon, 2012; Nunkoo et al., 2012; Nunkoo and Smith, 2013). Thus, it is one of the important factors in the generation of a range of supportive behaviors of the population after a crisis event (Van der Weerd et al., 2011; Freimuth et al., 2014). Trust in government may trigger individuals' seemingly irrational cognitive assessments and risk-seeking decisions in crisis situations (Lim and Moon, 2021). However, the moderating role thereof trust has not been explicitly tested in both tourists' assessments of perceived susceptibility and subsequent travel decisions.

To satiate this research gap and adequately consider the long-term nature of COVID-19's impact on tourism, this study has the following objectives: 1) To examine the effects of perceived susceptibility, health risk perception, risk aversion, and travel intention to elucidate tourists' decision-making behavior in the context of public safety crises; 2) To reveal the mediating mechanisms of perceived susceptibility on tourists' travel intentions; and 3) To explore the moderating role of government trust between perceived susceptibility and risk perception, risk aversion, and travel behavior in the context of public safety crises. In conclusion, this study provides theoretical support and strategic services for destination risk management during regional or global public safety crisis management, including COVID-19. The conceptual model is shown in Fig. 1.

## 2 Literature review and research hypothesis

### 2.1 Perceived susceptibility

Perceived susceptibility refers to an individual's judgment of whether they will be at risk of contracting a disease (Ca-

hyanto et al., 2016). An important method to measure it is to compare and estimate the infection risk of individuals with that of others (Vollrath et al., 1999). It is a core construct in models of health behavior (Mirakzadeh et al., 2021). These models suggest that once people think they are vulnerable to disease, they tend to take preventive measures or give up risk-induced behavior (Huang et al., 2020). With the growing importance of consumerism and information symmetry in tourism contexts, tourists are becoming more cautious in their travel decisions and more sensitive to their own susceptibilities (Matiza and Slabbert, 2021).

Previous studies found that perceived susceptibility, perceived travel risk, and the severity of a pandemic may prevent people from traveling (Cahyanto et al., 2016; Mirakzadeh et al., 2021). During the pandemic, potential tourists' cognition thereof will affect their perceived susceptibility, and directly affect their travel intention (Lu and Schuldt, 2018; Naseer et al., 2022). When people discern a higher perceived susceptibility, they will travel more carefully (Cahyanto et al., 2016). Perceived susceptibility can enhance potential tourists' perceived health risk, which leads to risk mitigation behavior or even risk aversion behavior, including reduced travel owing to safety concerns (Matiza and Slabbert, 2021). Thus, the higher the perceived susceptibility of potential tourists, the higher their level of perceived health risk and risk aversion, the lower their travel intention (Morar et al., 2021). The results of Cahyanto et al. (2016) and Mao et al. (2022) showed that individuals who think they have a high perceived susceptibility have a higher health risk perception and are more likely to take preventive measures because they believe that prevention and avoidance behavior will reduce the risk of disease; those individuals who think they have a low perceived susceptibility have a lower degree of health risk perception, are more likely to take high-risk behaviors, and have an increased willingness to travel. Accordingly, the following hypotheses are proposed:

H1: Perceived susceptibility has a significant positive impact on perceived health risk.

H2: Perceived susceptibility has a significant positive impact on risk aversion.

H3: Perceived susceptibility has a significant negative impact on travel intention.

## 2.2 Perceived health risk

Perceived risk is an individual's perception of the uncertainty and potential negative consequences of purchasing a product or service, engaging in certain activities, or making lifestyle choices (Binder et al., 2011). Uncertainty comprises objective uncertainty (determined by the inherent uncertainty of the product or service) and subjective uncertainty (determined by the customers' previous behavior, experience, and knowledge) (Dowling and Staelin, 1994). This means that risk is inherent in every decision but has a

greater impact in the tourism industry (Joo et al., 2021). There are many risks associated with the tourism industry, such as cultural barriers, crime, political instability (Larsen et al., 2009). During COVID-19, health-related risks have a direct negative impact on tourism, as it plays a crucial role in the spread of pandemics between destinations and tourists fear that travel will lead to contracting diseases (Rather, 2021).

Health risk perception is considered to be a key determinant of the public's willingness to engage in health protection behaviors (Mirakzadeh et al., 2021). During COVID-19, travel is seen as a high-uncertainty and high-risk leisure activity, which could easily trigger public fear of travel and raise their health risk perceptions (Zheng et al., 2022). When tourists have a higher level of health risk perception, they will hold an increased level of risk aversion (Bae and Chang, 2021). Additionally, the greater the health risk perception of the potential tourists, the greater the likelihood that they will reduce risk through risk aversion behavior (e.g., abandoning the travel plan) (Zhu and Deng, 2020). Indeed, many studies have reported a negative correlation between perceived risk and travel intentions, both for normal domestic and international travel, and in the context of sudden major events such as terrorist attacks, nuclear accidents, and infectious diseases (Chew et al., 2014; Bø and Wolff, 2019; Khan et al., 2019). When experiencing uncertainty, people tend to take countermeasures aimed at restoring certainty (Poortvliet and Lokhorst, 2016), especially in complex, uncertain, and occasionally dangerous situations (Chérif et al., 2018). Accordingly, the following hypotheses are proposed:

H4: Perceived health risk has a significant positive impact on risk aversion.

H5: Perceived health risk has a significant negative impact on travel intention.

## 2.3 Risk aversion

Risk aversion refers to an individual's unwillingness to take actions that may lead to loss or no guarantee of interests (Stefánsson and Bradley, 2019) and is the individual's natural response to risk (Im et al., 2021). Scholars believe that it is one of the main predictors of tourist's behavior (Nugraha et al., 2016). For risk averse people, a slight change in risk will greatly change their behavior intention. However, for people with risk preference, the change of risk will not affect such intention (Zhu and Deng, 2020). Moreover, the behavior of individuals with similar risk aversion is not necessarily similar, as it is also influenced by their previous experience, risk perception, perceived susceptibility etc. (Nugraha et al., 2016). In tourism, risk aversion can undermine the visitor experience and therefore mass tourism is essentially based on the absence of risk (Williams and Baláž, 2015). However, traveling during a pandemic is seen as a high-risk activity, as people can be infected with the virus,

forced into quarantine, and prevented from traveling (Zheng et al., 2022).

When people are affected by risks, they can mitigate potential risks through complete risk aversion but seem to prefer to optimize their risk-taking behavior by balancing expected benefits and losses (Zhu and Deng, 2020). During the pandemic period, risk aversion had a great impact on potential tourists' behavior intention (Zhu and Deng, 2020). Buying travel services during this period was a risky decision (Nugraha et al., 2016). After weighing the expected benefits and losses of traveling, potential tourists will form risk aversion or risk acceptance, which directly affects their travel intention (Wang et al., 2021). For example, Kalra and Taneja (2022) pointed out that people's fear and anxiety in the face of a crisis positively affects their risk aversion, which in turn negatively affects their travel intention. Bae and Chang (2021) also confirmed that people's risk aversion negatively affects their travel intentions. Accordingly, the following hypothesis is proposed:

H6: Risk aversion has a significant negative impact on travel intention.

## 2.4 The moderating effect of trust in government

Trust in government usually refers to the confidence in government or politics. It comes from the public's belief that the political system is about to operate and produce results consistent with their psychological expectations (Yang et al., 2021). In recent decades, scholars became more interested in the public's trust in government and its possible impact on society and effective governance (Mizrahi et al., 2020); specifically in periods of crisis, as the government plays a very important role during this period. For example, if the government does not accurately update the information on the confirmed cases and deaths of COVID-19, the public may be confused, leading to increased mistrust in the government (Lim and Moon, 2021). Additionally, most people have insufficient time, resources, and abilities to accurately judge the current situation, characteristics, and evolution trends of the crisis (Poortvliet and Lokhorst, 2016). Therefore, when people trust the government, they can fully obey the arrangement thereof, even if they may not fully understand why the government makes these decisions (Lim and Moon, 2021). They believe that their personal safety will be effectively protected by the government (Hsieh et al., 2021). However, when people lack trust in the government, they will doubt whether the measures implemented thereby are sound and sufficient and whether they can ensure their health in the process of tourism (Dedeoğlu and Boğan, 2021).

When potential tourists trust the government and recognize the government's ability and performance in preventing and dealing with crises, their fear thereof will be reduced, health risk perception will be lower, and attitude toward risk aversion will be changed (Ma and Christensen, 2019). During COVID-19, potential tourists, who have increased gov-

ernment trust, are more likely to believe that the government's decisions on pandemic prevention and control are correct and are more likely to travel in compliance with these decisions (Dedeoğlu and Boğan, 2021). As well as easing the attention and frequency of potential tourists to COVID-19, increased government trust can reduce the impact of risks on tourists (Xu, 2021). When they trust the government, their negative emotions, such as worry, fear, anxiety, perceived threat, and perceived health risks will be reduced, and their travel intentions will also be increased (Hsieh et al., 2021). For example, Zheng et al. (2022) found that trust plays a crucial role in individuals' responses to threats, by influencing their perceptions of risk and associated benefits, alleviating individuals' negative emotions, especially when they tend to rely on trust to reduce complexity when using their limited knowledge for risk assessment and decision-making. Wu et al. (2016) also demonstrated that trust can effectively moderate individuals' risk perceptions and influence their rational judgments and behavioral intentions. Conversely, Dedeoğlu and Boğan (2021) have shown that individuals' trust in government has a significant moderating effect on their willingness to go out. Su et al.'s (2022) study supports this view, with individuals' trust having a significant moderating effect on their travel intentions. Accordingly, the following hypotheses are proposed:

H7a: Trust in government has a significant moderating effect between perceived susceptibility and travel intention.

H7b: Trust in government has a significant moderating effect between perceived susceptibility and perceived health risk.

H7c: Trust in government has a significant moderating effect between perceived health risk and travel intention.

H7d: Trust in government has a significant moderating effect between perceived susceptibility and risk aversion.

H7e: Trust in government has a significant moderating effect between risk aversion and travel intention.

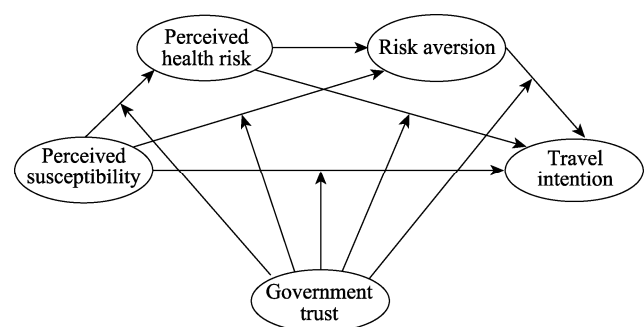


Fig. 1 Conceptual model

## 3 Methodology

### 3.1 Measures

The questionnaire used in this research consists of two parts: The first part includes five variables. Specifically, the items to measure perceived susceptibility (4 items) (Wang et al.,

2021), health risk perception (4 items) (Bratić et al., 2021), risk aversion (3 items) (Zheng et al., 2020; Wang et al., 2021), trust in government (13 items) (Lee, 2011) and travel intention (5 items) (Maghrifani et al., 2022). The questionnaire was originally designed in English and translated into Chinese. The measurement items of the first four variables were obtained through literature reviews and interviews, while the variable of travel intention was obtained through the literature research method (See Appendix 1 for the full names of items). All the measurement items in the paper were measured on a 7-point Likert scale (where 1 = strongly disagree, and 7 = strongly agree). The second part is the personal information of the interviewees.

### 3.2 Sample and data collection

To ensure the accuracy and reliability of the questionnaires, the research team conducted a pre-study through the online mini program “Tencent Questionnaire”. The research team initially conducted pre-research through the online mini program “Tencent Questionnaire”. The 113 valid questionnaires collected were tested for reliability and validity, and the results showed that these questionnaires were acceptable and the measurement questions had a good degree of interpretation. In the formal investigation, owing to the strict personnel flow control policies formulated by local governments, the case sites of this study are Hangzhou and Ningbo, Zhejiang Province, China, based on the principle of proximity. Both have always been classified as low-risk areas, so public places have been opened, and the resumption of tourism has created convenient conditions for the smooth distribution of questionnaires. The research team used random sampling to obtain questionnaires, from July 5 to August 1, 2020. There are 6 main sites for investigation: Ningbo Tianyi Square, Zhongshan Park, Drum Tower Along Pedestrian Street, Wuyue Square, Hangzhou Wulin Square, and Mid-mountain Forest Park. The researchers first briefly introduced the purpose of the study and asked the sampled tourists if they were willing to participate in the survey to ensure that participation was voluntary. Respondents were assured that names and addresses were not collected for the study. And as is customary, a small gift was given as a token of appreciation. Overall, a total of 550 questionnaires were distributed, and 507 completed questionnaires were valid.

### 3.3 Data process

Descriptive statistical analysis was performed on 620 samples by SPSS 25.0. Since COVID-19 perceived susceptibility and risk aversion are reverse items, the respondents' responses are processed in reverse order. Data reliability was tested by Cronbach's alpha. The common method bias was assessed by Harman single factor method, and through kurtosis and skewness test data normality. Confirmatory factor analysis was performed to assess structural validity. Model hypotheses were tested using AMOS 26.0. Finally, the me-

diating role of health risk perception and risk aversion, and the moderating role of government trust were tested using PROCESS models 6 and 1, respectively.

## 4 Results

### 4.1 Profile of the respondents

A descriptive analysis of the sample shows (Table 1) that there were slightly more male respondents (51.5%) than female (48.5%), nearly half (48.7%) of the respondents were between the ages of 19–29, and up to 59.2% had a bachelor's degree, followed by 18.7% who had a high school or equivalent education; 51.3% were unmarried and 47.4% were married. The monthly income level of 65.6% of the respondents was the local average. In terms of occupation, the highest proportion of respondents were employees of enterprises and institutions, accounting for 21.3% of the total sample, followed by students, accounting for 17.9%.

Table 1 Sample profile

Variable	Category	Frequency	Percentage (%)
Gender	Male	319	51.5
	Female	301	48.5
Age	18 years and below	33	5.3
	19–29 years old	302	48.7
	30–39 years old	204	32.9
	40–49 years old	59	9.5
	50–59 years old	17	2.7
	60 years old and above	5	0.8
Education	Junior high school and below	38	6.1
	High school and equivalent	116	18.7
	University	367	59.2
	Graduate and above	99	16.0
Marital status	Unmarried	318	51.3
	Married	294	47.4
	Divorced/separated	8	1.3
Occupation	Civil servant	14	2.3
	Enterprise and institution employee	132	21.3
	Private business owner	39	6.3
	Service/sales workers	87	14.0
	Professional and technical personnel (teachers, doctors, and other professionals)	89	14.4
	Self-employed	44	7.1
	Freelancers	56	9.0
	Students	111	17.9
	Retired	4	0.6
	Other	44	7.1
	Far below average	26	4.2
	Below average	65	10.5
Monthly income level	Average	407	65.6
	Above average	108	17.4
	Well above average	14	2.3

## 4.2 Measurement model

Potential common method bias was first examined, and this study was procedurally controlled in questionnaire design by reversing the content of the perceived susceptibility and risk aversion, and avoiding bias from a single data source. The results of Harman's single factor test showed that the total variance explained by the first factor was 30.421%, which was below 50% and the data did not have common method bias. The items have skewness values between -2.070 and 0.340 and kurtosis values between -0.886 and 2.721, which are consistent with normal distribution.

The reliability analysis was performed on all items by confirmatory factor analysis (CFA). The CFA results indicated that the model fits well, including  $\chi^2/df$  of 2.368, *RMSEA* of 0.049, *GFI* of 0.913, and *CFI* of 0.972. As shown in Table 2, the factor loading values for all items were above 0.634, and significant at the 0.001 level. Furthermore, all variables had sufficient intrinsic quality, shown by the composite reliability and average variance

Table 2 Results of confirmatory factor analysis

Construct	Items	S.E.	C.R.	Factor loading	AVE	CR
Perceived susceptibility	PS1			0.767	0.749	0.922
	PS2	0.043	24.320	0.897		
	PS3	0.043	23.972	0.883		
	PS4	0.043	24.512	0.908		
Health risk perception	HRP1			0.922	0.776	0.933
	HRP2	0.027	36.301	0.914		
	HRP3	0.031	30.954	0.854		
	HRP4	0.031	29.219	0.830		
Risk aversion	RA1			0.868	0.693	0.869
	RA2	0.036	29.279	0.933		
	RA3	0.042	18.805	0.675		
Travel intention	TI1			0.634	0.715	0.925
	TI2	0.061	20.479	0.801		
	TI3	0.062	20.897	0.825		
	TI4	0.077	19.680	0.987		
	TI5	0.075	19.254	0.935		
	TG1			0.782		
Trust in government	TG2	0.035	29.216	0.826	0.652	0.954
	TG3	0.040	26.119	0.836		
	TG4	0.042	22.503	0.812		
	TG5	0.046	24.256	0.871		
	TG6	0.043	23.033	0.828		
	TG7	0.045	22.411	0.816		
	TG8	0.044	22.197	0.813		
	TG9	0.047	22.850	0.841		
	TG10	0.050	21.892	0.807		
	TG11	0.047	23.164	0.840		
	TG12	0.056	19.487	0.734		
	TG13	0.054	18.437	0.700		

extracted values being over 0.7 and 0.5, respectively. The diagonal values in Table 3 are the AVE square roots of each latent variable, demonstrating that there is a good discriminant validity between the variables.

Table 3 Correlations between the constructs

Dimension	Perceived susceptibility	Health risk perception	Risk aversion	Trust in government	Travel intention
Perceived susceptibility	0.866				
Health risk perception	0.229**	0.881			
Risk aversion	0.376**	0.469**	0.833		
Trust in government	-0.399**	-0.171**	-0.266**	0.808	
Travel intention	-0.241**	-0.360**	-0.501**	0.182**	0.845

Note: \*\* 0.001 < *P* < 0.01.

## 4.3 Structural model and hypothesis testing

The results of model hypothesis testing are shown in Table 4. Tourists' perceived susceptibility on perceived health risk (H1:  $\beta=0.241$ ,  $P<0.001$ ), risk aversion (H2:  $\beta=0.297$ ,  $P<0.01$ ), perceived health risk on risk aversion (H4:  $\beta=0.380$ ,  $P<0.001$ ) and on travel intention (H5:  $\beta=-0.185$ ,  $P<0.001$ ), and risk aversion on the travel intention (H6:  $\beta=-0.356$ ,  $P<0.001$ ), all had significant positive effects, supporting H1, H2, H4, H5, and H6, respectively. However, perceived susceptibility on travel intention (H3:  $\beta=-0.034$ ,  $P>0.05$ ) did not have significant effect.

Table 4 Results of the hypothesis testing

Hypothesized relationship	Standardized estimate
H1: Perceived susceptibility → Perceived health risk	0.241***
H2: Perceived susceptibility → Risk aversion	0.297***
H3: Perceived susceptibility → Travel intention	-0.034
H4: Perceived health risk → Risk aversion	0.380***
H5: Perceived health risk → Travel intention	-0.185***
H6: Risk aversion → Travel intention	-0.356***

Note: \*\*\*  $P<0.001$ .

## 4.4 The mediating effect

This study examines two parallel chains of mediating effects between perceived susceptibility and travel intention with the help of Model 6 in the Process Macro program developed by Hayes. When zero is not included in the 95% confidence interval, the indirect effect is significant, indicating that there is a significant mediating effect. The results of the study (Table 5) show that the direct effect value of perceived susceptibility on tourists' travel intention is -0.053 with 95% CI interval [-0.129, -0.009] excluding 0, suggesting that perceived susceptibility has an impact on tourists' travel intention. Specifically, perceived susceptibility can influence tourists' travel intention through health risk

perception; also through risk aversion (Ind 2); and through the chain relationship between health risk perception and risk aversion (Ind 3).

Table 5 Direct and indirect effects in the proposed model

Dependent variable	Effect	LLCI	ULCI
Total effect: PS→TI	-0.250	-0.329	-0.182
Direct effect: PS→ TI	-0.053	-0.129	-0.009
Total indirect effect	-0.196	-0.250	-0.131
Ind 1: PS→HRP→TI	-0.037	-0.063	-0.006
Ind 2: PS→RA→TI	-0.120	-0.161	-0.077
Ind 3: PS→HRP→RA→TI	-0.039	-0.058	-0.022

#### 4.5 The moderating effect

The moderating effect of government trust was tested using Model 1 of Process Macro in SPSS. All variables were centered on the mean before estimating the hypothesized model. Where the moderating effects between perceived susceptibility and perceived health risk ( $\beta=0.100$ ,  $t=2.464$ ,  $P<0.01$ ) and between perceived health risk and intention to travel ( $\beta=-0.082$ ,  $t=-1.994$ ,  $P<0.05$ ) support H7b and H7c, Fig. 2 is a plot of the moderating effect of government trust. However, the moderating effects between risk aversion and travel intention ( $\beta=-0.027$ ,  $t=-0.717$ ), perceived susceptibility and risk aversion ( $\beta=0.001$ ,  $t=0.020$ ), and perceived susceptibility and travel intention ( $\beta=-0.012$ ,  $t=-0.334$ ), were all insignificant for trust in government, contradicting H7a, H7d, and H7e.

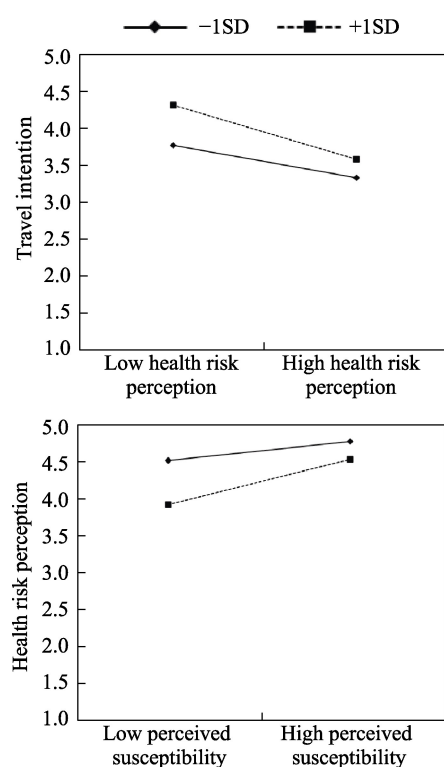


Fig. 2 A visual representation of the curvilinear of moderation test

## 5 Discussion

### 5.1 Theoretical implications

First, in the context of the global public health crisis, travel intention has become a very important research area in tourism research (Bhati et al., 2021; Rather, 2021; Sánchez-Cañizares et al., 2021; Zhang et al., 2021a; Xie et al., 2021; Seçilmiş et al., 2022; Talwar et al., 2022). Although perceived susceptibility is an important factor influencing travel intention in health and hygiene security crisis (Golets et al., 2023), few scholars have conducted studies on the impact mechanism of perceived susceptibility on travel intention. Therefore, this study conducted the impact of perceived susceptibility on health risk perception, risk aversion, and travel intention. The results showed that perceived susceptibility did not significantly affect travel intention, but health risk perception and risk aversion did. These findings deepened the understanding of the factors influencing travel intention and enriched the research results on travel intention in the context of COVID-19.

Second, this study examines the potential mediating role behind the relationship between perceived susceptibility and travel intention, which is largely unknown (Zheng et al., 2022). It provides new ideas and insights for understanding the formation mechanism of tourists' intention to travel under COVID-19. Previous studies have explored the relationship between perceived susceptibility and tourists' behavioral intention, but few studies have considered mediating factors (Zheng et al., 2022). Tourist concern and risk aversion are both very important variables in tourist risk perception research (Nugraha et al., 2016; Pichierri et al., 2023). Research on the mediating role of health risk perception and risk aversion between perceived susceptibility and travel intention expands our cognition and understanding. Therefore, the second theoretical contribution of this study is to clarify the mediating role of health risk perception and risk aversion in the relationship between perceived susceptibility and travel intention, and the chain mediating role of health risk perception and risk aversion in the relationship between perceived susceptibility and travel intention.

Finally, in the realm of public administration, trust in government is an essential notion. It is seen as a critical component in the connection between destination inhabitants and the government in tourism studies (Beritelli et al., 2007). Few scholars, however, have investigated the moderating influence of government trust in the study of tourist intention and behavior. To meet this need, this study applies the notion of trust in government to the field of tourist willingness and behavior research and investigates the moderating influence of trust in government on COVID-19 perceived susceptibility and health risk perception, risk aversion, and travel intention. The results show that, in the context of COVID-19, trust in government has a moderating influence on the association between perceived susceptibility



ity and perceived health risk, as well as the relationship between perceived health risk and travel intention. In tourism research, this finding enhances the boundary conditions of the influence of tourists' perceived susceptibility and risk aversion on their trip intention.

## 5.2 Practical implications

With the pandemic stabilizing and generally improving, the tourism market is back on track for regular operations. In response to the multi-layered impact of perceived susceptibility on travel decisions, there is an urgent need for the government to link the market in a combination of "activation and restart". In order to address the "aftershocks" caused by COVID-19 and solve the shift in tourism demand and the disruption of supply-side development and resource depletion. Firstly, the government should provide fiscal, tax and financial support to destination tourism enterprises in batches, such as social security exemptions, tax exemptions, and subsidies for stable employment, to ensure that supply-side human capital and cash flow revive and stabilize; and issue consumer vouchers to residents, reduce or waive admission fees to scenic spots, free subway tickets, and organize bazaars to stimulate consumer demand. Secondly, tourism enterprises and markets should accurately capture the psychological and behavioral characteristics of tourists' trips and thus transform the marketing methods of destinations. Play the role of the local government to lead, social media to boost up, in the business and the people of the trio to create a humane, irreplaceable tourist destination.

At the same time, the establishment of trust between tourists and public places should not be slackened. Build tourism wisdom applications for the government, enterprises and people respectively, realize public management systems such as data sharing and message delivery, crisis event warning and response, and enhance the scientific research and judgment and rapid response capabilities of tourism enterprises and destinations to emergencies; establish accurate and timely public opinion handling mechanisms at all levels, and strengthen the timeliness and transparency of information disclosure; establish major science and technology projects for antiviral drug research and development, and strengthen medical service capacity building and treatment resource preparation.

## 6 Conclusions

Perceived susceptibility significantly predicted health risk perception and risk aversion, and health risk perception and risk aversion significantly predicted travel intention. This shows that perceived susceptibility is a key factor influencing tourists' health risk perception and risk aversion, which verifies the research conclusion of Neuburger and Egger (2021). Health risk perception and risk aversion are vital factors influencing travel intentions during major global public health crises such as COVID-19. This verifies Bae and Chang (2021), Kozak et al. (2007), Bhati et al. (2021).

However, perceived susceptibility does not predict people's travel intentions. This echoes the research results of Zhao and An (2021), who believe that tourists' perceived susceptibility to chronic diseases cannot directly affect their intention of forest convalescent tourism. Therefore, in the context of the pandemic, whether based on objective evidence such as the development trend of the pandemic, or a subjective perspective such as personal protection measures, tourists' assessment of their probability of contracting COVID-19 cannot directly affect their future travel intentions. The reason for this: On the one hand, it is because of the different research contexts. Most of the recent historical pandemics have been regional; the number of infections and deaths is low compared to the global spread of COVID-19 (Karabulut et al., 2020). Therefore, in this context, the perception of vulnerability and risk is higher among tourists. On the other hand, under the umbrella of the general prevention and control strategy of "external prevention and control, internal prevention and rebound" and tourism-related support policies (Tang et al., 2022), both the Chinese government and localities are becoming more experienced in preventing and managing outbreaks, the domestic tourism environment is safe and orderly, and tourists' personal awareness of precautions and psychological adaptability are gradually increasing. Some studies have shown that provincial tours, rural tours, nature and ecological tours, and micro-vacations have become important travel products under the pandemic (Tang et al., 2022).

Health risk perception and risk aversion play a mediating role in the impact of perceived susceptibility on travel intentions. Health risk perception partially mediates the impact of perceived susceptibility on travel intention and plays a partial chain mediating role between the two. In previous studies, scholars investigated the mediating role of risk perception between the perceived impact of COVID-19 and travel aversion (Nazneen et al., 2021), as well as the mediating role of risk aversion between risk knowledge and travel intention (Zhu and Deng, 2020). This study proves the mediating process of perceived susceptibility influencing tourists' travel decisions under global public health crises and makes a significant contribution to this research direction.

This study confirmed that trust in the government has a significant moderating effect on perceived susceptibility and perceived health risk, and the relationship between perceived health risk and travel intentions. Thus, with the improvement of individuals' trust in government, the predictive effect of perceived susceptibility on health risk perception is gradually increasing. Simultaneously, the prediction effect of health risk perception on travel intentions also shows a gradually increasing trend (Lieberoth et al., 2021). The results of Braun and Zenker (2022) found that in the context of Brexit, individuals' trust in government agencies can increase travel intentions by reducing perceived uncertainty. However, the conclusion drawn in this study is contrary to this, which may be owing to the lifting of domestic travel restrictions in most low-risk areas and the govern-

ment's encouragement of tourism enterprises to resume work and production. Furthermore, the spread of COVID-19 has been effectively controlled by the implementation of regular prevention and control policies of the national and local governments; hotels, restaurants, and shopping malls require strict enforcement of environmental cleaning, disinfection and ventilation, wearing of masks, and deployment of no-rinse disinfectant alcohol, which has increased public trust in the government's pandemic control policies to some extent, namely the "flag effect" (Kritzing et al., 2021). Nevertheless, when the pandemic emerged, the government continued to isolate close contacts and call off business establishments, which led to the violent health risks felt by tourists who had increased trust in the government. Tourists may therefore take excessive precautions (Min et al., 2020) and avoid traveling during a pandemic as a way to support the government's epidemic prevention policies (Shin et al., 2022).

## 7 Limitations and future research

First, this study only selected cross-sectional data from April to May, 2020, the outbreak stage of COVID-19 in China. The long-term impact of the pandemic on tourist psychology is still unclear, and follow-up studies are still needed to collect data in different periods, for in-depth longitudinal comparison. Second, owing to the obvious differences between China's political system and that of Western countries, prevention and control measures and efforts taken by the Chinese government are quite different from those in the western part of the world during COVID-19. Therefore, the research conclusions may not be applicable to all countries and regions. Moreover, future research is recommended to consider the effect of government in a cross-cultural context, such as government prevention and control performance. The mediating role of government could be studied further in the terms of perceived susceptibility, risk perception, risk aversion, and tourists' travel intention. Finally, socio-demographic variables, such as age or educational attainment, were not included in the control variables in this study. Future research can consider combining theoretical frameworks such as social exchange theory or adding social-level relevant variables, which may improve the explanatory power of the overall model from multiple levels.

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## COVID-19 感知易感性对健康风险感知、风险规避和出游意愿的影响：政府信任的调节作用

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**摘 要:** 本研究考察了 COVID-19 感知易感性、健康风险感知、风险规避与出游意愿之间的关系, 并探讨了政府信任的调节作用。研究数据通过腾讯问卷 (113) 和实地调研 (507) 两种方法收集。研究发现: 感知易感性显著影响健康风险感知和风险规避, 这 2 个变量又显著影响游客的出游意愿。健康风险感知和风险规避分别在感知易感性影响出游意愿发挥部分中介作用, 它们之间的链式中介关系也得到支持。政府信任在感知易感性影响健康风险感知, 以及健康风险感知和出游意愿之间有显著的调节作用。本研究对全球公共卫生危机游客出游意愿的影响因素提供了新的见解, 有助于后疫情时代旅游经济复苏和目的地的营销策略制定。

**关键词:** 感知易感性; 健康风险感知; 风险规避; 出游意愿; 政府信任

## Appendix 1 List of adapted items

Construct	Item
Perceived susceptibility	
PS1	Compared to others, my probability of contracting COVID-19 is very low
PS2	Judging from the current government prevention and control effect, my probability of contracting COVID-19 is very low
PS3	Owing to personal prevention and control measures, my probability of contracting COVID-19 is very low
PS4	From the perspective of the pandemic trend, my probability of contracting COVID-19 is very low
Health risk perception	
HRP1	COVID-19 will not affect the quality of my travel
HRP2	COVID-19 will not reduce my travel pleasure
HRP3	COVID-19 will not change my travel plans
HRP4	COVID-19 will not shorten my travel time
Risk aversion	
RA1	I can accept the possible risks of COVID-19
RA2	I am able to accept the risks that may come with traveling
RA3	After weighing, I think the advantages of travel during COVID-19 outweigh the disadvantages
Travel intention	
TI1	Currently, I am willing to travel
TI2	Currently, I am willing to travel for a long time
TI3	Currently, I am willing to travel with my family
TI4	Currently, I am willing to recommend friends and family to travel
TI5	Currently, I will encourage friends and family to travel
Trust in government	
TG1	I believe that the government has the ability to prevent and control COVID-19
TG2	I believe that the government's decision on COVID-19 prevention and control is correct
TG3	I believe that the government's pandemic prevention and control work is efficient
TG4	I believe the government's pandemic prevention and control measures are effective
TG5	I believe that the government has the technology and experience in pandemic prevention and control
TG6	I believe the government cares about the safety of the people
TG7	I believe that the government cares about the needs of the people
TG8	I believe the government will try its best to help the people
TG9	I believe that the government will not do things that harm the interests of the people
TG10	I believe that the government is fair in the prevention and control of the pandemic
TG11	I believe that the government keeps its promises when it comes to preventing and controlling the pandemic
TG12	I believe that the government's announcement of the pandemic information is realistic
TG13	I believe that the government's announcement of the pandemic information is prompt and timely