Understanding How Media Exposure Influences Old Adults Travelers' Perceived Risk and Travel Intention During the COVID-19 Pandemic

(COVID-19 パンデミック時のメディア報道が高齢者旅行者のリスク

認知と旅行意図に与える影響についての考察)

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Chapter 1. Introduction

1.1 Background to This Study

The tourism industry depends heavily on tourist mobility, and during the COVID-19 outbreak restrictions on interpersonal interaction and mobility led to a significant decline in tourism. According to data, the total number of international tourists globally is 1.5 billion as of 2019, and the United Nations World Tourism Organization (UNWTO) predicts an increase in international tourists of between 3% and 4% by 2020 (UNWTO, 2020). However, the COVID-19 pandemic changed this trend, with international tourist arrivals dropping by 850 million to 1.1 billion after the outbreak. The loss of tourism export revenues also reached the largest drop in history, between $860 billion and $1.2 trillion. Asia as one of the first regions to be affected by COVID-19, experienced a 35 percent drop in tourist arrivals in the first three months of 2020 (UNWTO, 2020). The global tourism industry showing a shift from over-tourism to non-tourism. Based on the experience of previous health-related crises such as SARS, and given the high likelihood of long-term damage from pandemics (i.e., a high likelihood of recurrence even after its end), the public maintains to be cautious about the COVID-19 outbreaks (Joo et al., 2019; Leppin & Aro, 2009; Manzoor & Safdar, 2020; Novelli et al., 2018).

Prior to the COVID-19 pandemic outbreak, China's tourism industry was booming, however the emergence of COVID-19 changed this situation. To contain the spread of the pandemic, the Chinese government implemented unprecedented preventive and control measures (e.g., the Wuhan lockdown) in the absence of a vaccine and effective treatment (Camitz & Liljeros, 2006). The study found that while the rapid spread of the pandemic brought negative emotions such as panic, the implementation of the travel bans, and related policies also changed people's lives and behavior patterns. For example, the implementation of the international travel bans inversely promoted domestic tourism, with short trips to the countryside becoming popular. At the same

time, the reduction of crowd gathering and the policy of stay- at- home also strengthened peopl's reliance on the media, e.g., to obtain COVID-19 related information and to satisfy their personal entertainment or shopping needs. This has been confirmed by previous studies, where people chose to spend less time outdoors during the pandemic, with an increase in online shopping and working from home, as well as keeping in touch with friends through social media (de Haas et al., 2020; Juvonen et al., 2021; Shamshiripour et al., 2020; Yabe et al., 2020).

Having discovered the first cases of COVID-19, China has more experience managing the virus and a greater perception of its risk. Individuals' perceptions of disease shape travel decisions or behaviors, especially during pandemics. Consequently, exploring the correlation between risk perception and travel intentions is important. Risk perception will differ depending on the type of risk. Considering that the public is in an environment of high uncertainty and panic, it seems reasonable to measure risk perception in terms of both cognitive and affective. Cognitive risk perception describes the subjective perception of risk-induced uncertainty, while affective risk perception describes the change in emotion when an individual is exposed to a risky situation (Bauer, 1960; Sjöberg, 1998). PMT gives an explanation for why people undertake protective behavior, which has been frequently noted in the literature as a risk reduction strategy (D. L. Floyd et al., 2000). In addition, regarding the role of media, most of the prior studies chose to explore the effect of a particular media on risk perceptions or behaviors. As a novel virus, people may need to obtain substantial COVID-19-related information in the early stages of a pandemic to enhance their knowledge of the virus. This study therefore introduces four main sources of information access to explore their impact on risk perceptions and behaviors. Self-efficacy is defined as the ability and confidence of information receivers to understand, access and screen virus-related risk information in this study. Individuals with high self-efficacy can effectively sort out useful information and thus enhance risk perceptions. It is also worth noting that the effect of COVID-19 on subgroups is heterogeneous. For example, old adults, as a vulnerable group with a high rate

of severe disease, may have a different risk perception than other subgroups. The public generally minimizes uncertainty induced by COVID-19 by accessing sufficient information, but old adults are generally not considered to choose the online method due to physical or technology-related barriers, so we introduce interpersonal communication as a possible information access option of choice for old adults (Passyn et al., 2011).

1.2 Aims and Significance of This Research

The Chinese government activated first-level public health emergency response to prevent the spread of a pandemic, which included cancelling mass gatherings, closing scenic spots, and epidemic prevention at borders, which significantly disrupted public travel behavior, increased risk perceptions, and caused public emotional distress (Motta Zanin et al., 2020). Old adults have higher COVID-19 severity and mortality rates due to their weaker immune systems. This also makes them more susceptible to negative and depressive emotions. Therefore, we should pay more attention to this group and try to provide them with appropriate solutions.

Covid-19 threw the world into chaos and not only challenged existing norms, but also had a great impact on individual's behavior. Therefore, this study tries to establish a theoretical framework through eTPB and PMT theory that facilitates a better understanding of behavioral decision-making process in the context of a pandemic, as well as the factors that influence this process.

Our outcome variable is behavioral intentions toward domestic travel over the next twelve months. Considering the COVID-19 crisis, cognitive and affective risk perceptions were used as antecedents to influence protective behavior to extend the model. It emphasizes individuals' propensity to acquire health-protective behaviors in response to perceived risks along dual cognitive and affective pathways. In addition, due to the unique characteristics of COVID-19, we added media exposure as an option for individuals to obtain COVID-related risk information. We tried to examine the effect of media exposure on individuals' risk perception and subsequent

behavior under self-efficacy. This study focuses on how media exposure influences behavioral intentions through individual's risk perception in the early stages of the pandemic, but we did not include specific variables for TPB or PMT in the study framework; instead, we used the dual-route of perceived risk to maintain the focus of this study. This study is not limited to assessing Chinese tourists' behavioral intentions during COVID-19 but rather examines how individual behavioral intentions are formed in the context of public health emergencies (e.g., pandemics) to inform post-disaster tourism recovery and reconstruction. The objectives are as follows:

(1) To analyze how potential tourists are influenced by related risk information under media exposure and how its further influences travel decisions

(2) Identifying the structural relationships between media exposure, self-efficacy, risk perceptions, preventive behaviors, and travel intentions

(3) To assess the dual-route risk perception process

(4) To examine the travel decision-making process under different demographic categories (e.g., gender, age) and provide actionable recommendations for travelers and tourism organizations

Chapter 2. Literature Review

2.1 Theory of Planned Behavior (TPB)

Attitudes and subjective norms shape behavioral intentions in the TRA, while the TPB contends that people only take action after careful consideration. Furthermore, TPB adds the control variable of perceived behavioral control based on the TRA, suggesting that behavioral intentions can only be converted into behavior if the behavior is controlled by will.

TPB, a three-stage behavioral analysis model, can help us better understand how individuals alter their behavioral patterns. Specifically, behavioral attitudes, subjective norms, and perceived behavioral control are crucial variables in determining behavioral intentions (Ajzen, 1991). Individuals with a positive attitude who perceive the support of others or the group and who have a higher sense of control over their behavior tend to adhere to their intentions to behave. Beliefs serve as the cognitive and affective foundation for the three variables. Personal and environmental factors indirectly influence the three major variables (i.e. attitude, subjective norms and perceived behavioral control), intentions, and behavior by influencing behavioral beliefs.

Researchers attempted to extend TPB by adding new factors in order to improve its explanatory power and, more precisely, predict behavior. For example, Sparks and Pan (2009) investigate the values of potential outbound travelers in Shanghai regarding destination attributes and attitudes toward international travel. In addition, the relationship between Vietnamese residents' trust, perceived risk, and travel intentions was examined by Nguyen et al. (2023); a higher willingness to travel was associated with positive attitudes toward travel, a perception of behavioral control, and subjective norms. Thapa et al. (2023) identified antecedents and psychological structures that influence the willingness of travelers during a pandemic by adding public trust as a factor; they identified antecedents that influence travel intention in terms of public trust, subjective norms, perceived travel benefits, perceived behavioral control, and perceived knowledge of the pandemic. By adding perceived uncertainty, Quintal et al. (2010) evaluated

factors that influence Chinese, Japanese, and Korean tourists' intentions to travel to Australia. They confirmed that perceived uncertainty influenced Chinese and Korean tourists' attitudes, while it also influenced Chinese and Japanese tourists' perceptions of behavioral control. As a result, we believe that the theory of planned behavior provides a theoretical foundation for comprehending travelers' travel intentions and underpins the research presented in this paper.

2.1.1 Behavior Intention

Behavioral intention, a key factor of TPB, demonstrates one's tendency and likelihood to engage in certain type of behaviors in a given scenario (Khoa et al., 2021). Travel intention can be defined as a desire or probability for a traveler to visit a specific location as a form of behavioral intention (Chen et al., 2014). Aside from using TPB and eTPB to explain illness-related travel intentions, researchers have extensively studied the effect of Covid-19 related variables, such as risk perception, trust, travel anxiety, ethic-based evaluation, perceived benefits, and mood state (Zheng et al., 2021; Bui, 2023; Huang et al., 2023; S. Liu & Mair, 2023). Some researchers conducted longitudinal study by collecting data from two different points in time in order to examine the relationship between perceptions of COVID-19, perceptions of travel risk, and travel behaviors among travelers in the DACH region over time (Neuburger & Egger, 2021).

Researchers have also examined the effect of risk perception on travel intentions, such as Zheng et al. (2021) who found that Chinese residents' risk perceptions indirectly influenced their travel behavior. Liu (2021)'s study, on the other hand, confirmed the mediating role of non-pharmacological intervention behaviors between COVID-19 perceptions and Chinese residents' intention to travel internationally. This explains well that protective behaviors can be used as a risk reduction strategy to influence individual behavior, and Pine and McKercher (2004)'s study validates the claim that perceived risk leads to reduced travel demand when illness or mega-events occur. A similar study was conducted by Bui (2023) who confirmed that the perceived risk of domestic tourists visiting Ho Chi Minh City after COVID-19 directly affected their travel

decisions. There is a study by Bae and Chang (2021) that stands out as one of the most significant. In the study, the relationship between the cognitive-emotional dual-path model of risk perception and behavioral intention was validated. The results showed that affective risk perception had a negative impact on behavioral intention, while cognitive risk had a positive impact, providing support for the dual-route model in this study. In contrast, Zhang et al. (2022) offered a different view, stating that only affective risk perceptions have a significant impact on international travel intentions.

In summary, while extensive literature has been conducted on individual behavioral intentions, researchers have given conflicting accounts of the factors that influence travel intentions in the context of COVID-19 and given this situation it is necessary to propose a theoretical framework to test the associations between these variables.

2.2 Protection Motivation Theory (PMT)

China's citizens were at risk from COVID-19, which caused severe economic damage and threatened their health. As of May 31, 2020, there were 83,017 confirmed cases and 4,634 deaths, with a fatality rate of 5.6% (Fighting COVID-19: China in Action_ Chinese government website, n.d.). However, people's response to a pandemic can mitigate the disease's impact on the public. For example, British authorities encourage self-isolation and continued employment to mitigate the effects of the H1N1 pandemic (Smith et al., 2009; Teasdale et al., 2012). Individuals' behavior can be explained using TPB, but the motivations behind those actions remain elusive. However, PMT gives a theoretical framework that explains why individuals participate in health-protective actions and helps us understand how people respond to risks like pandemics (D. L. Floyd et al., 2000; Maddux & Rogers, 1983). Before adopting preventive behaviors, individuals must endure a cognitive process, which is comprised of two components based on the process by which the behavior is generated (Rogers & Prentice-Dunn, 1997): The information sources are the internal and external factors that motivate individuals to engage in health behaviors and can explain the

fear induced by risk information; the cognitive process is central to the generation of the behavior and can be used to explain the behavioral response to the COVID-19 pandemic. Cognitive mechanisms include threat and coping assessments, and according to the PMT, protective behaviors are motivated by high levels of threat assessment, high response efficacy and self-efficacy, and low response costs, which are consistent with travel avoidance and cautious travel behavior during a pandemic (Rogers & Prentice-Dunn, 1997; Zheng et al., 2021).

In tourism research, PMT has been utilized to explain travelers' behavioral intentions (Ali et al., 2019; Choi et al., 2019; Harris et al., 2018; Ruan et al., 2020). In a study on smog pollution in China, for instance, perceived severity significantly impacted the behavior intentions of international travelers (Ruan et al., 2020). Fisher et al. (2018) verified the coping appraisal procedure's effect on cruise passengers' intention to cleanse their hands. Due to the frequency of pandemics and the significance of risk perception in travel risk research, researchers have shifted their focus to preventive behaviors in recent years, and the COVID-19 outbreak has exacerbated this trend (Fisher et al., 2018; Law, 2006; Lu & Wei, 2019; Qi et al., 2009; Sönmez & Graefe, 1998; W. C. Wang et al., 2019). Zheng et al. (2021) combined PMT, coping, and resilience theories to investigate how threat severity and susceptibility induce 'travel fear,' resulting in protective travel behaviors following a pandemic outbreak. The study by Teasdale et al. (2012) concluded that individuals were more likely to adopt recommended Swine influenza prevention behaviors when they perceived their effectiveness and efficacy to be high. Farooq et al. (2020) evaluated PMT during the COVID-19 pandemic and found that the individual's intention to self-isolate was proportional to his perceived severity and self-efficacy.

Although PMT is widely used in tourism and health behavior research, most studies have only examined one part of the model or selected variables, making it difficult to compare and integrate results from different studies (Leppin & Aro, 2009). For this reason, in conjunction with the previous studies, we argue that PMT provides an appropriate theoretical framework for

integrating relevant variables in risk contexts, i.e., preventive behaviors in risk contexts such as pandemics generally need to be generated through cognitive processes of risk, and that risk-related information stimuli from information sources generate corresponding risk cognitive processes that promote individuals to adopt protective behaviors.

2.2.1 Precautionary Behavior as Non-pharmaceutical Interventions

As stated previously, precautionary behaviors have been the focus of PMT and travel risks research in recent years. Due to the limited availability of drugs and vaccines in the early stages of the pandemic, the World Health Organization has recommended a variety of non-pharmaceutical interventions as strategies to reduce COVID-19 infection, include measures of social isolation and hygiene care. Social isolation implies minimizing public transport use and working from home, whereas personal hygiene care involves washing hands and wearing masks to reduce the risk of disease transmission (Gozzi et al., 2022). There have been similar recommendations by the UK government to reduce the public health impact of the H1N1 pandemic by encouraging people with flu-like symptoms to stay at home (Teasdale et al., 2012).

In-depth studies have been conducted on the factors that induce preventive behavior by researchers. A number of studies have highlighted the importance of risk perception, which suggests that when individuals perceive health risks, they will be more prone to taking preventative measures in order to keep their health protected. As Bish and Michie (2010) point out, perceived risk and perceived severity are significant determinants of behavior. In addition, perceived severity and anxiety are associated with protective behaviors such as donning masks, avoiding public transportation, and frequently washing hands. Mask usage is controversial in the United States. Nonetheless, individuals decide whether to wear masks based on their perceived susceptibility and the severity of the risk (Eikenberry et al., 2020; Y. Liu et al., 2022). Siegrist et al. confirmed that risk perceptions play an important role in implementing government policies regarding protective

behavior. For example, individuals with high-risk perceptions are more likely to adopt behaviors that maintain hygiene and limit interpersonal contact.

In the case of the pandemic, it is vital that individuals understand how to modify their behavior in accordance with public health recommendations in order to limit the spread of the disease. Norman et al. (2020) stated that individuals' knowledge, attitudes, and behaviors regarding COVID-19 significantly influence the effectiveness of protective measures, which is why China maintained normalcy during the early phases of the pandemic. Not only because preventive behavior is the most cost-effective way to reduce infection risk but also because of the normative status of preventive behavior, which represents an attitude of self-protection and not putting others at risk. Based on the demographics, Kim and Crimmins (2020) examined the effects of protective behavior recommendations on responses. While younger people adopted protective behaviors more rapidly in the early months of the pandemic than older people, as the pandemic progressed, older people adopted more protective behaviors. These preventive measures were indeed effective in reducing transmission rates before a COVID-19 cure was available, but only widespread Covid-19 vaccination has the potential to end the pandemic. The Chinese government began a vaccination program in July 2020 with the aim of providing multiple quantities of vaccine to those at high risk of exposure as well as the general public. In light of uncertainty regarding the immune response to vaccination and whether vaccination is protective for the old adults, the Joint Prevention and Control Mechanism of the State Department announced in March 2021 that a mass vaccination program can be implemented after an assessment of the health status of the old adults population and the risk of infection. Older people are more susceptible to COVID-19 due to weakened immune systems and chronic diseases, and the uncertainty of vaccination further exacerbates their vulnerability. Combined with literature studies, it is evident that people use non-pharmaceutical measures in the early stages of a pandemic to reduce infection; this behavior

directly impacts behavior intention (Zheng et al., 2021). Therefore, we propose the following hypothesis.

H1. Self-isolation behavior has a negative relation with Behavior intention

H2. Hygienic care behavior has a negative relation with Behavior intention

Researchers have generally examined the influence of a single type of protective behavior, for example, self-isolation or healthcare enhancement (Gozzi et al., 2022). However, given the level of uncertainty and panic created by COVID-19, it may be possible for the two types of panic to coexist or even interact. To test this proposal, the following hypothesis is made:

H3. Hygienic care behavior has a positive relation with Self-isolation behavior

H4. Self-isolation behavior has a positive relation with Hygienic care behavior

2.3 Risk perception

A person's subjective opinion or judgment regarding the uncertainty of a given risk situation is known as risk perception (Bauer, 1960). Tourism researchers defined risk perception as consumers' perceptions of what they are likely to encounter in terms of danger (Chew & Jahari, 2014). However, Fuchs and Reichel (2006) claimed that travelers' decisions are only partially influenced by their risk perception. When the perceived risk is high, travelers seek additional information and make more rational decisions. COVID-19 has a higher rate of transmission and mortality than other infectious diseases and has even caused worldwide panic and a sharp decline in global tourism. Due to the high level of risk associated with COVID-19, it seems that individuals are seeking additional information in order to make informed decisions regarding their travel, such as whether to adopt protective behaviors or alter their travel plans.

Over the past decade, the increasing incidence of infectious diseases has raised concerns about health-related risk perceptions in tourism. As a result, variables related to risk perceptions have been extensively examined. Risk perception has been examined by a number of researchers in the context of preventive and travel behavior. An individual with a higher risk perception is

more likely to adopt preventive measures (Rogers, 1975). Sönmez and Graefe (1998) confirmed that travelers' perceptions of risk significantly affect their decision-making. Nevertheless, there are also different findings, including a Korean study examining the H1N1 virus, which concluded that perceptions of the virus did not negatively affect the willingness of potential travelers to travel internationally. On the contrary, by taking personal non-pharmacological measures to reduce the threat of infection to a level acceptable to them, they reinforced their behavior intention (C. K. Lee et al., 2012). Moreover, Reisinger and Mavondo (2005) confirmed that travelers' risk perceptions have a negative effect on their travel intentions. Furthermore, Reisinger and Mavondo (2005) confirmed that travelers' risk perceptions negatively influence travel intentions. Thus, they must decide whether to maintain their travel arrangements, change their travel behavior, or obtain relevant information. Researchers also found that exposure to information affects individuals' risk perceptions and behaviors. Such as information-seeking is a major risk-reduction strategy for travelers (J. Wang, Liu. Lastres, Ritchie, & Mills, 2019). A study by Chen et al. (2023) indicates that Chinese people's risk perceptions are largely influenced by their satisfaction and trust in government websites. Moreover, other relevant factors have been examined in relation to risk perception. Miao et al. (2022) argue that people with lower levels of COVID-19 risk perception travel more frequently and for longer periods. Further, risk perceptions will affect transport preferences, for example, the perception that public transportation transmits COVID-19 more rapidly (Ozbilen et al., 2021; Zafri et al., 2022). A study conducted by Troutman-Jordan and Kazemi (2020) found that cardiovascular disease and respiratory disease increase the risk of serious COVID-19 infections in the old adults. Moreover, a longitudinal study conducted in Malaysia have provided interesting results. Airak et al. (2023) distributed questionnaires to measure changes in public risk perceptions and travel frequency between the two phases. There were no significant differences between the two surveys in terms of the perception of risk associated with the virus, according to the study. Notably, despite the restrictions being maintained

over a prolonged period of time, the recovery phase exhibited significant increases in infections in comparison to the earlier phase, resulting in a decline in respondents' perception of their ability to control the pandemic; in other words, COVID-19 infections were considered difficult to control.

Throughout the previous study, researchers discussed affective risk perceptions (negative emotions) quite frequently. Cognitive risk perception was the focus of early studies, such as that of Floyd et al. (2004), who split risk perception into two dimensions: susceptibility and severity. A person's susceptibility to an infection is defined as their belief that they are more likely to contract that infection, whereas a person's perception of an infection's severity is defined as how severely they believe an infection has affected them. As the theory has progressed, researchers have proposed additional dimensions, including cognitive and affective (Brug et al., 2004). This dimension, as described by Sjöberg (1998), emphasizes the cognitive aspects of risk and the affective changes that occur when individuals are exposed to risk. There is evidence that affective perceptions, such as worry and fear, play a more significant role in predicting intentions and behaviors than cognitive perceptions. Even though these emotional states are not fully considered in risk research, they may reflect an instinctive approach to risk. Loewenstein's theory of risk as feeling, proposed in 2001, not only shows that cognitive and emotional risk influence behavior in independent ways, but also emphasizes that individuals' emotional responses are more powerful than cognitive perceptions when they are faced with frightening risk, which confirms Peters and Slovic 's finding (Loewenstein et al., 2001; Peters & Slovic, 1996). During COVID-19, Bae and Chang (2021) tried to distinguish the impact of rational and emotional assessments of risk on future actions separately. Qiao et al. (2021) also discovered that worry, a fundamental element in emotional risk perception was linked to future actions. According to Zajonc (2000), cognitive thought and emotional responses are distinct aspects of mental processing. Aliperti and Cruz (2019) suggest that people become overwhelmed by negative emotions when they encounter high-risk situations. Chen et al. (2023) concluded that negative emotions (depression, helplessness, and

loneliness) were positively associated with risk perceptions among those who relied on social media messages.

To summarize, negative emotions and risk perceptions may play a significant role in the emergence of protective behaviors during the early phases of an outbreak of COVID-19. However, very few studies have examined the associations between these variables in the context of COVID-19. Therefore, in light of the above, we propose the following hypothesis：

H5. Cognitive risk has a positive relation with Hygienic care behavior

H6. Cognitive risk has a positive relation with Self-isolation behavior

H7. Affective risk has a positive relation with Hygienic care behavior

H8. Affective risk has a positive relation with Self-isolation behavior

Additionally, researchers have proposed that risk perception should be considered as a dual-route process involving both cognitive and affective components. As parallel, interdependent, and continuously active information processing processes, these two dimensions guide perception of risk and judgment processes associated with behavior (LeDoux, 1995; Pessoa, 2015). Palazon and Delgado Ballester (2013) validated the hypothesis that individuals apply cognitive-emotional information processing mechanisms when they have utilitarian objectives. There has also been research to suggest that risk perceptions can be formed by emotionally responding to risk messages communicated by the media (Lerner & Keltner, 2001). Chien et al. (2017) suggest that anxiety affects an individual's perception of travel risk. That is, the higher the individual's anxiety about potentially risky events, the higher the perception of travel risk. As regards COVID-19, activation of the cognitive-affective route is justified since avoiding infection is consistent with previous studies' utilitarian goals. Based on prior research, the following hypothesis is proposed considering the parallel and interdependent relationship between the dual-route process:

H9. Affective risk has a positive relation with Cognitive risk

H10. Cognitive risk has a negative relation with Affective risk

2.4 Media Exposure to COVID-19 Information

Media outlets provide easy access for individuals to get information in today's highly informative age. To ease the panic resulting from the lack of knowledge about COVID-19, many people use the media or personal social networks to gain virus-related information (J. Wang, Liu. Lastres, Ritchie, & Pan, 2019).

Some researchers have argued that media coverage influences perceived risk awareness of COVID-19 (Karasneh et al., 2021; Tsoy et al., 2021), whereas others have emphasized that media coverage can lead to fear or emotional responses such as anxiety and worry about infection (Ali et al., 2019; Qiao et al., 2021). The research conducted by Shim and You (2015) confirms that media coverage is substantially associated with both cognitive and affective risk perceptions. Comparative studies on the impact of various media categories on pandemic risk perceptions in infectious diseases have been relatively limited and have primarily focused on a particular media type or the media as a whole. For instance, Zhang et al. (2022) found that media can influence the risk perceptions and behaviors of individuals. Other researchers have examined the effects of a particular type of media, including mass media, social media, the Internet, and interpersonal communication (Fung et al., 2011; Huynh, 2020) The media can assist individuals in comprehending risk and influence their perceptions of issues. The dissemination of public health news and information through the media can increase public awareness of risk (Lin & Lagoe, 2013). People tend to obtain information from new media platforms such as social media. As each sender of information can alter the message by enhancing, weakening, or filtering portions of it , disseminating false information on social media can cause public distress and a heightened perception of risk. The Internet's rapid growth has made it a significant source of information sharing and access. Sparks and Pan's (2009) study emphasizes the Internet's significance as a source of information and its growing influence over time. However, Fan et al. (2020) argue that a substantial portion of the online COVID-19 information lacks scientific rigor. Furthermore,

interpersonal communication, a highly utilized source of information can not only amplify or diminish risk-related information but also make risk perceptions 'contagious' (Govers et al., 2007). Hartjes et al. (2009) demonstrate that people rely on family and acquaintances for information, although they are less likely to provide adequate, targeted information. Based on the above research, we try to explore how exposure to relevant risk-related information reported by different media can affect risk perception. The following hypotheses were developed for this study:

H11. Media coverage (a: mass media; b: social media; c: internet website; d: interpersonal communication) has a significant impact on affective risk perceptions

H12. Media coverage (a: mass media; b: social media; c: internet website; d: interpersonal communication) has a significant impact on cognitive risk perceptions

Media exposure and excessive information can also increase the public's fear and anxiety. Holman et al. (2014) found that crisis-related media coverage can result in significant psychological distress or mental health conditions. Specifically, researchers have discovered that old adults' media consumption is positively correlated with their level of depression and experiencing mild or severe depression during COVID-19 (Y. Li et al., 2022). Considering the influence of self-efficacy on information processing, the following hypotheses were developed:

H13. Public perceptions of pandemic-related information are associated with self-efficacy during a pandemic

2.5 Self-Efficacy

Bandura created the concept of self-efficacy to characterize a person's belief in their capacity to perform a behavior successfully. In other words, individuals with high self-efficacy believe they can conduct a specific behavior. Gavrilov Jerković et al. (2014) defines self-efficacy as the belief that an individual can influence events. Based on this concept, it is argued that a person's self-efficacy in information processing can facilitate optimistic anticipations of events.

The concept of self-efficacy has been extensively researched; for example, Farooq et al. (2020) found that an individual's intention to self-segregate is directly related to his perception of severity and his self-efficacy. A high level of government effectiveness can increases societal trust (Catterberg, 2006). Moreover, residents' perceptions of government performance regarding the outbreak were positively correlated with self-efficacy in avoiding infection and perceptions of the government's ability to restore local tourism, leading to a greater expectation of rapid tourism recovery. According to a study by Rimal (2001), people who perceive risk less and believe they are more capable of using health information are more likely to be able to use health information.

Several studies have discussed the relationship between self-efficacy and risk perceptions, suggesting that self-efficacy influences people's risk perceptions. In times of pandemic, individuals are situated in an unstable information environment. As mentioned, people obtain much information from multiple sources to manage risk (Lo et al., 2011). However, only those with high self-efficacy can reduce their risk perceptions by filtering valid information. Due to travel restrictions, people relied more on online platforms such as social media during COVID-19. Social media provides a forum for the public to convey their sentiments, opinions, and perspectives; however, as each individual can modify the information by enhancing or filtering portions, the information's credibility is diminished and consequently risk increased. Traditional perceptions consider offline information more reliable than online information; however, with the rapid growth of the online society and the impact of isolation policies for epidemics, the importance of online media, such as social media, is growing daily. And people's perceptions of the credibility of information from online social sources may vary based on their self-efficacy with social media. In addition, individuals with greater social media self-efficacy may be more likely to perceive social media information as credible (Gefen & Straub, 2000). Furthermore, researchers have discovered that self-efficacy can mitigate the effects of media on an individual's perceptions or behaviors (H. Lee et al., 2014), indicating the potential for self-efficacy to moderate the

relationship between social media and risk perceptions. In the context of a pandemic, the interaction between self-efficacy and social media can result in varying risk perceptions of infectious diseases, as individuals hold different levels of self-efficacy when relying on media to obtain virus-related information and thus forming risk perceptions. In light of this, we propose the following hypothesis:

H14. Self-efficacy influences cognitive risk perception significantly

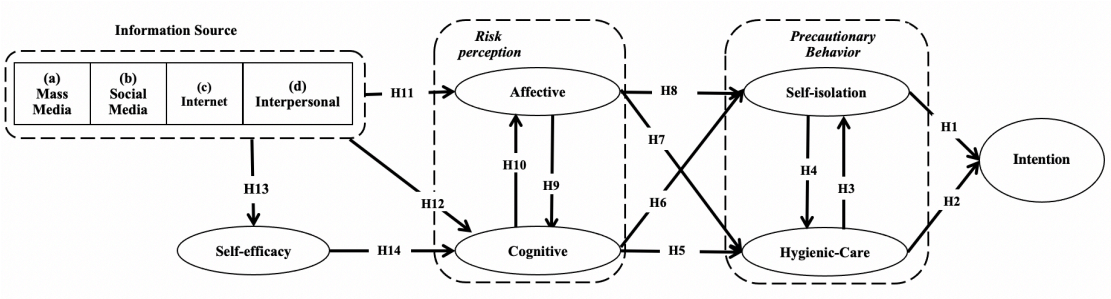
2.6 Conceptual Model

Unlike previous viruses such as SARS or MERS, the COVID-19 pandemic caused a worldwide turmoil that not only challenged pre-existing behavioral norms, but its virus features also motivated health-protective behaviors, thereby leading to the prediction of tourist behavior.

In this study, both TPB and PMT were utilized to construct the conceptual framework. Our final outcome variable was behavioral intention to travel during COVID-19, and two variables (self-isolation and hygienic care) were identified as antecedents based on behavioral intention to travel. Considering the crisis context involving COVID-19, we added risk perception to the model. The HBM, which emphasizes the propensity of individuals to acquire health-protective behaviors in the presence of perceived risk, can justify this addition to the behavioral intention model. In other words, we presume that this travel behavior is the result of individuals deciding whether or not to adopt appropriate protective behavior attempts to encourage or discourage their behavioral intentions in response to the perceived risk of a COVID-19 outbreak. Considering that media coverage has been a determinant of risk perception and self-efficacy is also used as an influential antecedent in risk perception evaluations. Hence, it is necessary to investigate how media coverage and self-efficacy influence risk perception amid COVID-19. However, variables specific to TPB and PMT were not included in this study's framework; influenced by COVID-19, we used variables such as risk perception and media coverage to maintain the study's focus. Figure 1 shows the conceptual model.

Figure 1

Conceptual Model



Chapter 3. Methodology

3.1 Overview

On February 12th, 2020, the number of new confirmed cases in China reached a peak. However, as a result of a series of preventive and control measures, there were no new confirmed cases in China for the first time on March 18th, indicating that the peak of the pandemic has passed for temporary. The government has also begun to restore social production and working order, and the tourism industry is gradually moving from winter to thaw. The implementation of international travel bans and concerns about disease infection, while having an impact on international travel, have conversely boosted tourists' willingness to travel domestically. Particularly in China where the rapid containment of the spread of the epidemic in a short period of time increased confidence, it looks as if the Chinese have found coping strategies to meet their travel requirements while minimizing the perceived risk, and this study was initiated to explore this trend.

PMT provides an appropriate theoretical framework for highlighting protective behavior as a coping strategy for COVID-19 risk perception. Put it simply, non-pharmaceutical interventions helped against COVID-19 widespread within China. The study also examined other variables, such as risk perception, media coverage, and self-efficacy. Through examining the relationships between the variables, we try to explore how people's behavior intention is determined and what influences it.

3.2 Construct Measurements and Questionnaire Design

The study used quantitative methods to conduct an empirical analysis of the hypothesized model. Measurement items were adapted from prior research to ensure content validity.

Behavioral intention. Three items were used to measure behavioral intentions after the pandemic. Each item was scored on a seven-point scale (1 is definitely not, 7 is definitely will). The following items were included in the questionnaire: "Intention to visit Wuhan in the next 12 months,"

"Intention to have a domestic trip in the next 12 months," and "Intention to change my travel destination in the next 12 months."

Precautionary Behavior. In order to measure people's willingness to adopt preventive behaviors during a pandemic, we adapted scales from prior studies (Brug et al., 2004; Bults et al., 2011). Participants were asked to rate their likelihood of adopting preventive behavior (1: definitely not; 7: definitely will).

Risk Perception. The cognitive and affective components of risk perception will be measured separately, and the scale items are adapted from Trumbo and Harper (2015) ' s study. Three items measure cognitive risk perception, and each item is scored on a seven-point scale (1: totally agree; 7: totally disagree). The questionnaire included the statements, "I do not feel very knowledgeable about the risk of Coronavirus," "I believe that the risk of Coronavirus is increasing over time" and "I don't have any choice about my exposure to Coronavirus." An individual's affective risk perception, on the other hand, was measured using the following questions to assess their negative emotional reactions caused by COVID-19: "The thought of Coronavirus fills me with dread or fear," "The thought of Coronavirus makes me feel anxious or worried", and "The thought of Coronavirus makes me feel sad or depressed."

Information Sources. Additionally, we examined factors that may influence risk perceptions as an extension of our research model. Therefore, we measured the sources of information available to the public regarding COVID-19. Participants were asked whether they had received information about COVID-19 through the listed sources. A dichotomous scale (yes / no) was used to determine whether the respondents obtained COVID-19-related information through the listed channels, after which they were asked to rate their level of use, stated as: "To what extent do you receive information related to the coronavirus from the following media platform". In this study, we considered four main common channels of information sources: mass media (e.g., newspapers

/ radio / TV), social media (WeChat / QQ / Douban / Weibo), Internet websites, and interpersonal communication. Each item was rated on a 7-point Likert scale, from very little to very much.

Self-efficacy. In this study, self-efficacy was defined as the individual's ability to process information related to COVID-19. A seven-point Likert scale was used to evaluate each of the three items, including " I have confidence in my ability to search on coronavirus related information ") " I have confidence in my ability to understand the coronavirus related information " " I have confidence in my ability to evaluate the credibility of coronavirus related information ".

As part of the questionnaire, we also collected demographic information such as age, gender, level of education, and monthly income status (RMB). A list of the questionnaire items that were used can be found in Table 1.

Table 1

Questionnaire Items & Reference

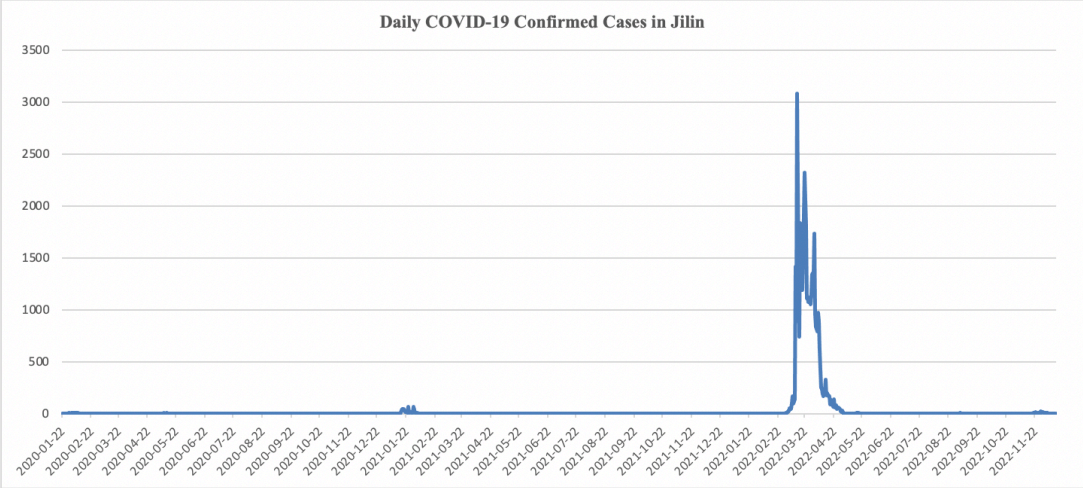
Variable	Item	References
Self-Efficacy	I have confidence in my ability to search on coronavirus related information I have confidence in my ability to understand the coronavirus related information I have confidence in my ability to evaluate the credibility of coronavirus related information	Li, Guo & Ito (2014)
Behavioral Intentions	Intention to visit Wuhan in the next 12 month Intention to have domestic trip in the next 12 months Intention to change my travel destination in the next 12 months	Law (2006); Lee et al (2012);
Cognitive	I feel very knowledgeable about the risk of coronavirus I believe that the risk of coronavirus is increasing over time. I have choice over my exposure to coronavirus.	C.W Trumbo&R.Harpe (2015)
Affective	The thought of coronavirus fills me with dread or fear. The thought of coronavirus makes me feel anxious or worried. The thought of coronavirus makes me feel sad or depressed.	C.W Trumbo&R.Harpe (2015)
Precautionary behavior	1.Refrain from going outsite. 2. Keep away from crowded places 3.Staying home from school or work 4. Avoid using public transportation 5. Wear face masks 6 Practice better hygiene (washing hands more frequent etc.) 7. Exercise regularly	ılts et al. (2011)Brug et al.(2004)

3.3 Data Collection and Analysis

We chose the online platform WJX (https://www.wjx.cn) to distribute the anonymized questionnaire because the survey was conducted at the beginning of the pandemic, when the government was encouraging social distance and reducing gatherings in order to control the spread of the disease. The survey was conducted between March 18, 2020 (the first time there were no newly reported domestic cases in China) and March 23, 2020 (two months after Wuhan closed its egress route). The data collection period was constrained due to these two crucial time points relevant to this study may affect the final results. Information gathered during a pandemic provides value as a point of reference for future research on the impact of pandemics on individuals' long-term behavior change (Novelli et al., 2018).

Figure 2

Trend of New Coronavirus in Jilin Province



Data Source: Sina News

To preserve the participants' privacy and limit the impacts of social desire bias, we indicated in the questionnaire that the data would be used only for academic research purposes and that all information would be kept strictly confidential. Random and snowball sampling methods collected a total of 1523 responses. A majority of the geographic areas of China were covered by

the sample, including the north (6%), northeast (68.7%), east (7.4%), south (2%), southwest (3.8%), northwest (8.1%), and the central (3.9%). At the time of the research, approximately 76.9% of respondents lived in high-risk or medium-risk areas where COVID-19 cases were confirmed more than ten (i.e., Jilin 1682 cases, Fujian 203 cases, Liaoning 75 cases, Guangdong 68 cases, Shandong 49 cases, Zhejiang 35 cases, Tianjin 32 cases, Gansu 24 cases, Heilongjiang 21 cases, Shanghai 20 cases, Shaanxi 11 cases) (Chinese government website, 2022). The sample distribution statistics are presented in Table 2.

Table 2

Sample Distribution Statistics

Geographic division	Province	Frequency		%
The North China	Beijing	12	91	5.975
	Tianjin	8		
	Hebei	35		
	Shanxi	19		
	Inner Mongoria	17		
The Northeast China	Liaoning	33	1046	68.68
	Jilin	990		
	Heilongjiang	23		
The East China	Shanghai	11	112	7.353
	Jiangsu	14		
	Zhejiang	8		
	Anhui	14		
	Fujian	10		
	Jiangxi	8		
	Shandong	47		
	Taiwan	0		
The Central China	Henan	39	59	3.873
	Hubei	10		
	Hunan	10		
The South China	Guangdong	12	33	2.166
	Guangxi	7		
	Hainan	14		
	HongKong	0		
	Macao	0		
The Southwest China	Chongqing	11	58	3.808
	Sichuan	20		
	Guizhou	12		
	Yunan	14		
	Tibet	1		
The Northwest China	Shaanxi	14	124	8.141
	Gansu	15		
	Qinghai	1		
	Ningxia	1		
	Xinjiang	93		

Approximately 68% of respondents were residents of Jilin Province; this percentage jumped to almost 81% among those aged in the old adult's group (from 50 to 60 over). As mentioned previously, one of the objectives of this study was to investigate demographic differences, as accessibility to information, risk perception and behavioral intentions may vary between age groups. As a risk group for COVID-19, older adults should use online channels to access information to reduce the risk of infection; however, due to physical and technology-related

barriers, older consumers do not typically access information through online channels. We were intrigued about how access to COVID-19-related information and the perception of risk induced by COVID-19 among different age groups, particularly old adults' individuals, influenced individual behavioral decisions and intentions during the COVID-19 pandemic. Considering the aforementioned factors, the original sample data were balanced to maximize retention of the older age group sample, ultimately limiting the sample for this study to Jilin Province residents (respondents from other regions were excluded from further analysis), with a total of 990 considered valid. Respondents who completed the survey in less than 31% of the average time (271 s) were excluded from the data analysis (Li, 2012). There were 168 unqualified responses in total. An effective 83% recovery rate was achieved, as 822 completed surveys were included in the final dataset.

Chapter 4. Results

4.1 Profile of Respondents

Table 3 presents the sociodemographic information of the 822 respondents, including 456 males (55.5%) and 366 females (44.5%). According to the descriptive statistics, the majority of respondents were young aged (51.6 % were under 30). Over 77.6% respondents were well educated, 62.8% were undergraduates, 14.8% had a master's degree or higher. Nearly half (45%) of respondents reported monthly incomes below the lower range of response options supplied, which was 2,000 yuan.

Table 3

Sociodemographic Profile of Respondents

Characteristics		Frequency			%		
		Total(n=1523)	Jilin(n=990)	Jilin(n=822)	Total(n=1523)	Jilin(n=990)	Jilin(n=822)
Gender	Male	843	558	456	55.4	56.4	55.5
	Female	680	432	366	44.6	43.6	44.5
Age	Under 20	267	163	148	17.5	16.5	18.0
	20-29	627	322	276	41.2	32.5	33.6
	30-39	143	113	90	9.4	11.4	10.9
	40-49	128	103	78	8.4	10.4	9.5
	50-59	216	194	157	14.2	19.6	19.1
	60 and more than 60	142	95	73	9.3	9.6	8.9
Education	Primary School	13	6	3	0.9	0.6	0.4
	Middel School	42	26	15	2.8	2.6	1.8
	High School/Secondary Vocational Technical School	80	61	48	5.3	6.2	5.8
	Technical Secondary School	19	16	10	1.2	1.6	1.2
	Junior College	168	135	108	11.0	13.6	13.1
	Bachelor's degree	1011	593	516	66.4	59.9	62.8
	Master's degree/PhD	190	153	122	12.5	15.5	14.8
Income	Under 2000	804	415	370	52.8	41.9	45.0
	2000-4000	211	169	127	13.9	17.1	15.5
	4000-6000	223	181	135	14.6	18.3	16.4
	6000-8000	132	113	105	8.7	11.4	12.8
	8000-10000	74	60	47	4.9	6.1	5.7
	More than 10000	79	52	38	5.2	5.3	4.6

4.2 Measurement Model

Exploratory Factor Analysis. Kaiser's test for sufficient sampling and Bartlett's test of sphericity both indicated that the data were eligible for factor analysis. (KMO = 0.744, $p < 0.001$). A maximum likelihood extraction approach was used in the EFA. Loadings lower than 0.4 were deemed insufficient for inclusion in the study. Using the abovementioned criteria, a five-factor solution was proposed to account for 77.102% of the variance. Tables 4 and 5 reveals that the item

communalities of the 14 variables that made it through the study had values between 0.581 and 0.916, indicating that the five-factor solution adequately described the variances of each original variable (ranging from 58% to 91%). The factor loadings of the variables varied from 0.467 to 0.987. Cronbach's alpha ranged from 0.629 to 0.905 across the five components, indicating acceptable internal consistency. Using Harman's one-factor test without rotation, common method bias was evaluated. Based on the principal component analysis, the first factor explained 18.600 percent of the variance, far below the recommended threshold of 40%. This indicates no common method biases in this study (Podsakoff et al., 2003).

Table 4

Measurement Model for Constructs (Jilin).

Construct/item	Communality	Mean	SD
Behavioral Intentions			
BI1. Intention to visit Wuhan in the next 12 months	0.739	1.929	1.171
BI2. Intention to have domestic trip in the next 12 months	0.727	2.009	1.281
BI3. Intention to change my travel destination in the next 12 months	-	3.426	1.981
Cognitive			
Cog1. I feel very knowledgeable about the risk of coronavirus	-	0.862	6.000
Cog2. I believe that the risk of coronavirus is increasing over time.	-	1.591	4.000
Cog3. I have choice over my exposure to coronavirus.	-	1.387	6.000
Affective			
Aff1. The thought of coronavirus fills me with dread or fear	0.813	1.780	4.000
Aff2. The thought of coronavirus makes me feel anxious or worried	0.851	1.791	4.000
Aff3. The thought of coronavirus makes me feel sad or depressed	0.709	1.808	3.000
Self-efficacy			
SE1. I have confidence in my ability to search on coronavirus related	0.773	1.168	6.000
SE2. I have confidence in my ability to understand the coronavirus related	0.854	0.978	6.000
SE3. I have confidence in my ability to evaluate the credibility of coronavirus related information	0.824	0.991	6.000
Self-Isolation Precautionary behavior			
SIPB1. Refrain from going outside	0.723	0.775	7.000
SIPB2. Keep away from crowded places	0.752	0.606	7.000
SIPB3.Staying home from school or work	0.581	0.853	7.000
SIPB4. Avoid using public transportation	0.636	0.904	6.000
Hygienic Care Precautionary behavior			
HCPB1. Wear face masks	0.916	0.455	7.000
HCPB2. Practice better hygiene (washing hands more frequent etc.)	0.897	0.461	7.000
HCPB3. Exercise regularly	-	0.916	6.000

Confirmatory factor analysis. Using EFA, the proposed baseline model proposes five factors or latent constructs: Behavior Intention (BI), Affective Risk Perception (Aff), Self-Efficacy (SE), Self-Isolation Precautionary Behavior (SIPB), and Hygienic-Care Precautionary Behavior

(HCPB), each of which serves as an indicator of a separate construct. The CFA was applied to test the determine the correlation between the latent variables and the validity and reliability of these variables. A satisfactory model is demonstrated by the following indices: $\chi 2/df = 2.456$ ($p = .000$); GFI = 0.973; RMSEA = 0.042; RMR = 0.026; CFI = 0.982; NFI = 0.971; IFI = 0.982; TLI = 0.976; AGFI = 0.958; NNFI = 0.976; SRMR = 0.028. CR and AVE were calculated for each of the five latent factors to test the reliability of the measurement model. As shown in Table 5, all five constructs had CR and AVE values of more than 0.70 and 0.50, respectively, indicating that the indicators for all five components were suitable for the measuring model. Correlations across latent variables varied from 0.743 to 0.910, and all squared correlations in Table 6 were lower than the AVE for latent variables, indicating discriminant validity.

Table 5

Results of CFA of Constructs (Jilin).

Construct/item	Loading	Cronbach α	CR	AVE
Behavioral Intentions		0.629	0.723	0.596
BI1. Intention to visit Wuhan in the next 12 months	0.467			
BI2. Intention to have domestic trip in the next 12 months	0.987			
BI3. Intention to change my travel destination in the next 12 months	-			
Cognitive		-	-	-
Cog1. I feel very knowledgeable about the risk of coronavirus	-			
Cog2. I believe that the risk of coronavirus is increasing over time.	-			
Cog3. I have choice over my exposure to coronavirus.	-			
Affective		0.866	0.872	0.696
Aff1. The thought of coronavirus fills me with dread or fear	0.849			
Aff2. The thought of coronavirus makes me feel anxious or worried	0.928			
Aff3. The thought of coronavirus makes me feel sad or depressed	0.712			
Self-efficacy		0.881	0.889	0.727
SE1. I have confidence in my ability to search on coronavirus related	0.778			
SE2. I have confidence in my ability to understand the coronavirus related	0.915			
SE3. I have confidence in my ability to evaluate the credibility of coronavirus related information	0.860			
Self-Isolation Precautionary behavior		0.810	0.828	0.552
SIPB1. Refrain from going outside	0.817			
SIPB2. Keep away from crowded places	0.877			
SIPB3.Staying home from school or work	0.626			
SIPB4. Avoid using public transportation	0.614			
Hygienic Care Precautionary behavior		0.905	0.906	0.828
HCPB1. Wear face masks	0.931			
HCPB2. Practice better hygiene (washing hands more frequent etc.)	0.888			
HCPB3. Exercise regularly	-			

Table 6

Discriminant Validity (Jilin).

	BI	Aff	SE	SIPB	HCPB
BI	**0.772**				
Aff	0.036	**0.834**			
SE	-0.111	-0.069	**0.853**		
SIPB	-0.114	-0.006	0.260	**0.743**	
HCPB	-0.053	-0.045	0.150	0.486	**0.910**

Note. *The boldface numbers are the square roots of corresponding AVE values.*

4.3 Structural model

This research proposes to test a unified model of how media exposure affects the behavior of Jilin's tourists by investigating the link between self-efficacy, risk perception, preventive measures, and behavior intention. Using SEM with maximum likelihood, we tested the hypothesized connections between the constructs in this model. The structural model yielded a Chi-square value of 220.280 with 80 degrees of freedom, which is statistically significant ($p = 0.00$). The structural model provided an adequate fit in terms of other goodness-of-fit statistics: $\chi 2/df = 2.753$, GFI = 0.966; RMSEA = 0.046; RMR = 0.066; CFI = 0.970; NFI=0.954; IFI = 0.970; TLI = 0.960; AGFI = 0.949; NFI = 0.954. The data were somewhat in line with the theory-driven model, as shown by the results. SEM analysis was performed to examine the hypothesized path.

A summary of the results is presented in Table 7, which indicates that only seven hypotheses were supported. Hypotheses 1-2 sought determining which preventative behaviors would influence tourists' intention. H1 was supported to show that self-isolation behaviors were negatively associated with behavioral intention ($\beta = -0.129$, $p < 0.01$). Hypotheses 3 and 4 examined whether the two kind of preventive behaviors would interact. Results showed that H3 was supported ($\beta = 0.541$, $p < 0.001$), and H4 was rejected; indicating that only hygienic-care behaviors positively influenced self-isolation behaviors. Furthermore, cognitive risk perception

was positively associated with both types of prevention behaviors, supporting hypothesis 5 (β = 0.253, $p < 0.001$) and hypothesis 6 ($\beta = 0.157$, $p < 0.001$). However, no significant effect was shown between affective risk perception and preventive behavior, thus hypotheses 7 and 8 were rejected. Hypotheses 9-10 tested the dual-route risk perception model, but the original hypothesis were all rejected, implying that cognitive and affective risk perceptions did not interact in this study. H11 (a-d) predicted that media exposure would influence tourists to affective risk perception but were all rejected. The significant relationship between media exposure and perception of cognitive risk partially supported hypothesis 12. The standardized coefficients of 0.071, 0.124 and 0.074 for media, social media and internet websites, respectively, confirmed H12 (a-c); the hypothesis of interpersonal communication was rejected. As predicted by Hypotheses 13, media exposure was significantly related to self-efficacy. The standardized effect was 0.139 for mass media, 0.076 for social media and 0.088 for internet websites, meaning that mass media greatly influenced tourists' self-efficacy, followed by internet websites and social media. However, the effect of interpersonal communication on self-efficacy was not significant, and the findings only supported H13 (a-c). Finally, Hypothesis 14 predicted whether tourists' self-efficacy significantly affected their cognitive risk perception, the results supported the original hypothesis (H14: $\beta = 0.403$, $p < 0.001$).

As regards tourist self-isolation behavior, there was a significant direct correlation between hygienic-care behavior (0.541) and cognitive risk perception (0.253), both of which had a significant direct impact on self-isolation behavior during the COVID-19 pandemic. The model explains 36% of the variance in self-isolation behavior. Moreover, the constructs that had a significant direct effect on tourists' perception of cognitive risk during the COVID-19 pandemic include self-efficacy, which was associated with a path coefficient of 0.403, mass media exposure, which had a path coefficient of 0.071, social media exposure, that was associated with a path coefficient of 0.124, and internet websites that were associated with a path coefficient of 0.74.

Based on the model, 22.3% of cognitive risk perception variance is explained. The results can be found in Figure 3 and Table 7.

Figure 3

SEM Results of Jilin Sample

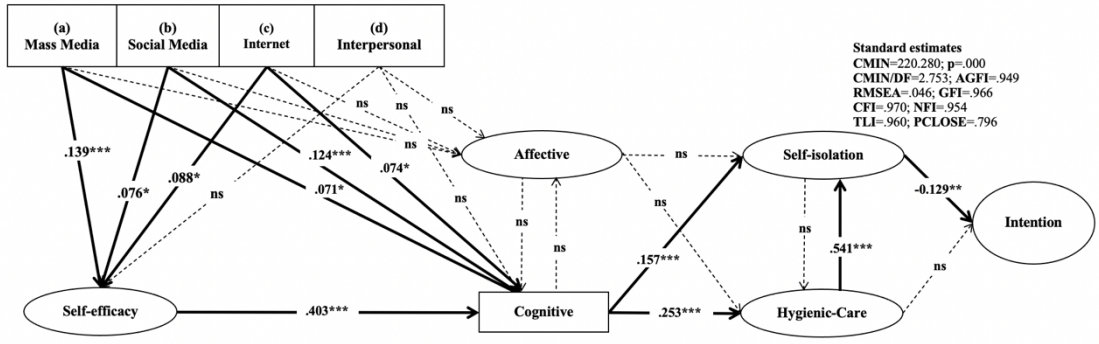


Table 7

Summary of Structural Model Results (Jilin)

Hypotheses	Path	*β*	*p* -Value	Support
H1	SIPB→BI	-0.129	0.006**	Accepted
H2	HCPB→BI	0.009	0.873	Rejected
H3	HCPB→SIPB	0.541	0.000***	Accepted
H4	SIPB→HCPB	-1.893	0.058	Rejected
H5	Cog→HCPB	0.253	0.000***	Accepted
H6	Cog→SIPB	0.157	0.000***	Accepted
H7	Aff→HCPB	-0.03	0.747	Rejected
H8	Aff→SIPB	0.062	0.139	Rejected
H9	Aff→Cog	0.103	0.062	Rejected
H10	Cog→Aff	-0.101	0.078	Rejected
	Mass media→Aff	0.033	0.409	Rejected
H11	Social media→Aff	0.069	0.114	Rejected
(a-d)	Internet→Aff	-0.02	0.636	Rejected
	Interpersonal→Aff	0.031	0.446	Rejected
	Mass media→Cog	0.071	0.026*	Accepted
H12	Social media→Cog	0.124	0.000***	Accepted
(a-d)	Internet→Cog	0.074	0.028*	Accepted
	Interpersonal→Cog	-0.039	0.252	Rejected
	Mass media→SE	0.139	0.000***	Accepted
H13	Social media→SE	0.076	0.046*	Accepted
(a-d)	Internet→SE	0.088	0.024*	Accepted
	Interpersonal→SE	-0.063	0.103	Rejected
H14	SE→Cog	0.403	0.000***	Accepted

4.4 Mediating Role of Self-efficacy

A sampling frequency of 5,000 is used to sample and analyze mediating effects of self-efficacy on cognitive risk perception associated with media exposure using the Bootstrap method.

Table 8

Result of mediation test

Hypothesis	c	a	b	a*b	a*b (z)	a*b (p)	a*b (95% BootCI)	c'	Conclusion
Mass media→Self-Efficacy→Cognitive	0.059**	0.071**	0.207**	0.015	1.503	0.133	0.017 ~ 0.055	0.045**	Partial Mediation
Social media→Self-Efficacy→Cognitive	0.048**	0.043*	0.207*	0.009	0.915	0.36	0.002 ~ 0.040	0.039*	Partial Mediation
Internet Website→Self-Efficacy→Cognitive	0.02	0.049**	0.207**	0.01	1.029	0.304	0.006 ~ 0.045	0.01	Full Mediation
Interpersonal→Self-Efficacy→Cognitive	0.013	-0.023	0.207**	-0.005	-0.515	0.607	-0.030 ~ 0.006	0.018	No Mediation

* p<0.05 ** p<0.01

Mediation analysis must consider both direct and indirect effects. It appears from the results of the study that there are four mediation paths, two of which are partially mediated, one is fully mediated, and the fourth is insignificant. As illustrated in Table 8, a and b are statistically significant while c' is not significant, means the indirect effect is significant and the direct effect is not significant. It can be concluded that self-efficacy partially mediates the effect between perceptions of cognitive risk and coverage by mass media and social media platforms. Additionally, self-efficacy fully mediates the relationship between internet website coverage and perceived risks. Mediation test result.

Chapter 5. Group Differences Study

5.1 Gender study

5.1.1 Reliability and Validity

According to the results of the EFA, the KMO values for both the male and female groups fell between 0.7 and 0.8, indicating that the factor analysis was appropriate (Male group: KMO = 0.754, $p < 0.001$; Female group: KMO = 0.740, $p < 0.001$). Five variables accounted for 72.728% of the total variance in the male group. Variable factor loadings varied from 0.506 to 0.947. Cronbach's alpha ranged from 0.631 to 0.893, indicating adequate internal consistency across the five components. In comparison, the female group's five factors accounted for 77.192% of the total variance. The factor loadings ranged from 0.556 to 0.954. A Cronbach's alpha indicated good internal consistency between 0.629 and 0.905.

In both the male and female groups, CFA analyses were conducted for each of the factors and items analyzed, showed in Table 9. AVE values for all five factors were greater than 0.5, while all other CR were greater than 0.7 with the exception of the male group, where the CR for BI was marginally less than 0.7 at 0.689. Analyses of the discriminant validity for the male and female groups revealed that the square root of the AVE was greater than the absolute value of the correlation coefficient between the factor and the other factors, indicating good discriminant validity (Table 10). Similarly, the model fit both genders well. Male group with the following parameters: $\chi 2$ / df = 1.983 (P = 0.000); GFI = 0.962; RMSEA = 0.046; RMR = 0.039; CFI = 0.979; NFI = 0.958; IFI = 0.979; TLI = 0.971; AGFI = 0.940; NNFI = 0.971; SRMR = 0.035. The following parameters were found in a female group: $\chi 2$ / df = 1.766 (P = 0.000); GFI =0.957; RMSEA = 0.046; RMR = 0.033; CFI = 0.979; NFI = 0.954; IFI = 0.979; TLI = 0.972; AGFI = 0.933; NNFI = 0.972; SRMR = 0.035.

Table 9

Results of CFA of Constructs (Male & Female)

Construct/item	Loading		Cronbach Alpha		CR		AVE	
	Male (n=456)	Female (n=366)	Male (n=456)	Female (n=366)	Male (n=456)	Female (n=366)	Male (n=456)	Female (n=366)
Behavioral Intentions			0.631	0.629	0.689	0.724	0.545	0.601
BI1. Intention to visit Wuhan in the next 12 months	0.506	0.556						
BI2. Intention to have domestic trip in the next 12 months	0.913	0.805						
BI3. Intention to change my travel destination in the next 12 months	-	-						
Affective			0.872	0.866	0.876	0.861	0.704	0.679
Aff1. The thought of Coronavirus fills me with dread or fear	0.834	0.868						
Aff2. The thought of Coronavirus makes me feel anxious or worried	0.928	0.923						
Aff3. The thought of Coronavirus makes me feel sad or depressed	0.745	0.656						
Self-efficacy			0.885	0.881	0.894	0.882	0.739	0.714
SE1. I have confidence in my ability to search on coronavirus related	0.750	0.819						
SE2. I have confidence in my ability to understand the coronavirus related information	0.947	0.873						
SE3. I have confidence in my ability to evaluate the credibility of	0.872	0.842						
Self-Isolation Precautionary behavior			0.803	0.810	0.824	0.830	0.548	0.554
SIPB1. Refrain from going outside	0.836	0.789						
SIPB2. Keep away from crowded places	0.886	0.862						
SIPB3.Staying home from school or work	0.574	0.791						
SIPB4. Avoid using public transportation	0.617	0.600						
Hygienic Care Precautionary behavior			0.893	0.905	0.894	0.924	0.809	0.859
HCPB1. Wear face masks	0.918	0.954						
HCPB2. Practice better hygiene (washing hands more frequent etc.)	0.880	0.899						
HCPB3. Exercise regularly	-	-						

Table 10

Results of Discriminant Validity (Male & Female)

	BI	AF	SE	ISPB	HCPB
BI	**0.738**				
AF	-0.01	**0.839**			
SE	-0.109	-0.092	**0.86**		
ISPB	-0.161	-0.034	0.259	**0.74**	
HCPB	-0.084	-0.073	0.171	0.465	**0.899**

Note. *The boldface numbers are the square roots of corresponding AVE values.*

(a) Male Group

	BI	AF	SE	ISPB	HCPB
BI	**0.775**				
AF	0.046	**0.824**			
SE	-0.107	-0.026	**0.845**		
ISPB	-0.098	-0.01	0.274	**0.744**	
HCPB	-0.044	-0.038	0.128	0.506	**0.927**

Note. *The boldface numbers are the square roots of corresponding AVE values.*

(b) Female Group

5.1.2 Male group

We tested the hypothesized relationships between the components of the model in the male group. The structural model produced a Chi-square value of 180.088 with 81 degrees of freedom,

which is statistically significant (p = 0.00). The structural model provided an adequate fit in terms of the other goodness-of-fit statistics: $\chi 2$ / df = 2.223, GFI = 0.950; RMSEA = 0.052; CFI = 0.962; NFI = 0.934; TLI = 0.951; AGFI = 0.926; NFI = 0.934. A summary of the results is presented in Table 12. Hypothesis 1 was supported, demonstrating that self-isolation behavior was negatively associated with behavioral intentions (β = -0.183, $p < 0.01$). H3 was supported (β = 0.503, $p < 0.001$), showing that hygienic care behavior had a positive effect on self-isolation behavior. In addition, H4-5 were accepted, indicating a significant effect of cognitive risk perception on preventive behavior (H4: β = 0.251, $p < 0.001$; H5: β = 0.150, $p < 0.001$). In contrast, H6-7 were rejected, which suggests no correlation between affective risk perception and preventive behavior. Hypotheses 8-9 were all rejected, suggesting that cognitive and affective risk perceptions did not interact with this study. H10 (a-d) were all rejected, implying that there was no correlation between media exposure and affective risk perceptions. Hypothesis 11 was partially supported, indicating that mass media (β = 0.108, $p < 0.01$) and social media (β = 0.112, $p < 0.01$) exposure significantly affects the public's perception of cognitive risk. In hypothesis 12, the standardized coefficients of 0.111, 0.113 and 0.104 for media, social media and Internet websites, respectively, confirm H12 (a-c). Indicated that information from social media platforms has a significant impact on tourist's self-efficacy, followed by mass media and Internet websites. However, the effect of interpersonal communication on self-efficacy was not significant. Finally, Hypothesis 13 predicted whether tourists' self-efficacy had a significant effect on their cognitive risk perceptions, and the results supported the original hypothesis (β = 0.460, $p<0.001$).

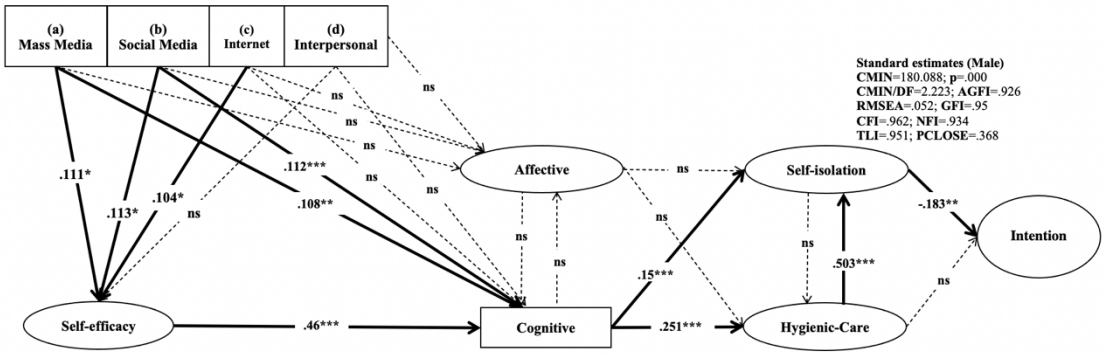
5.1.3 Female group

The structural model for the female group yielded a Chi-square value of 76.257 with 50 degrees of freedom. Table 11 displays the structural model's compatibility: $\chi 2$ / df = 1.525; GFI = 0.967; RMSEA = 0.038; CFI = 0.986; NFI = 0.961; TLI = 0.982; AGFI = 0.949. In contrast to the male group, hypotheses 1 and 2 were not supported, indicating that there was no correlation

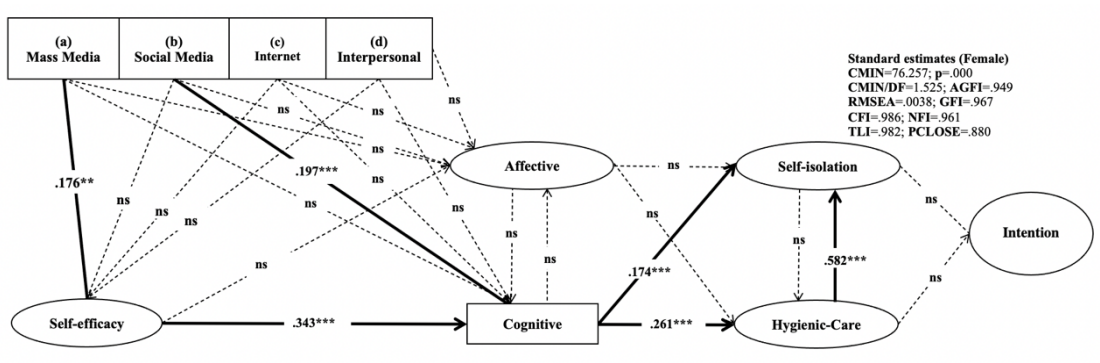
between protective behavior and behavioral intentions. H3 was supported (β = 0.582, p < 0.001), indicating that tourist's intention to self-isolation behaviors increases when they employ hygienic care behaviors more frequently. Additionally, H4 (β = 0.261, p < 0.001) and H5 (β = 0.174, p < 0.001) were supported, indicating that cognitive risk perception was a significant antecedent of preventive behaviors. As was the case with the male group, there was no correlation between affective risk perceptions and preventive behaviors; therefore, hypotheses 6-7 were rejected. Also denied were hypotheses 8 and 9, which examined the interaction between cognitive and affective risk perceptions. Hypotheses 10 (a-d) were refuted because there was no correlation between media exposure and affective risk perceptions in the female group. Only H11b was supported in hypothesis 11, indicating that COVID-19 related information from social media platforms influenced female cognitive risk perceptions (β = 0.197, p < 0.001). Similarly, only H12a (β= 0.176, p < 0.01) was accepted, indicating that information from mass media had a significant effect on the self-efficacy of tourists. Furthermore, self-efficacy (β = 0.343, p < 0.001) considerably influences individuals' perceptions of cognitive risk, thus supporting Hypothesis 13.

Figure 4

The Assessment of the Structural Model (Gender)



(a) Male Group



(b) Female Group

Table 11

Goodness-of-fit indices for the gender model (Male & Female)

Indices	Criteria	Model Fit		Test Result	
		Male	Female	Male	Female
χ^2 /df	<3	2.223	1.525	Yes	Yes
GFI	>0.90	0.95	0.967	Yes	Yes
AGFI	>0.90	0.926	0.949	Yes	Yes
RMSEA	<0.08	0.052	0.038	Yes	Yes
CFI	>0.90	0.962	0.986	Yes	Yes
NFI	>0.90	0.934	0.961	Yes	Yes
TLI	>0.90	0.951	0.982	Yes	Yes
IFI	>0.90	0.962	0.986	Yes	Yes

Table 12

Significant results of comparisons of the path (Male & Female)

Hypotheses	Path	Male			Female		
		β	*p*-Value	Support	β	*p*-Value	Support
H1	SIPB→BI	-0.183	0.005**	Accepted	-0.127	0.383	Rejected
H2	HCPB→BI	-0.015	0.845	Rejected	0.026	0.748	Rejected
H3	HCPB→SIPB	0.503	0.000***	Accepted	0.582	0.000***	Accepted
H4	Cog→HCPB	0.251	0.000***	Accepted	0.261	0.000***	Accepted
H5	Cog→SIPB	0.150	0.000***	Accepted	0.174	0.000***	Accepted
H6	Aff→HCPB	-0.067	0.184	Rejected	-0.054	0.329	Rejected
H7	Aff→SIPB	0.029	0.521	Rejected	0.013	0.792	Rejected
H8	Aff→Cog	0.142	0.094	Rejected	0.114	0.471	Rejected
H9	Cog→Aff	-0.150	0.127	Rejected	-0.119	0.508	Rejected
	Mass media→Aff	0.089	0.099	Rejected	-0.037	0.530	Rejected
H10	Social media→Aff	0.048	0.376	Rejected	0.069	0.292	Rejected
(a-d)	Internet→Aff	-0.049	0.374	Rejected	0.014	0.819	Rejected
	Interpersonal→Aff	0.091	0.068	Rejected	0.008	0.896	Rejected
	Mass media→Cog	0.108	0.009**	Accepted	0.062	0.204	Rejected
H11	Social media→Cog	0.112	0.007**	Accepted	0.197	0.000***	Accepted
(a-d)	Internet→Cog	0.074	0.098	Rejected	0.114	0.252	Rejected
	Interpersonal→Cog	0.036	0.393	Rejected	-0.133	0.114	Rejected
	Mass media→SE	0.111	0.023*	Accepted	0.176	0.001**	Accepted
H12	Social media→SE	0.113	0.024*	Accepted	0.010	0.850	Rejected
(a-d)	Internet→SE	0.104	0.041*	Accepted	0.057	0.298	Rejected
	Interpersonal→SE	-0.134	0.103	Rejected	0.049	0.368	Rejected
H13	SE→Cog	0.460	0.000***	Accepted	0.343	0.000***	Accepted

5.2 Age study

According to the United Nations, the portion of the population aged 60 and over is expected to reach 2.1 billion by 2050, making it one of the largest international tourism markets (United Nations, 2019). Besides to the huge scale of this market segment, the increasing disposable income of old adults' people and the flexibility of their time in retirement demonstrate the old adults market's enormous potential and growth prospects. Current tourism research has focused on the study of the travel consumer intentions of Generation Z, while elder travelers have not received as much attention. As the aging population continues to grow worldwide, tourism managers competing for the old adult's tourism market must grasp the travel decision-making process of elder people and the factors that influence their travel intentions in order to better tailor tourism products and services to the old adult's market.

Previous research has shown that age, gender, income level, and health status have a significant impact on the travel behavior of the old adults (Blazey, 1987; Romsa & Blenman, 1989). Regarding age, there are multiple definitions of 'old adults' based on varying perspectives (Borges Tiago et al., 2016; Y. Wang et al., 2005). It is important to note that age remains the most significant defining factor in tourism even though there are several different definitions of "old adults". In China, the majority of studies on old adults tourism refer to retirement age laws and regulations to define old adults people (F. Chen et al., 2021). China's State Council (2011) states that the legal retirement age is 60 years for women and 55 years for men (The departments of human resources and social security of Jilin province, 2023). China National Committee on Ageing report shows that the consumption potential of China's old adults population will increase from RMB 4 trillion in 2014 to approximately RMB 106 trillion in 2050, representing 33% of GDP (China report of the development on silver industry, n. d). Moreover, a report on the travel consumption behavior of middle-aged and old adults people released by Tongcheng Travel shows that 53% of middle-aged and old adults travelers in China are male and 47% are female, with 62% of middle-aged and old adults travelers aged 51 to 60 years old (China report of the development on silver industry, n.d.). Notably, the COVID-19 pandemic in 2020 expedite the integration of the silver consumers into digital life. In 2020, the population of silver consumers Chinese mobile Internet users over the age of 50 will surpass 100 million, growing significantly quicker than other age categories across the network. In addition, the study by Anderson and Langmeyer (1982) also revealed significant differences in travel decisions between age under 50 and over 50. Based on the preceding, this study applied a 50-year-old age threshold criterion to old adults' Chinese travelers in Jilin Province.

5.2.1 Reliability and Validity

EFA results indicated that factor analysis was appropriate (Younger group: KMO = 0.736, $p < 0.001$; Elder group: KMO = 0.738, $p < 0.001$). Five variables accounted for 78.542% of the

variance in the younger group. Variable factor loadings ranged from 0.602 to 0.941. Cronbach's alpha varied between 0.664 and 0.908, indicating adequate internal consistency. The five variables in the elder group explained 75.281 percent of the total variance. The factor loadings varied between 0.496 and 0.930. Cronbach's alpha values between 0.534 and 0.902 indicated adequate internal consistency. Table 13 displays the results of CFA analyses results conducted on the younger and elder group. AVE values for both age groups were greater than 0.5, with a CR of 0.682 for BI in the younger age group and 0.683 for BI in the elder age group, both just below 0.7, exceeding 0.60 (Fornell & Larcker, 1981), indicating that the constructs are reliable. Table 14 reveals that both groups have acceptable discriminant validity. The following were the model fit parameters for the youngest group: $\chi 2$ / df = 2.34 (p = 0.000); GFI = 0.959; RMSEA = 0.051; RMR = 0.029; CFI = 0.976; NFI = 0.959; IFI = 0.976; TLI = 0.968; AGFI = 0.935; NNFI = 0.968; SRMR = 0.034. The elder group fulfilled the following criteria: $\chi 2$ / df = 1.617 (p = 0.000); GFI = 0.951; RMSEA = 0.045; RMR = 0.047; CFI = 0.977; NFI = 0.943; IFI = 0.977; TLI = 0.969; AGFI = 0.923; NNFI = 0.969; SRMR = 0.040.

Table 13

Measurement model for constructs (Younger & Elder)

Construct/item	Loading		Cronbach Alpha		CR		AVE	
	Younger (n=514)	Elder (n=308)	Younger (n=514)	Elder (n=308)	Younger (n=514)	Elder (n=308)	Younger (n=514)	Elder (n=308)
Behavioral Intentions			0.664	0.534	0.682	0.683	0.524	0.567
BI1. Intention to visit Wuhan in the next 12 months	0.602	0.496						
BI2. Intention to have domestic trip in the next 12 months	0.828	0.728						
BI3. Intention to change my travel destination in the next 12 months	-	-						
Affective			0.872	0.852	0.879	0.855	0.711	0.665
Aff1. The thought of Coronavirus fills me with dread or fear	0.868	0.810						
Aff2. The thought of Coronavirus makes me feel anxious or worried	0.941	0.905						
Aff3. The thought of Coronavirus makes me feel sad or depressed	0.703	0.722						
Self-efficacy			0.896	0.847	0.902	0.857	0.755	0.667
SE1. I have confidence in my ability to search on coronavirus related information	0.788	0.759						
SE2. I have confidence in my ability to understand the coronavirus related information	0.924	0.892						
SE3. I have confidence in my ability to evaluate the credibility of coronavirus related information	0.890	0.793						
Self-Isolation Precautionary behavior			0.825	0.790	0.842	0.810	0.577	0.523
SIPB1. Refrain from going outside	0.811	0.827						
SIPB2. Keep away from crowded places	0.910	0.832						
SIPB3.Staying home from school or work	0.618	0.655						
SIPB4. Avoid using public transportation	0.664	0.535						
Hygienic Care Precautionary behavior			0.908	0.902	0.911	0.904	0.836	0.824
HCPB1. Wear face masks	0.928	0.930						
HCPB2. Practice better hygiene (washing hands more frequent etc.)	0.900	0.885						
HCPB3. Exercise regularly	-	-						

Table 14

Results of Discriminant Validity (Younger & Elder)

	BI	AF	SE	ISPB	HCPB
BI	**0.724**				
AF	0.007	**0.843**			
SE	-0.161	-0.074	**0.869**		
ISPB	-0.179	0.006	0.305	**0.76**	
HCPB	-0.07	-0.038	0.19	0.46	**0.914**

Note. *The boldface numbers are the square roots of corresponding AVE values.*

(a) Younger Group

	BI	AF	SE	ISPB	HCPB
BI	**0.753**				
AF	0.023	**0.816**			
SE	-0.061	-0.084	**0.817**		
ISPB	0.032	0.008	0.208	**0.723**	
HCPB	0.013	-0.031	0.103	0.51	**0.908**

Note. *The boldface numbers are the square roots of corresponding AVE values.*

(b) Elder Group

5.2.2 Younger group

As shown in Figure 5(a), the structural model Chi-square value was 188.611 with 70 degrees of freedom in the younger group. Structural model fit is shown in Table 15: $\chi 2$ / df = 2.694; GFI = 0.949; RMSEA = 0.057; CFI = 0.962; NFI = 0.941; AGFI = 0.924. The results of hypotheses test (Table 16) showed that H1 was accepted, indicating that self-isolation behavior (β = -0.196, $p < 0.01$) was negatively associated with intention to travel behavior. H3 was supported (β = 0.543, $p < 0.001$), indicating that hygienic care behavior (β = 0.543, $p < 0.001$) leads to an increase in self-isolation behavior in younger age groups. Furthermore, H4 and H5 were supported to indicate that the higher the level of risk perception in the younger group, the greater their willingness to adopt preventive behaviors. No correlation was shown between affective risk perception and preventive behavior, and hypotheses 6-7 were rejected. Hypotheses 8-9 were rejected indicating that cognitive risk perception and affective risk perception were not significantly correlated in the younger group. Hypothesis 10 (a-d) was rejected, and there was no correlation between media exposure and affective risk perception. Hypothesis 11 was partially supported, implying that risk information from mass media platforms (β = 0.127, $p < 0.01$) and social media (β = 0.142, $p < 0.001$) shaped young tourist's cognitive risk perceptions. Similarly, mass media (β = 0.122, $p < 0.01$) and social media (β = 0.115, $p < 0.05$) were shown to influence self-efficacy in the younger cohort, with H12(a-b) being accepted. Self-efficacy (β = 0.449, $p < 0.001$) showed an extremely strong positive correlation to perceived risk perception, and Hypothesis 13 was supported.

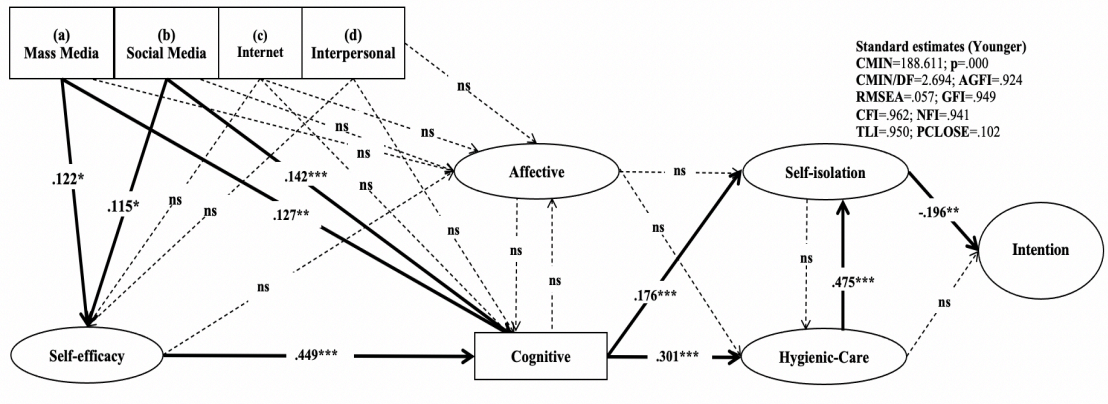
5.2.3 Elder group

Figure 5 and Table 15 display the results of the structural model fit for the old adult's group, with a structural model Chi-square value of 62.179 and 48 degrees of freedom. $\chi 2$ / df = 1.295 ; GFI = 0.968; RMSEA = 0.031; CFI = 0.990; NFI = 0.958, and AGFI = 0.949. The findings refute hypotheses 1 and 2, implying that protective behavior does not substantially influence travel behavior intention. H3 indicated that old adults' individuals' hygienic care behavior substantially

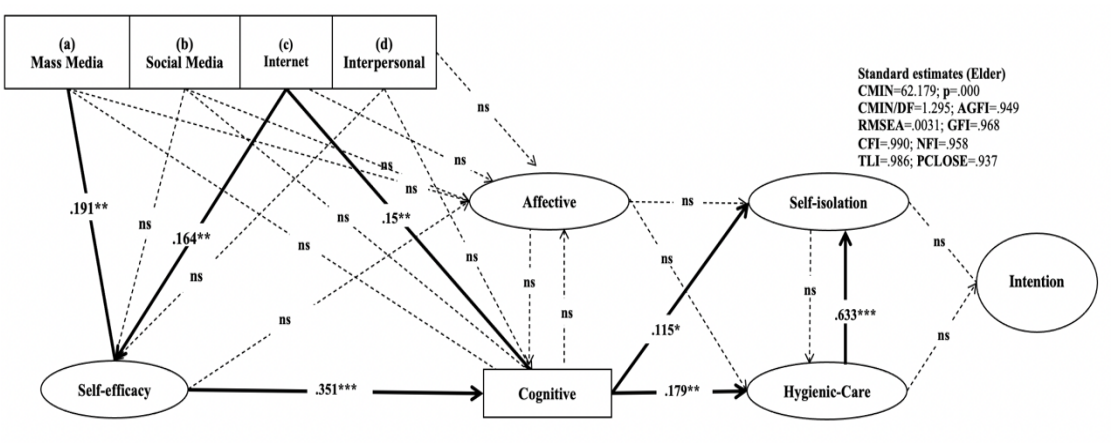
influenced their self-isolation behavior (β = 0.633, p < 0.001). H4 (β = 0.179, p <0.01) and H5 (β = 0.115, p < 0.05) were supported, indicating that the reasons why the old adults engage in risk-avoidance behaviors are based on their assessment of the dangers they face. H6-10 were rejected, indicating that there was no correlation between affective risk perceptions and media exposure, cognitive risk perceptions, or preventive behaviors. Hypothesis 11 was partially supported, implying that risk information from Internet website influenced the cognitive risk perceptions of older individuals (β = 0.150, p < 0.01). The mass media (β = 0.191, p < 0.01) and Internet website (β = 0.164, p < 0.01) were found to influence the self-efficacy of old adults; therefore, H12(a) and H12(c) were supported. Self-efficacy (β = 0.351, p < 0.001) still exhibited an exceptionally strong positive correlation with cognitive risk perception in the older age group, supporting Hypothesis 13.

Figure 5

Multi-Group Structural Model (Younger & Elder)



(a) Younger Group



(b) Elder Group

Table 15

Goodness-of-fit indices for the Structural model (Younger & Elder)

Indices	Criteria	Model Fit		Test Result	
		Younger	Elder	Younger	Elder
χ^2 /df	<3	2.694	1.295	Yes	Yes
GFI	>0.90	0.949	0.968	Yes	Yes
AGFI	>0.90	0.924	0.949	Yes	Yes
RMSEA	<0.08	0.057	0.031	Yes	Yes
CFI	>0.90	0.962	0.990	Yes	Yes
NFI	>0.90	0.941	0.958	Yes	Yes
TLI	>0.90	0.950	0.986	Yes	Yes
IFI	>0.90	0.962	0.990	Yes	Yes

Table 16

Significant results of comparisons of the path (Younger& Elder)

Hypotheses	Path	Younger			Elder		
		β	*p*-Value	Support	*β*	*p*-Value	Support
H1	SIPB→BI	-0.196	0.001**	Accepted	-0.063	0.103	Rejected
H2	HCPB→BI	0.009	0.873	Rejected	-0.039	0.252	Rejected
H3	HCPB→SIPB	0.543	0.000***	Accepted	0.633	0.000***	Accepted
H4	Cog→HCPB	0.301	0.000***	Accepted	0.179	0.002**	Accepted
H5	Cog→SIPB	0.176	0.000***	Accepted	0.115	0.025*	Accepted
H6	Aff→HCPB	-0.046	0.219	Rejected	-0.03	0.747	Rejected
H7	Aff→SIPB	0.034	0.306	Rejected	0.062	0.139	Rejected
H8	Aff→Cog	0.126	0.085	Rejected	0.069	0.114	Rejected
H9	Cog→Aff	-0.129	0.114	Rejected	-0.02	0.636	Rejected
	Mass media→Aff	0.033	0.410	Rejected	-0.03	0.747	Rejected
H10	Social media→Aff	0.069	0.106	Rejected	0.062	0.139	Rejected
(a-d)	Internet→Aff	-0.020	0.629	Rejected	0.103	0.062	Rejected
	Interpersonal→Aff	0.031	0.416	Rejected	-0.101	0.078	Rejected
	Mass media→Cog	0.127	0.001**	Accepted	0.112	0.195	Rejected
H11	Social media→Cog	0.142	0.000***	Accepted	0.108	0.176	Rejected
(a-d)	Internet→Cog	0.087	0.087	Rejected	0.150	0.005**	Accepted
	Interpersonal→Cog	-0.039	0.220	Rejected	0.274	0.251	Rejected
	Mass media→SE	0.122	0.008**	Accepted	0.191	0.002**	Accepted
H12	Social media→SE	0.115	0.012*	Accepted	-0.008	0.232	Rejected
(a-d)	Internet→SE	0.129	0.074	Rejected	0.164	0.007**	Accepted
	Interpersonal→SE	-0.063	0.081	Rejected	-0.032	0.081	Rejected
H13	SE→Cog	0.449	0.000***	Accepted	0.351	0.000***	Accepted

Chapter 6. Discussion

The COVID-19 outbreak has provided individuals with an unprecedented risk environment, which has prompted them to re-evaluate how they live, work, and travel. Furthermore, it leaves the future of tourism uncertain, since the recovery process depends on the speed of virus control, the duration of travel restrictions, and the timelines for reopening national borders. Understanding how travelers make decisions is crucial to tourism recovery after a pandemic, especially when new security measures and travel policies are enacted.This study evaluated the conceptual model to examine how risk information related to COVID-19 affected risk perceptions and individual's behavioral intentions during a pandemic. The following are the findings of this study：

First, the self-isolation precautionary behavior of Jilin residents had a significant negative effect on travel intentions ($\beta = -0.129$, $p < 0.01$), consistent with prior studies' results (Chew & Jahari, 2014; Shim & You, 2015). Moreover, the role of hygienic-care precautionary behaviors as a mediator of risk perception and self-isolation precautionary behavior was also validated.

Secondly, cognitive risk perceptions were significantly associated with protective behavior (H5: $\beta = -0.253$, $p < 0.001$; H6: $\beta = -0.157$, $p < 0.001$) and negatively affected behavioral intentions. It supports the findings of previous research regarding the influence of risk perception on individual preventive behavior (Gozzi et al., 2022).

Thirdly, affective risk perception was not a significant antecedent which contradicts the initial hypothesis. Although the factor analysis showed good reliability and validity, affective risk perceptions were not statistically significant in the model. One possible explanation is that affective risk perceptions should be studied as independent variables. Individuals are highly influenced by negative emotions (e.g., fear, sadness, anxiety, etc.) generated by risk information during a pandemic though; however, the antecedents that elicit these emotional responses and their impact on behavioral decisions need to be further investigated. Another possible explanation is that the data were collected after the peak of the first pandemic in China when sporadic cases were reported,

and more infections were caused by entrants carrying the virus and continued to spread overseas. Although there was no serious outbreak in Jilin province at the moment, the continued increase in overseas cases, the absence of effective drugs and treatments and with widespread media coverage, may have caused individuals' severe panic, leading to further confusion and resulting in their inability to make rational decisions. Finally, even though all hypotheses related to affective risk perception were rejected in this study, affective risk perception should not be underestimated as an important component of risk perception (Sjöberg, 1998). Therefore, a future study should attempt to include more variables or conduct longitudinal studies to confirm the significance of affective risk perception within the context of pandemics.

Fourthly, this study confirmed the media coverage's function as the source of COVID-19 information at the early pandemic stage (Lo et al., 2011). However, interpersonal communication was not associated with either self-efficacy or risk perception (Govers et al., 2007). Prior studies have indicated, interpersonal communication enhances or weakens relevant risk information, which conflicts with this finding. In the early stages of the pandemic, people chose to comply with government regulations, such as reducing exposure and staying away from dense crowds, to avoid contracting the disease. As mentioned earlier, China has made significant progress in preventing the spread of pandemics due to quarantine, blockades, and other restrictive measures. Therefore, even though Jilin Province was not subject to quarantine and travel restrictions during the data collection period, it is reasonable to assume that the main factor that allowed Jilin residents to maintain low levels of infection was due to strict adherence to relevant protective precautionary behaviors, such as the use of masks and social isolation. Therefore, interpersonal communication was not a method for Jilin residents to obtain information about COVID-19 in the early stages of the pandemic. Although the original hypothesis regarding interpersonal communication was rejected, exploratory factor analysis demonstrated that interpersonal communication is an effective

means of obtaining COVID-19-related information for individuals. Thus, a follow-up study is needed to investigate the factors influencing interpersonal communication.

Fifthly, self-efficacy plays an important role, as it is significantly associated with cognitive risk perception and information resources. At the beginning of a pandemic, individuals' perceptions of risk are shaped by risk information. Specifically, frequent reporting of COVID-19 may increase risk awareness, which self-efficacy reinforces or facilitates, ultimately leading to an increased willingness to engage in protective behavior (Shim & You, 2015). Moreover, Choi et al (2013) maintain that self-efficacy mediates the relationship between media coverage and perceived risk which supported by our research.. It was confirmed in the study that those who had been exposed to more risk information through the media had a greater sense of self-efficacy and higher risk perceptions on the COVID-19 test. Meanwhile, the positive impact of mass media, social media, and internet platforms on perceived risk perceptions supports previous findings (Lam & Hsu, 2006). In particular, social media plays an important role.

Sixth, on the moderating role of socio-demographic data. The results showed that gender significantly moderated the relationship between self-efficacy and cognitive risk perceptions. Male participants showed a stronger effect of self-efficacy on their perception of cognitive risk than female participants. In addition, self-isolating behavior had a greater effect on younger participants' intention to travel behavior than older participants. One possible explanation is that younger individuals are influenced by more factors than older individuals due to constraints such as employment and social status. Overall, risk information generated by media coverage enhanced self-efficacy and cognitive risk perceptions among Jilin travelers, prompting them to increase protective behaviors to reduce the likelihood of COVID-19 infection and decrease travel behavioral intentions. However, factors influencing risk perceptions differed between groups: 1) Mass media and social media coverage increased self-efficacy and influenced cognitive risk perceptions in the male group, whereas self-efficacy did not mediate media coverage and cognitive

risk perceptions in the female group. 2) For the younger group, similar results to those for the male group were shown, with self-efficacy mediating the relationship between mass media, social media and cognitive risk perceptions; for the older group, online media coverage was the only antecedent influencing self-efficacy and cognitive risk perceptions.

Overall, this study's results are partially consistent with previous findings. It supports the cognitive risk perception route in the conceptual model and reveals a direct and significant effect of COVID-19 media coverage on self-efficacy and cognitive risk perception. Based on the findings, it was determined that Jilin residents' self-isolation and healthcare prevention behaviors were largely influenced by their perceptions of COVID-19 risk. In addition, media coverage related to COVID-19 (risk information as an environmental factor) and their beliefs regarding their own management of the risk information they received (self-efficacy as a personal factor) significantly impacted their risk perceptions. This study's findings support the notion that the information environment created by various media reports is an essential source of risk-related knowledge for the general public and a significant determinant of their perceptions of and responses to risk. In the beginning phases of a pandemic, uncertainty heightens the need for information. High-quality information can leave a positive impression on the audience and persuade them to be well-informed regarding an event's occurrence and potential risks. Therefore, they may intend to learn more and better prepare for future consequences. Even if the findings do not demonstrate a dual-route of risk perception, the cognitive-affective risk perception relationship has been widely investigated. Some studies confirming a positive relationship between negative emotions and the likelihood of perceived risk and the severity of the perceived threat (C. Chen et al., 2023). Furthermore, other studies have validated the negative association between risk perception and negative emotions, such as fear (Lerner & Keltner, 2001; Slovic & Peters, 2006). Based on these results and the context of the COVID-19 pandemic, we remain convinced that perceptions of risk can influence individuals' emotional responses to risky situations, including

anxiety, depression, and fear. Similarly, risk transmission can amplify people's negative emotional reactions and influence their perceptions. One possible explanation for the absence of a dual route is that these data were collected during the initial phase of the pandemic outbreak when the public faced unusually high levels of risk uncertainty and tended to collect fact-based information to reduce risk perceptions. And as the pandemic entered its middle stages, the tremendous outflow of negative and false information led to more negative emotions among some individuals with lower self-efficacy in effectively screening information. However, in the post pandemic, as the public's negative emotions are alleviated with the spread of the vaccine and the lifting of travel restrictions in various countries, and the implementation of corresponding tourism promotion tools, the long-suppressed willingness to travel may increase significantly. Therefore, to accelerate the recovery of the tourism industry, vaccine coverage should be actively implemented to help people reduce the risk of infection. In contrast, tourism support measures (such as the provision of travel coupons) and emergency risk preparedness should be actively developed to accelerate the recovery of the tourism industry.

Chapter 7. Conclusion

7.1 Key Findings

Three years have passed since the outbreak of the COVID-19 pandemic, with the initial social panic induced by the virus's high mortality rate and the lack of information. People have progressively adapted to life under a pandemic since the launch of the vaccine, the ongoing dynamic management by the government, and the active adoption of precautionary behaviors by individuals have given them the confidence to withstand the strains of a pandemic.

In the early stages of the COVID-19 pandemic, individuals relied on the media for knowledge acquisition and to maintain social connections. Male had broader access to information, including mass media and social media, compared to females. The preferences of the younger age group were consistent with those of the male group, with the surprising finding that old adults' preferred internet website platforms to interpersonal communication. The strict social isolation imposed by the government and communities during the pandemic may have contributed to this consequence. Although old adults' groups are at a disadvantage in terms of media use and information reception compared to younger generations, they still rely on online networks to obtain information and maintain social connections. Due to age and ability restrictions, old adults are less able and weaker to receive information, but they have more leisure time and financial flexibility; therefore, minimizing the disadvantages for old adults' in media use can facilitate the development of the old adult's tourism market. By developing travel applications for the old adults (e.g., streamlining user interfaces and steps) and tourism products for the old adults (e.g., setting reasonable travel itineraries that take their physical conditions into account), tourism managers can promote their travel intentions and accelerate recovery of the tourism industry after the epidemic.

The findings demonstrate a significant reliance on media use during the COVID-19 pandemic, validating the theory of media dependency, which proposes that when audiences lack alternatives or resources, they become dependent on mass media. Due to the decline in social

activity, the media was the primary source of information about the pandemic. While the information conveyed by the media increases the perception of risk, negative media coverage related to COVID-19 may also contribute to negative emotions. Previous research has shown that media exposure can affect how people feel; for example, during the COVID-19 pandemic, the media played a role in shaping people's perceptions of the severity of the pandemic and influencing individual feelings through their coverage, the formation of public opinion, and the promotion of particular values (Xin & Ma, 2023). Media overloading can cause mental health issues, especially for the old adults who are more vulnerable to false information because of their limited resources and abilities. Therefore, the government might reduce public anxiety during a pandemic by disseminating positive information, such as the number of successful cures and the advancement of medications and vaccinations. However, the results of the present study do not corroborate these earlier findings.

Stable social relationships, such as those with family and friends, are effective at preventing the spread of negative information (Dong & Yang, 2023). Especially for groups like the old adults who are relatively vulnerable psychologically and physiologically, having sufficient and correct information can strengthen their psychological resilience in the face of public health crisis events. As a country with a typical culture of community, China should make maximal use of community for efficient information transmission during a public health crisis in order to improve the psychological resilience of citizens and reduce anxiety such as overwhelming panic.Resilience is regarded as a stable, well-manageable resource for resisting external disturbances and pressure. This concept has been extensively studied in public health risks studies, such as Xin and Ma (2023)' s study, which found that old adults can effectively modulate their emotions in environments with high levels of media exposure by using their experience and knowledge.

Another explanation is that the public awareness of risk perception and protective behaviors may be a result of China's distinctive "community grid governance model". During a pandemic,

each community worker is responsible for contacting households, undertaking nucleic acid amplification tests, promoting of preventative measures and meeting the necessary requirements of residents to live, including the distribution of food supplies and nucleic acid detection kit. Appropriate community emergency preparedness can therefore provide positive social support for the government's pandemic management and help mitigate negative emotions among people during a pandemic (J. Li et al., 2020).

This study investigates the risk perception and travel intentions of Jilin Province residents during the initial stages of the pandemic. First, the findings confirm that media coverage had a significant effect on self-efficacy and cognitive risk perceptions. Secondly, cognitive risk perceptions had a positive and significant influence on protective measures, but a negative influence on behavioral intentions. In the early stages of a COVID-19 pandemic, potential travelers rely on protective behaviors such as maintaining social distance, wearing masks, and frequently washing their hands, but these acts did not increase their travel intention. Contrary to the findings of Lee et al (C. K. Lee et al., 2012) study, which emphasized non-pharmacological personal measures as an adaptive behavior that could persuade potential travelers to reduce their risk to an acceptable level in order to support their intention to continue traveling during a pandemic.

7.2 Theoretical Implications

Instead of relying exclusively on the TPB or PMT models to explain the propensity of travelers to avoid risks, we tested an integrated model based on a theoretical foundation and used it to investigate how travelers' behavioral intentions were influenced in the earliest stages of the pandemic. In this study, fourteen hypotheses were proposed and tested. Despite that only seven of these hypotheses were supported by the findings, we observed that affective risk perception had no direct or indirect effect on the participants' intentions or actions. This unexpected result calls for further study.

This study offers a timely analysis of the influence of COVID-19 on traveler behavior changes during this unprecedented pandemic. Based on timely data collection and analysis during the initial stages of the pandemic, it provides a variety of theoretical implications. Firstly, this research is an attempt by researchers to contribute to the tourism literature by explaining this issue was conducted on a regionally scale and caused significant disruption in the lives of societies and individuals. Considering the long-term harm that COVID-19 can cause and the possibility of a recurrence even after the outbreak has ended, the findings of this study will serve as a key indicator for future longitudinal studies examining short-term and long-term changes in tourist behavior. Second, this study provides compelling evidence to explain how media coverage and self-efficacy evaluate risk perception in the context of a pandemic. The theory of planned behavior has been extensively applied to the study of travel intentions and behavior (Bae & Chang, 2021; Huang et al., 2020; Y. Liu et al., 2021). However, few studies have exhaustively explained how media coverage and risk perceptions change travel intentions and behaviors. This insufficient is slightly addressed by examined the direct and mediated effects between media coverage, self-efficacy, risk perceptions, precautionary behaviors, and travel behavioral intentions. Third, this study attempts to introduce affective risk perceptions, which have attracted little academic attention, to constitute a dual affective-cognitive route model. The results do not support the effect of affective risk perception on the relevant constructs, but they do validate the significance of affective risk perception in risk perception with exploratory factor analysis. In brief, cognitive risk perceptions play an essential part in the early phases of a pandemic, as individuals acquire knowledge through media coverage, develop their cognitive risk perceptions through self-efficacy, and then engage in protective behaviors and make travel decisions. Finally, in addition to confirming the mediating role of self-efficacy between media coverage and risk perception, this study also investigated the moderating roles of gender and age in the hypothesized structural relationship. This study's

findings will offer detailed insights into the behavior of travelers during future infectious disease outbreaks.

Unlike previous studies that place the risk factor as interference in the construct, this study contends that risk is a prominent element in the travel behavior decision-making process. Furthermore, it is observed that cognitive risks have significant positive impact on precautionary behavior, but there is no correlation between affective risk and precautionary behavior. Previous research stated that individuals chose not to engage in self-protective behaviors since they had survived similar risky circumstances in the past without taking any actions (J. Wang, Liu. Lastres, Ritchie, & Mills, 2019). The finding may explain the travel decision-making process during the early phase of a pandemic in regions with varying risk levels. In this study, Jilin, a low-risk zone, did not have a large-scale danger of infection, hence, Jilin residents chose information-seeking from different platforms and take preventive behaviors as risk reduction strategies at early pandemic period. Governmental factors were not accounted for in this study, however, previous research by Lau et al. has shown that effective governance mitigates resident negative emotions.

7.3 Practical Implications

The findings of this study have practical implications for China's tourism sector, as well as international markets and destination managers. Health officials have warned that environmental changes will cause serious illnesses like COVID-19 to return every four to five years .In initial stage, due to a shortage of information about the new virus and widespread media coverage of non-pharmaceutical interventions, individual perceptions of the risks of travel were mainly focused on infection. However, with the development of a vaccine and coronavirus variant, it is possible that tourism practitioners will need to consider standing tourism during the pandemic as a new travel model in order to minimize the perception of travel risk among Chinese travelers in the post-pandemic. To satisfy visitors' demands while reducing their perception of risk, destinations must have a reliable and sustainable strategy to protect them against infection.

Individuals will prefer local, self-drive, or nature-based tourism owing to the risk of infection as a result of COVID-19's long-term impact. Tourism agencies should be able to offer personalized and segmented tourist goods for a family or small group and ready to provide pre-crisis warnings and post-crisis protection. As the increased number of travelers and the distances travelled will make them more vulnerable to occasional outbreaks after the travel restrictions are lifted.

Additionally, this study confirms the impact of media coverage on risk perceptions. Based on this, it is recommended that in the aftermath of a pandemic, tourism agencies use media to spread optimistic messages about the safety of their tourist attractions. Potential travelers should be aware of health and safety rules and procedures already in place at the location (such as requiring proof of a certificate of testing for COVID-19, valid COVID-19 vaccination certificate, and an international travel health certificate).

The findings of this study may serve as a valuable resource for tourism-related organizations. Due to the significant impact of information sources on risk perception, destination tourism officials could provide more positive information and health guidance to travelers via the Internet or social media platforms. In addition, risk perception plays an essential role in terms of travel behavior intentions in the province of Jilin. Therefore, it is necessary to reduce and diminish negative perceptions of pandemic-related risks by optimizing management and marketing techniques. For instance, destination marketers can promote the implementation of precautionary measures and services to ease the apprehension of travelers.

7.4 Limitations and Future Research Direction

This study contributes to the body of knowledge but has limitations that should be considered in future studies.

Firstly, the results of this study are limited to a single cross-section of the pandemic. The data collection time of this study was in a highly changeable week. On the one hand, the pandemic in China has been effectively controlled, and on the other hand, it has spread rapidly overseas.

Behavioral intention will change when people are in different stages of the pandemic, so the results of this study can only confirm the behavioral decision-making process of Jilin residents in one time period. The negative impact of future pandemics on travel behavior intentions may change as vaccine and drug development succeeds or new disease strains emerge. Therefore, it is necessary for researchers to collect additional data over multiple time periods to study this question longitudinally.

Second, the study required immediate information over a short, highly variable period; therefore, snowball sampling was employed to obtain a highly concentrated sample within Jilin Province. Although the snowball sampling method can complete data collection in a short period of time, its weakness is also obvious. The survey is completed based on personal social networks, which leads to the imbalance of sample data. More than half of the samples are from 20-29 years old, more than 70 samples are from Jilin Province.Future studies incorporating probability sampling may give destination managers, travel agents, and travelers more useful information.

Thirdly, inadequate scale validity. Different research contexts may have contributed to the validity of the scale's cognitive risk perception items. Although the scale's items were adapted from previous studies, the context of the study was centered on West Nile virus, a mosquito-caused disease. This disease is more geographically restricted, and its prevention is more likely than COVID-19. Reducing exposure to mosquito-infested environments, for instance, can reduce the risk of infection. In contrast, COVID-19, a global public health disease, is significantly more infectious and lethal than West Nile virus, which may have resulted in insufficient validity of the cognitive risk perception items in the original scale to be measured in the context of COVID-19. In addition, the lack of pre-testing, coupled with the fact that the items in the study were adapted from a well-established construct, contributed to the failure to detect scale reliability and validity deficiencies in a timely manner. Pretesting the validity and consistency of the scale in future studies would toward ensuring the quality of the data.

Fourth, questionnaire recovery was unsatisfactory. The initial sample totaled 1839, of which 315 were recruited from the sample service, and 1524 were recruited by snowballing through social networks. As a result of the highly unequal distribution in age groups, the subsequent data processing was affected by a high number of respondents in the 20-29 age group, which accounted for 40% of all respondents. Considering older people are more likely to be affected by COVID-19 and possess a weaker capacity for information obtain, it is more valuable to study their decision-making process in the context of the pandemic. Moreover, the difficulty of collecting data from older adults also enhances its value. Therefore, we balanced the data processing to maximize the retention of the older sample data. The descriptive statistics analysis indicated that the majority of the old adult's sample came from Jilin Province and met the basic criteria of data analysis. Therefore, the Jilin sample was selected for analysis.

Fifth, the sample size of this study is based on residents of Jilin Province as medical resources and the capacity deal with COVID-19 disposition differ from region to region, caution should be taken when generalizing the impact of the research. This study reflects regional risk perceptions and travel intentions; therefore, when trying to understand the findings, it is necessary to understand the specific context, i.e., what motivates Jilin residents to comply with social norms (e.g., self-isolation, measures to maintain hygiene, etc.). The lockdown of Wuhan has slowed the spread of the COVID-19 pandemic. Still, it is also causing widespread panic, exacerbated by daily news reports of new confirmed and suspected cases. Although there has not been a major outbreak of infection in Jilin province, people continue to adhere strictly to protective behaviors promoted by the government to reduce the risk of infection. Moreover, the sample in this study is biased toward younger individuals, and it would be helpful to obtain more accurate information on travel intentions by using probability sampling age groups.

Sixthly, the data quality for the old adult's sample was inadequate. As stated in the preceding section, obtaining data for the old adult's sample was challenging. Even though a sample of 142

old adults over the age of 60 was collected through personal social networks, data analysis revealed that the quality of the old adults' questionnaire responses was unsatisfactory, particularly for the 7-point Likert scale questions, for which they had difficulty providing detailed and accurate responses, selecting mostly neutral options and two extreme values. This may be due to several factors, including a lack of pertinent experience in completing questionnaires and an inability to comprehend the questions without assistance. In addition, they tend to think simplistically for the complex 7- point Likert scale and therefore elect the simpler extreme attitude option. For these reasons, it may be appropriate for future questionnaire design to reduce the scale levels for special groups, such as the old adults and uneducated, so that they can better comprehend the scale items and make more informed decisions.

Seventh, EFA and CFA didn't work very well. As discussed in the previous section, one of the reasons for this may be the quality of the sample used. The questionnaire may have been too complex for older people to understand, resulting in poor data quality, especially for those over 60. It is also possible that people could not make rational decisions due to panic caused by COVID-19, although there was no large-scale outbreak of infection in Jilin Province at the time of the data collection. It is noteworthy that the social panic caused by the pandemic was exacerbated by the absence of medical resources such as masks, the sporadic outbreak of COVID-19, and the movement of people after the resumption of operation , all of which resulted in a higher perception of risk and the adoption of protective behavioral measures encouraged by the government to reduce their own risk of infection.

Eighth, when a pandemic occurs, an urgent need for information may arise due to the potential for risk and uncertainty. While our findings indicate significant effects of information on risk perceptions and self-efficacy, we have not explored the impact of perceived information usefulness in depth. Information that is valuable and trustworthy, such as advice from authoritative medical experts, has a high degree of information usefulness for the general public. In addition to

conveying knowledge about self-protection, this information can also help residents to effectively reduce anxiety and stress.

Ninth, travel intention and travel avoidance. The data collection context for this study was after the first peak of COVID-19 in China. Based on experience with past pandemics. In the early stages of a pandemic, rational and cautious travelers may be more likely to avoid travel to reduce the risk of infection. For less risk-aware travelers, unprecedented restrictions and suppressed travel needs will likely result in proximity travel behavior, such as short trips, after the pandemic has abated. The duration and severity of COVID-19 exceeded expectations. Instead of considering whether Chinese tourists would have developed travel behavior during COVID-19, we are more interested in exploring why tourists make the travel decision (e.g., travel intention or travel avoidance) and what factors influence it. COVID-19 has affected the world, but China has unique characteristics (e.g., the first country to identify COVID-19 confirmed cases; the first country to lockdown cities; set up mobile cabin hospitals; provide medical team support for infection cities, etc.), and these unique environmental factors can influence individuals' behavior. Therefore, understanding the triggers for their behavior can help improve crisis preparedness and disaster management strategies and provide a valuable reference for the global tourism industry in post-disaster recovery and reconstruction.

Tenth, the method of data analysis was chosen. As the scale items used in this study were adapted from well-established questionnaire scales, structural equation modeling was used for the inter-variate analysis. It was not considered that both the transmission and fatality rates of COVID-19 were significantly different from previous pandemic viruses, and it may be more appropriate to explore the relationship between the variables through regression analysis.

Eleventh, silver tourism. While the COVID-19 pandemic has severely impacted the tourism industry, it has also provided new opportunities to transform it. During the COVID-19 pandemic, old adults were widely focused on as a vulnerable group without considering their unique

advantages in the tourism sector, such as stable disposable income, financial autonomy, and more leisure time. With an average holiday of five days and a per capita spending of over RMB 3,600 in 2018, old adult's tourism consumption is already a trillion-dollar market. The old adult's tourism market, which has been neglected, has huge growth potential, especially given the expanding global old adults population and changing consumption attitudes of older adults. Future research could incorporate semi-structured interviews and the adaptation of item scales to suit older age groups to collect data.

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APPENDIX

Questionnaire (English Version)

Variable	Item	References
Demography	Age	
	Residence	
	Gender	
	Income	< 2000RMB 2001-4000RMB 4001-6000RMB 6001-8000RMB 8001-10000RMB > 10000RMB
	Education Level	Primary school and below Junior high school Senior high school Vocational and technical school Junior College/Polytechnic Bachelor's degree or equivalent university education Master's degree/MBA/PhD
Self-Efficacy	I have confidence in my ability to search on coronavirus related information	Li, Guo & Ito (2014)
	I have confidence in my ability to understand the coronavirus related information	
	I have confidence in my ability to evaluate the credibility of coronavirus related information	
Information Source	Whether you had received information about coronavirus through the listed sources ? To what extent do you retrieve information related to the coronavirus from the following media platform ? 1.Mass Media (Newspaper, Radio, TV) 2.Social Media 3. Internet websites 4. Interpersonal communication	
Behavioral Intentions	Intention to visit Wuhan in the next 12 month	Law (2006); Lee et al (2012);
	Intention to have domestic trip in the next 12 months	
	Intention to change my travel destination in the next 12 months	
Cognitive	I feel very knowledgeable about the risk of coronavirus	C.W Trumbo&R.Harpe (2015)
	I believe that the risk of coronavirus is increasing over time.	
	I have choice over my exposure to coronavirus.	
Affective	The thought of coronavirus fills me with dread or fear.	C.W Trumbo&R.Harpe (2015)
	The thought of coronavirus makes me feel anxious or worried.	
	The thought of coronavirus makes me feel sad or depressed.	
Precautionary behavior	1.Refrain from going outsite. 2. Keep away from crowded places 3.Staying home from school or work 4. Avoid using public transportation 5. Wear face masks 6 Practice better hygiene (washing hands more frequent etc.) 7. Exercise regularly	ults et al. (2011)Brug et al.(2004)

关于COVID-19新型冠状病毒的调查问卷

第一部分	您的性别	男/女
	您的年龄	20岁以下 20-29岁 30-39岁 40-49岁 50-59岁 60岁及以上
	您目前居住在哪个城市	
	您个人目前的月收入水平是	2000元以下 2001-4000元 4001-6000元 6001-8000元 8001-10000元 10000元以上
	您个人的文化程度是	小学水平及以下 初中 高中/职业高中 中专/职业技术学校 大专 本科或同等学历 研究生（硕士/博士）
第二部分	1. 您是否从以下所列渠道获取关于COVID-19新型冠状病毒的信息？	是/否
	2. 关于您从下列渠道获取有关COVID-19新型冠状病毒的信息的频率，请选择与您情况最符合的选项 -大众媒体（报纸/广播/电视） -社交媒体 -网站 -人际交流	1-非常少 7-非常多
	我有信心能收集到有关COVID-19新型冠状病毒的信息	1-非常不同意 7-非常同意
	我有信心可以理解有关COVID-19新型冠状病毒的信息	
	我有信心可以判断有关COVID-19新型冠状病毒信息的可信度	
	我认为我对COVID-19新型冠状病毒的风险非常了解	
	我认为COVID-19新型冠状病毒的风险会随着时间而增加。	
	我可以选择是否接触COVID-19新型冠状病毒环境	1-非常不符合 7-非常符合
	一想到COVID-19新型冠状病毒，我就感到恐惧/害怕	
	一想到COVID-19新型冠状病毒，我就感到焦虑/担忧	
	一想到COVID-19新型冠状病毒，我就感到悲伤/沮丧	
	关于您针对COVID-19新型冠状病毒可能做的预防措施，请选择与您情况最符合的选项 1.避免外出 2.远离拥挤场所 3.居家学习/办公 4.避免使用公共交通工具 5.佩戴口罩 6 保持良好的卫生习惯 （如，勤洗手等） 7.经常锻炼	
	请问您在未来12个月之内是否有武汉旅行的计划？	
	请问您在未来12个月之内是否有国内旅行的计划？	
	请问您会考虑改变未来12个月之内的旅行目的地么？	