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Seeing the invisible hand: Underlying effects of COVID-19 on tourists' behavioral patterns

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ABSTRACT

Given growing attention toward the effects on COVID-19 on tourism, a number of institutions have made macro-level predictions related to the disease. More micro-level research are, however, needed. This study seeks to advance the understanding of tourists' potential behavioral transformation by reviewing psychological distance and construal level theory, as well as the relationship between psychological distance and perceived risk. Multiple dimensions of psychological distance and perceived risk are summarized with respect to COVID-19. The discussion suggests that global health emergencies evoke three types of tourism pattern: from general to elaborate, from open-hearted to closed, and from radical to conservative. These categories provide a conceptual foundation for empirical research considering contextual and individual stimuli. Practically, this paper highlights strategies to reduce individuals' risk perceptions, encourage specific types of tourism, and regulate unethical consumption. The recommendations also encourage the analysis of crisis recovery and relevant market analysis by tourism professionals and marketers.

1. Introduction

On December 1, 2019, a case of novel coronavirus pneumonia (COVID-19) was reported in Wuhan, China (Huang et al., 2020), and subsequently sparked a public health emergency of international concern. The World Health Organization (WHO) classified COVID-19 as a pandemic on March 11, 2020 (WHO, 2020a). A WHO-issued situation report published on March 27, 2020 indicated that COVID-19 had affected more than 200 countries and regions around the world, with the total number of COVID-19 cases surpassing 500,000 globally (WHO, 2020b).

The tourism industry is particularly vulnerable to crises or disasters (Cró & Martins, 2017). Travel is influenced by myriad external factors, such as political instability, economic conditions, the environment, and weather (Okumus, Altinay, & Arasli, 2005). According to Yang and Nair (2014), a key research trend in tourism involves risk and crisis management (Ritchie & Jiang, 2019), which includes terrorism (Massey, 2005; Sönmez, 1998), political instability (Zenker, Von Wallpach, Braun, & Vallaster, 2019), economic crises (Bodosca, Gheorghe, & Nistoreanu, 2014; Okumus et al., 2005), financial problems (U & So, 2020), natural disasters (Ruan & Li, 2018), and infectious diseases (Okuyama, 2018; Zeng, Carter, & De Lacy, 2005).

Historically, disease outbreaks have forced countries to close their borders, suspend visa-on-arrival policies, and institute travel bans. Such measures have brought irrefutable losses to tourism. For example, in 2003, China officially cancelled its May Day Holiday to limit the spread of SARS (Zeng et al., 2005). During the bird flu outbreak in Miyazaki, Japan in 2010, the Japanese government prohibited visitor entry into infectious areas, resulting in lost revenue of approximately ¥8.1 billion (Miyazaki Prefecture, 2011). Because COVID-19 is transmitted through human-to-human contact (Chan et al., 2020), many countries have announced short-term travel restrictions. International tourism shrank as countries closed their borders. UNWTO predicted that global international tourist arrivals could decline between 20 and 30% in 2020 due to the pandemic, leading to US$300–450 billion less in international tourism receipts (UNWTO, 2020). Public officials have encouraged people to avoid mass gatherings and have postponed or cancelled large public events (The State Council of the People’s Republic of China, 2020). Hotel and restaurant operations have also been suspended in many countries, spiking the unemployment rate across the globe.
The impact of COVID-19 on the tourism industry is reflected not only in lower revenue on the supply side but also in individuals’ inherent risk perceptions on the demand side. Safety concerns are a key factor in tourists’ willingness to travel and heavily influence tourism demand (Simon, 2009). Moreover, tourists’ risk perceptions vary (Reisinger & Mavondo, 2005) on the basis of complex psychological characteristics. While institutions have recently sought to provide macro-level predictions relating to COVID-19 (e.g. UNWTO, 2020), few studies have focused on the outbreak’s potential personal impacts. Tourism, which is highly reliant on tourist flows, is shaped by individuals’ responses. More research on tourist behavior is therefore needed amid this pandemic. This paper was therefore carried out to address this knowledge gap by exploring how tourist transformations occur across types of perceived risk during COVID-19 based on the theory of psychological distance and levels of construal.

Psychological distance is defined as “the subjective distance of an event in the actor’s psychological space, and the theory posits that different distance dimensions can be unified under one psychological space” (Kyeongheui, Zhang, & Li, 2008, p. 707). This concept includes the following four dimensions: temporal distance, namely how much time separates ‘now’ from the target event; spatial distance, or how distal a target is in space from ‘here’; social distance, specifically how distinct the social target is from the ‘self’; and hypotheticality, referring to the likelihood of a target event occurring or how close it is to ‘reality’ (Bar-Anan, Liberman, & Trope, 2006). The construal level refers to “the perception of what will occur: the processes that give rise to the representation of the event itself” (Trope & Liberman, 2010, p. 442). Representations of cognitive objects have different levels of abstraction (i.e. levels of interpretation), which depend on perceived psychological distance from the target event and can influence people’s judgment and decision making (Li, Zhou, & Zhou, 2009).

A review of studies on psychological distance, perceived risk, and tourism crises facilitates the building of a theoretical foundation for the research context. This study therefore presents and critically discusses major theories guiding earlier studies to consolidate the conceptual framework. Particular attention is given to how tourists’ psychology and behavior may change based on interactions between their internal state (i.e. consciousness) and surroundings (i.e. environment). Drawing upon the proposed conceptual model, the following questions are raised:

- How can psychological distance and construal level theory be incorporated into tourism research on COVID-19?
- How are psychological distance dimensions related to COVID-19?
- What risks do potential tourists perceive relative to the COVID-19 outbreak?
- How to explain the mechanism between psychological distance and perceived risk?
- How do identified dimensions of psychological distance and perceived risk influence tourism behavior?
- What research opportunities can be proposed based on the conceptual model put forth in this paper?

2. Literature review

2.1. Psychological distance and construal level theory

Psychological distance is “a subjective construction that something is close or far away from the self, here, and now” (Trope & Liberman, 2010, p. 440). From an egocentric viewpoint, four dimensions characterize overall psychological distance (Brügger, Morton, & Dessai, 2016) as noted earlier: temporal distance, spatial distance, social distance, and hypotheticality. Temporal distance refers to the perceived proximity of an event in time (e.g. Tan, Wong-Parodi, & Xu, 2020; Trope & Liberman, 2010). Spatial distance refers to how far an object is from the perceiver (e.g. local vs. 10 miles away; Tan et al., 2020; Trope & Liberman, 2010). Social distance describes closeness in terms of social relationships (e.g. self vs. others or in-group vs. out-group members; Tan et al., 2020; Trope & Liberman, 2010). Hypothetical distance defines the probability that an event will occur (Tan et al., 2020; Trope & Liberman, 2010), including duration, level of influence, controllability, familiarity, likelihood, and outcome severity (Huang & Wu, 2017). Researchers have examined probability as one example of psychological distance and argued that low-probability events can be perceived as psychologically distant while high-probability events can be perceived as proximate (Todorov, Goren, & Trope, 2007; Waksleak, Trope, Liberman, & Alony, 2006).

Construal level theory proposes that mental construal involves abstraction (Liberman, Sagristano, & Trope, 2002) and that psychological distance is one factor determining the level of abstraction (Liberman & Trope, 1998; Trope & Liberman, 2000). Construal levels can thus be adjusted to the target’s psychological distance (Bar-Anan et al., 2006). Generally, construal level theory suggests that people tend to describe events using high-level construal (i.e. abstract construal) when the perceived psychological distance is distal and low-level construal (i.e. concrete construal) when an event is perceived as psychologically close (Geng, Liu, Zhou, & Yang, 2015; Tan et al., 2020). Further, more abstract construal is accompanied by a gradual reduction in the detail and complexity of representations (Liberman et al., 2002). Compared to low-level construal, high-level construal is simpler, decontextualized, and more coherent (Liberman et al., 2002; Liberman & Trope, 1998; Trope & Liberman, 2010). Information about superordinate goals (i.e. ‘why’ aspects of action) is furthermore emphasized in high-level construal, whereas low-level construal involves subordinate means of reaching those goals (i.e. ‘how’ aspects of action) (Liberman & Trope, 1998).

Bar-Anan et al. (2006) conducted eight experiments using the Implicit Association Test to demonstrate associations between construal levels and the four dimensions of psychological distance. Their findings suggested that people intuitively associate proximate objects with indicators of low-level construal, which does not require conscious involvement. Furthermore, implicit associations may unconsciously affect explicit judgments and decisions. In addition, consistent with previous studies (Darke, Brady, Benediktus, & Wilson, 2016; Kyeongheui et al., 2008; Trope & Liberman, 2010), several assumptions of construal level theory have been supported: the four dimensions influence each other; the four dimensions have similar mechanisms and are unified in terms of psychological distance, leading to parallel effects on judgment; and the intervention of the four dimensions of psychological distance can have an interactive influence on judgment.

Psychological distance and construal level theory have implications for evaluation, prediction, and choice (Liberman & Trope, 1998). As such, they are popular in cognitive psychology (e.g. Bar-Anan, Liberman, Trope, & Algolm, 2007) and have recently permeated studies in marketing (e.g. Hernández-Ortega, 2018; Kim, Zhang, & Li, 2008) and environmental risk (e.g. Fox, Mcknight, Sun, Maung, & Crawfils, 2020; Geng et al., 2018; Wang, Marinova, Wang, & Wei, 2020). Studies related to tourism and crisis have confirmed that the effects of SARS on tourism were generally immediate and extreme but rather time-limited (Li, 2009; Zeng et al., 2005). This phenomenon could be explained by psychological distance: once temporal and spatial distance are perceived as distant enough, and the hypotheticality of an event occurring is low, the epidemic will appear controllable to tourists.

2.2. Psychological distance of COVID-19

This paper focuses on the COVID-19 outbreak, an event featuring relatively severe consequences. Pandemics can evoke considerable anxiety in addition to material losses, especially when individuals face treatment-related challenges or high mortality in densely populated areas (Li, 2009). Psychological distance can be described in the context of COVID-19 as follows.

Temporal Distance: For now, the temporal distance of COVID-19 is
proximate. Given that proximate psychological distance primes low construal (Geng et al., 2018), people are likely to pay attention to the immediate pandemic-related context and details.

**Spatial Distance:** Considering the widespread impact of the COVID-19 outbreak, people around the world are facing relatively close spatial distance, especially in severely affected countries and regions. Therefore, in terms of spatial distance, people perceive COVID-19 as psychologically close, which primes low construal. Because COVID-19 is primarily transmitted through close contact with infected individuals, and people are more sensitive to spatial distance between strangers, a larger spatial distance could reflect a larger social distance (Stephan, Liberman, & Trope, 2010; Trope & Liberman, 2010). Concrete construal can then lead people to minimize close spatial distance with others, particularly those from areas where COVID-19 is especially prevalent. This type of construal can also reflect a larger social distance from strangers.

**Social Distance:** Social distance describes closeness in terms of social relationships. Briefly, in an intergroup context (Harris, Middleton, & Joiner, 2000), an ‘in-group’ maintains close social distance while an ‘out-group’ maintains far social distance (Ahmed, 2007; Corkalo & Kamenov, 2003; Harris et al., 2006; Kim et al., 2008). Individuals generally tend to care more about their in-group, which includes their family and friends, than others (Trope & Liberman, 2010). Thus, in the time of COVID-19, many are fearful that their families and friends might contract the illness. People have therefore begun taking protective measures to keep themselves and their loved ones safe. Many countries have also enforced quarantine measures to prevent the situation from escalating. For example, Spain was under a 15-day emergency beginning on March 14, 2020 and required people to stay home (BBC News, 2020). Colombia forced people over the age of 70 to shelter in place from 20 March to 31 May (U.S. News, 2020). These regulations have expanded residents’ social distance through reduced social contact.

**Hypotheticality:** COVID-19 can be transmitted rapidly via person-to-person contact (Sheereen, Khan, Kazmi, Bashir, & Siddique, 2020). Even so, people will inevitably come into contact with others, thus increasing the probability of viral transmission if individuals are exposed to COVID-19 through respiratory droplets (e.g. coughing or sneezing). Additionally, no proven treatment is available for COVID-19, and the infection can have serious consequences for those who become ill.

### 2.3. Psychological distance and tourists’ perceived risk

Different from objective risk, perceived risk refers to consumers’ sense of uncertainty and potential negative consequences related to products or services (Featherman & Pavlou, 2003). In this case, consumers are not facing risk at the moment: theoretically, it is impossible to experience the past and the future, other people, and other places (Stamolampros & Korfitis, 2018; Trope & Liberman, 2010). Yet individuals still seek to predict the future, recall the past, imagine other people’s reactions, or infer outcomes based on their mental construal processes by relating distant objects to the present (Trope & Liberman, 2010).

Many studies have indicated that closer psychological distance can be explained by concrete construal and carries more perceived risk. Liu, Batra, and Wang (2017) contended that consumers can acquire tactile product attributes (e.g. softness, heaviness, and smoothness) through touch to judge product quality and represent a product through concrete construal. When purchasing items online, consumers are often uncertain about product quality and face greater perceived risk. In a crisis context, Geng et al. (2018) introduced power as a component of psychological distance to examine whether power influenced environmentally minded individuals’ risk perceptions and attitudes towards nuclear energy. Their findings suggested that high-power representations of nuclear energy resulted in abstract construal, which was coherent and superordinate: in this case, people perceived less risk and were more optimistic about the development of nuclear energy compared to those with low-power representations. In a similar vein, Fox et al. (2020) revealed that people who feel psychologically close to environmental pollution perceive pollution as a more concrete threat, resulting in greater perceived risk.

The current study proposes that psychological distance and construal level theory can enhance the understanding of tourists’ perceived risk amid COVID-19. According to construal level theory, individuals ‘zoom into’ their experiences as they move closer to an event and focus on concrete aspects, including minute details (Stamolampros & Korfitis, 2018). Thus, people may experience proximate psychological distance and use low-level construal to represent COVID-19 (Geng et al., 2018; Trope & Liberman, 2010). Moreover, when facing risky events with psychologically proximal distance, concrete background information including perceived risks and benefits is vital (Boudet, Zanocco, Howe, & Clarke, 2018; Trope & Liberman, 2000).

### 2.4. Tourists’ risk perceptions of COVID-19

In a travel context, subjective perceived risk can affect tourists’ destination choices and travel behavior (Reichel, Fuchs, & Uriely, 2007). Perceived risk has drawn extensive attention from tourism researchers. The tourism industry is highly susceptible to internal and external stimuli (Faulkner, 2001), and a growing number of studies have focused on perceived risk in crisis contexts (Korstanje, 2009). For instance, Fischhoff, De Bruin, Perrin, and Downs (2004) examined respondents’ willingness to travel shortly after the 2002 terrorist attacks in Bali based on estimates of travelers’ perceived risk in different destinations. In comparing the post-SARS recovery patterns of in-bound tourism from Japan, Hong Kong, and the USA in Taiwan, Mao, Ding, and Lee (2010) indicated that these markets exhibited significantly different recovery patterns. According to Smith (2006), people’s health concerns about SARS went beyond reality: the perceived uncertainty of infection and negative outcomes, coupled with person-to-person transmission and ambiguity over SARS identification and control, collectively contributed to public panic. By investigating the impact of perceived risk on people’s tendencies to travel internationally to Hong Kong after SARS, Kozak, Crotts, and Law (2007) indicated that affected areas, as well as neighboring countries, were vulnerable to crisis events and could suffer from an overall negative destination image.

According to Law (2006), tourists’ views of risk tend to be distinct from those of policymakers and industry practitioners. Thus, research on tourists’ perceived risk is needed to facilitate risk communication and risk management (Huang & Wu, 2017; Law, 2006; Smith, 2006). As a pandemic, COVID-19 has evoked panic among people worldwide. Based on the construal level of psychological distance, tourists who experience a psychologically close event generally demonstrate higher risk perceptions (Trope & Liberman, 2010). Generally, in the case of COVID-19, three assessments can be made. First, because the pandemic is still severe, temporal distance to COVID-19 is proximate. Second, although disease outbreaks can differ in magnitude and scale, most people encounter close spatial distance in modern times due to globalization. Third, considering the features of COVID-19 (e.g. high transmissibility and serious outcomes), the hypotheticality dimension is also proximate. People’s psychological distance to an epidemic event is close in the temporal, spatial, and hypotheticality dimensions. As such, people form concrete construal and perceive greater risk (Fox et al., 2020; Liu et al., 2017). Six risk perception attributes derived from psychological distance were considered in the present study.

**Health Risk:** Health risk refers to the perceived possibility of becoming ill (Han, 2005). Safety is an innate human need according to Maslow’s hierarchy of needs (Kozak et al., 2007). Proximity in the three aforementioned dimensions influences people’s health risk perceptions, leading individuals to develop concrete construal and greater perceived risk (Fox et al., 2020; Liu et al., 2017). Furthermore, as distal social distance provokes less trust, people coming into contact with strangers will likely perceive a higher possibility of COVID-19 infection. Thus,
tourists mingling with out-group members may perceive greater health risk than those remaining with in-group members. Additionally, spatially distant destinations are also socially distant: compared with one’s place of residence, tourism destinations are socially distal, and tourists perceive higher risks in unfamiliar environments (Lepp & Gibson, 2003). In sum, COVID-19 is psychologically proximate in terms of temporal distance, spatial distance, and hypotheticality. People will thus perceive high health risk (Fox et al., 2020; Liu et al., 2017), with a large social distance from out-group members and destinations further contributing to strong health-related risk perceptions.

**Psychological Risk:** Psychological risk is “undesirable [and] might signify a disappointing travel experience” (Sonmez & Graefe, 1998a, p. 171), such as anxiety about missing a flight (Simpson & Sigauw, 2008; Sonmez & Graefe, 1998a). COVID-19 is psychologically proximate in temporal distance, spatial distance, and hypotheticality. Along with far social distance from out-group members and destinations, the four dimensions of psychological distance each contribute to high health-related risk perceptions: safety is a prime concern among tourists during disease outbreaks (Simon, 2009; Wen, Wang, Kozak, Liu, & Hou, 2020), causing these four dimensions to evoke pandemic-related anxiety: the most significant psychological element influencing risk perceptions (Chien, Sharifpour, Ritchie, & Watson, 2017). Tourists therefore perceive high psychological risk during COVID-19.

**Social Risk:** Social risk refers to the “perception of how others will react to one’s purchase” (Jacoby & Kaplan, 1972, p. 2), which entails negative changes in others’ opinions and attitudes towards travelers in a tourism context (Keh & Sun, 2008; Kushwaha & Shankar, 2013; Sun, 2014). Social risk also includes the extent to which a trip suits tourists’ social status (Fuchs & Reichel, 2006; Kim, Kim, & Leong, 2005; Sun, 2014). In the present case, social risk can be contextualized as the possibility that one’s friends, family members, or associates may express negative attitudes toward a person’s tourism activities (Sonmez & Graefe, 1998a) during the COVID-19 outbreak, leading to a potential loss of esteem, respect, and even friendship due to one’s decision to travel.

By definition, people perceive social risk from in-group members because in-home quarantine has been recommended as a preventative strategy, and many governmental authorities have enacted policies to restrain mass gatherings and travel (e.g. Burke, 2020; Foreign & Commonwealth Office & The Rt Hon Dominic Raab MP, 2020). Tourists will presumably be discouraged by family, friends, and colleagues if they choose to travel. Doing so would violate these stringent travel policies. In addition, because spatial distance influences social distance (Stephan et al., 2010), geographical shifts during travel also contribute to a higher risk of infection and could exacerbate people’s negative reactions to such behavior. Thus, tourists may feel alienated upon returning home, leading to greater social risk.

**Performance Risk:** In a tourism context, performance risk refers to tourists not receiving anticipated vacation-related benefits due to a travel product or service not performing well (Khan, Cheliah, & Ahmed, 2017; Sonmez & Graefe, 1998a). In other words, this type of risk is based on the performance of products and services. Social distance is irrelevant when analyzing perceived performance risk. For related industries and small businesses, the COVID-19 outbreak and corresponding government-imposed travel restrictions can increase tourists’ performance risk during crisis situations.

**Image Risk:** Country image refers to an “overall, diversified impression that people have of a particular country,” containing elements of culture, traditions, history, economy, politics, and technology (Zhang, Wu, Morrison, Tseng, & Chen, 2018, p. 906). This image is an established determinant of destination choice and evaluation (Keating & Kritz, 2008; Zhang, Xu, Leung, & Cai, 2016), which is often fueled by media coverage and graphic imagery (Kozak et al., 2007; Mason, Grabowski, & Du, 2005; Schroeder & Pennington-Gray, 2014).

According to Brown (2000), image risk is related to negative publicity, poor public relations, and unfounded rumors. As people’s psychological distance to the pandemic is close in temporal, spatial, and hypotheticality dimensions, COVID-19 becomes a dominant concern. Based on social distance, people care less about their out-group and can easily ignore related information. Meanwhile, the features leading to an epidemic can contribute to enduring perceptions, especially when these characteristics are emphasized through misleading media coverage. The connection between spatial and social distance can also lead individuals to perceive high image risk toward tourism destinations, especially long-haul destinations. For instance, Joffe and Haarhoff (2002) investigated UK media coverage of the Ebola outbreak, which was initially (and wrongly) described as an African health issue. Consequently, misrepresentation and public misinterpretation negatively influenced international tourism to all of Africa (Novelli, Burgess, Jones, & Ritchie, 2018). According to Novelli et al. (2018), although no Ebola cases were reported in Gambia, the virus led to an Ebola-induced tourism crisis during the 2014/2015 season. In addition, during the SARS outbreak, media coverage and its sensationalist tone exacerbated global panic (Joffe & Haarhoff, 2002; Mason et al., 2005; Washed, 2004). Perceptions of some destinations, such as Toronto, were adversely affected and influenced area tourism industries (Mason et al., 2005).

According to Wen, Aston, Liu, and Ying (2020), some media outlets have inappropriately labeled the coronavirus as ‘Chinese virus pandemonium’. Such stigma and misleading coverage can adversely affect China’s country image and destination image in terms of tourism marketing and tourist behavior during COVID-19 (Wen et al., 2020). Thus, labels based on the virus’s origins can compromise China’s outbound and inbound tourism market. While outbound tourists could be worried about facing discrimination and even violence while traveling, inbound tourists’ fear of infection will hamper their visits to China or other affected areas. Generally, the media can affect risk perceptions (Mason et al., 2005; Novelli et al., 2018) in that inappropriate coverage can compromise the destination image and tourism market of certain regions.

**Time Risk:** Time risk refers to the possibility that travel will take too much time or that services will not occur as scheduled (Sonmez & Graefe, 1998a). Considering the on-going epidemic, quarantine-related measures are necessary but come with time-related costs; some services may not be available as scheduled due to travel policies during the pandemic. These frustrations can in turn influence travelers’ post-experience behavior, such as one’s intentions to recommend or revisit a destination (Susskind, 2005; Swanson & Hsu, 2009). Overall, the proximity of temporal distance, spatial distance, and hypotheticality could help explain time risk during COVID-19. Social distance is not especially relevant to time risk perceptions.

The preceding review of the literature confirms the influence of psychological distance on tourists’ risk perceptions; corresponding mechanisms are summarized in Table 1. Upon reviewing mechanism-related studies (e.g. Power, Di Domenico, & Miller, 2019; Ruan, Li, Zhang, & Liu, 2019; Tsai & Chen, 2010), it was concluded that a ‘mechanism’ is a method or a system of organizing different variables to clarify the relationships among them and solve certain problems or achieve a goal. In the current study, ‘mechanism’ refers to the connecting logic between psychological distance and perceived risk.
2.5. Tourists’ behavioral changes in response to risk perceptions

In the light of the foregoing literature review, a common opinion is that consumers aim to mitigate risk and uncertainty when purchasing a product or service and that these choices result in behavioral changes (Fuchs & Reichel, 2011). In a travel context, once tourists reach their destinations, they begin to favor nature-based settings (Zeng et al., 2005), little for the least cost (or risk) for the least cost (or risk) Reef (Bodocsa et al., 2014; Karl, Reintinger, & Schmude, 2015), and most researchers agree that perceived risk plays a role in destination choices (Fuchs & Reichel, 2011; Karl et al., 2015; Lepp & Gibson, 2008). Tourists are likely to avoid visiting high-risk areas (Kozak et al., 2007; Law, 2006; Mckercher & Hui, 2003; Uriely, Maoz, & Reichel, 2007), especially during times of crisis (Kozak et al., 2007; Fizam & Fleischer, 2002; Rittichainuwat & Chakraborty, 2009). When encountering strong perceived risk, rather than acting as a ‘General’ tourist with no particular purpose other than recreation, tourists more often “select the destination which best matches their needs by offering the most benefits” (Sönmez & Graefe, 1998b, p. 125). For instance, after SARS, tourists’ destination-related preferences changed: they began to favor nature-based settings (Zeng et al., 2005), little contact with others, and open and airy facilities (Cai, 2003).

| Perceived Risk | Psychological Distance to COVID-19 | Mechanism |
|----------------|----------------------------------|-----------|
| **Time risk**  | Temporally ongoing               | Proximity in temporal distance, spatial distance, and hypotheticality necessitate quarantine measures amid COVID-19. These actions carry time-related costs. Social distance is not especially relevant to time risk perceptions. |
| **Image risk** | Temporally ongoing               | COVID-19 is a major concern due to proximity in temporal distance, spatial distance, and hypotheticality. When tourism destinations are perceived as socially distal, people care less about their out-group. Contraual is highly abstract and less detailed-oriented. In comparison, features that may lead to illness attract close attention, especially when fueled by misleading media coverage. These characteristics can exacerbate tourists’ perceived image risk. |
| **Social risk**| Temporally ongoing               | The proximity of temporal distance, spatial distance, and hypotheticality leads people to form concrete construal and perceive greater risk. According to social distance, people care more about their close relationships. As travel currently opposes precautionary principles to some extent, tourists may be dissuaded from traveling by the people around them. |
| **Performance risk** | Temporally ongoing | Proximity in temporal distance, spatial distance, and hypotheticality can lead people to form concrete construal and perceive more risk. Related industries and small businesses may struggle with the pandemic and corresponding travel restrictions, which may give rise to performance risks among tourists. Social distance is irrelevant when analyzing perceived performance risk. |
| **Psychological risk** | Temporally ongoing | COVID-19 is psychologically proximate in terms of temporal distance, spatial distance, and hypotheticality. With a large social distance from out-group members and destinations, the four dimensions can evoke pandemic-related anxiety and lead to high perceived psychological risks in tourism contexts. |
| **Health risk** | Temporally ongoing               | COVID-19 is perceived as proximate based on the three dimensions of psychological distance, represented as a serious disease that can affect the ‘self’, thus leading to higher perceived risks. In terms of social distance, in-groups may carry lower health-risk perceptions while out-groups carry higher health-risk perceptions. Tourism destinations can furthermore become socially distal, which also contributes to health risk perceptions. |

Table 1: Mechanisms between psychological distance and COVID-19-related risk perceptions.
Tourists can also be particular about trip length. McKercher (2008) noted that travelers would take multi-destination trips with increased distance from their place of residence to reduce risk. Tideswell and Faulkner (1999) similarly suggested that a ‘portfolio’ of destinations could reduce risk associated with long-haul destinations. Fuchs and Reichel (2006) indicated tourists’ preference for short trips (Lo, Cheung, & Law, 2011; McKercher, 2008) and attractions that surround the areas travelers typically stay (Li & Ji, 2003). In terms of transportation, post-SARS tourists favored traveling by land or self-driving (Wen, Hui-min, & Kavanaugh, 2005). Moreover, other behavioral changes could also apply to COVID-19, such as searching for more information prior to travel (Fuchs & Reichel, 2011), purchasing travel insurance (Fuchs & Reichel, 2006; Lo et al., 2011; Mitchell & Vassos, 1997), and receiving immunizations (Lo et al., 2011; Yeung, Abdullah, McGhee, & Hedley, 2005).

Importantly, the impacts of perceived risk on tourists’ behavior are expected to vary demographically (Lo et al., 2011; Wen et al., 2005), including culturally (Reisinger & Mavondo, 2005) and socio-psychologically (Elrod, 2001). For example, studies have confirmed that adventurous tourists may be more ‘radical’: that is, they seek novel, exotic, and even risky experiences (Plog, 2001). Most tourists during COVID-19 will presumably express prudent (Wen et al., 2005) and ‘conservative’ attitudes, showing less propensity to change and seek novelty along with a certain degree of behavioral change.

3. Discussion

Based on Construal Level theory, several studies (Fox et al., 2020; Spence, Poortinga, & Pidgeon, 2012; Tan et al., 2020; Wang et al., 2020) have suggested that lower psychological proximity is associated with higher perceived risk and may be a critical predictor of individuals’ evaluations and behavior (Fox et al., 2020; Liberman & Trope, 2008; Trope & Liberman, 2010). As a result, by employing psychological distance and construal level theory (Trope & Liberman, 2003, 2010), this paper sought to propose an explanation for tourists’ risk perceptions and accompanying behavior from the perspectives of psychological distance and construal level theory (see Fig. 1). By focusing on COVID-19, the current study has categorized tourists’ behavioral changes and suggested that tourists will express three tendencies in their behavioral patterns – from general to elaborate, from open-hearted to closed, and from radical to conservative: based on psychological distance, construal level, and perceived risk. These patterns offer a conceptual foundation for empirical research and practical management of tourism crises.

3.1. From general to elaborate

In the current context, the term ‘general’ refers to tourists with a General trip purpose, “including the most important aspects of something, but not exact or detailed” (Oxford Learner’s Dictionaries). Johnson (1998) proposed a typology of wine tourists based on “general tourists” versus “specialists” (Mitchell & Hall, 2003, p. 69). ‘General wine tourists’ are those who visit a vineyard, winery, wine festival, or wine show for recreational purposes, while “specialists” are primarily motivated by “a specific interest in grape wine or grape wine-related phenomena” (Mitchell & Hall, 2003, p. 69). ‘General tourists’ do not have a specific purpose, which applies to our model. By contrast, ‘elaborate’ refers to a task or process that is “very complicated and detailed, carefully prepared and organized” (Oxford Learner’s Dictionaries).

In the model, this paper propose that tourists will be more ‘elaborate’ when specifying their travel locations rather than selecting a broad destination and spending a short time at multiple attractions. Previous studies have shown that risk related to individuals’ well-being is a strong determinant of destination choice (Gray & Wilson, 2009). Tourists’ construal of psychological distance affects perceived risk, and according to construal level theory, manipulating the dimensions of psychological distance could influence individuals’ judgment (Darke et al., 2016; Kyeongheui et al., 2008; Trope & Liberman, 2010). Accordingly, several selection principles will apply to the COVID-19 pandemic, embodied in subjective adjustment of distance. By choosing a destination where the disease has been controlled, tourists can create greater time distance. In terms of spatial distance, ‘distance equals safety’ (Williams & Bargh, 2008), tourists will be more interested in areas that have been less affected by COVID-19 or destinations that can offer spatial distance from others.

In terms of hypotheticality, because the virus is spread through human-to-human transmission, as temporal and spatial distance become larger, the likelihood of infection will diminish. Regarding the construal of temporal distance, tourists who perceive travel-related health risks may cancel their trip or minimize their travel time. Image risk could also influence their destination choices. Thus, tourists would balance motives/benefits and risk perceptions when making decisions (Defranco & Morosan, 2017; Khan, Chelliah, Haron, & Ahmed, 2017; Yüksel & Yüksel, 2007) and “select the destination which best matches their needs” (Sönmez & Graefe, 1998b, p. 125). When facing heightened psychological risk, social risk, performance risk, or time risk, tourists would be deliberate in their travel plans and choose locations that satisfy specific motivations. Selected attractions will meet visitors’ travel needs and include a level of risk that travelers deem acceptable and controllable.

3.2. From open-hearted to closed

Briefly defined, ‘open-hearted’ is similar to being “friendly” or “approachable” (Baddhabhumblitak, 2010, p. 29; Rekom & Go, 2006, p. 81), conveying a positive attitude when encountering or interacting with people. By contrast, a ‘closed’ tourist may be “[un]willing to accept outside influences or new ideas” (Oxford Learner’s Dictionaries) and have a negative attitude when interacting with others.

Travelers’ psychological reservations are reflected in their

![Fig. 1. Proposed conceptual model.](image-url)
destination choices. Because of how COVID-19 is transmitted, closer spatial distance implies greater health risk. Sparsely populated destinations could increase physical distance and effectively guarantee a low likelihood of infection by forming a psychologically ‘closed’ area. Zeng et al. (2005) found that nature-based areas, including nature reserves, national parks, and other sites, were common post-SARS destinations. Furthermore, because close spatial distance reflects close social distance (and thus elicits more positive affect and trust) (Ahmed, 2007; Kramer & Brewer, 1984), tourists’ preferences for short trips (Fuchs & Reichel, 2006) and attractions around which they typically stay (Lo et al., 2011; McKercher, 2008) could also relieve tourists’ risk perceptions and operate jointly with a tendency to be ‘closed’. In general, perceived risk can compel travelers to modify their destination preferences and reduce the probability of disease transmission.

Based on the assumption of social distance, people may also elect to travel with companions who are socially close to them rather than with strangers. Individuals show more positive affect and trust toward those with whom they are familiar (Ahmed, 2007; Kramer & Brewer, 1984). Instead, tourists may be more negatively disposed toward traveling with strangers on tour packages and be more guarded during the pandemic; that is, people will not be as ‘open-hearted’ or friendly to strangers as usual during the pandemic.

As individuals are most concerned with their family and friends based on social distance (Trobe & Liberman, 2010), individuals tend to be particularly anxious about their loved ones contracting illnesses. These worries may lead tourists to modify their transportation modes, causing them to prefer self-driving tours or recreational vehicles. A survey from Ivy Alliance Tourism Consulting, China Comfort Travel Group and Pacific Asia Travel Association (PATA) (2020) showed that people in crisis are careful about public transport. The spread of COVID-19 on several cruise ships has adversely affected many tourists, with 52% doubting whether they will take cruises in the future; 36% doubt whether they will travel by airplane. These concerns are particularly notable amid the pandemic that is, people will not be as ‘open-hearted’ or friendly to strangers as usual during the pandemic.

Warm service with more interaction will presumably decrease perceived risk. However, as a dominant tourism motivation (Crompton, 1979), this novelty-seeking tendency requires travelers to accept a certain level of risk (Chien et al., 2017). Yet traveling during a disease outbreak involves great perceived risk. Tourists are likely to modify their behavior to mitigate a threat if they believe they are at risk of contracting COVID-19 (Park, Ju, Ohs, & Hinsley, 2020). Examples include delaying purchases or considering alternative products (Dayout, Park, & Kimbu, 2019). These, along with other risk reduction strategies, could help travelers control potential negative outcomes and uncertainty, and partially alleviate travel- and destination-related risks (Bodosca et al., 2014; Dayout et al., 2019; Fuchs & Reichel, 2011). The current paper thus presumes that tourists will adopt a more conservative, rather than radical, approach to travel.

Food is an essential aspect of tourism production and consumption (Ying, Wen, Law, Wang, & Norman, 2018). One example of novelty seeking is tourists’ pursuit of delicacies, such as wildlife consumption. Ying, Wang, Liu, Wen, and Goh (2020) suggested that tourism may stimulate tourists’ hunger for wild animals: however, wild and exotic game may be virus reservoirs that trigger global health epidemics. Due to the high perceived risks of wildlife consumption, tourists will likely suppress their curiosity during disease outbreaks and instead focus on familiar foods to reduce health-related and psychological risks. The potential zoonotic origins of COVID-19 have already ignited public concern about wildlife consumption, resulting in heated debates and criticism of such behavior (Wen et al., 2020). Tourists could confront substantial social risk when consuming foreign or otherwise exotic foods and may even be blamed for disease transmission.

3.4. Travel patterns of different types of tourists

In summarizing the general trends, individual uniqueness should never be ignored. Studies have examined risk perception differences in a crisis context. For instance, Kozak et al. (2007) interviewed 1180 tourists after the SARS crisis and noted that culture can influence tourists’ perceived risk based on individuals’ propensity to avoid uncertainty. According to Park et al. (2020), people express biased risk perceptions of COVID-19, such that an individual may estimate their own risk for disease to be lower than others. In conclusion, tourists’ behavioral differences manifest through three aspects: (1) demographic characteristics, (2) cultural background, and (3) socio-psychological features.

The demographic characteristics of tourists which may have impacts on risk perceptions include individuals’ age, gender, education, income, nationality, and prior travel experience (Reichel et al., 2007). These characteristics may differentially affect visitors’ travel intentions and performance during disease outbreaks. A two-way analysis of variance revealed that men’s mean risk perceptions were lower than that of women for orienteering, mountain biking, rowing, surfing, sailing, skiing, parachuting, and cliff jumping (Demirhan, 2005). Also, experienced tourists’ risk perceptions were lower compared to tourists with less experience (Sharifpour, Walters, & Ritchie, 2014). Younger people perceived greater risk than older people (Floyd & Pennington-Gray, 2004). Compared with other types of tourists, older male tourists with rich experience may change their travel behavior less drastically amid the COVID-19 outbreak.

Reisinger and Mavondo (2005) confirmed that national culture significantly influenced travel-related risk perceptions. Visiting a destination with a culture which is distinct from one’s own can create challenges in learning and interaction (Manev & Stevenson, 2001). This fact can be explained by the Hofstede model, in which national culture is composed of five dimensions: power distance, individualism and collectivism, masculinity and femininity, control of uncertainty or risk aversion, and long- and short-term orientation (Hofstede, 1980, 2001; Martinez-Fiestas, Rodríguez-Garzón, Delgado-Padial, & Lucas-Ruiz, 2016). Specifically, cultures characterized by high uncertainty avoidance are traditionally uncomfortable with unpredictable situations. They prize structure and feel threatened by the unknown and the
ambiguous. By contrast, cultures featuring low uncertainty avoidance accept risk more willingly (Litvin, Crotts, & Hefner, 2004). Thus, tourists from cultures with low uncertainty avoidance may be less prone to behavioral modification during the COVID-19 outbreak.

From a socio-psychology standpoint, Plog (2001) classified tourists into three types: psychocentric tourists, who seek familiar, safe, and secure experiences; allocentric tourists, who seek novelty, exotic experiences, and occasionally risky experiences; and mid-centric tourists, who fall between these two extremes. Generally, novelty-seeking backpackers, the exemplar of exotic tourists, are attracted to destinations featuring risk. Adventure and risk are central to the construction of backpackers’ identities and travel narratives (Elstrud, 2001; Noy, 2007). These tourists are therefore unlikely to follow common trends; they may even travel to infected areas deliberately in pursuit of excitement.

4. Conclusion

This paper comes in response to a call for recovery strategies during tourism-related disasters and crises (Ritchie & Jiang, 2019). The review of perceived risk in tourism and crisis management, coupled with the fact that perceived risk can inform travelers’ destination choices and travel behavior (Fischhoff et al., 2004; Kozak et al., 2007; Reichel et al., 2007; Ritchie & Jiang, 2019), suggests that psychological distance and construal level theory can promote understanding of tourists’ perceived risks and shifting travel patterns. The discussion provides theoretical contributions to the literature. This study also apply the psychological distance and construal level theory to develop a valuable conceptual framework delineating specific risks individuals may perceive in tourism activities during the COVID-19 outbreak. This research lays an empirical foundation with strong application potential and fills a knowledge gap around threatened consumers’ behavior in tourism and hospitality settings.

The three identified tourism patterns reflect the intermediation of tourists’ psychological distance and perceived risk related to COVID-19. These patterns provide several useful marketing implications.

First, health risks and psychological risks are important entry points. Health risks represent major concerns for tourists (Lepp & Gibson, 2003). These risks can potentially influence individuals’ well-being (Chien et al., 2017; Wang et al., 2019) and are major inhibitors to travel (Quintal, Lee, & Soutar, 2010). Psychological risks also reflect anxiety or mental discomfort anticipated from post-purchase affective reactions, such as worry and regret (Roehl & Fesenmaier, 1992). In terms of the pandemic, the higher is travelers’ perceived risk of COVID-19, the more likely they are to experience anxiety and fear about this disease (Park et al., 2020). According to Smith (2006), some features of SARS (e.g. relatively high fatality rate, person-to-person transmission, unfamiliarity, and uncertainty over epidemic identification and control) affected individuals’ mental well-being. Destinations should therefore focus on reducing individuals’ health and psychological risk perceptions by emphasizing spatial distance and hypotheticality. In the case of the Mutianyu Great Wall, a Chinese attraction, several measures have helped control tourists’ risk perceptions: (1) tourists visits online or purchase tickets through QR codes; (2) before entering, the staff checks tourists’ health codes to confirm visitors are outside a 14-day quarantine; (3) when queuing, 1-m lines demarcate the waiting area; and (4) the transport shuttle only allows one passenger per row and requests that visitors sit in a Z-shaped pattern on the bus. A six-passenger cable car is only available for one passenger, and up to two when family and friends are traveling together (Zhou, Wang, Tang, & Li, 2020). By implementing similar measures, destination organizations and marketers could intervene psychological and spatial distance to reduce travelers’ overall perceived risk.

Second, as discussed above, tourists may shift preferences as tourism recovers from COVID-19. In terms of destinations, travelers may aim to choose locations that suit their needs (Sinmez & Graefe, 1998b) and prefer wide-open, natural settings (Cai, 2003; Zeng et al., 2005). Therefore, niche markets should be emphasized in publicity releases; sparsely populated and nature-based attractions, as well as places that are temporally distal, should promote relevant advantages. As for transportation preferences, Li and Ji (2003) found that 81.1% of tourists were careful about transportation modes after SARS, especially transport involving a high density of people. Additionally, previous survey indicated that more Americans chose to drive cars when traveling after SARS (Wen et al., 2005). Under COVID-19, for promotional purposes, stakeholders should pay attention to the self-driving market. With respect to accommodations, and based on social distance, small accommodation units should attempt to build trust and shorten social distance with tourists. If consumers begin to entertain themselves at home more frequently (Bodosoa et al., 2014), then industry and government officials may need introduce policy and measures to rebuild travelers’ tourism confidence. Shifting food preferences may occur as well, such as becoming more ‘conservative’. Rather than focusing on simply meeting demand, however, suppliers should pay more attention to ethics from a safety standpoint. For instance, in the case of wildlife consumption, stakeholders should become more aware of ethical and safety issues. Industry practitioners and tourists should particularly discourage unethical or excessive food consumption. Relevant laws, regulations, and policies need to be further improved, industry stakeholders should also comply with trends not to supply wildlife (e.g. due to health and safety risks). Awareness campaigns should advocate strongly for the protection of wild animals in tourism and emphasize the importance of sustainable development.

4.1. Future research directions

Three directions for future research deserve consideration: (1) testing a conceptual model that incorporates psychological distance through empirical studies; (2) comparing differences in risk perceptions among tourists segments and exploring relevant effects on the tourism industry; and (3) examining the impact of social media on potential tourists’ psychological distance construal and perceived risk.

First, Ritchie and Jiang (2019) recommended tourism crisis management researchers to focus on conceptual model building, empirical testing, and adaptation of models from other disciplines. Studies of the antecedents of perceived risk remain a major theme in tourism (Khan, Chelliah, & Ahmed, 2017; Kozak et al., 2007; Reisinger & Mavondo, 2005). For example, from a health psychology perspective, Chien et al. (2017) developed and tested a conceptual model integrating multilevel psychological constructs (e.g. worry, perceived control, and sensation-seeking propensity) to explore these factors’ effects on travelers’ health risk perceptions and protective behavior. As psychological distance theory and construal level theory may each influence perceived risk in tourism contexts, this paper suggests scholars to verify the relationships among these variables as well as their influences on tourists’ behavioral patterns. Future research should consider psychological distance in empirical investigations of COVID-19.

Second, as individuals tend to differ drastically in their construal of psychological distance and COVID-19-related risk perceptions, their travel willingness and preferences will vary as well. Although different forms of travel (e.g. cruise tourism, volunteer tourism, self-driving tourism, and food tourism) can inhibit negative sentiments and help people recover mentally and physically from COVID-19, these activities also carry risks. Therefore, the nuances of tourism segments should be explored in greater detail to identify the catalysts and inhibitors of specific psychological dimensions and perceived risk. Such insight can inform targeted tourism industry marketing and revival after the COVID-19 outbreak.

Third, tourists’ perceptions of objective risks are based on information, including information on safety, pricing, and travel campaigns, all of which can mitigate anxiety and foster tourism recovery (Okuyama, 2018). Luo and Zhai (2017) argued that social media outlets can disseminate negative messages and exacerbate country image problems.
and crises. Considering the proximity in temporal, spatial and hypothetical dimensions of the COVID-19, the epidemic is the major concern. According to social distance, people care less about the out-group, they would ignore much information. Thus, the features which may lead to an epidemic are central features in many people's mind. Presumably, when tourism destinations have a large psychological distance, people will be less detail-oriented and generate spontaneous trait inferences (Trope & Liberman, 2010). For instance, some communication channels have referred to COVID-19 by race, which has adversely influenced China's country image and destination image; potential tourists' risk perceptions are likely to increase as a result (Wen et al., 2020). Consequently, studies advocating for accurate and efficient information management are urgently needed for tourism recovery (Ritchie & Jiang, 2019).

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