

Antecedents and outcomes of health risk perceptions in tourism, following the COVID-19 pandemic

Maksim Godovykh, Abraham Pizam and Frida Bahja

Abstract

Purpose – *The purpose of this paper is to clarify the concept of perceived risks, identify the main antecedents and outcomes of health risk perceptions and propose a conceptual model of health risk perceptions in tourism.*

Design/methodology/approach – *This paper provides a review of the literature on customer risk perceptions, along with their antecedents and outcomes, and proposes a conceptual model of health risk perceptions in tourism.*

Findings – *Key findings reveal that the main factors of health risk perceptions can be broadly classified into cognitive, affective, individual and contextual components. The proposed conceptual model of health risk perceptions provides a theoretically integrated overview of relationships between all groups of factors, tourists' risk perceptions and travel intentions.*

Originality/value – *The paper contributes to theory by offering a new approach to health risk perceptions in tourism, which remain underexplored in previous studies. The literature review adds to the body of knowledge by introducing four main groups of factors affecting tourists' health risk perceptions, while the conceptual model proposes relationships between these factors, tourists' risk perceptions and travel intentions.*

Keywords *Health, Risks, Tourism, Risk perceptions, Travel intentions, COVID-19*

Paper type *Conceptual paper*

Maksim Godovykh,
Abraham Pizam and
Frida Bahja are all based at
the Rosen College of
Hospitality Management,
University of Central
Florida, Orlando, Florida,
USA.

目的：本文的目的是阐明可感知风险的概念，确定健康风险感知的主要前提和果，并提出旅游业健康风险感知的概念模型。

设计/方法/途径：本文提供了一份关于顾客风险认知的文献综述，连同他们的前提和结果，并提出了一个旅游业健康风险感知的概念模型。

发现：主要发现揭示了健康风险感知的主要因素可以大致分为认知，情感，个体和情境成分。所提出的健康风险感知概念模型提供了一个理论上的关于各个成分之间，游客风险感知，和出游意向之间综合关系的概况。

创意/价值：本文通过提供一种在以前研究中未被探索的新的旅游业健康风险感知方法，为理论发展做出了贡献。文献综述通过介绍影响客健康风险感知的四个主要因素丰富了相关知识体系，所提概念模型则建议了这些因素，客风险感知以及出游意向之间的关系。

关键词：风险感知，旅游，健康，COVID-19，风险，旅游意愿

文章类型：研究型论文

Antecedentes y resultados de las percepciones de riesgos para la salud en el turismo: Un modelo conceptual

Objetivo : *El propósito de este artículo es clarificar el concepto de riesgos percibidos, identificar los principales antecedentes y resultados de las percepciones de riesgos para la salud, y proponer un modelo conceptual de las percepciones de riesgo para la salud en el turismo.*

Diseño/metodología/método : *Este artículo provee una revisión de la literatura sobre las percepciones de riesgo de los clientes, junto con sus antecedentes y resultados, y propone un modelo conceptual de las percepciones de riesgo para la salud en el turismo.*

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Resultados : *Los resultados clave revelan que los principales factores de las percepciones de riesgos para la salud pueden clasificarse generalmente en componentes cognitivos, afectivos, individuales, y contextuales. El modelo conceptual propuesto de las percepciones de riesgos para la salud provee una perspectiva teóricamente integrada de la relación entre todos los grupos de factores, las percepciones de riesgo de los turistas, y las intenciones de viaje.*

Originalidad/valor : *El artículo contribuye teóricamente al ofrecer un nuevo enfoque sobre las percepciones de riesgos para la salud en el turismo, que siguen sin ser exploradas en estudios anteriores. La revisión de literatura contribuye al cuerpo de conocimiento al introducir los cuatro principales grupos de factores que afectan las percepciones de riesgo para la salud de los turistas, mientras que el modelo conceptual propone la relación entre estos factores, las percepciones de riesgo de los turistas, y las intenciones de viaje.*

Palabras clave : *Palabras clave Riesgos, Percepción de riesgos, Turismo, Salud, COVID-19, Intenciones de viaje*

Tipo de artículo : *Investigación*

Introduction

Tourists' risk perceptions have been described as one of the major factors of decision-making and behavioral intentions (Artuger, 2015; Hasan *et al.*, 2017; Wolff *et al.*, 2019). Although the COVID-19 pandemic significantly changed the tourism and hospitality industry through travel restrictions in different countries and regions worldwide, tourists' behavior after reopening depends on their perceptions of safety and risks associated with various travel activities (Dryhurst *et al.*, 2020; Wen *et al.*, 2020). Risk perceptions, however, are different from real risks. Whereas real risks are traditionally characterized by uncertainty about the effects of the activity and probability of outcomes in question (Kahneman and Tversky, 2013; Schmidli, 2017), perceived risks are related to an individual's subjective perceptions, which are influenced by multiple social, cultural and contextual factors based on personal judgments, attitudes, experiences and feelings (Brown *et al.*, 2018; Pidgeon, 1998; Ropeik, 2011). As a result, perceived risks might influence people's attitudes, decisions and behavior even if the real risks are minimal (Cakar, 2020; Quintal *et al.*, 2010; Reichel *et al.*, 2007). Conversely, unperceived risks will not have any effect on people's behavior even if the risks are real, significant and tangible.

People's perceptions about risks also depend on their individual differences, including personality traits, gender, culture and prior experience (Dryhurst *et al.*, 2020; Menon *et al.*, 2006). While some people strictly follow government guidelines and generally accept rules of isolation, social distancing and sanitation, others ignore these norms due to differences in perception of health-related risks, which vary by groups and individuals (Cori *et al.*, 2020). Furthermore, various cognitive, affective, individual and contextual risk factors might interact with each other and exert different effects on tourists' behavioral intentions. The purpose of this paper is to discuss the concepts of health risk perceptions in tourism, identify the main antecedents and outcomes of health risk perceptions, propose a conceptual model of health risk perceptions in tourism and call for a further investigation of the impacts of different factors of health risk perceptions on tourists' behavior during the COVID-19 pandemic and other disease outbreaks.

The concept of risk perceptions

The majority of risk perceptions studies originated from the fields of risk management and behavioral finance (Hoffmann *et al.*, 2013; Hopkin, 2018; Kahneman and Tversky, 2013), which describe risks in terms of uncertainty, severity and the probability of negative outcomes (Loewenstein *et al.*, 2001; Slovic, 2016). Risk perceptions were also presented as important determinants of customer attitudes and behavior in consumer behavior studies

(Hasan *et al.*, 2017). In a broader context, risk perceptions can be defined as people's subjective judgments about risk characteristics and severity (Cui *et al.*, 2016).

Categories of risk perceptions traditionally included financial, political, social, psychological and physical (Hasan *et al.*, 2017), while several studies further introduced property risks, health risks, security risks, facilities risks, value risks, moral hazards, weather risks and other types of risks (Cui *et al.*, 2016; Li, 2010; Liu and Gao, 2008). It is often difficult to clearly differentiate between such categories, as physical risks might influence psychological and social risk perceptions. For this reason, measuring risk perceptions as a multi-dimensional construct became popular in marketing, consumer behavior and tourism literature (Hasan *et al.*, 2017).

Risk perceptions in tourism

In contrast with economic and psychological research, tourism studies apply distinct explanations of risk perceptions, mostly associated with tourists' fear, anxiety, worry and nervousness (Fuchs *et al.*, 2013; Reichel *et al.*, 2007; Wolff *et al.*, 2019). Tourists' concerns about financial and security risks are abundant in the tourism and hospitality literature (Fuchs and Pizam, 2011; Pizam *et al.*, 1997; Quintal *et al.*, 2010), while a minority of studies described other categories of tourists' risk perceptions such as security (Liu and Gao, 2008), property loss (Dolnicar, 2005), crime (Maser and Weiermair, 1998), terrorist attacks (Law, 2006) and natural disasters (Fuchs and Reichel, 2011). Among the other previously discussed factors influencing tourists' risk perceptions and travel avoidance were negative media coverage (Brown, 2015), susceptibility (Cahyanto *et al.*, 2016), destination image (Carter, 1998), novelty preference (Lepp and Gibson, 2003) and cultural characteristics (Kozak *et al.*, 2007).

A number of studies explored tourists' risk perceptions as an important determinant of travel intentions and avoidance of potentially dangerous destinations (Casidy and Wymer, 2016; Cooper, 2006; Khan *et al.*, 2019). Common findings from the previous research yielded a negative correlation between risk perceptions and tourists' behavioral intentions. It was reported that higher levels of perceived risk evaluations led to lower levels of satisfaction, loyalty, attitude toward a destination and visit intentions (Casidy and Wymer, 2016; Hasan *et al.*, 2017; Roehl and Fesenmaier, 1992). Health risk perceptions, however, have not received much attention in previous tourism research.

Health-related risk perceptions

Tourism has been previously described as one of the major factors in contagious disease transmission (Hall, 2006). The mobility of international tourism can introduce new infectious diseases to world populations, and tourists might bring unfamiliar pathogens from remote areas to their home countries (Richter, 2003). Among the previously described health-related risks in tourism are HIV, schistosomiasis, Legionnaires' disease, sexually transmitted infections, SARS and COVID-19 (Bauer, 2007; Jonas *et al.*, 2011; Joseph *et al.*, 1996; McKercher and Chon, 2004; Schwartz *et al.*, 2005). While several empirical papers examined the effects of global health issues on travel intentions (Nazneen *et al.*, 2020; Wen *et al.*, 2020), their results describe the impact of the pandemic on attitudes toward different types of travel without specifying the nature and relative importance of various factors affecting tourists' perceptions. Most health studies in tourism describe tourists' visit intentions in medical tourism settings (Collins *et al.*, 2019; Dryglas and Lubowiecki-Vikuk, 2019; Medhekar *et al.*, 2020; Rahman, 2019).

Notwithstanding, several previous studies reported the influence of tourists' health-related risk perceptions on travel behavior during the previous SARS outbreak, as well as the significant effects of cultural dimensions, previous experience and perceived control (Jonas *et al.*, 2011; Kozak *et al.*, 2007; Rittichainuwat and Chakraborty, 2009). These findings,

together with theoretical insights from psychology, medicine and risk research, can be used as a benchmark for developing a conceptual model of health risk perceptions in tourism. Previous explanations of health risk perceptions include factors such as people's knowledge and understanding of the disease, personal experience, trust and cultural values, as well as demographic, cultural and personality characteristics (Prati and Pietrantonio, 2016; van der Linden, 2015; Zambrano-Cruz *et al.*, 2018). These factors can exert a great influence on tourists' behavior than the disease itself (Cooper, 2006; McKercher and Chon, 2004). Therefore, it is important to identify the antecedents of health risk perceptions in tourism and ascertain their effects on tourists' behavior.

Antecedents of risk perceptions

Numerous factors of risk perceptions were identified and described in previous studies (Table 1). The first group of factors is related to tourists' trust in tourism providers, governmental officials, health-care institutions and knowledge about the risk. For instance, trust significantly affected tourist behavior during the COVID-19 pandemic period, and it is anticipated that regaining trust in these institutions will be a long time in coming after the COVID-19 pandemic (Cori *et al.*, 2020; Slovic, 2000). Tourists' knowledge about risks also affects risk perceptions (Ropeik, 2011). Unknown risks are usually perceived as more frightening than known ones. In the case of SARS and the COVID-19 pandemic, the fear of new and unknown viruses, coupled with contradictory information about origin and outcomes, had significant negative effects on tourists' perceptions, attitudes and behavioral intentions. Knowledge about risks is mostly formed indirectly via the media or word of mouth. In turn, media affects risk perceptions through the valence, amount, and tone of the

Table 1 Antecedents of risk perceptions

<i>Authors</i>	<i>Factors</i>
Block and Keller (1995) Carter (1998) Slovic (2000)	Positive and negative affect Destination image Perceived lack of control, dread, catastrophic potential, fatal consequences, unknown hazards
Lepp and Gibson (2003) Kozak <i>et al.</i> (2007) McCarthy <i>et al.</i> (2008)	Health, political instability, strange food, novelty preference Power distance, individualism, uncertainty avoidance Amount of media coverage, frames used for presenting risks, valence and tone of media coverage, trustworthiness of risk information sources
Ropeik (2011)	Trust, origin, control, nature, scope, awareness, imagination, dread, uncertainty, familiarity, specificity, personal impact, fun factor Optimism bias
Sharot (2011) Zhang <i>et al.</i> (2013) Brown (2015) van der Linden (2015) Henrich <i>et al.</i> (2015) Cahyanto <i>et al.</i> (2016)	Age, education, profession, risk experiences, knowledge Negative media coverage Cognitive, experiential, socio-cultural, demographic Framing of risks Perceived susceptibility, severity, self-efficacy, subjective knowledge, socio-demographics
van Hoorn <i>et al.</i> (2016) Becken <i>et al.</i> (2017) Paek and Hove (2017)	Social desirability Destination image Voluntariness, controllability, familiarity, equity, benefits, understanding, uncertainty, dread, trust in institutions, reversibility Framing of risks
Murdock and Rajagopal (2017) Xie <i>et al.</i> (2019) Dryhurst <i>et al.</i> (2020) Bogacheva <i>et al.</i> (2020) Cori <i>et al.</i> (2020)	Affect, descriptive norms, mitigation response inefficacy Knowledge, experience, prosociality, trust, efficacy Travel experience Voluntariness, knowledge, visibility, trust
Source: Authors	

coverage, the trustworthiness of the information sources, and the applied frames for presenting risks (McCarthy *et al.*, 2008). As an illustration, Oh *et al.* (2015) explored perceptions of H1N1 influenza risks in South Korea and found that news coverage and entertainment media had significant effects on various dimensions of risk perceptions.

The next group of factors affecting risk perceptions is related to personality traits, including risk aversion, adventurousness, neuroticism, conscientiousness, agreeableness and emotional stability (Chauvin *et al.*, 2007; Hampson, 2012; Zambrano-Cruz *et al.*, 2018), as well as peoples' cognitive biases such as optimism bias, anchoring, adjustment, social influence, status quo bias and perceived control (Cui *et al.*, 2016). According to previous research, people with optimism bias believe that they are less likely to contract a disease than others (Sharot, 2011; Brewer *et al.*, 2007). Several studies demonstrate that risk is perceived as low if it is taken voluntarily (Cori *et al.*, 2020) and that people are ready to follow the majority (van Hoorn *et al.*, 2016). Previous studies also identified that risk perceptions are influenced by travel characteristics (Adam, 2015), destination image (Becken *et al.*, 2017), previous travel experience (Bogacheva *et al.*, 2020; Sternberg *et al.*, 2000) and other factors.

All factors affecting tourists' health risk perceptions can be broadly classified into cognitive, affective, individual and contextual types. The first group of cognitive factors is related to destination characteristics, gravity of the health risk event, media coverage, information accessibility and risk-mitigating measures (Brown, 2015; Paek and Hove, 2017). Among the current measures undertaken by tourism practitioners to mitigate the risks of COVID-19 are social distancing, sanitizing, temperature checks and contactless services. The second group of affective factors plays an important role in people's ability to deal with negative information (Block and Keller, 1995). Previous studies show that, just as customers in positive emotional states are readier to deal with negative information and outcomes, negative affective states prevent the processing of negative information about possible risks while enhancing self-positivity biases.

Among the previously described contextual factors of risk perceptions are the framing of risk information and the availability of alternative information sources. People tend to take preventive actions when the outcomes are framed in negative terms (Robberson and Rogers, 1988; Murdock and Rajagopal, 2017). For instance, a study by Henrich *et al.* (2015) reported significant effects of the framing of earthquake risk scenarios on participants' risk perception. The final group of individual differences includes gender, age, cultural characteristics, prior travel experience and personality traits, all of which significantly influence risk perceptions.

While tourism providers, destination marketing and management organizations, and governmental authorities can affect some cognitive and contextual factors of risk perceptions, they have no real influence on individual characteristics that determine tourists' subjective evaluations of risk. The effects of the previously described factors of risk perceptions were not explored in the context of global life-threatening health risks and, therefore, a series of studies should be conducted to investigate the influence of each factor on tourists' health risk perceptions to determine their effects on behavioral intentions.

Outcomes of risk perceptions

Previous studies described the effects of risk perceptions on tourist attitudes and behavioral intentions (Table 2). Baker (2014) pointed out that tourist risk perceptions have strong negative effects on attitude toward a destination. In a similar vein, Sohn *et al.* (2016) found that perceived risk led to negative perceptions of a local festival. Jin *et al.* (2016) described the negative effects of risk perceptions on trust, customer satisfaction and loyalty. Another group of risk perceptions outcomes is related to tourists' behavioral intentions. Le and Arcodia (2018) described purchase intentions as the main outcomes of

Table 2 Outcomes of risk perceptions

<i>Authors</i>	<i>Outcomes</i>
Weber <i>et al.</i> (2002)	Risk-taking behavior
Nomura <i>et al.</i> (2004)	Risk-taking attitude, avoidance behavior
Floyd <i>et al.</i> (2004)	Travel intentions
Reisinger and Mavondo (2006)	Behavioral intentions
Yuksel and Yuksel (2007)	Emotions, satisfaction, behavioral intentions
Fuchs and Reichel (2011)	Visit motivation
Lepp and Gibson (2003)	Destination image
Chew and Jahari (2014)	Revisit intentions, destination image
Baker (2014)	Attitude toward a destination
Hossain <i>et al.</i> (2015)	Destination loyalty
Sohn <i>et al.</i> (2016)	Negative perceptions, need for variety
Jin <i>et al.</i> (2016)	Trust, customer satisfaction, loyalty
Casidy and Wymer (2016)	Willingness to pay more
Hasan <i>et al.</i> (2017)	Revisit intentions
Le and Arcodia (2018)	Purchase intentions
Wang <i>et al.</i> (2019)	Self-protective behavior

Source: Authors

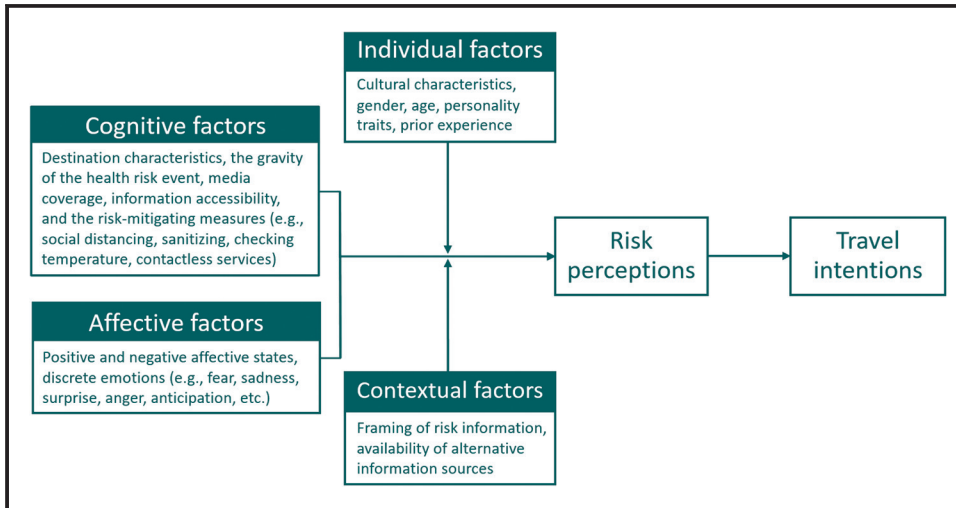
customer risk perceptions in different settings. Chew and Jahari (2014) found that the relationship between different components of tourists' risk perceptions and revisit intentions were mediated by affective and cognitive destination image. Among the other described consequences of perceived risks are destination image (Lepp and Gibson, 2003), avoidance behavior (Nomura *et al.*, 2004), loyalty (Hossain *et al.*, 2015), willingness to pay more (Casidy and Wymer, 2016), need for variety (Sohn *et al.*, 2016) and self-protected behavior (Wang *et al.*, 2019).

The relationships between risk perceptions and tourist outcomes, however, are not always straightforward and might be mediated and moderated by other constructs, such as tourists' individual characteristics, attitudes and previous experience. For instance, the study by Reisinger and Mavondo (2006) reported the effects of risk perceptions on international travel intentions as moderated by tourists' cultural differences. Yuksel and Yuksel (2007) found that the relationship between tourists' risk perceptions, satisfaction and behavioral intentions is mediated by tourists' emotions. A study by Liu *et al.* (2013), however, did not reveal significant effects of risk perceptions on customer purchase intentions in an online context. Moreover, risk perceptions can even stimulate risk-taking behavior among certain groups of customers (Weber *et al.*, 2002). Therefore, it is important to develop a conceptual model of health risk perceptions in tourism and empirically test it among different groups of tourists and destinations.

Conceptual model and future research directions

The main predictors of tourists' risk perceptions include cognitive, affective, contextual and individual factors (Figure 1). The cognitive factors are associated with the perceived gravity of health-related risks, media coverage, availability of information about risks and mitigating measures including social distancing, sanitizing, required wearing of masks, temperature checks and contactless services. The affective factors include tourists' positive and negative affective states that can influence people's ability to deal with negative information and self-positivity biases. The effects of the above factors are moderated or complemented by a group of contextual factors related to the framing of risk information and availability of alternative information sources and individual factors, such as cultural characteristics, gender, age, personality traits and previous experience.

Figure 1 Conceptual model of health risk perceptions in tourism



Travel intentions are introduced as the main outcome in the proposed model. On the one hand, most research demonstrates that low levels of risk perceptions predict greater behavioral intentions (Cahyanto *et al.*, 2016; Kozak *et al.*, 2007; Law, 2006; Reisinger and Mavondo, 2005). At the same time, a few studies suggest that perceived barriers to action related to costs and competing activities might disrupt the link between risk perceptions and behavioral intentions (Akompab *et al.*, 2013; Bubeck *et al.*, 2012). Therefore, the pathway between tourists' health-related risk perceptions and their travel intentions demands additional investigation in relation to the current COVID-19 situation.

The main components of risk perceptions include cognitive and affective dimensions (Dryhurst *et al.*, 2020; Xie *et al.*, 2019). The previously applied measurement scales of risk perceptions in tourism, however, mostly measured the cognitive components and were validated in contexts that are completely different from global health-related risks such as the COVID-19 pandemic. For instance, Fuchs and Reichel (2006) explored risk perceptions of a tourist destination by asking respondents to evaluate their judgments regarding terrorism, crowds and other dimensions of risk. Chew and Jahari (2014) evaluated financial risk, physical risk and socio-psychological risk to investigate the effects of perceived risks on revisit intentions in post-disaster Japan. None of the previously applied scales focuses on health issues and fully satisfies the need to measure physical health-related risk perceptions. Therefore, new scales should be developed and validated specifically to assess tourists' health-related risk perceptions by using a mixed-methods approach (Churchill, 1979; Creswell and Clark, 2019; DeVellis, 2016).

Conclusion

This paper intends to clarify the concept of health risk perceptions in tourism, identify the main factors of health risk perceptions, and propose a conceptual framework of health risk perceptions in tourism. The conceptual model advances a systematic and theoretically integrated overview of the main factors affecting tourists' risk perceptions and behavioral intentions and suggests that future research ought to understand these factors and their effects on travel behavior. New measurement scales of health-related risk perceptions should be developed and validated in tourism settings by using a mixed-methods approach. The relative importance of each of the cognitive, affective, contextual and individual factors that affect health risk perceptions for different groups of tourists, as well as

their relationship with tourists' behavioral intentions, should be empirically explored in future studies by conducting surveys, interviews, online content analysis, experiments and longitudinal studies.

This paper contributes to theory by offering a new approach to health risk perceptions in tourism, which remain underexplored in extant studies. The literature review adds to the body of knowledge by introducing four main groups of factors affecting tourists' health risk perceptions, while the conceptual model advances relationships between these factors, tourists' risk perceptions and travel intentions. The paper provides important practical implications as well. While tourism providers, destination marketing and management organizations and governmental authorities currently make every effort to eliminate the negative consequences of COVID-19, they cannot influence tourists' individual characteristics such as personality traits, socio-demographic characteristics and prior experience. Therefore, it is necessary for tourism practitioners to be aware of individual factors of perceived risks, constantly measure the factors and outcomes of tourists' risk perceptions and segment proposals to potential customers based on their sociodemographic, experiential and personality characteristics. The proposed conceptual model can be used as a framework for exploring the effects of different factors of risk perceptions on tourists' behavioral intentions in the context of the COVID-19 pandemic and other disease outbreaks.

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Corresponding author

Maksim Godovykh can be contacted at: maksim.godovykh@ucf.edu

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