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Determinants of perceived risk of online travel purchase in the wake of COVID-19

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ABSTRACT

Consumer risk perception is again at the forefront of research due to COVID-19, war, terrorism, and radical technological development. Our research explores travelers' attitudes toward perceived risk in the travel purchasing process in the wake of COVID-19. To gain a deeper understanding of the dimensions and interrelationships, we investigate three groups of perceived risks – traditional perceived risk factors related to travel purchase, perceived health risks related to COVID-19, and the risk of the online space related to travel purchase. In Study 1, we interviewed 38 participants in depth to explore the risk factors. In Study 2, we tested our hypotheses with 539 participants using CB-SEM-based quantitative modeling. Results reveal distinct, interacting constructs in the risk perception process. The research shows that a traveler may not perceive something as risky in general, but as soon as specific issues, problems, mistakes, and dangers arise, they perceive the whole travel as risky. Results further indicate that perceived risk often remains latent at a general level and becomes salient only through context-specific triggers, with distinct risk domains reinforcing one another in shaping overall travel purchase risk. This research tries to make a relevant contribution to the literature on what was experienced during the coronavirus pandemic, but beyond that, with a deep and structured analysis.

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Perceived risk of travel purchase; perceived risk of COVID-19; perceived risk of online space; structuring risk perception context; mixed methodology

1. Introduction

In uncertain times, consumers' perceptions of risk increase in all areas of life. This is no different in tourism. While in the early 2000s, the topic of risk perception and security in tourism has been reinforced by terrorism, climate change, and natural disasters, COVID-19 added a new aspect to this topic (Zheng, Luo, and Ritchie 2022). How the perception of risk determines consumer behavior is relevant to the travel purchasing process (Lu and Wei 2019). Regardless of the epidemic, travel habits have changed a lot (Le, Rao Hill, and Troshani 2022).

The theoretical interpretation of perceived risk has changed significantly due to the rise of e-commerce and COVID-19. In the context of risk perception, travel purchase has often measured online risk using the same types of perceived risks as those used for offline purchases (Kim, Qu, and Kim 2009; Brown, Coventry, and Pepper 2021). This suggests that the dimensions of

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online risk have yet to be explored in the same depth as traditional risks, i.e. those related to offline purchases. Examining health risks in the context of COVID-19 must also be considered in the context of tourism; related research has addressed the issue in many cases, but there are also lessons to be drawn in general terms (Chua et al. 2021).

Our objective in this research is to explore in depth the risks consumers perceive when making travel purchases. On the one hand, we want to identify and separate the different types of risk, and on the other hand, we want to investigate their inter-relationships. The context of our research is largely determined by the global pandemic and the fact that the majority of travel purchases are now made online. In this research, the perceived risk of travel purchase refers to the total travel purchase, aggregated with all booked providers, focusing on the holiday itself (Lu and Wei 2019).

We conducted a mixed-methods exploratory analysis across two studies. In Study 1, we conducted semi-structured in-depth interviews with 38 respondents in October 2020, considering their experience in the summer of 2020. The results indicate that risk perceptions associated with travel purchase can be captured by specific COVID-19 and online space risk perceptions and that has a strong link with the overall risk perception. Then, in Study 2, we hypothesized that the two risk factors that evolved during the qualitative interviews have a direct effect on the overall risk perception of travel purchase. We conducted a survey involving 539 respondents in 2021 to test the three hypotheses using CB-SEM-based modeling.

A significant contribution of our research is that it explores the perceived risk of travel purchase in-depth. Contrary to traditional risk-related research (Stone and Grønhaug 1993; Kim, Qu, and Kim 2009; Cui et al. 2016) our research does not approach risk as a unidimensional construct. Instead, we identify, systematize, and model perceived risk as a multidimensional concept. We show that the risk of travel purchase strongly depends on the challenges of the online space and fears of COVID-19. It is important to emphasize that, despite our intense focus on the impact of COVID-19 on risk perception, we can apply the results not only to similar crises but also to 'peacetime'. This research tries to make a relevant contribution to the literature on what was experienced during the coronavirus pandemic, but beyond that, with a deep and structured analysis.

We continue with a literature summary and present the research methodology, aims, and central issues. We then summarize the results of Study 1, and in Study 2, we test the hypotheses formulated based on the literature review and the results of Study 1. We end with a discussion and conclusions, focusing on the practical results and limitations.

2. Literature review

2.1. Perceived risk of travel purchase

Perceived risk results from a combination of uncertainty and expected consequences (Mitchell 1999). The summarized aggregate equations of uncertainty and negative consequences (Stone and Grønhaug 1993) most objectively describe this factor based on subjective perceptions. Karl and Schmude (2017) also emphasize the importance of examining subjectivity. The types of risk perceptions traditionally associated with shopping and purchasing behavior have most often been performance, financial, social, time, psychological, and physical (Siegrist 2021).

The concept of perceived risk in tourism draws simultaneously on psychological, sociological, cultural, economic, and other disciplines (Cui et al. 2016). If threats to a destination cannot be reduced in a durable sense, tourists may avoid it in the long term for various reasons (Chemli, Toanoglou, and Valeri 2022). Examples include the H1N1 virus or terrorism, whose presence has made certain areas completely unacceptable for receiving tourists. Simpson and Siguaw (2008) decomposed each of the perceived risk factors into tourism-specific sub-factors,

i.e. they did not create new factors but added tourism-specific sub-factors to the existing risk dimensions.

According to Adam (2015), performance risk in tourism consumption is when some mistake or misperformance happens to a destination or service provider, while financial risk is similar to the traditional interpretation, i.e. some kind of transaction problem occurs, or the subject simply makes a financially wrong decision. Adam (2015) defined physical risk perception as some injury happening to the traveler due to an accident or disaster, while for health risk perception, he highlighted illness. Socially perceived risk in tourism has been most prominent in research related to COVID-19, where negative social perceptions of travel, xenophobia, or a lack of social responsibility (e.g. a tourist returning home sick and infecting relatives) (Matiza and Slabbert 2021).

In parallel with security, the concept of intactness (similar to the safety concept) is also articulated in the literature on scientific tourism (Yang and Nair 2014). This suggests that intactness is compromised when health is impaired, either an injury, accident, disaster, or other human-induced harm occurs (Yordam Dağıstan et al. 2023). Perceived risk subtypes may collectively affect an aggregate total perceived risk or form a subset (Matiza and Slabbert 2021). From this, we can conclude that there is a perceived total risk that is influenced by perceived risk subtypes.

2.2. Perceived risk of online space

With the rise of the online space, studies have begun to revisit the potential impact of risk perception (Kim, Qu, and Kim 2009; Choi, Law, and Heo 2016). Cases (2002) was the first to look in more detail at the online space, especially its technological risks. With the spread of the internet, it has become clear that privacy and web-based risks such as the challenges of secure browsing, the quality of information, or the risks of fraud, theft, and scams are essential elements of the risks of online purchase (Naiyi 2004; Filieri and McLeay 2014).

In addition, some perceived risk types tend to extend (or even cover elements of) the classical offline approach, such as out-of-delivery risk (Ariff et al. 2014), which fits into the performance risk or transaction risk (Choi, Law, and Heo 2016), which fits into the financial risk perception, or convenience risk (Bhatti, Saad, and Gbadebo 2018), which is the basis for the description of the time perceived risk type.

In the case of tourism purchasing behavior, the challenges posed by technology do not dominate the analysis of perceived online risks. Some studies have analyzed traditional, offline perceived risk types in online spaces (Kim, Qu, and Kim 2009; Sharma, Singh, and Pratt 2022), but alongside them, research on online risks arising from differences in the shopping process between online and offline spaces has also emerged (Mohseni et al. 2018). These studies have shown that impersonality, misbranding, and lack of trust caused by online spaces can lead to a risk perception for tourists (Brown, Coventry, and Pepper 2021).

Among the technological challenges, researchers have analyzed the credibility problems posed by websites, which can create a sense of fear in travelers if they feel tricked (Amaro and Duarte 2013). In addition to the website's reliability, the information's authenticity has also been reported as a critical element (Filieri and McLeay 2014). Fear of losing personal data while purchasing or browsing has been repeatedly reported too (Ariff et al. 2014; González-Reverté et al. 2018). Nowadays, the perceived experiences while using ChatGPT for travel purchasing or information gathering can increase the tourists' concerns in the online space (Kim et al. 2023).

2.3. Health-related risk perception linked to COVID-19

To understand the risks associated with travel post-2020, we must recognize the health risks associated with COVID-19 in the context of tourism. While studies have addressed the issue in

the context of COVID-19, there are also lessons to be learned more generally. In the case of health risk, Floyd and Pennington-Gray (2004) previously identified risk perception as consisting of the perceived susceptibility to disease and its perceived severity. Godovykh, Pizam, and Bahja (2021) agree that health risk perception may have cognitive, affective, individual, and interpretative differences. Perić, Dramićanin, and Conić (2021) identified four distinct segments in articulating perceived health risk, highlighting from these the health security of destination and travel (epidemic situation), the hygiene conditions experienced in accommodation (sanitation), and a systemic sense of personal safety. It may also be essential to discuss susceptibility to disease and the potential severity of the disease when using the term when focusing on pandemics (Sánchez-Cañizares et al. 2021).

Gani et al. (2024) explained the negative outcome by severity and the probability of occurrence by susceptibility to disease. However, they added a third dimension – psychological perceived risk (i.e. mental fear and anxiety about getting sick). Ahorsu et al. (2022) elaborated on this when they said that those with higher mental anxiety scores and more depressive tendencies are also significantly more psychologically fearful of COVID-19, and more withdrawn and more stressed when it is mentioned. Taylor et al. (2020) further refined this to suggest that there may be multiple domains of mental distress.

In many cases, uncertainty is not based on cognitive but rather affective elements (Godovykh, Pizam, and Bahja 2021). Moreover, social connections may further complicate the processing of the pandemic situation from a mental perspective (Zheng, Luo, and Ritchie 2022). Contradictions in general environmental influences (media, politics, daily life, workplace) further increased mental distress during COVID-19 (Chemli, Toanoglou, and Valeri 2022). While the tourism sector can have a positive impact on mental health through its various services and attractions, this discrepancy also sheds light on the study of mental health risks of consumers.

3. Research objectives and research design

3.1. Research objectives and questions

Our objective is to explore and understand consumer attitudes toward the perceived risks inherent in the travel purchasing process in the shadow of COVID-19. We have integrated three types of risk perceptions into the model. These types are health-related risk perception linked to COVID-19, perceived risk of online space, and traditional perceived risk factors related to travel purchase. The combined analysis of these three groups still needs to be researched in the literature and requires a deeper understanding of consumer behavior (Cui et al. 2016; Sharma, Singh, and Pratt 2022; Fakfare et al. 2024). COVID-19 further increased the salience of certain types of risk perception or defined them on its own, even making the entire purchasing process and the enjoyable travel holiday impossible (Dryhurst et al. 2020; Taylor et al. 2020; Sánchez-Cañizares et al. 2021; Dogra and Adil 2024).

We differentiate the risk perception of health-related risk linked to COVID-19 and the online purchasing process itself, elements that can affect consumer risk perceptions of the overall travel purchase. Most studies that we have presented conducted descriptive, quantitative analyses, from which it is difficult to understand the underlying causes of the different risk types. The main questions of our research are based on all these considerations:

RQ1. What risks does the consumer perceive when making a travel purchase and what are the underlying causes of these risk perceptions?

RQ2. How are risk perceptions related to COVID-19 and to more general health-related concerns?

RQ3. How are the different types of perceived risks related to each other?

3.2. Research design

We answered our research questions with two studies. For RQ1, we used a qualitative research methodology to explore what characterizes consumers' perceptions and the importance of risk. Study 1 also answered the question posed in the literature (Cui et al. 2016) regarding which risk perceptions are relevant and when and how important they are in the travel purchasing process. To answer RQ2 and RQ3, we used a questionnaire survey to formulate our research model, constructs, and hypotheses based on the results of Study 1 and the literature review. Study 2 helped us to translate the links identified in the qualitative research into testable hypotheses and to test the relationships identified.

In 2020, COVID-19 reduced international tourist arrivals worldwide by about 75% and domestic travel by about 50% (UNWTO 2021). In Europe, international arrivals fell by 70%; in Hungary, they fell by 74.9% in 2020 compared to a year earlier (UNWTO 2021). Due to COVID-19, travelers increasingly seek experiences that minimize risk by reducing physical interactions and offering contact-free options; for example, hotel mobile check-in, mobile boarding passes, biometric solutions, digital ticketing, and contactless payment options (WTTC. 2021, p. 6.).

By the end of the empirical research (end of May 2021), three waves of COVID-19 had taken place in Hungary (WHO 2023). The first wave lasted from March 2020 to June 2020, averaging 70–100 new cases daily. The second wave started in September 2020 and lasted until January 2021, peaking in early December, averaging around 5,000–7,000 new cases daily. The third wave started in February 2021, peaking at the end of March. The average number of new cases per day was around 7,000–9,000 (WHO 2023). Mass vaccination was available from February 2021; national coverage increased steadily. Data for May 2021 reported a monthly average of 50% of those receiving the first dose, with 35% of the population having received both vaccine doses (WHO 2023). Study 1 occurred at the end of the first wave, before the second wave in October 2020, after a relatively quiet summer period. Study 2 occurred after the third wave, in May 2021, when vaccinations were common and people started planning their summer travel.

4. Study 1

4.1. Research design for Study 1

For Study 1, we applied a qualitative approach in October 2020 with the help of 38 in-depth interviews among those who traveled during summer 2020. This answered RQ1 in depth and detail regarding the risks perceived by consumers when booking travel. We asked the interviewees to recall their summer 2020 experiences and asked them, in turn, about their pre-travel thoughts and their post-travel experiences. If someone had traveled more than once, we asked them to choose one journey only. Interviews averaged 30-40 min.

The interview guide contained three main sections. The first consisted of questions on travel information, covering a general travel description. In the second block were questions on information gathering, which typically covered the pre-travel phase. The third block contained questions on purchase and implementation, which covered the actual travel booking. In addition to the three main sections, there were questions on demographic characteristics and where the respondent had to show how much the booking and realization of the travel had changed due to COVID and whether the virus had influenced their travel. As most of the interview questions were open-ended on perceived risks, it was helpful to know what elements were and were not mentioned by the interviewees and where they ended up talking in more detail about what topics. However, the interviews followed a pre-defined, rigid, well-focused structure. This also minimized the potential for bias in the responses from different subjects (Pratt 2009).

In this section, we investigate the types of information available to consumers during the travel booking process, the nature and timing of risk perceptions associated with booking decisions,

and the extent to which perceived risks mechanisms influence travel intentions with explorative questions (Cui et al. 2016; Sharma, Singh, and Pratt 2022; Fakfare et al. 2024). Furthermore, we explore individual-level factors that contribute to the understanding of this phenomenon. Specifically, our analysis incorporates demographic characteristics and travel behaviour. All analyses are conducted against the backdrop of the COVID-19 pandemic. The main questions were RQ1 and RQ2 for the qualitative study (the detailed interview guide can be found in the Appendix).

4.2. Data analysis procedure

The semi-structured interviews were analysed using a magnitude coding approach, which bears similarity to quantitative statistical content analysis methods (Kvale 2007). This coding technique is particularly suitable for mixed-methods research, as it involves assigning numerical values (e.g. one to three, one to five) to predefined keywords based on the frequency, intensity, or emphasis with which they appear in the text ('magnitude coding') (Saldana 2021). Through this process, we identify key concepts within the interviews and assess both the frequency and strength of their occurrence. At the same time, the coding procedure facilitates a more in-depth qualitative interpretation of the findings. Nevertheless, as noted in the literature, this approach does not yield results with the same level of quantitative precision as fully quantitative research designs (Kvale 2007; Saldana 2021).

We analyzed the qualitative results in three stages (Pratt 2009). We identified initial themes after open coding in the first stage. We then coded phrases and keywords from the existing texts of the interviews. In the second stage, we used axial coding to look for connections in the existing themes and constructs to form a higher-level, more aggregated factor group or category. We narrowed down the main keywords into constructs. Finally, we created main dimensions from the second-order factors and constructs based on some thematic context. This dimension reduction approach is far from linear and identifies two-way relationships rather than one-way effects. It is possible to create both a dimension found in some form in existing theories and a new group defined in a novel way based on the research results. All the interviews were recorded and transcribed for data analysis; researchers and two other research assistants then analyzed the transcripts. Coding was done manually using Microsoft Excel and IBM SPSS Statistics 27 software, following the coding classification methods (Pratt 2009).

4.3. Results of Study 1

In the semi-structured interviews, three levels of structural groupings were created. At Level 1, we identified 30 keywords and critical characteristics for the first-order themes. While narrowing it down, we discovered nine second-order constructs. We grouped these nine second-order constructs into three main dimensions. Of the 38 respondents, 20 reported traveling abroad and 18 reported traveling domestically. Twelve traveled to a neighboring foreign country and eight further afield. Respondents were of Generations X and Y. There were an equal number of women and men in the sample (19–19). Nearly one-third of the sample were students (12), while almost two-thirds were employees (26). There were also proportional frequencies for domestic and foreign destinations.

4.3.1. General features of risk perception

The key areas were identified at two levels during the qualitative analysis. In the dimension of risk perception, we identified three well-differentiated second-order constructs and 30 themes (Figure 1).

In many cases, subjects did not explicitly mention the perception of risk. When specifically asked whether they felt their travel or holiday was risky when they booked, most respondents

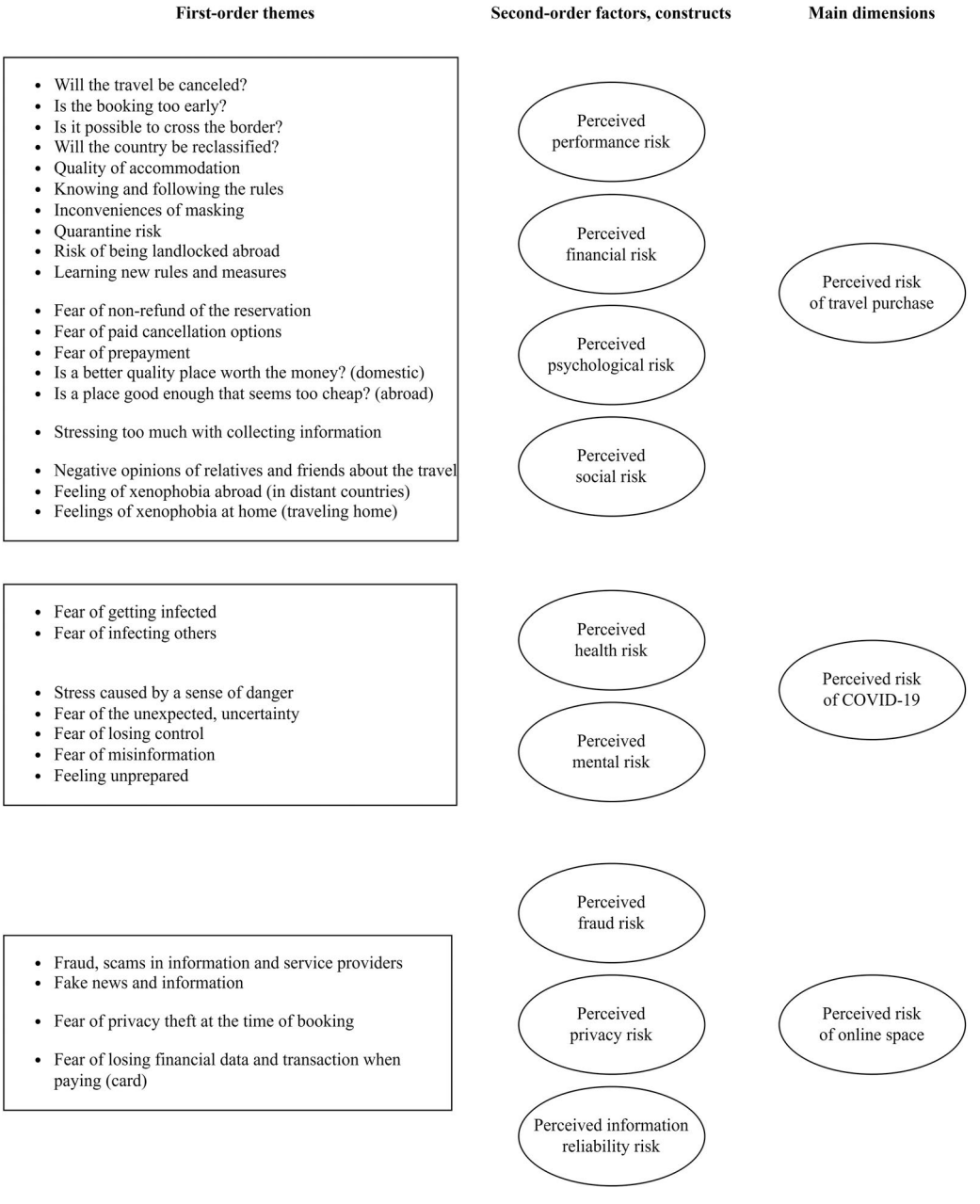

Figure 1. Details of the risk perception occurrence based on the interviews.

answered no. The difference for memories of the travel (i.e. retrospectively) was that slightly more respondents considered their travel risky, mainly those traveling domestically who felt that their stay was riskier at the time of the interview than they would have thought at the time of booking. For those who had traveled abroad, this feeling was reversed; they felt it less risky at the time of the interview than when booking. Destination strongly determined perceived risk; for this reason, we note whether the respondent was a domestic or international traveler.

> *At the time, I was a bit worried about whether everything was going to be OK, whether we would be able to get back to Hungary, but now, looking back, it was completely unnecessary; I would be more relaxed about the travel.* (International Traveler [IT])

In the end, the calm disease situation at home made this year's holiday feel like a normal summer travel, just with a bit of attention to the rules. (Domestic Traveler [DT])

We distinguished three main dimensions of risk perceptions when analyzing the responses.

4.3.2. Risk perceptions directly related to COVID-19

The centrality of risk perception due to deteriorating health is supported by the fact that getting sick was the first issue respondents mentioned among their risk perceptions and also the first item they mentioned as an element whose negative impact they would need to reduce to travel safely. Getting sick was also the most physically dangerous for respondents. This also hurt the realization of the complete travel. It made the planned travel impossible due to the individual's incapacity and made the travel itself risky due to the adverse external pandemic factors.

I was just worried about getting sick because otherwise, the travel conditions were good enough. (IT)

I traveled domestically because I thought that even if I caught the disease, I would be in better hands at home than abroad in an unknown place, as an infectious patient. (DT)

Respondents repeatedly showed feelings of anxiety and stress related to the success of their travel and their ability to avoid unexpected events. It was also apparent in some interviewees that the continued presence of mental fear increased the likelihood of other types of risk perception.

Mental risks were also associated with the possible physical effects of the disease. At that time, it was uncertain to what extent the illness would be associated with severe symptoms and how the individual might cope. There was also a strong sense of anxiety about the physical invisibility of the disease, i.e. the risk of passing something to an elderly relative when returning from abroad.

4.3.3. Perceived risks of travel purchase

The travel purchase itself could be fully isolated and, more broadly, non-specific risk perceptions related to the outcome and content of the travel itself. While the risk of COVID-19 mainly related to the physical health of the respondents and the resulting insecurities about their mental situation, they also showed a link between these risks and the realization and successful purchase of the travel in general. Thus, we observed an indirect impact on additional risk elements beyond COVID-19's physical and mental health risks, i.e. COVID-19 indirectly determined general risk perceptions related to travel purchase. In particular, this was reflected in the fact that performance and financial risk perceptions became more specific and were given a COVID-19 narrative.

Thus, instead of a generalized risk of non-fulfilment of service (performance risk perception) and thus of financial loss (financial risk perception), respondents were not afraid of a loss of service but were thematized and dominated by the development of COVID-19. In particular, respondents sought information on travel conditions, payment and cancellation options, insurance options and the evolution of the pandemic due to the emergent perception of danger. These all relate to aspects of performance and financial risk perception. Cancellation and refund options, the reality of the quality of accommodation, being stuck abroad, quarantine risks, and country reclassification were also identified as severe risks for the factors under consideration. There was also a basic fear (independent of the COVID-19 phenomenon) of the performance and quality of accommodation, as well as the value for money of the tourist services purchased. Thus, the traditional understanding of performance and financial risk perception also appeared in this block as risks associated with travel purchase.

I felt that I would not catch the coronavirus, or even if I did, I would not be seriously affected, but I was afraid of what kind of entry or exit measures would be put in place to restrict my travel. (IT)

Other types of traditional risk perception were less dominant. Some respondents were concerned they would lose their 'will to live' by reading so much news with adverse outcomes. Interestingly, they also felt that they were 'spending too much time on it and perhaps unnecessarily'. The result reflected the traditional psychological type of risk perception.

The fourth type of risk perception is related to the perceived risk of social judgment. In particular, respondents feared negative opinions and judgments from relatives, friends, and acquaintances. In addition, in a couple of cases, those who traveled abroad felt xenophobia or abuse directed toward them about wearing a mask:

> *I was shouted at from across the street to wear a mask when I did not have to wear a mask on the street, but I looked quite a tourist.* (IT)

Moreover, a few domestic travelers would have preferred not to meet foreigners during their travels. Respondents also feared infecting their elderly relatives and friends when they returned from their travels. This was a particular risk for those traveling abroad, while those traveling domestically also used this reason to postpone a possible holiday abroad. Physical risks, which in the literature are classified as traditional (offline) risk perceptions, were not explicitly mentioned by respondents but were fully covered by the health and mental dimensions of the risk perception directly linked to COVID-19.

4.3.4. Perceived risk of online space

In the dimension of risk perceptions, there was an area not related to COVID-19 but to the journey as a whole. We refer to this area as risk perceptions related to the online space. This included fears of fraud, online scams and misinformation from service providers, fake news, and the reliability of information.

Based on the results of the interviews, risks related to the online space were very distinct. It was a completely independent construct, especially for fears of losing personal data when booking and paying and fears of losing financial and payment data. Risks are all related to online sites, technology, and service provider websites. Those who did not feel a sense of risk attributed this to their experience and use of a trusted, reputable site for their peace of mind. There were also cases of people worried about whether their payment would be received; they called the service provider immediately after the financial transaction.

> *I make a lot of purchases online, and I usually have no problem with it, but I do have to consider that it is not a risk-free process.* (DT)

4.3.5. Conclusions of Study 1

The three second-order dimensions (perceived risk of travel purchase, COVID-19, and online space) emerge together in the area of the whole travel-related risks, but they are not of equal weight. Based on our results, the inherently risky individual travel planning process is further complicated by the use of the online space and the presence of a major crisis such as COVID-19. Of the traditional types of risk perception, the physical one is so dominantly linked to COVID-19 that it is worth highlighting and analyzing separately. For the other four risk perceptions related to travel purchase (performance, financial, psychological, and social), the interpretative framework is broader, in which general perceptions beyond COVID-19 appeared. According to the traditional theory of risk perception, this dimension covers the direct risks of travel purchase. Our results conclude that this dimension is the central element of perceived risk with its own well-defined factors. The deductions drawn from the interviews suggest that this central risk perception is influenced by the risks of COVID-19 and by risks of the use of online technology. We tested the hypotheses developed in our exploratory analysis in Study 2.

5. Study 2

5.1. Research model and design of Study 2

Study 1 showed that the general travel purchase-related perceived risk is strongly influenced by the two specific risk factors that emerged in the interviews, the health-related and the online risk. Concerning the online space, we found that both an examination of the uncertainty and negative consequences associated with the purchase and consumption of a product or service and the types of perceived risk in the online space were mainly associated with concerns and fears about the platform's reliability (Wu 2013). In Study 2, we would like to mainly answer our RQ3.

Study 1 pointed out that consumers can clearly and distinctly identify online perceived risks regarding technology. Based on the semi-structured interviews, perceived risk related to the online space (e.g. the possibility of personal data loss, the risk of fraud, and the types of risk related to information reliability) arise when using an online platform and relate to the characteristics of online technology. Overall, the perceived risk associated with the online space increases the risk perception associated with travel purchase (Figure 2).

H_1: The perceived risk of the online space increases the perceived risk of travel purchase.

Study 1 also suggests that risk perceptions related to COVID-19 could be identified as a well-differentiated risk factor. Based on our results, risk perceptions related to COVID-19 include health risks and mental fears. Overall, based on existing relevant theory (Chua et al. 2021; Perić, Dramićanin, and Conić 2021; Ahorsu et al. 2022) and Study 1, we hypothesize that the perceived risk of COVID-19, a second-order factor formed by the first-order factor of health and mental risk perceptions, increases the perceived risk of travel purchase (Figure 2).

H_2: The health-related risk perception linked to COVID-19 increases the perceived risk of travel purchase.

5.2. Research instruments and scale development

To test our hypotheses, we developed a questionnaire with multi-item scales. The results of Study 1 allowed us to observe how contextual risk perceptions (those related to online space and COVID-19) influence overall risk perceptions of travel purchase. Relatedly, Study 1 also showed that the dimensions associated with risk perception are multi-factorial and cannot be

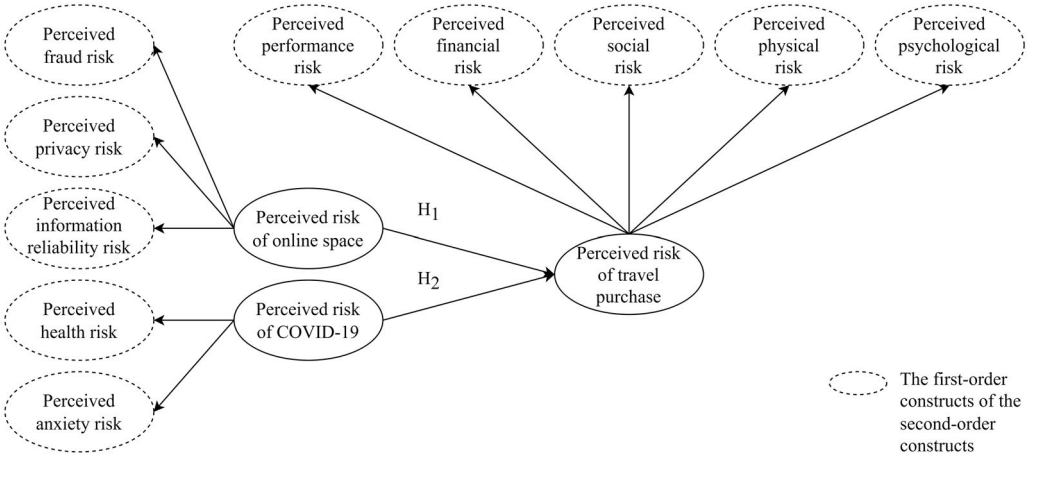

Figure 2. Hypothesized model.

described by a single construct. Accordingly, we measured risk factors in the model using first- and second-order factors. The literature review revealed that scales had already identified first-order level types of risk perception. In these studies, aggregation of potential first-order factors in perceived risk of travel purchase was typically measured by an overall factor (perceived overall risk, perceived travel risk) and a linear regression relationship was hypothesized between risk perception types and perceived risk of overall buying behavior (Stone and Grønhaug 1993; Cui et al. 2016). Contrary to this approach, based on our explorative findings we interpreted the risks associated with travel purchase as a second-order construct and measured it with first-order factors of each risk type, each item of which can be found in previous research. Similarly, for the online and COVID-related factors, we also developed a second-order factor structure based on the insights from qualitative research using items scattered in the literature.

Before Study 2, we conducted a pilot study to test whether first- and second-order constructs for different types of risk perception exist statistically. This was done in February 2021 for summer travel plans in 2021. A total of 312 people completed our questionnaire, mostly from generations X and Y, as in the previous Study 1 and then Study 2. We performed exploratory factor analysis (EFA) and principal component analysis (PCA) on the variables, with ProMax rotation. Results showed that the first-order variables were operational and could be used to create independent factors, with all variables associated with a factor having weights of at least 0.6 and a factor of Cronbach's alpha above 0.8. Since the correlation between factors was detectable, we constructed second-order factors and tested the resulting factor structure using confirmatory factor analysis (CFA). The CFA construct worked for the first-order factors (χ^2/df= 2.7 CFI = 0.924, RMSEA = 0.065, SRMR = 0.062, Cronbach's alpha > 0.82). The criterion indices were also met for the second-order construct (χ^2/df = 2.5 CFI = 0.933, RMSEA = 0.059, SRMR = 0.063, Cronbach's alphas > 0.83). At the same time, the second-order factors corresponded to the main dimensions identified in Study 1, i.e. travel purchase, COVID-19, and online space risk perception types. Based on this, the scales were considered reliable and valid and thus used in Study 2.

Facts of the latent variables are summarized in Appendix Table 1. In total, we used 31 statements in the research, of which 10 first-order variables were constructed, and three second-order variables were constructed from these. The statements were asked on a Likert scale of 1 to 7, with 1 being the response option 'not at all typical of me'/'strongly disagree' and 7 being the response option 'totally typical of me'/'strongly agree'.

Travel purchase risk perceptions include performance, financial, social, physical, and psychological risk perceptions (Stone and Grønhaug 1993; Kim, Qu, and Kim 2009; Sharma, Singh, and Pratt 2022). Performance risk refers to the uncertainty that a purchased product or service will not perform as expected or fail. Financial risk occurs in the form of a monetary outlay spent on purchasing a product or service and its subsequent maintenance. This type of risk concerns consumers that their money will be wasted if the product or service they have purchased does not arrive or perform as expected. Social risk is based on the perception of a third party, be it a relative, friend, acquaintance, or member of society, of how the consumer thinks. In the case of physical risk, the consumer may physically harm their person by purchasing the product or service. Psychological risk refers to the possibility that the product or service purchased may negatively affect the consumer's self-perception or peace of mind. Overall, the perceived risk of travel purchase is related to the outcome and content of the travel itself as we saw in Study 1 or in the literature (Lu and Wei 2019).

In the case of risks in the online space, the risk of fraud refers to the consumer's concerns about the reliability and credibility of the seller during the online purchase (Naiyi 2004). The risk of loss of personal information refers to the use or misuse of consumers' personal information that may violate their privacy (Sharma, Singh, and Pratt 2022). The risk of information reliability (Naiyi 2004; Filieri and McLeay 2014) measures how reliable and asymmetric the consumer perceives the information (i.e. from the seller and even from the consumer combined).

Health-related risk perception linked to COVID-19 refers to damage to the consumer's health, particularly the ill health and other serious consequences of contracting COVID-19 (Taylor et al. 2020). Moreover, the perceived risk of anxiety refers to the thoughts and stress of the consumer's inner peace of mind being broken due to COVID-19 (Taylor et al. 2020). Due to the shorter name, the term 'perceived risk of COVID-19' is used in the figures and tables.

5.3. Data collection procedure and sample

In Study 2, we interviewed 594 people using an online questionnaire with validated statements. The final sample after data cleaning and filtering was 539 respondents. They were interviewed in May 2021; all were asked about their travel plans for the summer of 2021. The questionnaire was sent out and completed *via* the Qualtrics software using snowball sampling.

5.4. Sample characteristics

The average age of the sample was 28.6 years, with a standard deviation of 12.2 years. Of the respondents, 60.3% (325) were female and 39.7% (214) male; 64.7% (349) had the highest secondary education level, while 33.8% (182) had a tertiary degree; 61.2% were students (330), and 34.1% (184) were employees; 40.6% (219) were from the capital city and 29.9% (161) were from other cities; 19.5% (105) were registered in a county seat, and 10.0% (54) were in a town/village.

5.5. Results of Study 2

5.5.1. Measurement model

For the analysis, first we constructed the factor structure using CFA with a maximum likelihood weighting technique. We performed the validation of the constructs at two levels: first with the first-order latent variables and then including the second-order variables. Based on the results, all critical values were appropriate for the first-order and second-order CFA constructs (Appendix Table 2) and the final SEM model (Hair et al. 2019). We also looked at discriminant validity in the CFA analysis. For Study 2, we used IBM SPSS Statistics version 27 for data cleaning, descriptive statistics, and exploratory factor analysis, and IBM SPSS Amos Graphics version 27 for modeling and hypothesis testing.

For the factor weights, we set the minimum values generally at 0.5 (Awang et al. 2015) for both levels of the CFA construct, with *p*-values below 0.001. Tables A3 (in Appendix) and 4 summarize the CFA results. The composite reliability (CR) is more significant than 0.7 (excluding the financial perceived risk factor, where the CR value is still acceptable at 0.667), so the scales are reliable (Hair et al. 2019). AVE values at both levels exceeded the necessary minimum of 0.5. Furthermore, the AVE square root values are just above the correlation values, so the discriminant validity of the model is also adequate. Due to the two-level structure, the results of the CFA analysis are presented in Table 1 and A3. The correlations showing the discriminant validity of the constructs are shown in Appendix Tables A4 and A5. In Table A5, we correlate the second-order variables with the remaining first-order variables. The bootstrap procedure generated 2000 sub-samples.

5.5.2. Hypotheses testing

We were able to accept our hypotheses (Table 2 and Figure 3). We accepted H_1, as the perceived risk of the online space significantly increases the perceived risk of travel purchase (standardized beta is 0.450, *p*-value is 0.000). We also accepted H_2, as the perceived risk of COVID-19 significantly increases the perceived risk of travel purchase (standardized beta is 0.439, *p*-value is 0.000). The squared multiple correlation (R^2) for the perceived risk of travel purchase is 0.553.

Table 1. CFA analysis results on the second-order factor structure.

Second-order constructions	First-order constructions	Factor weights	AVE	CR	Cronbach-alpha
Purchase_PR	Perfrisk	0.895	0.560	0.862	0.894
	Finrisk	0.756			
	Socrisk	0.573			
	Physrisk	0.740			
	Psychorisk	0.741			
Online_PR	Fraudrisk	0.781	0.637	0.840	0.867
	Privacyrisk	0.778			
	Inforisk	0.834			
COVID_PR	Healthrisk	0.855	0.753	0.859	0.903
	Anxietyrisk	0.881			

Table 2. Direct effect values measured in the SEM.

	Direct standardized regression coefficient value	Direct regression coefficient value	*p*-value	R^2	S.E.	C.R.
Online_PR→Purchase_PR	0.450	0.501	<0.001	0.553	0.058	8.287
COVID_PR→Purchase_PR	0.439	0.479	<0.001	0.553	0.066	7.610

Note: Purchase_PR: Perceived risk of travel purchase; Online_PR: Perceived risk of online space; COVID_PR: Perceived risk of COVID-19. The bootstrap procedure generated 2000 sub-samples.

6. Discussion and conclusion

Mixed methodology was used in our research and prepared two studies (and one pilot study) to answer our questions. In Study 1, we aimed to understand consumers' risk perceptions and systems concerning travel purchase. From Study 1, we consider three findings worth highlighting.

First, although the respondents' perceptions of risk associated with travel purchase were most similar to traditional understandings of risk perception (Stone and Grønhaug 1993; Cui et al. 2016; Siegrist 2021), their answers revealed that they could not answer questions about direct risk perception. For them, the related questions seemed to be general. They seemed to have no fears about anything when purchasing a travel. However, as soon as we started asking them about specifics, more contextual risk perceptions about COVID-19 and the online space emerged. In general, travelers did not perceive huge risks associated with travel purchase, but for those who did, these two elements influenced the size of their overall risk perception.

This pattern suggests that the absence of explicitly stated risk should not be interpreted as the absence of underlying concern. Rather, it indicates that perceived risk may exist in a latent form that is not readily accessible through general questioning. From a risk research perspective, this finding challenges the assumption that perceived risk is always a consciously articulated and stable cognitive evaluation, and instead points toward a more processual understanding of risk perception (Quintal, Lee, and Soutar 2010; van Winsen et al. 2016). This transition from low general risk perception to heightened concern under specific conditions indicates a context-driven activation mechanism of perceived risk. In this sense, perceived risk does not precede information processing as a fixed attitude but is constructed dynamically through interaction with salient situational cues, such as health-related uncertainty or perceived insecurity of online information and transactions (Cui et al. 2016; Siegrist 2021).

The second key findings of Study 1 is the structured appearance of the aforementioned COVID-19 risk perceptions and the exploration of the snowball effect concerning risk perceptions. It can be seen that the theory of risk perceptions due to COVID-19 mainly represents health-related risk fears (Chua et al. 2021; Sánchez-Cañizares et al. 2021; Zheng, Luo, and Ritchie 2022), and few other studies have also examined mental risk perceptions (Dryhurst et al. 2020; Taylor et al. 2020; Ahorsu et al. 2022; Chemli, Toanoglou, and Valeri 2022). Our research also explored these elements, but our results go beyond these approaches. The interviews revealed that those who were more anxious about the presence of COVID-19 – not just about getting sick – also had

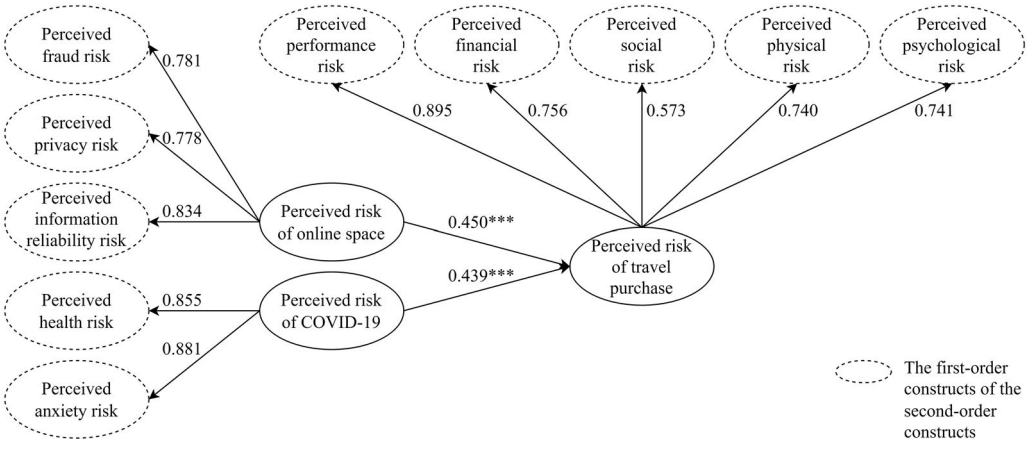

Figure 3. Results of SEM. Note: $*p < 0.05$; $**p < 0.01$; $***p < 0.001$. All factor weights of first-order constructs are significant at 0.1%, which we have not marked separately, and all second-order constructs are significant at 0.1%. Coefficients are standardised regression coefficients.

stronger risk perceptions of travel purchase (particularly performance, financial, and social) and were more nuanced in their ability to talk about their risk perceptions of travel purchase, as traditional consumer behavior theories suggest. Respondents ended up going on holiday with serious concerns, but without necessarily realizing it. Overall, there was a kind of anxiety, unexpressed or unspoken. COVID-19-related anxiety appeared to spill over into broader evaluations of travel purchase outcomes. This interdependence between risk domains offers a qualitative explanation for why perceived risks are more appropriately conceptualized as interacting constructs rather than isolated dimensions.

The presence of such unarticulated concern highlights an important distinction between perceived and expressed risk. While much of the risk research literature relies on self-reported measures of consciously perceived risk, our findings suggest that implicit or partially articulated risk perceptions may substantially influence behavior. This insight aligns with interpretative approaches to risk, which emphasize that individuals may act under conditions of uncertainty without fully verbalizing or conceptualizing their concerns (Bae and Chang 2021).

The third key finding of Study 1 relates to risk perception in the online space. This factor, similar to the risk perceptions associated with COVID-19, influenced the risk perception of travel purchase in that those who feared finding wrong information, reading fake news, or perhaps feared how reliable the advertisement of the provider began to perceive more risk about the fulfilment of the holiday, as well as the potential financial loss. Overall, detailing risk perceptions in the purchase process caused by the online space helped to understand consumers' deep-seated risk perceptions, often unspoken or too complex to articulate. This finding underscores the role of digital environments as independent sources of perceived risk that nevertheless interact with traditional travel-related risk perceptions (Filieri and McLeay 2014; van Winsen et al. 2016; Wu 2013).

The assumptions, based on the results of Study 1 one were tested in a quantitative study. Study 2 showed a positive statistical relationship between the three factors in that specific risk perceptions (COVID-19 and online space) increased risk perceptions associated with travel purchase. Each of the three factors investigated was included in the model as a second-order variable, with first-order factors behind them. Subcategories within the dimensions were explored in the qualitative research, and measured with validated scales. The regression effects are strong, and we could accept both hypotheses (H_1 and H_2). The quantitative findings thus empirically substantiate the qualitative insights by demonstrating that perceived risk is best understood as a multidimensional and hierarchical phenomenon. The strong regression effects and the confirmation of second-order constructs indicate that contextual risks do not merely coexist with general travel purchase risk but actively intensify and shape it.

Taken together, the findings of Study 1 and Study 2 contribute to risk research by conceptualizing perceived risk as a dynamic, contextually activated process rather than a static cognitive state. The study demonstrates that risk perceptions may remain latent until triggered by specific situational cues, at which point they can cascade across multiple risk domains. This process-oriented understanding extends existing models of perceived risk and highlights the importance of considering implicit, unarticulated concerns in both theoretical and methodological approaches to risk perception (Siegrist 2021; Fakfare et al. 2024; Kökény, Birkner, and Michalkó 2024).

6.1. Practical implications

Although in our research we examined the context of the pandemic in the given situation, our results have more general validity, thus, the implications can be interpreted from a broader perspective. Based on our results, we can state that there is a complex picture of the travel itself in the travelers' minds, and the perception of risks associated with it may be enhanced by more specific, more tangible elements, even though the travel itself may not necessarily be perceived as risky. Thus, service providers should also support consumers in overcoming specific risk perceptions. These considerations become particularly important in situations where travel is affected by an external circumstance that increases risk perception (health-related issues, war, natural disasters, etc.). Companies must be up to date with the risks that may arise and be aware of tourists' current risk perceptions. To this end, it is worth creating a frequently asked questions block on daily news or future threats, an information itinerary for tourists wishing to reduce their risks, and answers to any fears they may have.

Consumers should also be made aware of the insurance and guarantee conditions to see to what extent they may be compensated if specific problems occur with the cover they have taken out for the service or travel. It is also important to remind consumers of their responsibility to ensure they are more likely to be insured and compensated when traveling. Often, travelers are unaware of their options or do not trust their insurance, so it is also essential to provide clear and accurate information on these issues.

Defining what the consumer can and will receive and detailing what is up to the provider and what is up to the individual helps. Having a flowchart on the website showing how prepared the person is, what they have to do to make a reservation, and what the service will be like when they consume it, would also help, as would informing consumers in advance about an emergency scenario, be it a contingency on the part of the service provider or the consumer or due to a change in an external environmental condition (pandemic, war). If a crisis such as COVID-19 directly or indirectly affects the service provider, it is worth providing specific and well-developed information to travelers. Messages on service guarantees and security and their practical implementation may also be reflected in the service and in pricing. Flexible conditions, cancellation options, guarantees of service fulfilment, and additional information on the matters listed herein may represent a higher quality position, competitive advantage, or added value on the part of the service provider, which may also be reflected in prices.

COVID-19 has strongly influenced health risks. However, in more exotic countries, there have been persistent epidemics in recent years or a high risk of viral disease from various insect species and animals. Illness is often a major event during travel, which can result not only in the inability to participate in activities or to return home but also in severe physical pain. For this reason, the service providers and the destination must complete a test with the traveler to ensure that they are aware of the situation and adequately prepared for any problems that may arise.

The use of the online space is inevitable when purchasing travel for tourism purposes, but we have seen that it carries several risks. The risk of losing their data is a severe issue for travelers, and the fear of fraud can put them off traveling altogether. Websites must have trustworthy certificates, clear and concise terms of use, and 'cookie' terms and conditions, and data management rules. Many people scroll quickly through pages and pages of documents that can take hours to read and even interpret. It is also essential to regulate the possibility of

data being disclosed to third parties. In an information-rich online space, providing credible, accurate, reliable, and precise information to consumers requires particular attention from service providers. This information should be simple to understand, cover several topics and, where possible, prepare the traveler in advance.

6.2. Limitations and future research

The biggest challenge in our research was to measure or filter the changing environmental conditions as much as possible. Furthermore, it would have been interesting to interview the same individuals on the two data collection points. In similar research, it would be worthwhile looking at additional dimensions that influence travel intention, such as perceptions of the importance of safety elements or knowledge and trust in the local culture and institutions (Buratti and Allwood 2019). It would also be essential to look at internal individual differences, such as those underlying demographic characteristics or those arising from personality type, as noted by Karl, Muskat, and Ritchie (2020). However, based on the qualitative research results, we did not see evidence that there would be differences. For this reason, it may be worthwhile investigating value dimensions using other qualitative research techniques (means-end or critical incidents technique).

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Ethics

We confirm all the subjects have provided appropriate informed consent and details on how this was obtained are detailed in the manuscript.

Disclosure statement

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Appendix

Table A1. Statement titles and factor structure.

Second-order constructions	First-order constructions	Statements	Short names for statements	Sources
Perceived risk of travel purchase	Perceived performance risk	Overall, I consider my vacation travel this year to be risky.	Perfrisk_1	Stone and Grønhaug 1993; Kim et al. 2009; Sharma et al. 2022
		I am worried that something will go wrong with my travel purchase.	Perfrisk_2	
		Overall, I have fears about various aspects of my travel this year.	Perfrisk_3	
		I am afraid of some parts of the travel purchase.	Perfrisk_4	
	Perceived financial risk	I see many risks when I think through all the possible problems with completing my travel.	Finrisk_1	Stone and Grønhaug 1993; Kim et al. 2009; Sharma et al. 2022
		I am concerned that purchasing travel is a risky financial investment.	Finrisk_2	
	Perceived social risk	My travel purchase would be considered foolish by those I give the benefit of the doubt.	Socrisk_1	Stone and Grønhaug 1993; Kim et al. 2009; Sharma et al. 2022
		Others' opinions of me would be unfavorable were I to go on vacation this summer.	Socrisk_2	
	Perceived physical risk	I fear that my travel purchase would cause me unnecessary health problems.	Physrisk_1	Stone and Grønhaug 1993; Kim et al. 2009; Sharma et al. 2022
		I am concerned about health problems that may arise during my travel.	Physrisk_2	
		I wonder if the vacation I want to buy will involve health risks.	Physrisk_3	
	Perceived psychological risk	The thought of purchasing a vacation causes unnecessary anxiety.	Psychorisk_1	Stone and Grønhaug 1993; Kim et al. 2009; Sharma et al. 2022
		I feel psychologically uncomfortable thinking about going on vacation.	Psychorisk_2	
		I feel unpleasant tension at the thought of making a travel purchase	Psychorisk_3	
		I feel an uncomfortable tension about going on vacation.	Psychorisk_4	

(*Continued*)

Table A1. Continued.

Second-order constructions	First-order constructions	Statements	Short names for statements	Sources
Perceived risk of online space	Perceived fraud risk	I find it challenging to find support if something goes wrong while making a travel purchase online.	Fraudrisk_1	Naiyi 2004
		I am afraid I will not find a place to report my problems.	Fraudrisk_2	
		I feel that I would find it difficult to know whom to turn to after the purchase if I had a problem.	Fraudrisk_3	
	Perceived privacy risk	I am worried that my personal information used in travel purchase could fall into unauthorized hands.	Privacyrisk_1	Sharma et al. 2022
		I am worried that my email address used for purchasing might fall into unauthorized hands.	Privacyrisk_2	
		I am concerned that my payment details (credit card number etc.) used for travel purchase may fall into unauthorized hands.	Privacyrisk_3	
	Perceived information reliability risk	I am afraid that the information available from the online seller will not be sufficient.	Inforisk_1	Naiyi 2004; Filieri and McLeay 2014
		I am worried that the information about the travel I want to buy will not be sufficient on the internet.	Inforisk_2	
	Perceived health risk	I am very concerned about COVID-19.	Healthrisk_1	Taylor et al. 2020
		I am afraid of losing my life to COVID-19.	Healthrisk_2	
		Overall, COVID-19 poses a severe threat to me.	Healthrisk_3	
		I am afraid that I will have difficulty living through the disease if I get infected.	Healthrisk_4	
Perceived risk of COVID-19	Perceived anxiety risk	It makes me uncomfortable to think about COVID-19.	Anxietyrisk_1	Taylor et al. 2020
		My palms get clammy when I think of COVID-19.	Anxietyrisk_2	
		I get nervous and anxious if I read or hear about COVID-19 in the news.	Anxietyrisk_3	
		When I think of COVID-19, my heart beats faster.	Anxietyrisk_4	

Table A2. Values of fit indicators for the two levels of CFA constructs.

Indices	Recommended criteria values	CFA construction (with first-order variables)	CFA construction (with second-order variables)	SEM model
χ^2/df	<3	2.367	2.481	2.481
CFI	>0.90	0.953	0.945	0.945
RMSEA	<0.08	0.050	0.052	0.052
SRMR	<0.08	0.041	0.051	0.051

Table A3. CFA analysis results on the first-order factor structure.

First-order constructions	Short names for statements	Means	SD	Factor weights	AVE	CR	Cronbach-alpha
Perfrisk	Perfrisk_1	2.66	1.38	0.802	0.656	0.884	0.882
	Perfrisk_2	2.90	1.54	0.805			
	Perfrisk_3	2.16	1.31	0.848			
	Perfrisk_4	2.48	1.49	0.784			
Finrisk	Finrisk_1	3.43	1.47	0.748	0.590	0.742	0,702
	Finrisk_2	2.88	1.51	0.788			
Socrisk	Socrisk_1	2.01	1.09	0.837	0.648	0.786	0.781
	Socrisk_2	2.31	1.24	0.772			
Physrisk	Physrisk_1	2.24	1.24	0.851	0.784	0.916	0.912
	Physrisk_2	2.54	1.44	0.925			
	Physrisk_3	2.66	1.50	0.879			
Psychorisk	Psychorisk_1	1.86	1.17	0.733	0.712	0.908	0.895
	Psychorisk_2	1.63	1.01	0.899			
	Psychorisk_3	1.69	1.03	0.918			
	Psychorisk_4	1.56	0.82	0.812			
Fraudrisk	Fraudrisk_1	2.66	1.43	0.881	0.789	0.918	0.918
	Fraudrisk_2	2.58	1.43	0.919			
	Fraudrisk_3	2.55	1.46	0.865			
Privacyrisk	Privacyrisk_1	2.67	1.54	0.952	0.773	0.910	0.907
	Privacyrisk_2	2.49	1.44	0.890			
	Privacyrisk_3	2.66	1.46	0.788			
Inforisk	Inforisk_1	2.43	1.30	0.926	0.778	0.875	0.873
	Inforisk_2	2.41	1.35	0.836			
Healthrisk	Healthrisk_1	3.03	1.53	0.702	0.630	0.871	0.866
	Healthrisk_2	2.22	1.45	0.816			
	Healthrisk_3	2.37	1.41	0.852			
	Healthrisk_4	2.44	1.53	0.795			
Anxietyrisk	Anxietyrisk_1	3.25	1.72	0.744	0.535	0.822	0.804
	Anxietyrisk_2	1.71	1.11	0.708			
	Anxietyrisk_3	2.73	1.64	0.738			
	Anxietyrisk_4	1.69	1.09	0.736			

Note: The statements were asked on a Likert scale from 1 to 7, where 1 represented the response option "not at all typical of me"/"strongly disagree" and 7 represented the response option "totally typical of me"/"totally agree".

Table A4. First-order CFA construction discriminant validity.

	Perfrisk	Finrisk	Socrisk	Physicrisk	Psychorisk	Fraudrisk	Privacyrisk	Inforisk	Fearofcovid	Anxiety
Perfrisk	**0.810**									
Finrisk	0.763	**0.768**								
Socrisk	0.455	0.477	**0.805**							
Physicrisk	0.636	0.559	0.434	**0.886**						
Psychorisk	0.667	0.466	0.515	0.540	**0.844**					
Fraudrisk	0.472	0.326	0.273	0.341	0.353	**0.889**				
Privacyrisk	0.44	0.296	0.294	0.392	0.322	0.610	**0.879**			
Inforisk	0.507	0.278	0.305	0.389	0.377	0.650	0.648	**0.882**		
Healthrisk	0.419	0.299	0.264	0.539	0.424	0.229	0.332	0.277	**0.793**	
Anxietyrisk	0.465	0.326	0.293	0.448	0.466	0.246	0.253	0.312	0.752	**0.732**

Table A5. Second-order CFA construct discriminant validity.

	Purchase_PR	Online_PR	COVID_PR
Purchase_PR	**0.748**		
Online_PR	0.625	**0.798**	
COVID_PR	0.619	0.399	**0.868**

Interview guide for Study 1

- Have the parameters of your travel changed as a result of the coronavirus? What was the reason for this? If so, how? What exactly did you change? Why these?
- When you are looking for information for your travel, what are you most afraid of, and what do you look for the most information on? How much has this changed now?
- In this case, have the type and amount of information you are looking for changed?
- What decision factors did you consider? *(Help if needed: services, attractions, location, travelling companions, mode of travel, destinations, risks)*
- What risks did you identify when gathering information? Identify as many risks as possible (financial, performance, health, physical, social, etc.).
- What were you most afraid of when paying for your travel? Did you think about anything during the travel?
- What risks did you perceive during the payment? Specifically, if you bought online: What online risks did you perceive while you were making your purchase? (e.g. loss of personal data, website reliability, etc.)
- How reliable did you find the sources of information used?