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Master Thesis Data Science and Marketing Analytics

How COVID-19 and Risk Perception Impacted Consumer Travel Decision Making.

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Abstract

The COVID-19 epidemic has influenced tourist behavior, causing them to be cautious when traveling. The present epidemic has altered visitors' psychological behavior as well as their perceptions of travel risk perception. This study aims to look into the impact of destination attributes, individual qualities, and destination risk profiles on tourists' travel decisions, specifically regarding COVID-19 cases and travel restrictions. The research also evaluates the mediating effect of risk perception on the probability of booking a trip.

A discrete choice experiment was conducted to study post-pandemic decision making in the travel industry. The survey was conducted in June 2022 and initially involved 108 individuals. Various models such as; conditional logit models, multinomial logit models, and mixed logit models were used to assess the outcomes of the discrete choice experiments. Furthermore, the models were implemented to evaluate the interaction effect of COVID-19 cases and measures by including an interaction between the two variables. A path analysis model was also implemented to investigate the mediating effect of risk perception on the probability of choice.

The results show that Risk Perception was influenced by safety concerns, COVID-19 Measures, and Cases. The study found that people prefer medium-restricted destinations with many attractions and activities, and are willing to spend more on health safety and ease of access. Risk perception significantly influences consumer decision-making in post-COVID travel, with safety being more important than health.

Keywords

COVID-19, Booking a trip, Risk perception, Consumer decision making, Discrete choice experiment, Mediation Analysis

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Contents

1. Introduction

Tourism, in its broadest sense, refers to individuals traveling for a short period of time to other places, either locally or globally, for leisure, social, or business reasons. The tourist industry has been one of the biggest industries in the world and its impact can be seen all around the world since many countries' economies are heavily reliant on it. It has well-managed benefits for everyone as it can diversify the economy and extend the labor market.

Globally, there has been a notable rise in international tourism as a result of people's desire to travel and learn about other cultures and civilizations, as well as technological advancement. Due to the positive influence of economic, social, demographic, and political variables, the evolution of tourism around the world was defined by a pattern of growth in the years prior to 2019. This growing trend in international travel resulted in tourism being regarded as one of the most active economic sectors, even during periods of social, economic, and political favorability. Unfortunately, the emergence of the pandemic COVID-19 in 2019 greatly affected the tourism industry and altered the decision making process of tourists.

The viewpoint of the visitor, who seeks varied physical and mental experiences, is crucial in the decision-making process. The tourist's decision making process when deciding whether to take a holiday mainly includes where to travel, when to travel, how long to stay, and how much money to spend (Nuraeni et al., 2014). The initial decision for a tourist if they wish to travel may be driven by a variety of reasons, including physical and mental rejuvenation or pleasure and amusement. They may also be motivated by cultural curiosity, business, or to meet friends and family. However, the decision and destination for an individual to travel is influenced by several other aspects such as; if the traveler is traveling with friends or family, whether the cost of living and traveling in the country is within their budget, contemplating the types of activities they would like to undertake while away and how safe the country is. The destination is determined by a sequence of explicit and implicit judgments that go from an initial state of

destination awareness to the formation of specific destination preferences and finally a trip intention (Woodside and Lysonski, 1989). However the emergence of COVID-19 significantly impacted the tourists decision making process, making the tourists more conscious and analyzing all the risk factors before making any travel plans. There has been a noticeable trend in tourist behavior toward more familiar, predictable, and low-risk trips (Kupi and Szemerédi, 2021).

The global coronavirus (COVID-19) pandemic began at the end of 2019 and since the outbreak of the virus was not confined to a certain area and was expanded across continents, it had negatively affected the tourism industry. This was because countries regularly started imposing partial and complete lockdowns and travel restrictions had been implemented around the world to protect the health of citizens and to prevent the spread of the new virus. There was fear of being infected and uncertainty amongst people which made travelers cancel their trips and limit themselves to home. As a result, throughout 2020 and far into 2021, the number of people planning to book vacations decreased. The effect of the pandemic on the industry can be seen statistically as there was a massive decline in the global GDP of the tourist industry, the world GDP dropped from 10.4% in 2019 to 5.5% in 2020 (Global Economic Impact and Trends, 2021). The falling trend in the tourism industry was also seen in Europe as the number of international tourists visiting dropped to 500 million from 700 million.

Now, almost more than 2 years after the outbreak of the virus, the world is at a situation where there is availability of vaccine which provides greater immunity against COVID-19 and the virus has mutated into a variant with more flu like symptoms. With this, almost all of the countries have lifted travel ban, though some countries still have some travel restrictions and entry requirements depending upon the COVID-19 situation. However, we can now see that things have started to go back to normal and according to UNWTO the tourism industry has started to grow again, but the pace of recovery is slow and still below the pre-pandemic level,

mainly due to the degree of travel restrictions and travelers' confidence and it is not until 2024 or later that international tourism is expected to recover to pre-pandemic levels. Although the recovery of tourism is fraught with uncertainties, it offers a unique opportunity to look at the changes in tourists' travel behavior and what factors people now consider the most important before booking a trip.

Several international studies indicate that the pandemic has greatly altered tourists' travel behaviors and destination preferences, making them more conscious and aware of their surroundings (Kupi and Szemerédi, 2021). Thus the aim of this research is to examine the role destination risk profile, individual traits and the destination profile has in booking a trip, specifically looking at whether travel restrictions and COVID-19 cases alleviate tourists' perceived risk of travelling. Tourists' psychological behavior when planning trips is influenced by the views of travel risk and management, due to the spread of the current pandemic, tourists may have a new perspective on travel risk and management challenges (Rahman et al., 2021). Therefore, this study pays attention to explore, evaluate and understand the changes in tourist behaviour as a result of the epidemic and how it has affected consumers' travel decisions.

1.1 Motivation

People suffer long-term impacts as a result of crisis situations instilling deep fear in them. Similar is the consequence of the pandemic, it has affected the tourists' behavior making them plan trips based on some degree of fear and adopt cautious travel behavior (Zheng et al., 2021). While society can efficiently recover from financial disruption, notably in global travel and tourism activities, the sociological and mental repercussions of the COVID-19 pandemic will be more persistent (Rahman et al., 2021).

Therefore the impact of the COVID-19 catastrophe on consumers' risk perception and how it affects future tourist travel behavior is of particular interest to tourism experts. Prior research

has only provided a knowledge of how and why travelers behave to protect their health, but has not investigated the impact of such health-related behavior on the decision-making process (Chien et al., 2017; Wang et al., 2019). As a result, this study adds to understanding tourists' risk perception, its antecedents, and its effect, leading to a better understanding of consumers' travel decision-making at the individual level.

Analyzing consumer behavior and learning about the factors that travelers now consider the most important before booking a trip can help the tourism industry overcome the world-wide crisis it is facing. According to Rahman et al. (2021), tourists' views of travel risk drives the development of new tourism markets that academics and tourism operators can research collaboratively to shape marketing and management strategies to enhance tourists' confidence to attract them. For example, policies can be developed to attract consumers as travelers now give more importance to flexible tickets and travel insurance in order to ensure coverage in the event of being contacted with COVID-19. Hence, this study will allow tourism professionals to have an insight into destination attributes, individual traits and the risk variables, it will allow practitioners to understand which COVID-19 related concerns are the most important, therefore, allow them to make positive changes in the tourist industry as the pandemic is ending.

2. Literature Review

In this chapter, we will look at previous academic studies to examine the existing views of researchers in order to better comprehend the drivers behind booking a trip, particularly taking COVID-19 into consideration and how it has changed consumer behavior. The goal is to connect with the tourist industry's 'new normal' and leverage the shared experience of past researches to better understand customer decision making. This will be done by looking at the importance destination attributes and individual traits play in travelers decision making. Furthermore, destinations risk variables such as; travel safety, COVID-19 cases and restrictions will be studied to evaluate the mediating effect of perceived risk on booking a trip.

Although tourists are mainly driven by their desires and needs to choose a destination, the attributes of the destination also play an important role in influencing their decision to make a choice (Nuraeni & Novani, 2015). Hence, destination attributes are essential for attracting tourists and need to be looked into (Zhou, 2005). In accordance with Nyaupane and Andereck (2008), destination attributes such as; the influence of travel costs, sufficient places to visit and quality of destination facilities on travel behavior are important attributes while making a decision.

Destination preference patterns have changed moderately in the past year, according to Gursoy et al. (2020), when it comes to vacation destinations, low visitor population and hygienic conditions are now considered the most important factors. In order to avoid crowded places, tourists prefer places that offer outdoor activities and allow them to interact with nature. According to Lapteva (2021), mass tourism may not be as popular as it once was, as individuals seek out less well-known destinations with fewer crowds. Based on the literature, in this study, destination attributes are hypothesized as a determinant of booking a trip in the proposed model. As a result the following hypotheses are suggested:

H1a: Higher Cost of Living and Traveling decreases the probability of Booking a Trip.

H1b: Higher Attractions and Activities increase the probability of Booking a Trip.

H1c: Higher Density of Tourists decreases the Probability of Booking a trip.

De Zwart et al. (2007), demonstrated that the post-epidemic state had a significant impact on many aspects of life, and that the decision to travel was greatly influenced by the precautionary measures, lockdown, and restrictions in place during the pandemic. Different countries have been compelled to impose varying amounts of travel regulations to control the spread of COVID-19. These include taking measures such as closing borders and ceasing travel and tourism, cancelling events, quarantine procedures and travel requirements such as proof of negative COVID-19 test, vaccination certificate etc. These regulations greatly impacted the travel behavior of individuals (de Haas et al., 2020; Mogaji, 2020). Liew (2020) discovered that consumers' interest in online hotel reservations, flight tickets, and package tour offers of tourist companies declined due to regulatory constraints during the pandemic.

Measures that ensure increased safety and mobility restrictions lead to a restricted number of people in public areas which may result in fewer tourists. This is because tourists may be less inclined to travel if they are unable to fully enjoy the experience during their stay (Marques Santos, 2020), based on this, the following hypothesis is proposed:

H2: COVID-19 Measures have a negative impact on the probability of Booking a Trip.

Perceived risk refers to when tourists have anxiety or concerns about their exposure to risk when they make travel decisions (Quintal et al., 2010). It is defined as a consumer's overall negative view of a course of action based on an assessment of the probable negative consequences and the likelihood that those events would occur (Fuchs and Reichel, 2011). It includes fear, uneasiness, anxiety and nervousness for a situation (Rittichainuwat and Chakraborty, 2009).

Previous researchers have looked at how the tourists perceived risks in situations such as terrorism, political instability, crime and natural disasters effects tourists decisions (Park and Reisinger,2010; Chew and Jahari, 2014) but there have been few researches for risk perception for disease outbreak, such as swine flu and SARS (Su et al., 2021). Now, with the outbreak of COVID-19, the threat posed by the pandemic is predicted to have a significant impact on travel plans. Therefore, more emphasis should be placed on how travelers' perceived risk influences their trip preparations and behavioral intentions towards selecting a destination (Huang et al., 2020).

According to Yang and Nair (2014), perceived risk is crucial in forecasting tourists behavior. This statement is also in accordance with, Bhati et al. (2021), who also emphasized that perceived health risk is a significant feature of travel behavior and an important factor in destination decision making. The level of risk perceived by individuals might influence their attitude and decision of whether they visit or avoid the destination (Su et al., 2021). People will be reluctant to visit risky destinations (Rahman et al., 2021) as higher levels of perceived risk is associated with decreased satisfaction and negative attitude towards a destination hence lowering visit intentions (Florido-Benítez, 2021). This behavior of tourists was highlighted in the previous studies of Ebola virus that showed infectious diseases drastically altering travelers' perceived risk (Novelli et al., 2018), resulting in the avoidance of either particular destinations or all travel (Cahyanto et al., 2016). Zhang et al., (2020) further establishes that an elevated perceived COVID-19 threat intensifies risk aversion and alter peoples' behavior making them anxious about future travel plans, hence postponing or avoidance of traveling. According to Kock et al. (2020), this makes travelers more xenophobic, making them less likely to travel, more sensitive to crowds and more likely to favor travel insurance, however, this behavior would differ amongst individuals. Han et al. (2020), also concluded from a study of 305 people that the perceived risk associated with travel, influences customers' views and travel choices,

and makes tourists more likely to travel to safer areas. Due to the impact of COVID-19, the decision individuals take is linked to their travel risk, which are multifaceted and have unclear effects. Therefore, the following hypothesis is proposed:

H3: Higher Perceived Risk decreases the probability of Booking a Trip.

In view of escalating concerns about health and safety, rebuilding tourist faith and confidence in COVID-19 policies is critical to the tourism industry's recovery in the post-pandemic period (Shin et al., 2022). Where cross-border travel is accessible, consumer trust drops, because the risk of another outbreak prevents confidence in resuming travel (Marques Santos, 2020). However, individual behaviors can be influenced by one's level of political trust. People are more likely to travel if they trust governments' general measures to respond to the COVID-19 epidemic because they feel safer and believe that the issue is controlled (Shin et al., 2022). Individuals' perceptions of risk at a destination are likely to be influenced by whether or not they trust the destination's measures, which in turn influences their decision-making behavior (Eitzinger & Wiedemann, 2008). Indicating that if people trust a government's COVID-19 related measures, they will have less perceived risk, which in turn will lead to a greater desire to travel in the future (Rudolph and Evans, 2005). During the crisis, travel-related perceived risk is reduced by the governments' openness and clear communication of the measures being taken. As a result, governance has a significant impact on risk perception (Toanoglou et al., 2021).

Wolf et al. (2020), further emphasized the significance of values in consumer responses to COVID-19 measures implemented by governments to stop the virus's spread, their findings showed that those who are self-conscious and risk averse are more likely to trust public health regulations and engage in behavior that ensures safety. This suggests that perceived risk is

prone to how much individuals trust the COVID-19 policies. Thus, the following hypothesis is proposed:

H4: The impact of COVID-19 Measures on the probability of Booking a Trip is positively mediated by Risk Perception.

Zenker & Kock (2020), states that people's views of perceived risk are expected to shift as a result of the COVID-19 pandemic. Fear of being infected, hence increased perceived risk can have a substantial impact on travel behaviors, particularly when it comes to higher COVID-19 cases at the destination (Hotle et al., 2020). Mobility across borders raises the risk of contracting the disease and fosters a notion that makes it difficult for tourists to select a particular location (Smith, 2006). This behavior is also emphasized by the study of Toanoglou et al. (2021), which states that perceived risk is intensified by the pandemic's growth pace. Therefore, there is a larger preference for destinations that are less affected by COVID-19 while traveling outside of the home country due to lower perceived risk (HES-SO, 2020). As a result, the following hypotheses is established in this study:

H5: The impact of COVID-19 Cases on the probability of Booking a Trip is negatively mediated by Risk Perception.

The status of political stability in a certain region or country, as well as the overall health of the population, play an important role for tourism (Kataya, 2021). Tourists evaluate environmental concerns, crime, terrorist activities, and health-related risks while determining where to go and what to do (Garg, 2015).

Illiashenko et al. (2021) discovered that political instability has a great influence on limiting visitor flows, suggesting that political-economic climate of any destination, together with attempts to construct and curate a positive image boosts the appeal and competitiveness of the destination hence attracting tourists (Kataya, 2021).

The pandemic of COVID-19 has resulted in elevated levels of perceived risk, which is linked to a desire for safety while traveling (Rettie and Daniels 2020). During a pandemic, destination confidence is more important in deciding travel participation, as potential travelers will be less willing to travel if they have doubts about a location's health safety management (Shin et al., 2021). Although post-pandemic tourist travel is still possible, consumer trust in safe travel has significantly decreased (Marques et al., 2020).

It is indicated by Zhang et al. (2020) that the outbreak of COVID-19 pandemic resulted in a strong negative response in terms of travel behavior, which was facilitated by safety seeking measures. The COVID-19 pandemic has had a significant impact on tourist travel decisions taking health safety into consideration as they can have a key role in tourists' perceptions of travel risk. Risk of being exposed to infection, stimulates a safety-seeking drive and causes travel avoidance (Li et al., 2021). According to the study of Zemke et al. (2015), it was seen that travelers are willing to pay more for hygienic accommodations in order to decrease health related risk.

According to Rahman et al. (2021), tourism industry must emphasize health and safety precautions, to make sure tourists feel more at ease on their vacation thus lowering their perceived risk. This travel safety behavior affects perceived risk and ultimately influences travel intention. Thus, we assume the following hypotheses:

H6a: The impact of Travel Safety on the probability of Booking a Trip is positively mediated by Risk Perception.

H6b: The impact of Health Safety on the probability of Booking a Trip is positively mediated by Risk Perception.

Tourists are concerned about the impact of the Covid-19 pandemic in the post-pandemic phase on their travel activities and choices (Rahman et al., 2021). Since the virus was spread over a large magnitude, people are increasingly concerned about their own safety and health. In times

of the outbreak of COVID-19, people became more conscious about the severity of the pandemic and taking more precautionary measures themselves (Meng et al., 2021).

Self-efficacy refers to travelers taking preventive measures in various traveling circumstances. It has been observed that social distancing can aid in the prevention of COVID-19 outbreak (Lee, 2020). In the study of the transmission of H1N1 flu (swine flu) pandemic, Lee et al. (2012), found that coping mechanisms such as personal nonpharmaceutical measures, for example; washing hands, wearing masks and social distancing were found to have predictive effect over tourists' intention to book a trip. Bhati et al. (2020), suggests that self-efficacy influences the behavior of tourists and their risk perception, the relationship between tourists' preventive measures and risk perception was further seen in Huang et al. (2020) study.

Given that humans are social creatures, there are some doubts regarding whether people can endure and abide by social distancing and lockdowns for an extended amount of time (Rozenkrantz et al., 2020). However, it was found that visitors are ready to observe social distancing as the threat of COVID-19 increases (Itani and Hollebeek, 2021). People maintain physical distance from others by selecting a private table at a restaurant or going to less crowded places (Lee and You, 2020). Wolf et al. (2020), reveals that adopting cautious actions is substantially linked with perceived risk and response efficacy of the situation, hence affecting the behavior of travelers in booking a trip. Based on the literature, the following hypothesis is proposed:

H7: Higher Self-efficacy increases the probability of Booking a Trip.

During the unusual times of a pandemic, which claimed thousands of lives every day, travelers are anxious about future travel plans, resulting in more unfavorable travel plans and causing travelers to postpone or avoid travel (Karl et al., 2020). Various prior studies found that people tend to cancel or postpone overseas visits or flights in order to prevent being infected during

pandemics (Leggat et al., 2010). According to Neuburger and Egger's research published in 2021, as the number of confirmed cases increased, so did people's perceptions of the risks associated with COVID-19 travel, and their willingness to postpone or alter travel plans. While investigating the impact of COVID-19 on the desire of tourists to visit overseas, Rachmawati and Shishido (2020) discovered that over 78% of tourists postponed or cancelled their travel arrangements.

In a study by Liet al. (2020), approximately half of the respondents surveyed expected to take their next vacation six months or more after the virus has been contained. Similarly, in Reitano et al. (2021) study, respondents' intention to wait longer before flying again was also seen after the restrictions were lifted, this was due to concerns about safety and uncertainty. People may be hesitant to travel in the short term due to lack of ability to control the spread of COVID-19, but they may be more willing to book future travel arrangements if the situation improves. However the willingness to delay travel plans varied among people of different ages (Sharangpani et al., 2011). As a result, the following hypothesis is established in this study:

H8: The latter the Preferred Time to Travel the higher probability of Booking a Trip.

COVID-19 pandemic containment measures are critical. In impacted locations, policies that restrict population mobility decreasing contact rates should be taken into consideration to control the pandemic (Wu et al., 2020). The goal is to "flatten the curve", which involves reducing and delaying the peak of an epidemic (Santos, 2020). Kaimann, & Tanneberg (2021), found evidence that closing schools and non-essential businesses, limiting large gatherings, restricting travel to and through risky areas, closing national borders and enforcing national curfews all slow the coronavirus's development rate and, consequently, the peak of daily confirmed cases.

For two years, the restrictive measures have kept COVID-19 instances largely under control. Kaimann, & Tanneberg (2021) suggest that individual measures do affect the rate at which COVID-19 is spread. Nevertheless, countries have unfortunately experienced an increasing "second wave" or "third wave" of cases due to partial relaxations and the introduction of other COVID-19 variations (Dedeoğlu et al., 2022).

As seen above, COVID-19 related measures impact the number of cases in a region, however, the measures imposed in a region are also in response to the number and growth of COVID-19 cases. The higher the number of cases, the stricter measures taken by the government for the containment of COVID-19. The travel restriction approach adopted by countries based on the risk levels linked with COVID-19 highlights this pattern. The "traffic light" approach categorizes regions as green, orange, red, or gray based on the number of COVID-19 cases and places restrictions accordingly (Uthman et al., 2022). Therefore, in light of the above literature the following hypothesis is put forth:

H9: There is an interaction effect between COVID-19 Measures and COVID-19 Cases

2.1 Conceptual Framework

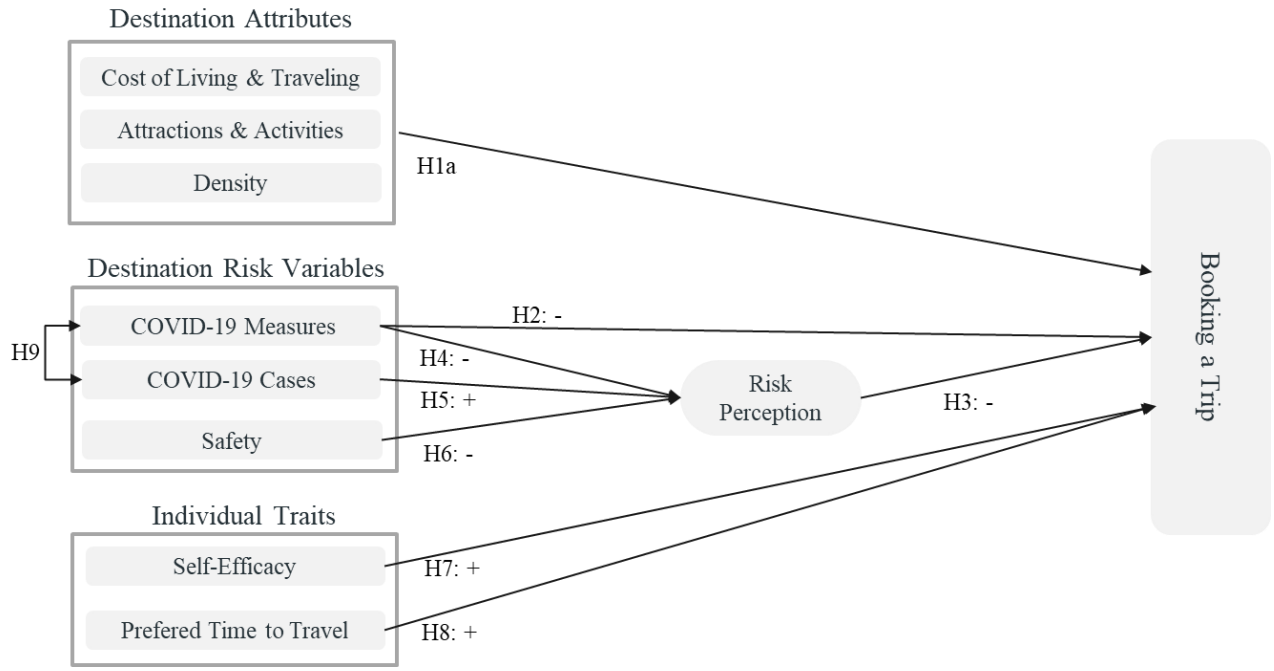

Figure 1:Conceptual Framework

2.2 Tables

2.2.1 Dependent and Independent Variables

Table 1: Dependent and Independent Variables

Hypothesis	Dependent Variable	Independent Variable	Data Measures
H1	Book a Trip (Yes/No)	Destination Attributes	• Examine booking a trip • Examine cost of living • Examine cost of travelling (e.g. ticket, cost of COVID -19 test) • Examine importance of attractions and activities • Examine how crowded the destination is/ tourist density
H2	Book a Trip (Yes/No)	COVID-19 Measures	• Examine Booking a Trip • Examine travel requirements • Examine ease of travel
H3	Book a Trip (Yes/No)	Risk Perception	• Examine booking a trip • Examine the risk of being exposed to COVID-19 • Examine being physically uncomfortable • Examine being nervous or stressful on vacations
H4	Risk Perception (5-point Likert Scale)	COVID-19 Measures	• Examine booking a trip • Examine restrictions and its impact on risk perception • Examine measures taken to prevent spread of COVID-19
H5	Risk Perception (5-point Likert Scale)	COVID-19 Cases	• Examine booking a trip • Examine the number of COVID-19 cases and its impact
H6	Risk Perception (5-point Likert Scale)	Travel Safety	• Examine booking a trip • Examine health safety of a destination • Examine safety
H7	Booking a Trip (5-point Likert Scale)	Self-Efficacy	• Examine booking a trip • Examine if people will be more careful while traveling • Examine whether people will limit contact with others • Examine if people will take preventive measures to ensure safety (e.g., wear mask, use sanitizer)

H8	Booking a Trip (immediately – more than 1 year)	Preferred Time to Travel	• Examine booking a trip • Examine how long people are willing to wait to book a trip considering certain situations

2.2.2 Planned Analysis

Table 2: Planned Analysis

Hypothesis	Dependent Variable	Independent Variable	Type of Analysis
H1	Book a Trip (Yes/No)	Destination Attributes	Logistic Regression
H2	Book a Trip (Yes/No)	COVID-19 Measures	Logistic Regression
H3	Book a Trip (Yes/No)	Risk Perception	Logistic Regression
H4	Risk Perception (5-point Likert Scale)	COVID-19 Measures	Linear Regression
H5	Risk Perception (5-point Likert Scale)	COVID-19 Cases	Linear Regression
H6	Risk Perception (5-point Likert Scale)	Travel Safety	Linear Regression
H7	Booking a Trip (5-point Likert Scale)	Self-Efficacy	Linear Regression
H8	Booking a Trip (immediately – more than 1 year)	Preferred Time to Travel	Linear Regression

3. Methodology

To study post-pandemic decision making involved in the travel sector, a discrete choice experiment was designed. Respondents were asked about their preferences for attributes of potential holiday destinations using scenarios based on the destination attributes, destination risk variables and individual traits. The relative importance of these attributes and the trade-offs respondents were willing to make were analysed using a multinomial logit model. Furthermore, the mediation model was constructed to explore the effect of risk perception on choices.

The decision to choose a destination for holiday involves numerous factors and with the advent of the pandemic these factors have increased even more. Previous studies have examined the factors in isolation and during the peak of the pandemic. This study aims to investigate the effect of different factors altogether considering the current situation when the fear of COVID-19 has largely decreased. In order to do so a discrete choice experiment was designed.

The present study applies the framework of discrete choice experiment to study decision making involved in booking a trip while considering COVID-19 cases and measures related to it. Discrete choice experiment was selected for this research because it allows for simultaneous analysis of multiple aspects and the trade-offs between different choices, and thus offers a viable way to examine decision making. Enabling simultaneous variation of all attributes ensures a decision scenario that accurately represents real-world experience (Fischer et al., 2018).

The premise of a discrete choice experiment is that consumer preferences are determined by a mix of attributes and attribute levels that can be used to describe the purchasing behaviour of consumers. A discrete choice experiment involves repeatedly presenting respondents with

hypothetical choices between two or more alternate choices that consist of various combinations of attribute levels (Kan et al., 2016).

Discrete choice experiment is based on the random utility theory of behavior (Thurstone, 1927), which was initially introduced by McFadden in 1974. According to the random utility theory, each alternative choice has a latent "utility," and people will always select the alternative with the highest utility. Since utility is a latent construct, it cannot be observed directly but can be learned by examining choice patterns (Louviere, 2001). To measure the utility gained or lost by each attribute, discrete choice experiments are created to systematically modify the attributes linked to choice sets.

The main objective of the present study is to assess the most important factors that influence individuals' decisions to book a flight. In order to do so, participants were given multiple choice sets, each with three alternative scenarios, and asked to select the scenario they would more likely prefer for traveling.

The study also aimed at investigating the mediation effect of risk perception on the choices that respondents made. In order to do so participants were presented with different scenarios of the attributes that are expected to influence the mediating variable on the choices and were asked to rate their risk perception.

3.1 Attributes and Attribute Levels

Studies of relevant literature were used to determine the attributes to be included. The attributes of the scenarios were systematically altered across the choice sets to include in the discrete choice experiment. In total, seven relevant attributes with their levels were determined: (1) cost of living and travelling, (2) Attractions and Activities, (3) Tourist Density, (4) COVID-19 Measures, (5) COVID-19 Cases, (6) Crime Rate and (7) Political Stability. Table 3 describes each attribute and the attribute levels.

Table 3:Attributes and Attribute Levels

Attribute	Attribute Levels
Cost of Living & Travelling: Accounts for the expected approximate cost per day on the holiday	1. Low (€60 - €80); 2. Moderate (€100 - €150); 3. High (€200 or more).
Attractions & Activities: Refers to the number of places and activities that are available for tourists at holiday destination	1. Few: Less than 5 activities; 2. Adequate: Between 5 and 7 activities; 3. Many: More than 7 activities.
Tourist Density: Refers to number of tourist arrivals in the country	1. Low; 2. Moderate; 3. High.
COVID-19 Measures: Precautionary measures taken by government to curb COVID-19	1. Minimal Restrictions: Attending to hygienic measures, social distancing nation-wide; 2. Medium Restrictions: Closing all schools and hospitality levels in addition to minimal restrictions; 3. Significant Restrictions: Emergency ordinance, large level events cancelled in addition to medium restrictions; 4. Very Significant Restrictions: Complete restriction on movement in addition to significant restrictions.
COVID-19 Cases: Classification of the countries according to the rate of COVID-19 cases at the destination	1. Green Zone: Areas with few confirmed cases till date or in the last 21 days; 2. Orange Zone: Areas which have reported a limited number of cases in the past; 3. Red Zone: Areas or the hotspots classified as those with the highest caseload.
Crime Rate: Refers to the crime rate in the destination country	1. Low; 2. High.
Political Stability: Refers to the political stability of the destination country	1. Low; 2. High.

3.2 Study Design and Questionnaire

In order to conduct the research, an online questionnaire form was used as a data collection method. The questionnaire was divided into three main parts, the first involving socio-demographic questions, such as gender, age, education, and travel information to capture the respondents profile, the second part resonated to the main study consisting of the discrete choice experiment and finally the third part associated with measuring the mediating variable, risk perception. The final questionnaire can be found in the Appendix.

For the discrete choice experiment, the combination of four attributes with three levels and one attribute with four levels results in a large number of hypothetical treatment alternatives. As it is not feasible to present a single respondent with all alternatives, an efficient discrete choice experiment design was created with 12 choice sets to estimate all main effects and interaction effects. The different combination of choice sets were made using JMP software version 16. The design was developed such that it minimized overlap and reduced the number of questions with the same attribute levels across alternatives while also ensuring that the total number of times a given level appeared was balanced. While designing the choice model in JMP, it was made sure that interaction effect between COVID-19 Cases and COVID-19 Measures was accounted for. Furthermore, prior mean of COVID-19 Measures and COVID-19 Cases were set according to the expected attractiveness. Prior mean indicates the preference for varying levels of each alternative. As a result, the design can avoid asking respondents to choose between a profile with all desirable levels of the qualities and a profile with all undesirable levels to the respondent. Since every respondent will select the same profile in such a choice set, it does not offer any information.

In the final discrete choice experiment, each choice set consisted of three treatment options for travel destinations to choose from. Before the start of the discrete choice experiment a detailed description of the attributes and their levels were provided.

The third section of the questionnaire aimed at measuring the mediating effect risk perception has on the choices that respondents made. Which was done by presenting respondents with varying levels of attributes for COVID-19 Measures, COVID-19 Cases, Crime Rate and Political Stability and asking respondents to rate their Risk Perception in Terms of Safety and Risk Perception in Terms of Health on a 5-point Likert scale. Using JMP software with the same values of prior mean as before a number of 16 different profiles were designed. Since response reliability was expected to decrease by having 16 profiles to rate per respondent, a blocked design was used, dividing the 16 profiles into two groups, accounting for 8 profiles per respondent in the final survey. It was made sure that the two groups of profiles were evenly and randomly presented to the respondents.

3.2.1 Questionnaire

The questionnaire was designed in Qualtrics and set up as an online survey. Since the population was too large, a convenience sampling approach was utilized to obtain data quickly and efficiently and anyone above the age of 18 was eligible to respond. It was distributed using anonymous links on social media and on research platforms such as SurveySwap and SurveyCircle which enabled it to reach faster to a wider population. The questionnaire distributed can be found in Appendix C.

The participants were given a brief of the aim of the research and informed consent was obtained from all participants before they participated in the survey, the respondents had the right to withdraw from the survey at any time. It was also made sure that the participants understood that the questionnaire was anonymous, information they shared in case of participation will be kept confidential and did not aim at collecting identifying information. Participation in the questionnaire took about 15 – 20 mins.

The survey took place through the month of June 2022 and it initially involved 108 individuals, however about 17.5 percent did not complete the survey, causing them to be excluded from the analysis, leaving 89 complete responses. The final study sample was predominantly female (54.3%) and were between 25-34 age range (47.9%). The majority of the respondents were university graduates (43.6%), who mainly belonged to Europe (63.8%) and Asia (29.8%). While asked about their health, the majority (72.4%) of them assed their health to be good and very good. The results can be found in Appendix A.

3.3 Effects Coding

The data was modified and transformed from long to wide format before analytic models were applied. Additionally, since the model included categorical variables and interaction of categorical variables, effects coding was applied as it could offer adequate results for both the main effects and the interaction. Effects coding is similar to dummy coding, however it differs in how the reference level is coded. In this case, the reference level is coded with minus ones instead of zero. In principle, by regressing the effect coded variables, the result at a particular level is compared to the unweighted mean of the outcome across all levels, which allows us to interpret the main effect independently from the other variables.

3.4 Discrete Choice Experiment

3.4.1 Utility Maximization Model

The data from the discrete choice experiment was evaluated within the framework of random utility theory, which is predicated on the idea that respondents select the alternative that maximizes their utility. When a respondent, *n*, is presented with a choice between *j* possibilities, he/she associates a certain level of utility with each alternative and eventually choses the alternative that offers him the highest utility. Therefore, if the respondent chooses alternative *i*, it is anticipated that he/she gains lower utility out of each of the other options.

$$U_{ni} > U_{nj}, for\ all\ j \neq i$$

(1)

The utility can be represented as the sum of the observed and unobserved elements. It consists of the predicted utility V_{ni}, which is observed based on the attributes of the choice and the unobserved elements ε_{ni}, which is viewed as random.

$$U_{ni} = V_{ni} + \varepsilon_{ni}$$

(2)

In order to predict the outcome, the researchers need to know the unobserved element of the utility model, therefore they can only predict the outcome in terms of probability.

The probability that a respondent *n* chooses *i*, is described as follows:

$$\begin{aligned} P_{ni} &= P(U_{ni} > U_{nj}) \\ &= P\left((V_{ni} + \varepsilon_{ni}) > (V_{nj} + \varepsilon_{nj})\right) \\ &= P\left((\varepsilon_{nj} - \varepsilon_{ni}) < (V_{ni} - V_{nj})\right), for\ all\ j \neq i \end{aligned}$$

(3)

The discrete choice model is broadly represented with the equation above *(2)* & *(3)*. It can be used to build any decision model that is consistent with random utility maximization, by imposing probability density function on ε_{ni} in equation *(3)*, however, different probability distributions will result in different discrete choice models (Cushing, 2007).

3.4.2 Conditional Logit Model

In order to analyze the choices of the discrete choice experiment, a conditional logit model was initially applied, assuming that all respondents had the same preferences.

Conditional logit model is suitable to use when the decision between choice sets is treated as a result of the features of the alternatives instead of the characteristics of the person making the decision (Hoffman & Duncan, 1988). According to Hoffman & Duncan (1988), the outcomes

of models that solely rely on the "individual characteristics" are often difficult to explain in terms of behavior. However, subjects related to social sciences and demographics can be analyzed using “features of the alternative” approach, hence using conditional logit model. Since our study focuses on the customer decision making, we first assumed homogeneity amongst respondents and used the conditional logit model to estimate how the characteristics of alternatives affect the decision making process.

The conditional logit model assumes extreme value distribution of the unobserved element of the utility ε_{ni}, it further assumes all ε_{ni} to be independent and identically distributed (iid) and imposes the IIA assumptions. Therefore the probability of individual *n* choosing *i* can be expressed as follows:

$$P_{ni} = \frac{e^{V_{ni}}}{\Sigma_i e^{V_{ni}}} = \frac{e^{\alpha' Z_{ni}}}{\Sigma_i e^{\alpha' Z_{ni}}} \quad (4)$$

Where all the observed explanatory variables are represented by Z_{ni} and α represents the parameters from the model. Hence it can be seen that the probability depends only on the characteristic of *i* and does not depend on other characteristics.

3.4.3 Multinomial Logit Model and Mixed Logit Model

To further analyze the results, the possibility of heterogeneity amongst preferences was evaluated by applying multinomial logit model and mixed logit model.

Multinomial logit model is similar to the conditional logit model assuming ε_{ni} to be iid with extreme value distribution, however the difference lies in how the decisions between choice set is treated, in this case the explanatory variables are expected to differ according to the individuals rather than categories.

A mixed logit model is flexible for examining heterogeneity in respondent behavior. It is similar to the multinomial logit model except that it completely relaxes the IIA assumption by permitting correlation amongst repeated choices made by each individual (Algers et al., 1998). It additionally relaxes the restriction of α being same for every individual, which allows the estimation of probability of individual *n* selecting i by estimating P_{ni} over all potential values of α.

$$M_{ni} = \int P_{ni}(\alpha) f(\alpha) d\alpha = \int P_{ni} \left(\frac{e^{\alpha' Z_{ni}}}{\Sigma_i e^{\alpha' Z_{ni}}} \right) f(\alpha) d\alpha \quad (5)$$

All three models were analyzed and the optimal model was chosen based on the Akaike information criterion (AIC), which assesses a model's ability to accurately represent the data from which it was generated. According to AIC, the model that explains the most variance with the fewest number of independent variables is the best fit. In other words, a lower value suggests a more efficient model.

3.5 Mediating Effect of Risk Perception

In order to test whether risk perception had a mediating effect on the choices made, there was first a need to link the data collected for risk perception of each individual with the choices they made in the discrete choice experiment.

In our study, this was done by running a linear regression on the results of risk perception data for each individual respondent to calculate an approximate weight for each attribute level. The weight of each attribute level for every individual was then linked with the attribute levels presented in the discrete choice experiment. The values were eventually used to calculate the risk perception in terms of health and safety of every individual for the given scenario in the discrete choice experiment.

After a dataset was created that connected risk perception with the discrete choice data, mediation analysis was performed on it. The mediation model is a causal model that explains the reasons behind and mechanisms underlying cause-and-effect relationships and the relationship is connected by a mediator. In its most basic form, mediation simply involves the effect of a third variable (M) to a two-variable relation (X → Y). In this case the independent variable, X causes mediator (M), and M in turn causes Y. The mediation effect is characterized as an "indirect effect" and serves two purposes. It functions as an independent variable for Y while acting as the dependent variable for X.

The relationship can be simply depicted as follows:

$$X \rightarrow M \rightarrow Y$$

Statistically the mediation model can be depicted using Baron and Kenny's (1986) approach:

The direct effect between independent variable (X) and the dependent variable (Y):

$$Y = \alpha_0 + \alpha X + \varepsilon_1 \quad (6)$$

The correlation between the independent variable (X) and the mediator (M):

$$M = \beta_0 + \beta X + \varepsilon_2 \quad (7)$$

The dependent variable (Y) is affected by both the independent variable (X) and the mediator (M):

$$Y = \gamma_0 + \alpha' X + \gamma M + \varepsilon_3 \quad (8)$$

It should be noted that the coefficient α in equation *(6)* should be larger in absolute value then the coefficient α' in equation *(8)*. If the partially direct effect in equation *(8)* is zero (i.e. $\alpha' = 0$), the mediator completely mediates causal relationships.

4. Results

4.1 Discrete Choice Experiment

In this section we analyze the results of the models which were implemented using the dataset concerning the discrete choice experiment. Initially, the hypotheses were tested for the main effect of variables only, followed by the inclusion of interaction between variables.

For testing the main effect a total of 3 models, as mentioned in the preceding section were applied to evaluate to what extent the results are impacted through alternative approaches. All three methods produced fairly comparable outcomes, with the conditional logit model and multinomial logit model giving identical results while the mixed logit model producing slightly different outcomes. The results further reveal that the least restrictive model, mixed logit model, had the most efficient estimation, and thus the lowest AIC value of 1849.45, followed by the multinomial logit and conditional logit models at 1911.306 which produced identical results. The model estimation results for the conditional logit, multinomial logit, and mixed logit models are summarized in Tables 4 and 5, respectively.

Table 4: Conditional and Multinomial Logit Models

	Conditional Logit		Multinomial Logit	
Coefficient	Estimate	Std. Error	Estimate	Std. Error
COL-low	0.338**	0.109	0.338**	0.109
COL-high	-0.540***	0.103	-0.540***	0.103
AA-few	-0.293***	0.083	-0.293***	0.083
AA- adequate	-0.189**	0.091	-0.189**	0.091
TD-low	0.037	0.102	0.037	0.102
TD-high	-0.095	0.077	-0.095	0.077
Measures-minimal	0.432***	0.105	0.432***	0.105
Measures-medium	0.197	0.152	0.197	0.152
Measures-significant	-0.049	0.099	-0.049	0.099
Cases-green	0.307***	0.080	0.307***	0.080
Cases-orange	0.357***	0.096	0.357***	0.096
Crime-low	-0.346***	0.062	-0.346***	0.062
Political-high	0.222***	0.593	0.222***	0.593

For the conditional logit model and multinomial logit model, the results are identical. Considering that people are rational, a negative effect of Cost of Living (COL) is expected because as price increases, the demand decreases. The results show clear significant price effects for high COL ($\beta = -0.54, \rho < 0.001$) also low COL ($\beta = 0.34, \rho < 0.01$), these estimates are the values relative to the unweighted average of all three levels. According to the findings, high COL has the greatest impact on the choice that an individual makes, with less preference for it. Individuals are also more likely to choose a destination that has more Attractions and Activities (AA) since the results indicate lower preference for destinations with less than 7 attractions and activities; few AA ($\beta = -0.29, \rho < 0.001$) and adequate AA ($\beta = -0.19, \rho < 0.01$). The results for the COVID-19 related variables indicate that individuals prefer Minimal Restrictions ($\beta = 0.43, \rho < 0.001$), attending to hygienic measures and social distancing only, relative to the unweighted average of all four levels. In terms of COVID-19 cases at the destination, individuals as expected select those with lower number of COVID-19 Cases; Green Zone ($\beta = 0.31, \rho < 0.001$) and Orange Zone ($\beta = 0.36, \rho < 0.001$), with Orange Zone destinations having slightly higher influence on the decision as compared to destinations in the green zone. Lastly, destinations with low Crime Rate ($\beta = -0.35, \rho < 0.001$) and high Political Stability ($\beta = 0.22, \rho < 0.001$) are favored.

Table 5: Mixed Logit Model

Coefficients	Estimate	Std. Error
COL-low	0.452***	0.136
COL-high	-0.696***	0.128
AA-few	-0.373***	0.104
AA-adequate	-0.202*	0.110
TD-low	0.054	0.115
TD2-high	-0.100	0.092
Measures-minimal	0.523***	0.129
Measures-medium	0.333*	0.178
Measures-significant	-0.027	0.117
Cases-green	0.360***	0.098
Cases-orange	0.525***	0.119
Crime-low	-0.454***	0.082
Political-high	0.248***	0.072
sd. COL-low	0.224.	0.132
sd. COL-high	0.257.	0.145
sd. AA-few	-0.223	0.167
sd. AA-adequate	0.180	0.201
sd. TD-low	0.102	0.150
sd. TD-high	-0.021	0.156
sd. Measures-minimal	0.808***	0.143
sd. Measures-medium	0.262	0.172
sd. Measures-significant	0.496***	0.133
sd. Cases-green	0.377***	0.102
sd. Cases-orange	0.413***	0.118
sd. Crime-low	0.551***	0.077
sd. Political-high	0.072	0.098

The pattern of results from mixed logit model are similar to those from conditional logit and multinomial logit model. All estimated coefficients of the mixed logit have the same sign as that of conditional logit and multinomial logit models. Most coefficients have the same level of significance with the exception for Adequate level of Attractions and Activities ($\beta = -0.20, \rho < 0.05$) and Medium Measures ($\beta = 0.33, \rho < 0.05$). In comparison to the conditional logit and multinomial logit models, the coefficients of the mixed logit model are consistently higher in absolute terms.

Additional results from the mixed logit model concerned the standard deviation of the random parameters. The dispersion around the mean of Attractions and Activities (AA), Tourist Density (TD) and Political Stability is equivalent to zero because of statistically insignificant parameter estimates for the estimated SD. This implies that all distributional information of

these parameters showed the existence of homogeneity around the mean. The estimations of estimated SD for all other parameters are statistically significant and indicate variation around the mean parameter across the survey participants.

Overall, the three models' outputs are extremely comparable in terms of performance while having slightly different statistical outcomes.

4.1.1 Interaction Effect

To estimate whether there is an interaction effect of COVID-19 Cases depends on COVID-19 Measures, multinomial logit and mixed logit models were implemented with the inclusion of interaction between the two variables. The results of the interaction effect are summarized in Table 6 and 7, corresponding to multinomial logit and mixed logit models respectively. The results show that the mixed logit model is more efficient, with an AIC of 1850.687, than the multinomial logit model, which has an AIC of 1911.891.

Table 6: Multinomial Logit Model (Interaction Effect)

Coefficients	Estimate	Std. Error
COL-low	0.462**	0.180
COL-high	-0.520***	0.127
AA-few	-0.442***	0.100
AA-adequate	-0.030*	0.112
TD-low	-0.066	0.176
TD-high	-0.026	0.146
Measures-minimal	0.322**	0.137
Measures-medium	0.356*	0.190
Measures-significant	-0.149	0.115
Cases-green	0.250*	0.105
Cases-orange	0.410***	0.119
Crime-low	-0.506***	0.130
Political-high	0.216***	0.063
Measures-minimal: Cases-green	-0.223	0.191
Measures-medium: Cases-green	-0.439	0.290
Measures-significant: Cases-green	0.147	0.141
Measures-minimal: Cases-orange	-0.101	0.398
Measures-medium: Cases-orange	0.463*	0.273
Measures-significant: Cases-orange	-0.066	0.141

For the multinomial logit model, the variable estimates of the main effect indicate somewhat similar results to that of the models without interaction effect, with the main difference being in the magnitude of the coefficients. The difference can be seen in the results for low COL ($\beta = 0.46, \rho < 0.01$). Pertaining to the interaction between COVID-19 Cases and COVID-19 Measures it can be seen that low COL does not have as much impact on individuals a similar pattern can be seen in adequate AA (between 5 and 7 activities) ($\beta = -0.03, \rho < 0.05$). Results indicate that both Minimal Restrictions ($\beta = 0.32, \rho < 0.01$) and Medium Restrictions ($\beta = 0.36, \rho < 0.05$) are preferred over Very Significant Level of Measures, with Medium Restrictions being preferred slightly more than Minimal Restriction. Looking at the interaction effect, what is interesting is that, interaction between COVID-19 Cases and COVID-19

Measures is not really observed except for that of destinations in the Orange Zone with Medium Level of Restrictions ($\beta = 0.46, \rho < 0.05$).

Table 7:Mixed Logit Model (Interaction effect)

Coefficients	Estimate	Std. Error
COL-low	0.425**	0.197
COL-high	-0.597***	0.145
AA-few	-0.494***	0.122
AA-adequate	-0.066*	0.133
TD-low	-0.112	0.190
TD-high	-0.185	0.161
Measures-minimal	0.492**	0.180
Measures-medium	0.455*	0.228
Measures-significant	-0.122	0.136
Cases-green	0.281*	0.131
Cases-orange	0.657***	0.150
Crime-low	-0.440**	0.149
Political-high	0.238**	0.078
Measures-minimal: Cases-green	-0.231	0.224
Measures-medium: Cases-green	-0.262	0.318
Measures-significant: Cases-green	0.158	0.177
Measures-minimal: Cases-orange	0.324	0.446
Measures-medium: Cases-orange	0.360*	0.323
Measures-significant: Cases-orange	-0.278	0.171
sd. COL-low	0.230.	0.130
sd. COL-high	0.297*	0.139
sd. AA-few	-0.266.	0.159
sd. AA-adequate	0.280.	0.169
sd. TD-low	0.090	0.145
sd. TD-high	-0.099	0.135
sd. Measures-minimal	0.827***	0.149
sd. Measures-medium	0.291.	0.164
sd. Measures-significant	0.492***	0.132
sd. Cases-green	0.300**	0.103
sd. Cases-orange	0.498***	0.122
sd. Crime-low	0.550***	0.082
sd. Political-high	0.022	0.100

Like before, for the most part, the magnitude of the coefficients of the main effect of the mixed logit model are similar to that of the multinomial logit model. Looking at the interaction between COVID-19 Cases and COVID-19 Measures, like before we can detect interaction between destinations in Orange Zone with Medium Restrictions ($\beta = 0.36, \rho < 0.05$). For the

standard deviation of the random parameters with the exception of Tourist Density and Political Stability, all estimated SD are statistically significant.

4.2 Testing for Mediation

The path analysis model was applied to measure association of Risk Perception among individuals while selecting a destination. The model used the predicted Risk Perception values calculated for each individual. Since Risk Perception was measured in Terms of Health and Safety, to evaluate which type of risk individuals are more concerned about, factor analysis was performed (FA) to assess if individuals distinctly differentiate between the two types of risks. The aim of FA was to simplify the mediation analysis model by combining the two risks if they were comparable.

The Risk Perception in Terms of Health and Safety would have been combined if the Risk Perception for the variables of both risks had large loadings for the same factor. For example if Risk Perception for Crime in Terms of Health and Risk Perception for Crime in Terms of Safety both had somewhat similar loadings for the same factor. However, this is not the case and there is significant difference seen between the factor loadings of each variable. It is thus concluded that the two risks are not comparable and consequently cannot be merged. The results for the factor analysis can be found in the Appendix B.

Before the mediation analysis model was estimated, the model was specified by denoting the direct and indirect effects. In our model we proposed a direct effect of COVID-19 Measures on the probability of choice that the respondents made. The variables COVID-19 Measures, COVID-19 Cases, Crime Rate and Political Stability had an indirect effect on the destination choices through Risk Perception in Terms of health and Safety. COVID-19 Cases, Political Stability and Crime Rate were hypothesized to be fully mediated through Risk Perception,

hence no direct effect was specified. The results for mediation analysis are reported in Table 8 and 9.

The model was run using a distributionally-weighted least squares (DWLS) estimator. DWLS combines normal theory based and asymptotically distribution free (ADF) based generalized least squares estimation to balance the information from the data and the normality assumption which improves the estimation and inference with non-normal data. The model for mediation analysis ended normally after 53 iterations.

Table 8: Mediation Model Summary

Direct Effects		
	Estimates	Std. Error
Measures	-0.109***	0.029
Indirect Effects		
	Estimates	Std. Error
Measures → Health → Choice	0.007**	0.002
Cases → Health → Choice	-0.002*	0.008
Crime → Health → Choice	-0.002	0.003
Political → Health → Choice	0.006	0.006
Measures → Safety → Choice	0.013***	0.005
Cases → Safety → Choice	-0.001	0.002
Crime → Safety → Choice	-0.042**	0.016
Political → Safety → Choice	0.005*	0.004
Total Effect		
	Estimates	Std. Error
Total	-0.404***	0.085

Table 9: Mediation Model

Effect of Independent Variables on Mediator (Health Risk Perception)		
	Estimates	Std. Error
Measures	-0.21***	0.056
Cases	0.744***	0.071
Crime	0.277*	0.107
Political	-0.652*	0.117
Effect of Independent Variables on Mediator (Safety Risk Perception)		
	Estimates	Std. Error
Measures	-0.478***	0.056
Cases	0.052	0.072
Crime	1.535**	0.115
Political	-0.181***	0.122
Effect of Mediator (Risk Perception) on Choice		
	Estimates	Std. Error
Risk Perception-Health	-0.368**	0.010
Risk Perception-Safety	-0.027***	0.010

The results include the estimated direct effect and indirect effect, it also shows the significance of the mediation effect, which is the product of the mediator and the direct effect. The results in Table 8 suggest a direct effect of COVID-19 Measures on the Choice of destination ($\beta = -0.11, \rho < 0.001$), indicating that the higher the measures, the less likely it will be that people will choose the destination.

Further analyzing the results in Table 9, we look at the significance of the effect of the independent variables on the mediators and that of the mediators on the probability of choice. We see that COVID-19 Cases ($\beta = 0.74, \rho < 0.001$) and Crime Rate ($\beta = 0.28, \rho < 0.05$) are positively associated with Risk Perception in Terms of Health, i.e. the higher Cases or Crime Rate the higher the Risk Perception. Whereas COVID-19 Measures ($\beta = -0.21, \rho < 0.001$) and Political Stability ($\beta = -0.65, \rho < 0.05$) are negatively associated with Risk Perception in Terms of Health that means the higher the Measures and Political Stability the

lower the Risk Perception in Terms of Health. The findings indicate that COVID-19 Cases have the greatest impact followed by Political Stability, Crime Rate and COVID-19 Measures.

While analyzing Risk Perception in terms of Safety, it can be seen that COVID-19 Measures ($\beta = -0.48, \rho < 0.001$) and Political Stability ($\beta = -0.18, \rho < 0.001$) have a negative significance, such that COVID-19 Measures have a greater impact on individuals' concerns regarding safety followed by Political Stability. It can also be seen in the results that Crime Rate ($\beta = 1.53, \rho < 0.01$) has a high positive impact on Risk Perception in Terms of Safety.

Overall it can be seen that Risk Perception in Terms of Health ($\beta = -0.03, \rho < 0.01$) and Risk Perception in Terms of Safety ($\beta = -0.37, \rho < 0.001$) have a negative significant impact on the choices made by individuals, that means higher the Risk Perception in Terms of Health and Safety lower the probability of Booking a Trip.

Looking at the significance of the indirect effects in Table 7, it can be seen that the effect of COVID-19 Measures ($\beta = 0.007, \rho < 0.01$) and COVID-19 Cases ($\beta = -0.002, \rho < 0.05$) through the Risk Perception in Terms of Health mediator are significant. The effects of COVID-19 Measures ($\beta = 0.01, \rho < 0.001$), Crime Rate ($\beta = -0.04, \rho < 0.01$) and Political Stability ($\beta = 0.005, \rho < 0.05$) through the Health variable of Risk Perception are significant. Thus it can be said that there is a partial mediation effect of risk perception in terms of Health and Safety on COVID-19 Measures. A Mediation effect of Risk Perception in Terms of Health through COVID-19 cases can also be seen but it is very less. Likewise a very low mediation effect for Risk Perception in Terms of Safety can be detected on Crime Rate and Political Stability. Hence it can be said that consumers' decision making process is entangled with risks associated with Health and Safety.

4.3 Demographics and Risk Perception

Analyzing Risk Perception we can see that respondents with higher Risk Perception appear to be male, in the age bracket 55 -64. They are the ones who are willing to wait 2-3 months before traveling and willing to limit contact upon travelling. However those with lower risk perception are the ones who travel more frequently and check cases in the destination country before making travel plans and are willing to take preventive measures. All the estimates are statistically significant.

5. Discussion

Further analyzing the results of the previous section, the conclusion for each of the hypothesis can be made as follows:

H1a: Higher Cost of Living and Traveling decreases the probability of Booking a Trip.

We reject the null hypothesis and the results depict that high cost of living has a negative and significant influence on the probability of booking a trip.

H1b: Higher Attractions and Activities increase the probability of Booking a Trip.

We reject the null hypothesis, the results suggest a significant positive impact of the number of attractions and activities on the probability of booking a trip.

H1c: Higher Density of Tourists decreases the probability of Booking a Trip.

We fail to reject the null hypothesis, tourist density does not have a significant impact on the probability of booking a trip.

H2: COVID-19 Measures have a negative impact on Booking a Trip.

We reject the null hypothesis COVID-19 measures have a negative impact on the probability of booking a trip; however, the impact of only Minimal and Medium restrictions are significant.

H3: Higher Perceived Risk decreases the probability of Booking a Trip.

We reject the null hypothesis that perceived risk has a negative and significant effect on booking a trip, the higher the perceived risk of an individual for a destination the lower the probability that he/she will book the trip.

H4: The impact of COVID-19 Measures on the probability of Booking a Trip is positively mediated by Risk Perception.

We reject the null hypothesis, the impact of COVID-19 measures on the probability of booking a trip is positively mediated by risk perception. Higher the measures taken to curb COVID-19 the lower the perceived risk of an individual and the higher the probability of booking a trip.

H5: The impact of COVID-19 Cases on the probability of Booking a Trip is negatively mediated by Risk Perception.

We fail to reject the null hypothesis, the impact of COVID-19 cases on the probability of booking a trip is not significant.

H6a: The impact of Travel Safety on the probability of Booking a Trip is positively mediated by Risk Perception.

We reject the null hypothesis, the impact of travel safety on booking a trip is positively mediated by risk perception.

H6b: The impact of Health Safety on the probability of Booking a Trip is positively mediated by Risk Perception.

We reject the null hypothesis, the impact of health safety on booking a trip is positively mediated by risk perception.

H7: Higher Self-efficacy increases the probability of Booking a Trip.

We reject the null hypothesis, there is a positive significant impact of self-efficacy on the probability of booking a trip.

H8: The latter the Preferred Time to Travel the higher the probability of Booking a Trip.

We reject the null hypothesis, there is a positive significant impact of time on the probability of booking a trip.

H9: There is an interaction effect between COVID-19 Measures and COVID-19 Cases.

We reject the null hypothesis, there is a significant positive interaction effect between COVID-19 measures and COVID-19 cases, however it is very small.

In this study, the demand side of a significant source market is examined to assess the post-COVID-19 tourism recovery. Destination attributes, destination risk variables and individual traits were investigated to determine which variable had stronger and longer-lasting effects on travel plans. The mediating effect of perceived risk was also explored.

The respondents of the study were a diverse group in terms of both demographics (e.g. age, gender) and occupations. The findings reveal a possible behavioral difference between respondents' ages, but only a little variation between genders. It was seen that risk perception had a significant negative effect on making travel plans, this effect was a consequence of the combination of safety concerns, COVID-19 measures and COVID-19 cases. Risk perception was especially strong amongst individuals with older age, who have ‘Fair’ self-assessed health, they tend to wait longer to make travel plans.

The results further indicate that COVID-19 signals the severity of the pandemic in the country, lower restrictions indicating lower cases. Although it was also seen through the mediation effect that high measures rebuild tourist confidence of safety when risk perception is involved. The results indicate that individuals prefer destinations with medium COVID-19 restrictions for making travel plans. Medium restrictions indicate the destination to have relatively lower risk of COVID-19 and allows individuals higher mobility while exploring, as it was also seen that individuals prefer destinations with more attractions and activities. While cost of living and traveling at the destination is seen to be important, health safety and easy access and attractions and activities at destinations are critical elements in choosing a destination for post-pandemic travel, for which individuals are willing to pay slightly higher.

Results from this study surprisingly indicated that travel safety had a greater detrimental impact on consumer travel behavior than health safety. Despite the severity of COVID-19 crises, the recovery path in tourist psychology can be found to be back to normal and can be compared to those of earlier epidemics. Survey results indicate that individuals are now less anxious about their health which indicates that travel behavior has nearly returned to normalcy and people are more concerned about destination safety such as crime rate and political stability. A reason for this might be because measures to control COVID-19 led to consumers being stuck in their home for a long period of time, with decrease in COVID-19 and ease in the measures people now are wanting to resume their travel plans. Since these people are the ones who check cases in the destination country before making travel plans and are willing to take preventive measures they have less risk perception while traveling.

This study confirms the existence of risk perception that is likely to affect consumer decision making post-COVID-19. The results indicate the recovery pathway of the travel industry, this can be said because the results indicate that risk perception in terms of safety is considered more important than health. However, a slight shift in individual behavior is seen as COVID-19 related elements play an important role in determining the destination. It was seen that although structural constraints (money and number of activities) and destination measures were the main travel barriers, risk perception had a very significant impact on consumer behavior.

However the research had few limitations, first due to time constraint, a small dataset was used to run the analysis, which does not give us the full picture of the research as the data was not very diverse in terms of demographics. Designing a discrete choice experiment is very complex and it is not possible to include all the potential attributes that impact decision making since although a large number of choices help with statistical efficiency, respondents have a better response efficiency when presented with fewer number questions. Furthermore, individual behavior was not assessed in isolation, other economic and personal factors might have

impacted the choices that they made such as the Ukraine war. Finally, tourists perception regarding COVID-19 has changed over time as the survey was conducted in summer 2022

Future research may look into tourist behavior in real-world settings such as using different countries rather than hypothetical scenarios since it would be wrong to generalize the results due to different rate of spread and government capability to control the pandemic. It can aim at the economical section and analyze the impact COVID-19 had on the economy of different countries and how long it took for them to come out of it. It can also test the change in post-pandemic marketing campaigns for destinations.

6. Conclusion

The study aimed to investigate the various factors that influence the probability of booking a trip. The results indicated that high cost of living and low number of attractions and activities had a negative impact on the probability of booking a trip. Additionally, COVID-19 measures had a negative impact on the probability of booking a trip only for minimal and medium restrictions. The study also found that perceived risk had a negative effect on the probability of booking a trip, which was positively mediated by the impact of COVID-19 measures on risk perception. Furthermore, the study revealed that both travel safety and health safety had a positive effect on the probability of booking a trip, which was also mediated by risk perception. Self-efficacy and preferred time to travel were also identified as factors that had a positive impact on the probability of booking a trip. Finally, the study found a small but significant positive interaction effect between COVID-19 measures and COVID-19 cases.

The findings indicate that risk perception is an important denominator in the choices that individuals make therefore ensuring a positive image of the country will be a worthwhile strategy for government entities to attract tourists. As individuals highly rank safety of the destination while making choices it is important to focus on how people perceive the country. Travel companies along with the government should promote public information platforms on the attractions, activities and safety of the country, which should be more accessible through websites. These websites should also contain information regarding measures taken for COVID-19. Removing inaccurate information regarding the country can assist manage the risk perception and uncertainty that prohibit tourists from making travel decisions, as well as lessen the elements that negatively affect their travel wants. As it was seen that individuals value more on the measures taken for COVID-19 rather than the cases and are very keen on returning back to their travel behavior pre-COVID-19 it can be said that tourists do not consider the pandemic as a strong risk anymore and they are more concerned about ease of traveling at the destination.

This tourist behavior should be focused on and turned into opportunity and attracting them by making the destination attractive while ensuring that traveling to and from the destination is not very difficult.

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Appendix

Appendix A: Respondents Profile

		Frequency	Percent
Gender	Male	39	41.5
	Female	51	54.3
	Prefer not to say	4	4.2
	Total	*94*	*100.0*
Age	18-24 years old	40	42.6
	25-34 years old	45	47.9
	35-44 years old	8	8.5
	45-54 years old	1	1.0
	55 and above	0	0.0
	Total	*94*	*100.0*
Education	Bachelor's Degree	41	43.6
	High school graduate	21	22.3
	Master's Degree	31	33.1
	No schooling completed	1	1.0
	Total	*94*	*100.0*
Occupation	Student	51	54.3
	Working part-time	7	7.4
	Working full-time	29	30.9
	Unemployed and looking for work	1	1.0
	Retired	1	1.0
	A homemaker or stay-at-home parent	5	5.4
	Total	*94*	*100.0*
Residence	Asia	28	29.8
	Europe	60	63.8
	North America/Central America	4	4.4
	South America	1	1.0
	Australia	1	1.0
	Total	*94*	*100.0*
Health	Poor	1	1.0
	Fair	7	7.4
	Good	34	36.2
	Very Good	34	36.2
	Excellent	16	17.0
	Prefer not to say	2	2.2
	Total	*94*	*100.0*
Travel Frequency	0	18	19.1
	1 times	17	18.1
	2 times	26	27.7
	3 or more times	33	35.1
	Total	*94*	*100.0*

Appendix B: Factor Analysis

	Factor 1	Factor 2	Factor 3	Factor 4
Measures-Safety	-0.19	0.05	-0.08	-0.55
Cases-Safety	-0.46	-0.02	-0.05	0.01
Crime-Safety	-0.04	0.06	-0.06	0.59
Political-Safety	0.97	0.05	-0.02	0.21
Measures-Health	0.00	-0.08	-0.70	-0.05
Cases- Health	0.00	-0.40	0.08	-0.04
Crime- Health	0.06	-0.02	0.66	-0.04
Political- Health	0.10	0.94	0.31	-0.08

Appendix C: Survey

Dear Participant,

You are being invited to participate in a research study **'Post-Pandemic Purchase Behavior: Impact of COVID-19 on Consumer Decision Making while Booking a Trip'.** This research is being done by Sundas Nazir as part of the thesis for Master's in Data Science and Marketing Analytics at the University of Erasmus Rotterdam and has been reviewed according to Erasmus University procedures.

The purpose of this research is to investigate tourists' travel behavior and the factors that they consider the most important before booking a trip while taking COVID-19 into consideration.

Your participation in this research study is voluntary. If you decide to participate in this research survey, you may withdraw at any time. If you decide not to participate in this study or if you withdraw from participating at any time, you will not be penalized.

The procedure involves filling an online survey that will take approximately 20-25 minutes. The survey consists of four parts which comprises of basic demographic and COVID-19 related questions to get an overview of the respondents profile, hypothetical choice sets to get further insights into consumer choices and some open ended questions.

The information that you will share with us if you participate in this study will be kept completely confidential and we do not collect identifying information such as your name, email address or IP address and thus will be anonymous. The results of this study will only be used for scholarly purposes by Erasmus University representatives.

If you have any questions about the research study, please do not hesitate to contact 573242sn@eur.nl.

ELECTRONIC CONSENT:

Clicking on the "agree" button below indicates that:
- You have ready the above information
- You voluntarily agree to participate

If you do not wish to participate in the research study, please decline participation by clicking on the "disagree" button.

○ Agree (1)

○ Disagree (2)

1.1 How old are you?

- ○ Under 18 (1)
- ○ 18-24 years old (2)
- ○ 25-34 years old (3)
- ○ 35-44 years old (4)
- ○ 45-54 years old (5)
- ○ 55-64 years old (6)
- ○ 65+ years old (7)

1.2 How do you describe yourself?

- ○ Male (1)
- ○ Female (2)
- ○ Non-binary / third gender (3)
- ○ Prefer to self-describe (4)
  _____
- ○ Prefer not to say (5)

1.3 What is the highest level of education you have completed?

- ○ No schooling completed (1)
- ○ High school graduate (2)
- ○ Bachelor's Degree (3)
- ○ Master's Degree (4)
- ○ Doctorate Degree (5)

1.4 What best describes your employment status over the last three months?

- ○ Working full-time (1)
- ○ Working part-time (2)
- ○ Unemployed and looking for work (3)
- ○ A homemaker or stay-at-home parent (4)
- ○ Student (5)
- ○ Retired (6)
- ○ Other (7)

1.5 Where have you been living over the past 6 months?

- ○ Asia (1)
- ○ Africa (2)
- ○ Australia (3)
- ○ Europe (4)
- ○ North America/Central America (5)
- ○ South America (6)

1.6 How would you describe your overall health?

▼ 1 Poor (1) ... 6 Prefer not to say (6)

1.7 How many times have you travelled in the past 1 year?

- ○ 0 (1)
- ○ 1 (2)
- ○ 2 (3)
- ○ 3 or more (4)

1.8 Considering the current COVID-19 situation, how long are you willing to wait before booking a trip?

- ○ 0-1 month (1)
- ○ 2-3 months (2)
- ○ 6-12 months (3)
- ○ More than 1 year (4)

1.9 Please indicate to what extent you agree with the following statements.

	1 Strongly Disagree (1)	2 Disagree (2)	3 Neither Disagree nor Agree (3)	4 Agree (4)	5 Strongly Agree (5)
9. I check the number of COVID-19 cases in other countries before making any travel plans (1)	○	○	○	○	○
10. I make myself familiar with COVID-19 related measures in other countries before making any travel plans (2)	○	○	○	○	○

1.10 For the following question please indicate the level of your willingness using the scale below.

	1 Completely Unwilling (1)	2 Unwilling (2)	3 Neither Willing nor Unwilling (3)	4 Willing (4)	5 Completely Willing (5)
11. Considering the current COVID-19 situation, how willing are you to limit contact with people? (1)	○	○	○	○	○
12. Considering the current COVID-19 situation, how willing are you to take preventive measures (such as maintaining distance, wearing mask, using sanitizers) to ensure safety while travelling? (2)	○	○	○	○	○

Start of Block: Part 2: Discrete Choice Experiment

2.0 In the following part you will be presented with 12 hypothetical choice sets. For each choice set, please choose the alternative that attracts you the most for booking a trip.

Below are the different features that will describe the options you can choose from in each choice set.

Cost of Living & Travelling: Accounts for the expected approximate cost per day on the holiday

Attractions & Activities: Refers for the number of places and activities that are available for tourists at holiday destination

Tourist Density: Refers to number of tourist arrivals in the country

COVID-19 Measures: Precautionary measures taken by government to curb COVID-19

- Minimal Restrictions: Attending to hygienic measures, social distancing nation-wide
- Medium Restrictions: Closing all schools and hospitality levels in addition to minimal restrictions
- Significant Restrictions: Emergency ordinance, large level events cancelled in addition to medium restrictions
- Very Significant Restrictions: Complete restriction on movement in addition to significant restrictions

COVID-19 Cases: Classification of the countries according to the rate of COVID-19 cases at the destination

- Green Zone: Areas with zero confirmed cases till date or no confirmed case in the last 21 days
- Orange Zone: Areas which have reported a limited number of cases in the past

- Red Zone: Areas or the hotspots classified as those with the highest caseload

2.1

Please choose the alternative that attracts you the most for booking a trip.

1.Attributes	Choice 1	Choice 2	Choice 3
Cost of Living & Travelling	Low (€60 - €80 per day)	Low (€60 - €80 per day)	Moderate (€100 - €150 per day)
Attractions & Activities	Adequate (5 - 7)	Adequate (5 – 7)	Adequate (5 – 7)
Tourist Density	Moderate	High	High
COVID-19 Measures	Medium Restrictions	Significant Restrictions	Minimal Restrictions
COVID-19 Cases	Green Zone	Green Zone	Green Zone
Crime Rate	High	High	Low
Political Stability	High	Low	High

○ Choice 1 (1)

○ Choice 2 (2)

○ Choice 3 (3)

2.2

Please choose the alternative that attracts you the most for booking a trip.

2. Attributes	Choice 1	Choice 2	Choice 3
Cost of Living & Travelling	High (€200 or more per day)	Low (€60 - €80 per day)	Moderate (€100 - €150 per day)
Attractions & Activities	Few (< 5)	Many (> 7)	Adequate (5 – 7)
Tourist Density	Moderate	Low	High
COVID-19 Measures	Significant Restrictions	Minimal Restrictions	Significant Restrictions
COVID-19 Cases	Orange Zone	Orange Zone	Orange Zone
Crime Rate	High	Low	Low
Political Stability	High	High	High

- ○ Choice 1 (1)
- ○ Choice 2 (2)
- ○ Choice 3 (3)

2.3 **Please choose the alternative that attracts you the most for booking a trip.**

2. Attributes	Choice 1	Choice 2	Choice 3
Cost of Living & Travelling	High (€200 or more per day)	Low (€60 - €80 per day)	Moderate (€100 - €150 per day)
Attractions & Activities	Few (< 5)	Many (> 7)	Adequate (5 – 7)
Tourist Density	Moderate	Low	High
COVID-19 Measures	Significant Restrictions	Minimal Restrictions	Significant Restrictions
COVID-19 Cases	Orange Zone	Orange Zone	Orange Zone
Crime Rate	High	Low	Low
Political Stability	High	High	High

- ○ Choice 1 (1)
- ○ Choice 2 (2)
- ○ Choice 3 (3)

2.4 **Please choose the alternative that attracts you the most for booking a trip.**

4. Attributes	Choice 1	Choice 2	Choice 3
Cost of Living & Travelling	High (€200 or more per day)	Moderate (€100 - €150 per day)	Low (€60 - €80 per day)
Attractions & Activities	Few (< 5)	Adequate (5 – 7)	Few (< 5)
Tourist Density	High	Low	Low
COVID-19 Measures	Minimal Restrictions	Very Significant Restrictions	Medium Restrictions
COVID-19 Cases	Red Zone	Orange Zone	Green Zone
Crime Rate	Low	Low	Low
Political Stability	Low	High	Low

- ○ Choice 1 (1)
- ○ Choice 2 (2)
- ○ Choice 3 (3)

2.5

Please choose the alternative that attracts you the most for booking a trip.

5. Attributes	Choice 1	Choice 2	Choice 3
Cost of Living & Travelling	Moderate (€100 - €150 per day)	Moderate (€100 - €150 per day)	Moderate (€100 - €150 per day)
Attractions & Activities	Many (> 7)	Adequate (5 – 7)	Adequate (5 – 7)
Tourist Density	Moderate	High	Moderate
COVID-19 Measures	Significant Restrictions	Significant Restrictions	Minimal Restrictions
COVID-19 Cases	Red Zone	Green Zone	Red Zone
Crime Rate	Low	Low	High
Political Stability	Low	High	Low

- ○ Choice 1 (1)
- ○ Choice 2 (2)
- ○ Choice 3 (3)

2.6 **Please choose the alternative that attracts you the most for booking a trip.**

6. Attributes	Choice 1	Choice 2	Choice 3
Cost of Living & Travelling	Moderate (€100 - €150 per day)	High (€200 or more per day)	Moderate (€100 - €150 per day)
Attractions & Activities	Few (< 5)	Few (< 5)	Adequate (5 – 7)
Tourist Density	Low	Moderate	Low
COVID-19 Measures	Significant Restrictions	Significant Restrictions	Minimal Restrictions
COVID-19 Cases	Red Zone	Red Zone	Green Zone
Crime Rate	Low	High	High
Political Stability	Low	Low	High

- ○ Choice 1 (1)
- ○ Choice 2 (2)
- ○ Choice 3 (3)

2.7

Please choose the alternative that attracts you the most for booking a trip.

7. Attributes	Choice 1	Choice 2	Choice 3
Cost of Living & Travelling	Moderate (€100 - €150 per day)	High (€200 or more per day)	Moderate (€100 - €150 per day)
Attractions & Activities	Many (> 7)	Many (> 7)	Many (> 7)
Tourist Density	Low	Moderate	Low
COVID-19 Measures	Very Significant Restrictions	Significant Restrictions	Significant Restrictions
COVID-19 Cases	Green Zone	Orange Zone	Red Zone
Crime Rate	High	Low	Low
Political Stability	Low	Low	Low

- ○ Choice 1 (1)
- ○ Choice 2 (2)
- ○ Choice 3 (3)

2.8 **Please choose the alternative that attracts you the most for booking a trip.**

8. Attributes	Choice 1	Choice 2	Choice 3
Cost of Living & Travelling	Moderate (€100 - €150 per day)	Low (€60 - €80 per day)	Moderate (€100 - €150 per day)
Attractions & Activities	Adequate (5 – 7)	Many (> 7)	Few (< 5)
Tourist Density	Low	Moderate	High
COVID-19 Measures	Medium Restrictions	Medium Restrictions	Minimal Restrictions
COVID-19 Cases	Green Zone	Green Zone	Red Zone
Crime Rate	High	High	High
Political Stability	Low	High	High

- ○ Choice 1 (1)
- ○ Choice 2 (2)
- ○ Choice 3 (3)

2.9 **Please choose the alternative that attracts you the most for booking a trip.**

9. Attributes	Choice 1	Choice 2	Choice 3
Cost of Living & Travelling	High (€200 or more per day)	Moderate (€100 - €150 per day)	Moderate (€100 - €150 per day)
Attractions & Activities	Adequate (5 – 7)	Many (> 7)	Few (< 5)
Tourist Density	Low	High	High
COVID-19 Measures	Significant Restrictions	Medium Restrictions	Medium Restrictions
COVID-19 Cases	Red Zone	Green Zone	Green Zone
Crime Rate	High	Low	Low
Political Stability	High	High	Low

- ○ Choice 1 (1)
- ○ Choice 2 (2)
- ○ Choice 3 (3)

2.10 **Please choose the alternative that attracts you the most for booking a trip.**

10. Attributes	Choice 1	Choice 2	Choice 3
Cost of Living & Travelling	Low (€60 - €80 per day)	Moderate (€100 - €150 per day)	Low (€60 - €80 per day)
Attractions & Activities	Many (> 7)	Few (< 5)	Adequate (5 – 7)
Tourist Density	Low	Moderate	Low
COVID-19 Measures	Very Significant Restrictions	Medium Restrictions	Medium Restrictions
COVID-19 Cases	Red Zone	Orange Zone	Red Zone
Crime Rate	Low	Low	High
Political Stability	Low	High	High

- ○ Choice 1 (1)
- ○ Choice 2 (2)
- ○ Choice 3 (3)

2.11 **Please choose the alternative that attracts you the most for booking a trip.**

11. Attributes	Choice 1	Choice 2	Choice 3
Cost of Living & Travelling	High (€200 or more per day)	Moderate (€100 - €150 per day)	Low (€60 - €80 per day)
Attractions & Activities	Few (< 5)	Adequate (5 – 7)	Few (< 5)
Tourist Density	Moderate	Low	Moderate
COVID-19 Measures	Significant Restrictions	Significant Restrictions	Very Significant Restrictions
COVID-19 Cases	Green Zone	Red Zone	Orange Zone
Crime Rate	Low	High	High
Political Stability	Low	High	High

- ○ Choice 1 (1)
- ○ Choice 2 (2)
- ○ Choice 3 (3)

2.12

Please choose the alternative that attracts you the most for booking a trip.

12. Attributes	Choice 1	Choice 2	Choice 3
Cost of Living & Travelling	Moderate (€100 - €150 per day)	Low (€60 - €80 per day)	Low (€60 - €80 per day)
Attractions & Activities	Many (> 7)	Many (> 7)	Few (< 5)
Tourist Density	Low	Moderate	High
COVID-19 Measures	Significant Restrictions	Significant Restrictions	Medium Restrictions
COVID-19 Cases	Orange Zone	Red Zone	Red Zone
Crime Rate	High	Low	High
Political Stability	High	Low	Low

- ○ Choice 1 (1)
- ○ Choice 2 (2)
- ○ Choice 3 (3)

Start of Block: Part 3: Risk Perception

3.0 The following questions explore the risk perception of respondents regarding COVID-19. You will be presented with 8 different hypothetical profiles, on a scale 1 – 5, please indicate to what extent is your risk perception for each profile.

Below are the different features that will describe the options that the profiles will have.

Risk Perception in terms of Safety: hazards that might pose immediate or long-term threats to your well-being.

Risk Perception in terms of Health: hazards that might pose immediate or long-term threats to your health.

COVID-19 Measures: Precautionary measures taken by government to curb COVID-19

- Minimal Restrictions: Attending to hygienic measures, social distancing nation-wide
- Medium Restrictions: Closing all schools and hospitality levels in addition to minimal restrictions
- Significant Restrictions: Emergency ordinance, large level events cancelled in addition to medium restrictions
- Very Significant Restrictions: Complete restriction on movement in addition to significant restrictions

COVID-19 Cases: Classification of the countries according to the rate of COVID-19 cases at the destination

- Green Zone: Areas with zero confirmed cases till date or no confirmed case in the last 21 days
- Orange Zone: Areas which have reported a limited number of cases in the past
- Red Zone: Areas or the hotspots classified as those with the highest caseload

Start of Block: Part 3a

3.1.1 **How risky do you consider this situation?**

1.1 Attributes	
COVID-19 Measures	Minimum Restrictions
COVID-19 Cases	Red Zone
Crime Rate	High
Political Stability	Low

	1 Very Safe (1)	2 Safe (2)	3 Neither Safe Nor Risky (3)	4 Risky (4)	5 Very Risky (5)
In terms of saftey (1)	○	○	○	○	○
In terms of health (2)	○	○	○	○	○

3.1.2 **How risky do you consider this situation?**

1.2 Attributes	
COVID-19 Measures	Medium Restrictions
COVID-19 Cases	Green Zone
Crime Rate	High
Political Stability	High

	1 Very Safe (1)	2 Safe (2)	3 Neither Safe no Risky (3)	4 Risky (4)	5 Very Risky (5)
In terms of safety (1)	○	○	○	○	○
In terms of health (2)	○	○	○	○	○

3.1.3 **How risky do you consider this situation?**

1.3 Attributes	
COVID-19 Measures	Minimum Restrictions
COVID-19 Cases	Green Zone
Crime Rate	Low
Political Stability	High

	1 Very Safe (1)	2 Safe (2)	3 Neither Safe nor Risky (3)	4 Risky (4)	5 Very Risky (5)
In terms of safety (1)	○	○	○	○	○
In terms of health (2)	○	○	○	○	○

3.1.4 **How risky do you consider this situation?**

1.4 Attributes	
COVID-19 Measures	Medium Restrictions
COVID-19 Cases	Red Zone
Crime Rate	Low
Political Stability	High

	1 Very Safe (1)	2 Safe (2)	3 Neither Safe nor Risky (3)	4 Risky (4)	5 Very Risky (5)
In terms of safety (1)	○	○	○	○	○
In terms of health (2)	○	○	○	○	○

3.1.5 **How risky do you consider this situation?**

1.5 Attributes	
COVID-19 Measures	Minimum Restrictions
COVID-19 Cases	Red Zone
Crime Rate	Low
Political Stability	High

	1 Very Safe (1)	2 Safe (2)	3 Neither Safe nor Risky (3)	4 Risky (4)	5 Very Risky (5)
In terms of safety (1)	○	○	○	○	○
In terms of health (2)	○	○	○	○	○

3.1.6 **How risky do you consider this situation?**

1.6 Attributes	
COVID-19 Measures	Significant Restrictions
COVID-19 Cases	Orange Zone
Crime Rate	Low
Political Stability	Low

	1 Very Safe (1)	2 Safe (2)	3 Neither Safe nor Risky (3)	4 Risky (4)	5 Very Risky (5)
In terms of safety (1)	○	○	○	○	○
In terms of health (2)	○	○	○	○	○

3.1.7 **How risky do you consider this situation?**

1.7 Attributes	
COVID-19 Measures	Very Significant Restrictions
COVID-19 Cases	Orange Zone
Crime Rate	Low
Political Stability	High

	1 Very Safe (1)	2 Safe (2)	3 Neither Safe nor Risky (3)	4 Risky (4)	5 Very Risky (5)
In terms of safety (1)	○	○	○	○	○
In terms of health (2)	○	○	○	○	○

3.1.8 **How risky do you consider this situation?**

1.8 Attributes	
COVID-19 Measures	Significant Restrictions
COVID-19 Cases	Green Zone
Crime Rate	Low
Political Stability	Low

	1 Very Safe (1)	2 Safe (2)	3 Neither Safe nor Risky (3)	4 Risky (4)	5 Very Risky (5)
In terms of safety (1)	○	○	○	○	○
In terms of health (2)	○	○	○	○	○

Start of Block: Part 3b

3.2.1 **How risky do you consider this situation?**

2.1 Attributes	
COVID-19 Measures	Significant Restrictions
COVID-19 Cases	Orange Zone
Crime Rate	Low
Political Stability	High

	1 Very Safe (1)	2 Safe (2)	3 Neither Safe nor Risky (3)	4 Risky (4)	5 Very Risky (5)
In terms of safety (1)	○	○	○	○	○
In terms of health (2)	○	○	○	○	○

3.2.2 **How risky do you consider this situation?**

2.2 Attributes	
COVID-19 Measures	Medium Restrictions
COVID-19 Cases	Green Zone
Crime Rate	Low
Political Stability	Low

	1 Very Safe (1)	2 Safe (2)	3 Neither Safe nor Risky (3)	4 Risky (4)	5 Very Risky (5)
In terms of safety (1)	○	○	○	○	○
In terms of health (2)	○	○	○	○	○

3.2.3 **How risky do you consider this situation?**

2.3 Attributes	
COVID-19 Measures	Minimum Restrictions
COVID-19 Cases	Green Zone
Crime Rate	Low
Political Stability	High

	1 Very Safe (1)	2 Safe (2)	3 Neither Safe nor Risky (3)	4 Risky (4)	5 Very Risky (5)
In terms of safety (1)	○	○	○	○	○
In terms of health (2)	○	○	○	○	○

3.2.4 **How risky do you consider this situation?**

2.4 Attributes	
COVID-19 Measures	Very Significant Restrictions
COVID-19 Cases	Green Zone
Crime Rate	High
Political Stability	High

	1 Very Safe (1)	2 Safe (2)	3 Neither Safe nor Risky (3)	4 Risky (4)	5 Very Risky (5)
In terms of safety (1)	○	○	○	○	○
In terms of health (2)	○	○	○	○	○

3.2.5 **How risky do you consider this situation?**

2.5 Attributes	
COVID-19 Measures	Medium Restrictions
COVID-19 Cases	Orange Zone
Crime Rate	High
Political Stability	High

	1 Very Safe (1)	2 Safe (2)	3 Neither Safe nor Risky (3)	4 Risky (4)	5 Very Risky (5)
In terms of safety (1)	○	○	○	○	○
In terms of health (2)	○	○	○	○	○

3.2.6 **How risky do you consider this situation?**

2.6 Attributes	
COVID-19 Measures	Minimum Restrictions
COVID-19 Cases	Orange Zone
Crime Rate	High
Political Stability	Low

	1 Very Safe (1)	2 Safe (2)	3 Neither Safe nor Risky (3)	4 Risky (4)	5 Very Risky (5)
In terms of safety (1)	○	○	○	○	○
In terms of health (2)	○	○	○	○	○

3.2.7 **How risky do you consider this situation?**

2.7 Attributes	
COVID-19 Measures	Significant Restrictions
COVID-19 Cases	Green Zone
Crime Rate	High
Political Stability	High

	1 Very Safe (1)	2 Safe (2)	3 Neither Safe nor Risky (3)	4 Risky (4)	5 Very Risky (5)
In terms of safety (1)	○	○	○	○	○
In terms of health (2)	○	○	○	○	○

3.2.8 **How risky do you consider this situation?**

2.8 Attributes	
COVID-19 Measures	Medium Restrictions
COVID-19 Cases	Orange Zone
Crime Rate	Low
Political Stability	High

	1 Very Safe (1)	2 Safe (2)	3 Neither Safe nor Risky (3)	4 Risky (4)	5 Very Risky (5)
In terms of safety (1)	○	○	○	○	○
In terms of health (2)	○	○	○	○	○