Abstract. Since the 9/11 terrorist attack, risk perception has been one of the points of study in the context of tourism. The infamous day or occurrence, which led to a significant decline in travel demand, demonstrated the critical relevance of risk research in tourism. Previous research indicates that risk perception considerably influences travel behavior, particularly when considering terror-infested areas. However, the relationship between tourist risk perceptions and willingness to travel remains fragmented due to the variable nature of their association, as indicated by a few studies, which simultaneously revealed multiple dimensions of risk perception. The present study focuses on the five dimensions of perceived risks, namely Physical Risk, Financial Risk, Socio-Psychological Risk, Performance Risk, and Time Risk, and their relationship with the tourists’ willingness to travel. The purpose of this study is to determine whether risk perception affects undergraduate students at De La Salle University-Dasmarinas' willingness to travel to Mindanao. This quantitative study utilized a purposive sampling method to gather respondents. Their risk perceptions were measured using a questionnaire that experts validated. The results were analyzed using Spearman's Correlation, which indicated that all perceived risk dimensions, apart from time risk, had a negative and significant relationship to the willingness to travel to Mindanao of undergraduate students at De La Salle University-Dasmarinas.

Keywords: perceived risks, tourism risks, terrorism, willingness to travel, undergraduate students, Mindanao

Introduction

Risk has long been an element of the travel business; the two notions are inextricably linked. From the planning stage of a trip, the risk is already present. This might be due to uncertainty about the destination and insecurity over future situations. Over the decades, risk and its link to tourism have increasingly gained attention. It was explicitly highlighted after the 9/11 terrorist attack in 2001, which led to a significant decline in travel demand. This occurrence piqued scholars’ interest because it demonstrated the critical relevance of risk research in tourism, which eventually increased studies examining the concept and its substantial influence in the world of travel. Tourists’ risk perception has a noticeable effect on tourism, as some research indicates that it strongly predicts travel behavior. In the context of tourism, it is noted that perceived risk has a more significant effect on a tourist's destination selection than actual risk (Karl and Schmude, 2017). The notion of perceived risk has been explored in consumer behavior literature. As a result, different categories of perceived risk among travelers have been identified. However, the current study only took into account the five dimensions of risk perceptions developed by Fuchs and Reichel (2006): physical—the possibility of bodily injury to the consumer due to the product's operation; financial—the risk of losing money spent on goods; performance—the risk associated with the likelihood that the product...
may fail to function as intended; social-the fear that the product will not meet the reference group's expectations; psychological-the consumer's concern that the purchase will not be consistent with their self-image; and time-the potential that using the product may take an excessive amount of time.

Tourists usually shun sites they regard as unsafe in favor of ones they believe are safe. When travelers picture the destination as dangerous, this can have a detrimental effect on their thoughts, discouraging them from visiting the destination or, in some cases, the entire region, resulting in considerable losses in the areas wrongfully perceived as dangerous. This is an issue faced even by Mindanao, the Philippines' second biggest island, due to numerous terror-related incidents it has been subjected to. Most of these conflicts have been inflicted by secessionist groups on the island, such as the Abu Sayyaf Group (ASG), the Communist Party of the Philippines-New People's Army (CPP-NPA), and the Moro Islamic Liberation Front (MILF). The University of Maryland (2019) analysis of the country's terror incidents between 2016 and 2019 indicated that the plurality occurred in Mindanao. One of the impacts seen was a 30% drop in foreign tourists to one of the island's regions due to a five-month war in one of its cities (Francisco, 2018). The constant occurrence of such incidents inflicted by the previously mentioned terror groups led to the spiraling down of Mindanao's tourism, decreasing tourist arrivals, and investment losses.

Mindanao, which is composed of six regions, namely Region 9 (Zamboanga Peninsula), Region 10 (Northern Mindanao), Region 11 (Davao Region), Region 12 (SOCCSKARGEN), Region 13 (CARAGA Region), and BARMM (Bangsamoro Autonomous Region in Muslim Mindanao), is now a burgeoning regional and local economy. Nearly a third of its land area is dedicated to agriculture, which explains why agriculture is a substantial aspect of its economy. The primary products of the island region include tuna, pineapple, coconut oil, bananas, and natural rubber. It accounts for more than 30% of national trade and more than 40% of the Philippines' food requirements. China, the Netherlands, Japan, the United States of America, Vietnam, South Korea, and Iran are its key export destinations. If adequately managed, Mindanao's abundant agricultural resources have the potential to serve as the Philippines' basis for long-term development. According to Philippine Statistics Authority (2018), Mindanao's economy grew at an average of 5.9%. This was due to Services, Agriculture, Hunting, Forestry, and Fishing.

Aside from these, tourism is also one of the driving forces of their economy. According to Valdeavilla (2018), it is one of Asia's favored tourist destinations for its diverse culture and the island's natural beauty. For instance, Davao del Sur and Davao de Oro are both included in the list of the top 10 most visited places in the country in 2019 (Department of Tourism, 2019). This island group is home to world-class white-sand beaches, vast orchid gardens, scenic volcanoes, and various ethnic festivals. Some would go far as to say that the natural resources of Mindanao surpass those of Luzon and the Visayas. This could be a factor drawing tourists to the island. Francisco and Rosauro (2020) reported that Mindanao was visited by 15.5 million tourists in 2018. Of these, the majority were composed of domestic ones, with foreigners accounting for 372,000, or 2.4% of the total. Tourism growth in the Northern part of Mindanao generated jobs, mainly for the people in Camiguin province and Iligan and Cagayan de Oro cities. According to the data collected by the Bureau of Immigration (2019), total tourist arrivals by air in Davao alone attributed to 36 662, contributing to 0.44% of the
country's visitor arrivals in 2019. This province houses Davao City, a significant host for regional and national events, both by the public and private sectors.

In addition, the city of Cagayan de Oro holds the same title. Apart from being a venue for events, Mindanao's tourism development is also dependent on its recreational destinations, such as the seaside hideaways in Dapitan and Zamboanga cities in Region 9; islands of Siargao, Misamis Oriental, and Camiguin found in Regions 10; beaches in Samal and Davao Oriental in Region 11; islands in Sarangani province in Region 12; and coastal areas in Surigao in Region 13 (Francisco and Rosauro, 2020). Mindanao is also home to protected areas such as Mount Hamiguitan Range Wildlife Sanctuary in Davao Oriental and Mt. Apo in Davao del Sur; both found in Region 11, as well as the Initao-Libertad Protected Landscape and Seascapes in Misamis Oriental in Region 10. The numerous attractions found in the island region open up opportunities for multiple tourist activities such as surfing in Cloud 9, white water rafting in Cagayan de Oro River, mountain trekking in Mt. Apo, wildlife watching in Davao Crocodile Park, diving and snorkeling in Camiguin and Samal Islands, spelunking and rappelling in Blue Water Cave, diving in Enchanted River, etc. Apart from the attractions and products of Mindanao, its primary asset is its people. Generally, Mindanaoans are known for their positive outlook, pleasant disposition, and warm hospitality. However, the socio-political conflict generated by the massive influx of Christian settlers from the north led to the increasing marginalization of indigenous and Muslim groups on the island resulting in unstable peace and order situation creating an environment of political instability (National Defense University, 2016).

Although this area has been explored and applied to a few contexts, research on risk perception in terror-infested areas remains limited, even though studies revealed that terrorism is a top concern for tourists when planning a vacation. Moreover, the connection between tourist risk perceptions and willingness to travel is still fragmented, as some findings revealed that the relationship between the two is inconsistent. To bridge these gaps, the researchers conducted an in-depth study of the five categories of perceived risk and their influence on an individual’s willingness to travel, emphasizing a terror-infested destination. This research aims to determine whether risk perception influences the willingness to travel to Mindanao of undergraduate students in De La Salle University-Dasmariñas. The study also seeks to obtain: (1) to determine if physical risk impacts the tourists’ willingness to travel; (2) to know if financial risk affects the tourists’ willingness to travel; (3) to ascertain if socio-psychological risk impacts the tourists’ willingness to travel; (4) to know if performance risk impacts the tourists’ willingness to travel; and (5) to determine if time risk affects the tourists’ willingness to travel. The results of this study will be significant to the provincial government, as this will guide them in adopting more effective measures to promote Mindanao as a safe destination to visit, together with its other unique selling points. Also, this study will be valuable to the locals in Mindanao, as this will provide insight into how they might help alter people's perceptions of their island. Lastly, future researchers will be guided while doing new research or evaluating the validity of previously published findings. This study will work as a point of reference, elucidating the different risk perception factors toward Mindanao and their relationship to people's willingness to visit the island as a destination.

**Literature review and conceptual framework**

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The idea of risk perception is defined in tourism literature as the views held by tourists while acquiring and consuming travel services. It also examined how the different aspects of perceived travel risk influence visit intention (Khan et al., 2019). Tourism researchers characterized risk perception in various ways, which led to numerous interpretations. Perpiña et al. (2021) made significant contributions to the knowledge of risk perception, particularly in international tourism. They contended that various risk factors, whether natural or man-made, might impair the tourism experience. They evaluated 62 tourism risk perception and destination image papers between 1997 and 2014, taking into account all potential components of risk that may be utilized to evaluate this notion, and came up with 50 risk characteristics applicable to every tourism location. The 50 features identified were narrowed to five aspects of foreign travel: inconveniences, personal concerns, destination risks, physical risks, and time-value risks (Perpiña et al., 2021). Others asserted that risk perception is subjective (Bhasin, 2018; Paek and Hove, 2017), varies from person to person, and changes over time (Bhasin, 2018). The latter claim is supported by Hasan et al. (2017), which asserted that the risks felt by prospective travelers might vary over time and from one place to another. Hence, there is a need to evaluate risk perception on a destination-specific basis (Khan et al., 2019). According to Alvarez et al. (2020), risk perception is a multifaceted notion, but Hasan et al. (2017) simplified the complex nature of risk perception in six dimensions: physical, financial, performance, security, social, and psychological. Similarly, Bhasin (2018) identified the five types of perceived risks but renamed performance risk as functional risk, which negates the definition of risk since the term functional has a positive connotation. Over time, psychological and social risks were eventually merged into one due to the difficulties of interviewing tourists of Fuchs and Reichel (2006) to differentiate the two (Khasawneh and Alfandi, 2019). That being the case, the present study adapted Fuchs and Reichel (2006) five dimensions of risk perceptions: physical risk, time risk, financial risk, socio-psychological risk, and performance risk.

Despite the multifaceted nature of risk perception, tourism research indicates that terrorism, which falls under the category of physical risk (Sohn et al., 2016), is one of the top concerns for travelers when planning a trip (Asongu et al., 2018; Brodien Hapairai et al., 2018). This is backed by the findings of Adeloye and Brown (2018), which found that some respondents had a proclivity to avoid places believed to be at risk of terrorism. This conclusion is strengthened by the incident faced by the world's most visited city, Paris, which dealt a 0.8% drop in tourist arrivals due to terror attacks (Hosie, 2017). Contrary to this, some studies have discovered that tourists continue to visit unsafe places. While previous research has attempted to investigate risk perception in travel, few studies have concentrated on politically unstable destinations, despite scholars arguing that risk perception should be evaluated on a destination-specific basis (Khan et al., 2019). Additionally, previous studies examined the factors driving risk perception but fell short of delving deeper into five types of risk perception collectively and their impact on willingness to travel.

In tourism, physical risk refers to the probability that the tourism product inflicts harm to the consumer and others physically. According to Cui et al. (2016), natural tourism attractions involving land, waters, climatic sceneries, and natural landscape are associated the most with the previously mentioned types of risk. Physical risk is also among the dimensions of risks that bother tourists (Nagai et al., 2019). However, the physical risk was not broadly discussed in tourism literature prior to the 9/11 incident, at
least not in the most quoted articles on tourism safety and security (Nagai et al., 2019). Financial risk is the possibility that the tourist's financial condition is adversely affected due to unforeseen expenses that may arise before and during the trip. This could also involve tourists not obtaining value for their money (Cui et al., 2016). Socio-psychological risk refers to the extent to which tourists can be influenced by a group of individuals particularly those in their social circle, due to the nature of the trip and how it matches their social status and self-image (Chin et al., 2021). According to Deng and Ritchie (2016), in addition to the previous claim, another factor to consider is the visitors' general psychological stress or emotional strain and pressure sensation. Past research's socio-psychological theme mainly focuses on travelers' social concerns, such as how friends and relatives think, but Deng and Ritchie (2016) research shows that the psychological risks of student travelers extend far beyond social factors. Performance risk is the possibility of not receiving holiday benefits due to the travel product or service not performing well. Time risk pertains to the likelihood that the tourist's vacation time will be pointless and that the planning and preparations for the trip will be excessively time-consuming (Hashim et al., 2018).

In the context of the Philippines, risk perception is not given enough attention. Most studies are centered on security and safety as a whole and are not linked to the tourists' travel behavior or risk perception. In a smaller-scale setting, Mindanao has been the most associated with terrorism and other related constructs. It has long been the hideout of multiple terrorist groups, where most attacks have occurred. For instance, according to the University of Maryland (2019) statistics, most terrorist operations committed by these groups between 2016 and 2019 occurred in Mindanao. The continuous threat of terrorism in Mindanao and the persisting concern over its security has caused a depression in its tourism sector. The reputational damage resulting from these issues has led to a decrease in investment even among areas of Mindanao that are relatively unaffected by violence (World Bank, 2017). Therefore, it is important to understand potential tourists' risk perception toward Mindanao. Numerous research have shown a link between tourists' travel behavior and risk perception, as it was discovered to influence tourists' destination choice (Alvarez et al., 2020; Khan et al., 2019). Karl and Schmude (2017) stated that perceived risk has a more significant effect on the destination selection of tourists than absolute risk since they judge based on perception rather than fact. Tourists are compelled to make choices based on their perceptions due to the nature of tourism—intangible and an experience. Tourists' perceptions of risk, whether positive or not, will influence their travel choices. However, a study completed by Hasan et al. (2017) has found that the connection between travel behavior and risk perception is generally negative. This contradicts the findings of Anshul and Jeetesh (2017), who indicated that tourists' risk perception positively affects their decision-making.

The figure below shows the conceptual framework adapted from Khasawneh and Alfandi (2019) study. The current research did not include the overall destination image as a variable because its relationship to tourists' travel behavior, particularly willingness to travel, has already been explored and proven to be significant (Caber et al., 2020; Perpiña et al., 2020; Alrawadieh et al., 2018). The framework contains various types of risk perception as independent variables and willingness to travel as the outcome variable. In the context of tourism, it shows the correlation between visitors' risk perception and their decision to travel to a particular destination (Figure 1).
Materials and Methods

This research utilized an explanatory quantitative approach since this is the most practical method for determining the correlation between travelers' risk perception and willingness to travel. The respondents of this study are the undergraduate students of De La Salle University-Dasmariñas, composed of 8,405 students. 399 undergraduate students were chosen to participate in this research. They were purposively selected based on the following criteria: (1) traveled outside of their home province; (2) they stayed for at least 24 hours but not more than a year at the place they traveled to; and (3) the purpose of their trip should fall into one of the two primary purposes: traveling for personal or business purposes. The research utilized non-probability sampling, specifically purposive sampling, to obtain the necessary information from tourists alone. Additionally, this is the most appropriate sampling approach because the respondents are chosen according to criteria.

The questionnaires were administered to evaluate the respondents' risk perceptions and desire to travel to Mindanao. The researchers adapted risk perception statements from Fuchs and Reichel (2006) study, whereas willingness to travel was adapted from the research of Lam and Hsu (2006). Initially, the questionnaire contained 35 items and used a Likert scale with a five-point degree from (1) strongly disagree to (5) strongly agree. The first to the sixth part of the questionnaire assessed risk perception, whereas the seventh section evaluated tourists’ willingness to travel to Mindanao. However, based on the recommendations and feedback from tourism experts and professors at De La Salle University-Dasmariñas, those statements deemed relevant to the present study were the ones retained. The questionnaire version used for data gathering consists of 32 items categorized into seven parts: Overall Risk Perception, Physical Risk, Financial Risk, Socio-Psychological Risk, Performance Risk, Time Risk, and Willingness to Travel Mindanao. All constructs were quantified using a four-point Likert scales from (4) strongly agree to (1) strongly disagree. Before proceeding to the data gathering process, the researchers conducted a pilot testing on 32 undergraduate students at De La Salle University-Dasmariñas to ascertain how each scale reflected the construct being measured. Goforth (2015) suggested that items that loaded less than 0.50 are unacceptable and should be removed. The findings of the reliability tests for each variable showed that Cronbach’s alpha was above 0.90, which is considered excellent for exploratory studies. More specifically, results in terms of reliability analysis, first in
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"Overall Risk Perception" Cronbach, α=0.941, among "Perceived physical risk" factor Cronbach, α=0.942, "Perceived financial risk" factor Cronbach, α=0.942, "Perceived socio-psychological risk" factor Cronbach, α = 0.94, "Perceived performance risk" factor Cronbach, α=0.941, "Perceived time risk" factor Cronbach, α=0.941, and “Willingness to Travel to Mindanao”, α=0.95. The Cronbach Alpha value equated to 0.944, indicating an excellent internal consistency among the items in the questionnaire. The researchers sought the assistance of a statistician to interpret the gathered information accurately. Since the researchers used Likert scales to measure the respondents' risk perception and willingness to travel, Spearman's correlation was used to analyze the results.

The survey questionnaire was created through an online platform called Microsoft Forms, which was then distributed to the respective student government of each department during school days (Monday to Saturday). The survey took approximately 5 minutes to complete. The survey questionnaire asked the respondents’ e-mail addresses to avoid duplication of information. After submitting the survey, they received a copy of their responses at the e-mail addresses they provided. In compliance with the Data Privacy Act, the data collected were kept with the utmost confidentiality until the completion of the study. The researchers included an informed consent and data privacy authorization form before the survey questions. The respondents had to toggle a checkbox indicating that they have read and agreed to the terms in the forms.

Results and Discussion

Out of a total of 449 respondents, 399 were chosen based on the study’s criteria. Most respondents came from the College of Business Administration and Accountancy (CBAA), accounting for 22.06%, followed by the Colleges of Science and Computer Studies (CSCS), College of Tourism and Hospitality Management (CTHM), College of Liberal Arts and Communication (CLAC), College of Engineering, Architecture and Technology (CEAT), College of Criminal Justice Education (CCJE), and College of Education (COEd), accounting for 20.80%, 20.30 %, 16.79%, 16.04%, 2.26%, and 1.75%, respectively . The majority of respondents, 76.7%, were between the ages of 20 and 23. Regarding gender, 66.42% are female, 32.08% are male, and 1.50 % prefers not to identify. Table 1 represents the results of the bivariate correlation analysis. The results indicate that all perceived risk dimensions (physical, financial, socio-psychological, and performance risk), except for perceived time risks, and were negatively and significantly correlated to the respondents' willingness to travel to Mindanao. This means that as the risk dimensions mentioned above increase, the willingness to travel to Mindanao will decrease. A strong correlation had been found between physical risk and willingness to travel to Mindanao (r=-0.21). Among the indicators of physical risk, Q10 obtained the highest mean of 3.033. This statement measures the perception of respondents in terms of terrorism and political unrest in Mindanao. This supports Asongu et al. (2018) and Brodien Hapairai et al. (2018) claim that terrorism is one of the top primary concerns of travelers when planning a trip. This is because Mindanao is often associated with extremist groups and has experienced multiple terrorist attacks in the past decade.

Table 1. Spearman's correlation analysis of perceived risk dimensions and willingness to travel.
This is followed by a strong correlation between financial risk and willingness to travel to Mindanao (r= -0.141). This agrees with Khasawneh and Alfandi (2019), where financial risks and tourists' behavioral intentions strongly correlate. This factor includes statements measuring perceptions about expected and unexpected trip expenses to and at Mindanao. This is because of the gap between perception and reality. Another contributing factor would be the nature of tourism, which is an experience on its own, making it impossible for all parts of the trip to be anticipated. There was also a strong relationship between socio-psychological risk and willingness to travel to Mindanao (r= -0.235). This contradicts the findings of Khasawneh and Alfandi (2019), where the respondents were European tourists who visited Jordan. The respondents' generation significantly impacted the differences between the results of the two studies. Respondents in Khasawneh and Alfandi (2019) study were millennials, whereas respondents in the current study were Generation Z. Millennials are said to be more confident, while Generation Z is shown to be more conscious of their self-image and people's opinion, particularly those in their social circle.

A strong relationship has also been found between performance risk and willingness to travel to Mindanao (r= -0.265). This finding is consistent with the study of Deng and Ritchie (2016), where international university students had the same perception of performance risk. This is because it belongs among the human-induced risks, which are ultimately beyond the control of tourists and may have colossal damage, unlike weather and tourist facilities problems. Contrary to the results of the first four perceived risk dimensions, no correlation was found between time risk and willingness to travel to Mindanao (r=0.374). This aligns with Khasawneh and Alfandi’s (2019) findings. One factor that possibly contributed to the similarity of results would be the generation groups of the respondents of both studies. The previous study had a majority of older adults as respondents, while the current study's principal respondents were younger adults. Both of these generations, unlike seniors, are found to be less concerned with time risks while traveling.

**Conclusion**

This study aims to determine whether risk perception influences undergraduate students' willingness to travel to Mindanao at De La Salle University - Dasmariñas. This study identified five perceived risk dimensions: Physical Risk, Financial Risk, Socio-Psychological Risk, Performance Risk, and Time Risk. The respondents appear to view the first four perceived risk dimensions as significant in their willingness to travel to Mindanao. On the other hand, time risk seemed to have no impact on their intention to
visit Mindanao. Majority of the indicators that received the highest general arithmetic mean fall under the physical risk dimension category, while one indicator belongs to the performance risk dimension. However, the risk being measured in the statement is inflicted by humans. Therefore, this still covers physical concerns.

This study implies that higher risk perception in terms of Physical Risk, Financial Risk, Socio-Psychological Risk, and Performance Risk would indicate lower willingness to travel to Mindanao or vice versa. Furthermore, the present study suggests that a higher risk perception of Time Risk would mean a higher desire to travel to Mindanao or vice versa. Additionally, the results indicate that Physical Risk was the primary concern of undergraduate students in De La Salle University-Dasmariñas out of all the identified perceived risk dimensions. With Physical Risk being a substantial factor, it should be prioritized by the tourism stakeholders in Mindanao to guarantee that the said risk dimension is reduced to a minimum or avoided altogether to draw tourists to the island. This study is not without its limitations. It is delimited to the context of Undergraduate Students in De La Salle University-Dasmariñas. Moreover, the place that was perceived is confined to Mindanao. Clearly, a narrow or more specific scope would improve the study results. Future studies should also consider a wider age group to strengthen the generalizability of the findings. Specifically, it is recommended to look into the risk perception of the generation that represents the largest group of travelers—millennials.

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Conflict of interest

All authors declare that they have no conflicts of interest with any parties involved in the research.

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