

Tourists' risk perception of risky destinations: The case of Sabah's eastern coast

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Abstract

This study investigates tourists' risk perception towards a risky destination. The eastern coast of Sabah, Malaysia was chosen as the study site for its recent high risk status as a result of a series of abductions and political turmoil. Using *t*-test and PLS-SEM analysis, the impacts of travel experience, prior experience with risk, travel motivation, novelty preference, gender, age, and nationality on tourists' risk perception were examined. The results of this study indicate that tourists do perceive Sabah's eastern coast to be high risk but this negative perception of Sabah's eastern coast as a marine destination does not affect their perception of other coastal areas in Malaysia – tourists remain optimistic of other coastal areas within Malaysia. The effects of various determinants on risk perception are reported. The study has provided timely analysis and implications to the tourism industry in Sabah, which can also serve as a reference to destinations with similar risk background.

Keywords

Risk perception, marine destination, safety, security, PLS-SEM, Malaysia

Introduction

Risk and tourism are intrinsically connected, as the decision to travel itself implies risk, including the risk of travelling to an unfamiliar place; the uncertainty of future conditions; and the possible negative outcomes of making any travel-related decisions (Chang, 2009). Indeed, tourism as a product is intangible, inseparable, heterogeneous, and perishable in nature which makes risk part of the package (Mitchell and Grotorex, 1993; Williams and Baláž, 2013), although at times, risk contributes to the excitement and positive experience of travel (Cater, 2006; Dickson and Dolnicar, 2004; Quintal et al., 2010). Increasing discussion concerning risk and tourism is noted, especially those pertinent to safety and security risks, such as terrorism, political instability, and crime. This research trend has taken off since the 9/11 terrorist attack in 2001 which has caused severe impacts on international tourism (Kovari and Zimanyi, 2011; Shin, 2005). Since then, a rising number of tragic incidents that involved tourists have taken place, including bombings in Bali, Indonesia and Sinai, Egypt.

With the increasing expenditure households spend on travel (Roehl and Fesenmaier, 1992; Williams and Baláž, 2013), it is conceivable that risk research is of vital importance within the tourism discipline. This has been supported by prior research which has

documented the impacts of risk perception on travel behaviour and the complexity of travel decision making when risk is involved (Floyd et al., 2004; Sönmez and Graefe, 1998a; Sönmez and Graefe, 1998b; Wong and Yeh, 2009). Although a large body of risk literature has been developed, the concept of risk in essence has been criticized to be inconsistent across disciplines and its context-based nature has therefore, made it even challenging to operationalize (Roehl and Fesenmaier, 1992). The paucity of established risk theories within the tourism discipline has further led to a fragmented understanding of tourists' risk perception (Korstanje, 2009; Williams and Baláž, 2013). A great number of prior studies have investigated travel-related risk perception on a large sample which led to promising statistical significance, but much of the data was collected from residents, students, and the general public rather than actual tourists, and were not destination nor event specific (Lepp and Gibson, 2003; Simpson and Siguaw, 2008; Williams and Baláž, 2013). Roehl and Fesenmaier (1992), two of the pioneer scholars in this field, have cautioned that risk perception is situation-specific, hence it necessitates a destination-based study to aptly examine risk perception and its antecedents in the context of interest. Given the aforementioned gaps, this study investigates tourists' risk perception on the east coast of Sabah, Malaysia (destination-specific) which has become infamously known for kidnapping and terrorism (event-specific) from actual tourists at international airports.

Background of the eastern coast of Sabah – A risky marine destination

Marine tourism is one of the fastest growing areas in the industry (Hall, 2001). Similar trend is also found in Malaysia as in many Southeast Asian countries such as Thailand, the Philippines, and Indonesia. Its increasing importance is reflected in the statistics where nearly half of the 25 million tourists who arrived in Malaysia in 2010 have visited its beaches and islands (Tourism Malaysia, 2011). Tourists favour the coastal areas in Malaysia for the pristine marine environment. The many long stretches of beach in a tropical setting attract both divers and sun-sea-sand tourists. Similar to other destinations around the world, the islands and coastal destinations in Malaysia have become tourism dependent.

Marine tourism, a term that is often used interchangeably with island tourism and coastal tourism, refers to leisure activities that occur on, in or under the saline and tide-affected marine environment (Orams, 1999). Marine destination by definition, is a tourism setting where marine activities take place, including activities that are based on coastal areas, such as sunbathing and whale watching from a headland, as long as the focus is on the marine environment (Orams, 1999). The risk context of marine destinations is different from conventional destinations. On top of petty crime and marine specific safety risks (e.g.

diving safety and wildlife attack), some marine destinations in Malaysia, particularly the east coast of Sabah exposes tourists to a distinctive set of risks, such as piracy (Liss, 2010), terrorism (Wai, 2013), and kidnapping (Avineshwaran, 2014). Furthermore, marine destinations are not homogenous. Some diving-oriented or newly developed marine destinations, such as Perhentian Island and Sabah's eastern coast attract divers, adventure tourists, and backpackers (Daldeniz and Hampton, 2011). Past studies have indicated that these distinctive types of visitors may have higher risk tolerance compared to mass tourists (Cohen, 1972; Dickson and Dolnicar, 2004; Lepp and Gibson, 2003; Plog, 1974).

A number of fatal incidents on Malaysia's coastal lines in recent years have raised the safety and security concerns among tourists. This is especially so on the east coast of Sabah given the latest political turmoil and frequent kidnapping. Five abductions have taken place between November 2013 and July 2014, resulting in two deaths and six hostages, including tourists, hotel workers, marine police, and fish farm managers (Sabah Ministry of Tourism Culture and Environment, 2014; The Star, 2014). Adjoining the southern islands of the Philippines, which is a military based for Abu Sayyaf militants, terrorists, and pirates, this area has a long-standing history for kidnapping and terrorist attacks. Some of the most infamous examples include the abduction of more than 20

tourists in 2000 (Avineshwaran, 2014) and the incursion of Lahad Datu in 2013 (Wai, 2013). Following these incidents, many countries have therefore issued travel ban against the east coast of Sabah. These include Australia (Department of Foreign Affairs and Trade, Australia, 2013), New Zealand (Foreign Affairs & Trade, New Zealand, 2014), the United States (Bureau of Consular Affairs, U.S., 2013), Canada (Government of Canada, 2013), United Kingdom (Government of United Kingdom, 2013), Ireland (Department of Foreign Affairs and Trade, Ireland, 2014), France (France Diplomatie, 2014), Switzerland (Schweizerische Eidgenossenschaft, 2014), China (Ministry of Foreign Affairs, People's Republic of China, 2014), Hong Kong (Security Bureau, The Government of the Hong Kong Special Administrative Region, 2014), Taiwan (Bureau of Consular Affairs, Republic of China, 2014), and Japan (Ministry of Foreign Affairs, Japan, 2013). The risky status of this area was further supported by Yang, Khoo-Lattimore, and Nair's (2014) work on the risk rating of marine destinations in Malaysia where the east coast of Sabah was voted by both domestic and international tourists as the most dangerous destination in Malaysia.

Sabah remains a popular destination amongst divers and conventional tourists (Charuruks, 2013), despite fluctuations in tourist arrivals after each individual incident. As illustrated in Figure 1, the impact of risk on international tourists is more noticeable than

that of domestic tourists. This occurrence is supported by prior research which demonstrated that international tourists are more susceptible to safety and security risks than domestic tourists (Barker et al., 2003; George, 2010) because they are attractive targets for crime (Pizam, 1999) and terrorism (Sönmez and Graefe, 1998b). International tourists are likely to generalize risks to a whole country (Lepp and Gibson, 2003) or region (Kovari and Zimanyi, 2011) while domestic tourists are more aware of the specific risks related to an independent destination (George, 2010).

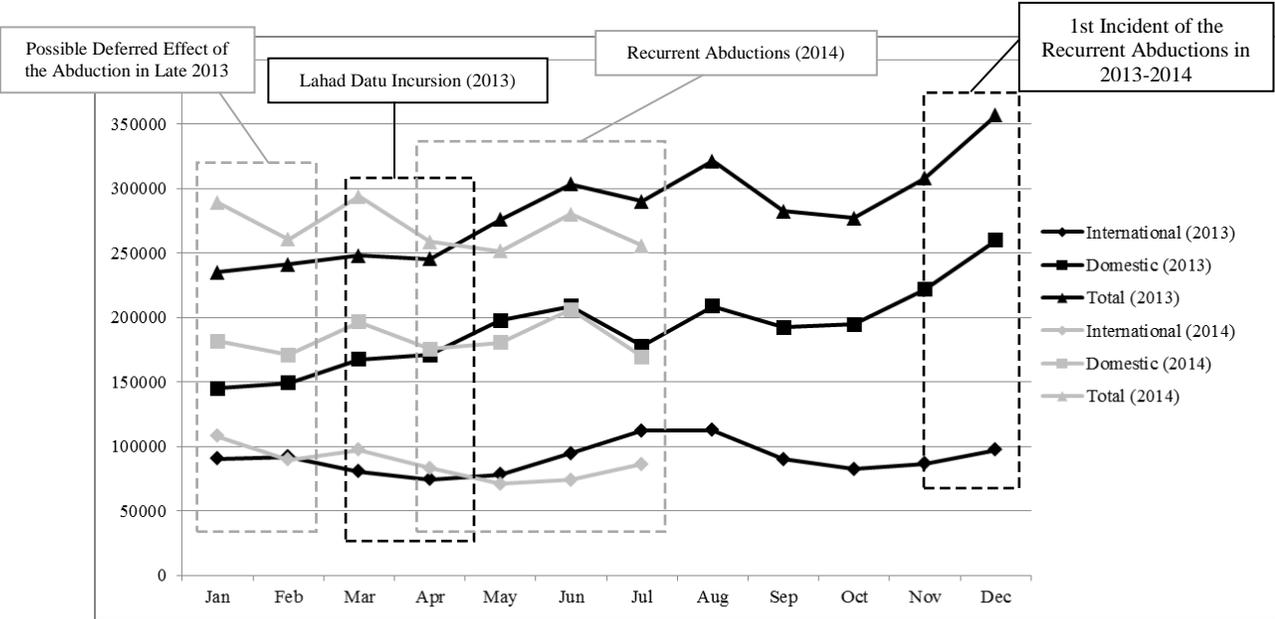


Figure 1. Tourist arrival, Sabah (Jan 2013 – May 2014).
 Source: Sabah Tourism Board (2014).

Although there is no empirical link between the fluctuations of tourist arrivals shown in this figure and risk, the figures have, however, implied an association which merits further verification. For example, there was a slight impact during the incursion of Lahad Datu in March and April 2013, where the hotel industry in that area experienced a 35 percent drop in business (The Star, 2013a; Yuen, 2013). As reflected in the graph, the tourism industry in Sabah was resilient for weeks after the political standoff (Personal Communication, 2014; The Star, 2013b). Again, the statistics fluctuated in early 2014 due to recurrent abductions in November 2013, and continuously from April to July 2014.

In this regard, this study aims to investigate tourists' risk perception on risky destination—the east coast of Sabah—in a timely manner. Little research has studied risk perception at marine destinations within the context of Malaysia; one of the fairly few exceptions is Yang et al. (2014). To address this deficit, this current study sets out to answer the following questions: (1) how tourists perceive risk on Malaysia's marine destinations in general and more specifically, on Sabah's eastern coast; (2) how travel experience, prior experience with risk, travel motivation, novelty preference, and demographic factors affect risk perception. By answering these questions, this study is

expected to contribute opportune perspectives to the tourism industry in Sabah and to provide theoretical implications to other destinations with similar risk background.

Literature review

Risk perception in tourism

The concept of risk has been primarily discussed in the economic literature from a quantitative viewpoint, as well as in the discipline of psychology from the cognitive and emotional perspectives (Korstanje, 2009; Korstanje, 2011). Within tourism, the discussion of risk gained some momentum since 1970s beginning with the classic works of Cohen (1972) and Plog (1974). In their work on tourist typologies, risk attitude was referenced inadvertently. A number of risk research in tourism emerged in the 1990s (Maser and Weiermair, 1998; Milman et al., 1999; Pizam, 1999; Sirakaya et al., 1997; Sönmez et al., 1999; Sönmez and Graefe, 1998a; Sönmez and Graefe, 1998b; Tsaur et al., 1997; Wilks and Atherton, 1994), but the zenith came only after the 9/11 incident. Since then “risk” has then become a prevailing trend in tourism research (Bianchi, 2006; Dickson and Dolnicar, 2004; Fuchs and Reichel, 2006; Kim and Gu, 2004; Korstanje, 2011; Law, 2006; Lepp and Gibson, 2003; Pizam et al., 2004; Quintal et al., 2010; Reisinger and Mavondo, 2005; Simpson and Siguaw, 2008; Williams and Baláž, 2013). How tourists perceive risk will

affect their travel decisions such as destination selection and itinerary planning, be they positive or otherwise. The existing literature has generally agreed that tourists tend to avoid destinations with greater perceived risks (Batra, 2008; Law, 2006; Sönmez et al., 1999), although a number of studies have found that some tourists would intentionally seek to participate in risky activities and visit risky destinations (Dickson and Dolnicar, 2004; Fuchs et al., 2013; Mura and Khoo-Lattimore, 2011). The disagreement on risk perception and travel decision merits further investigation. Responding to this call, the current study examines tourists' risk perception towards a risky marine destination (Sabah's eastern coast).

Risk is a highly subjective concept which varies across space and time (Green and Singleton, 2006; Lupton, 1999). Risk in tourism can be broadly grouped into four categories: absolute risks, actual risks, desired risks, and perceived risks (Dickson and Dolnicar, 2004). This study only focuses on perceived risk as tourists only experience risk that is pertinent to themselves (Budescu and Wallsten, 1985; Reisinger and Mavondo, 2005). In fact, perceived risk is more widely studied in the field of tourism because it is practically impossible to measure the exact scale and range of actual risk (Bentley et al., 2001). Risk perception is a fluid concept which is subject to tourists' role (Cohen, 1972;

Gibson and Yiannakis, 2002) and personalities (Plog, 1974). Based on Haddock's (1993) definition, perceived risk was described as the subjective evaluation of potential threats and dangers with the existence of safety controls. Prior research has identified a number of categories for perceived risks in tourism. For instance, Roehl and Fesenmaier (1992) discussed three dimensions of perceived risks, which includes physical-equipment risks, vacation risks, and destination-specific risks. Drawing on respondents' self-reported risk perception, Simpson and Sigauw (2008) identified ten types of travel-specific risks, which comprise health and well-being, criminal harm, transportation performance, travel service performance, travel and destination environment, generalised fears, monetary concerns, property crime, concern for others, and concern about others. Most recently, Pennington-Gray and Schroeder's (2013) study on international tourists' perception of safety and security suggested seven categories of travel risks, which include crime, disease, physical, equipment failure, weather, cultural barriers, and political crises. There is no ultimate list of perceived risks as scholars have been revisiting the risk classification from time to time to better reflect the changes of the external settings of tourism. Nevertheless, the existing literature has largely conceived that safety and security risks are the most important concerns as far as tourists are concerned (Floyd et al., 2004; Lepp and Gibson, 2003). For instance, Pizam and Mansfeld (2006) identified four types of security incidents that are

malevolent to the industry: crime, terrorism, war, and civil/political turmoil. Lepp and Gibson (2003) suggested that terrorism and political turmoil in one destination could affect the tourism industry in the region and neighbouring countries. Considering recent abductions and political turmoil on the east coast of Sabah, the associated travel bans, and the inconsistent risk perception tourists hold towards Sabah as suggested by Charuruks (2013) and Yang et al. (2014), it necessitates a timely study to investigate tourists' risk perception pertinent to safety and security in the affected area.

Having acknowledged the importance of safety and security risk in tourism, there has been surprisingly little research in Malaysia which has put forth the discussion of risk. Within the Malaysian tourism context, the limited risk studies have investigated the effects of terrorist threats on overall tourist arrivals (Lean and Smyth, 2009) and have focused on tourists' risk perception in urban destinations, such as Bukit Bintang (Amir et al., 2012) and Johor Bahru (Anuar et al., 2011). To our best knowledge, only one study in Malaysia has examined tourists' perception of risk on the rural islands and coastal areas. Yang et al. (2014) compiled a list of risks of which tourists were concerned with when visiting marine destinations in Malaysia. Their findings indicated that marine tourists in Malaysia were highly concerned with performance risks (e.g. travel service and transportation performance)

instead of safety and security risks, and the eastern coast of Sabah was rated as the most dangerous marine destination in Malaysia. Yang et al. (2014) have contributed fundamental insights into the knowledge of tourists' risk perception on Malaysian islands. This study intends to expand that of Yang et al. (2014) by measuring the risk perception level on the east coast of Sabah and investigating the effects of various determinants on risk perception. Considering the recent incidents that have happened on the east coast of Sabah, it is postulated that:

H1a: Tourists perceive Sabah's eastern coast as unsafe for travel.

H1b: Tourists perceive Malaysia's coastal destinations (in general) as safe for travel.

Determinants of risk perception

Tourists' risk perception is shaped by both internal and external factors (Um and Crompton, 1990). Internal factor refers to determinants that are closely related to tourists themselves whereas external factor is the risk image of a destination which includes information retrieved from travel advisory, mass media, travelogue, social media network, and word-of-mouth (Heung et al., 2001). The available information informs tourists of the actual risks they might encounter when travelling to a destination. How tourists interpret and perceive

the informed risks would depend on the internal determinants. Given that this study is interested in destination-specific risk perception where the risk image of the study site (Sabah's eastern coast) has been clearly covered in numerous travel advisories and mass media, only the internal factors of risk perception are examined. More specifically, these internal factors include travel experience, prior experience with risk, travel motivation, preference for novelty, age, gender, and nationality. The selection of determinants was referred to the common independent variables adopted by past studies (Aschauer, 2010; Kozak et al., 2007; Lepp and Gibson, 2003; Sönmez and Graefe, 1998b; Williams and Baláž, 2013).

Travel experience. Existing literature suggests that travel experience is likely to downplay risk perception. Drawing on Maslow's hierarchy of needs, Pearce's (2011) Travel Career Pattern (TCP) theorized the influence of travel experience on travel motivations. Based on Pearce's model, less experienced tourists seek to satisfy lower order of needs such as safety and food before they accumulate enough travel experience to climb up the travel career ladder and seek higher needs. Likewise, Kozak et al. (2007) also found that experienced tourists perceive lower risks. Their findings further advanced that the impact of travel experience on risk perception is even more significant when terrorism is concerned.

Similarly, Sönmez and Graefe (1998a) proposed that past travel experience is an influential determinant on future travel intention, especially when a risky destination is concerned. Hence, it is postulated that:

***H2a:** International travel experience exerts significant negative impact on tourists' risk perception.*

***H2b:** Marine travel experience exerts significant negative impact on tourists' risk perception.*

Prior experience with risk. It was claimed that tourists who have first-hand experience with crime, or sometimes indirect experience (e.g. learnt from people close to them) tend to be more concerned with risks of similar nature (Brunt et al., 2000; Seabra et al., 2013). However, George (2010) disagreed with this assumption as tourists from places with higher crime rate or terrorism threats could perceive less risk when travelling to risky destinations. The inconsistent findings from the existing studies imply that prior experience with risk does play a role in shaping risk perception, but the nature of the relationship, whether it is positive or negative, warrants further investigation. We therefore postulate:

***H3:** Prior experience with risk exerts significant effect on tourists' risk perception.*

Travel motivation. The existing literature suggests that travel motivation or purpose of visit plays an important role in tourists' risk perception (Fuchs and Reichel, 2011; Reisinger and Mavondo, 2005). Unlike business travellers, leisure tourists are free to choose or to avoid a destination in consideration of its safety status (Sönmez and Graefe, 1998b). Therefore, it is meaningful to ask tourists what motivates them to travel, especially to destinations with high risk status. While the needs of safety are of primary importance for tourists who travel to rest and relax (Reisinger and Mavondo, 2005), some tourists purposely seek for an optimal level of risk that forms the excitement part of travel (Cater, 2006; Dickson and Dolnicar, 2004; Quintal et al., 2010). This is particularly relevant to tourists whose purpose of travel is to participate in adventurous tourist activities, such as rock climbing, whitewater rafting, and scuba diving. These excitement seekers could be less sensitive to risk (Lepp and Gibson, 2003; Reisinger and Mavondo, 2005). It is therefore hypothesized that:

H4: Travel motivation exerts significant effect on tourists' risk perception.

Preference for novelty. Lepp and Gibson (2003) were the first scholars to systematically investigate the influence of tourists' preference for novelty on risk perception. The authors broadly categorized tourists into two poles: novelty seekers and familiarity seekers. Novelty seekers tend to avoid going back to the same destinations and they are more likely to travel

to destinations with higher risk (Lepp and Gibson, 2003). The need for novelty is associated with tourists' role (Cohen, 1972), individual lifestyle (Bello and Etzel, 1985), and personality (Plog, 1974). For instance, backpackers perceive lower degree of risks compared to mass tourists (Lepp and Gibson, 2003); independent travellers are more willing to take risks in making travel decisions (Hyde and Lawson, 2003). Hypothesis 5 is formed in this regard:

H5: Novelty preference is a significant negative contributor to tourists' risk perception.

Demographic factors. Past studies that investigated the influence of gender on risk perception have advanced contradicting opinions. Some scholars have demonstrated that women perceive higher risks than men (Kozak et al., 2007; Lepp and Gibson, 2003; Park and Reisinger, 2010; Qi et al., 2009) and that gender difference reflects different types of travel risks. For instance, women are more concerned about violence and terrorism risks while men perceive higher cultural and health risks (Qi et al., 2009). Other scholars, on the other hand, have suggested an insignificant relationship between gender and risk perception (Carr, 2001; George, 2003; Gibson and Jordan, 1998; Simpson and Sigauw, 2008; Sönmez and Graefe, 1998b). Prior research has concluded that gender does not work alone in

shaping risk perception and therefore, other factors such as age, nationality, travel experience, and novelty preference should also be considered (Carr, 2001; Gibson and Jordan, 1998). In terms of age and risk perception, older tourists have been found to be more fond of certainty and thus tend to avoid travel destinations with higher perceived risks (Aschauer, 2010; Gibson and Yiannakis, 2002; March and Woodside, 2005). Prior research has also highlighted the influence of culture and nationality on risk perception and travel intentions (Barker et al., 2003; George, 2010; Kozak et al., 2007; Pizam et al., 2004; Quintal et al., 2010; Reisinger and Mavondo, 2006; Seabra et al., 2013; Seddighi et al., 2001). There is, however, no overarching agreement on which culture perceives more risk than others as it is subject to the list of countries and the types of risks included in a research (Reisinger and Mavondo, 2006). Nevertheless, these studies have suggested the difference between domestic and international tourists where the latter have been found to be more susceptible to risk (Barker et al., 2003). Based on the above discussion, this study intends to test the following hypotheses:

***H6a:** Gender exerts significant impact on tourists' risk perception: Female tourists perceive greater degree of risk compare to their male counterparts.*

***H6b:** Age exerts significant positive impact on tourists' risk perception.*

***H6c:** Nationality exerts significant effect on tourists' risk perception.*

In brief, the main purpose of this study is to investigate tourists' risk perception of Sabah's eastern coast (H1a) and of Malaysia's coastal destinations in general (H1b). The second objective of the study is to examine the effects of travel experience (H2), prior experience with risk (H3), travel motivation (H4), novelty preference (H5), and demographic factors (H6) on risk perception. Figure 2 presents the theoretical model of the study.

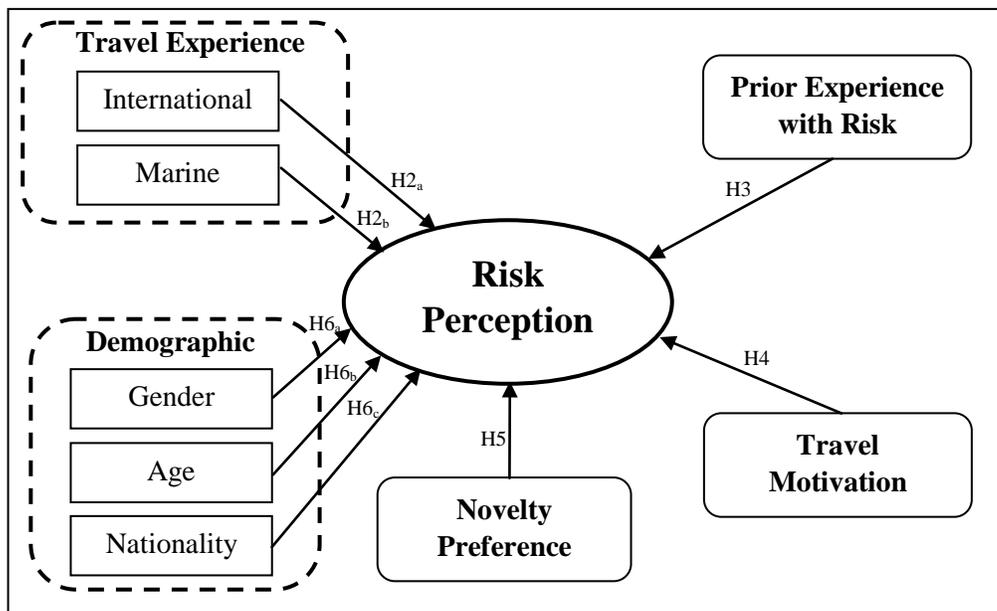


Figure 2. Theoretical model of risk perception.

Methodology

Instrument

The main objectives of this study are to investigate how marine tourists perceive risk on the east coast of Sabah and to study the factors that influence tourists' risk perception. A two-page self-administered questionnaire comprising four sections was developed to obtain the necessary data. The first section contained three screening questions to ensure that the participants (1) were aged 18 and above; (2) had visited or were planning to visit a marine destination in Malaysia; and (3) were familiar with Sabah's eastern coast. The second section captured travel motivation on a nominal scale and travel experience in an open-ended form at where participants were asked to list the number of marine trips they have taken in the past five years. In the same regards, they were also asked the number of international trips. The design of the questions on travel experience was referred to Sönmez and Graefe (1998a). The third section measured risk perception, past experience with risk, and novelty preference on a 7-point Likert scale. Seven items concerning risk perception were adapted from Fuchs and Reichel (2006). In order to contrast and compare the risk perception of Sabah's eastern coast and other Malaysia's coastal destinations, two items for general risk perception were also included in the survey: "Overall, I feel safe when travelling to marine destinations in Malaysia"; and "I do not perceive any security risk

when travelling to these marine destinations”. Past experience with risk was measured with five items adapted from Seabre et al. (2013), while the three items to gauge novelty preference were built upon the argument put forth in Lepp and Gibson (2003). The last section of the survey collected demographic information, including age, gender, education, perceived income level, marital status, and nationality. The survey instrument was in essence an integration of the input from the accumulated literature on tourist risk perception (Fuchs and Reichel, 2006; Seabra et al., 2013; Sönmez and Graefe, 1998a). Some of scales from previous research were adapted to suit the objectives and context of the current research.

Sample and data collection

The questionnaire survey was conducted in the international airports of Kuala Lumpur – the capital city of Malaysia rather than on Sabah’s eastern coast itself. This decision was heavily deliberated and made based on the consideration that the risk perception of those who are not visiting the infected area was of utmost importance because they are the mass potential segment to be captured. Moreover, tourists who travel to a threatened destination might perceive a different spectrum of risk and rationalization as their travel decision was not affected by the governmental advisories (Fuchs et al., 2013; Uriely et al., 2007), and

therefore, were excluded from this study. A total of 411 questionnaires were collected out of which 12 were incomplete and discarded, 399 usable questionnaires remained for further analysis. The current study was part of a larger research project, so the 399 cases were narrowed down to only the 217 cases who have heard of Sabah's eastern coast. According to Cohen, Cohen, West et al. (2003), a sample of 217 participants is sufficient to achieve the desired statistical power. Expectedly, many of the international participants were not familiar with the study site and therefore, were unable to provide their perception of the risk status of the infected destination. This led to an imbalanced sample composition in this study, which skewed towards domestic tourists. Nevertheless, the composition of domestic and international sample in this study is a factual reflection of the tourist profile in Sabah since 2008, of which approximately 70% of the tourists were local (Sabah Tourism Board, 2014).

Non-probabilistic sampling technique was employed as the population of tourists visiting marine destinations was enormous and therefore, the sampling frame was unavailable. The participants were recruited via convenience and criteria sampling strategies. A pilot test with 30 participants was conducted to validate the face validity of the questionnaire and to further enhance the questions (Creswell, 2003).

Table 1 shows the detailed frequencies and percentages of the demographic information. Data was gathered from 217 participants with a relatively balanced gender proportion. Majority of the participants were domestic tourists who were young and well educated. In any case, past studies in Southeast Asia have similar sample composition, in that participants were typically young and highly educated (Hui et al., 2007; Kim et al., 2014). For instance, Hui et al. (2007) conducted a tourist satisfaction survey in the international airport of Singapore of which 74% of their Asian sample were aged below 30 and one in every two of the participants were students. Similarly, the Malaysian sample in Kim et al. (2014) was made up by 77% of participants in their 20s and 30s, and 68% of college graduates. As clarified in Hui et al. (2007), researchers have limited control on the demographics of the sample due to the available pool of potential participants presented during the period of data collection. With the emergence of low cost carriers whose main consumers are from a younger cohort (O'Connell and Williams, 2005), our data collection has also led to a younger pool of sample. Moreover, the sample demographic may be an indication of the tourist profile in Asia. It lends support to prior research on the emergence of the youth travel market in Southeast Asia which is a reflection of the rapid economic growth and rise of middle class in the region since the 1990s (Bui et al., 2013). The young demographic of this current sample is also consistent with prior research on marine tourism

in Malaysia. Conducted in Perhentian Island – which is also a well-known diving site resembling Sabah, 60% of the participants in Ismail and Turner (2008) were below 30.

Table 1. Demographic Profiles of Participants

Variables	Frequency	%
Gender		
Female	99	45.62
Male	118	54.38
Marital status		
Single	145	66.82
Married	71	32.72
Divorced/widowed	1	0.46
Education		
No formal education	3	1.38
Secondary/high school	22	10.14
Tertiary	155	71.43
Postgraduate	36	16.60
Others	1	0.46
Age		
18 to 25	92	42.40
26 to 30	60	27.65
31 to 45	48	22.12
46 to 60	16	7.37
61 and above	1	0.46
Perceived income level		
Much below average income	16	7.37
Below average income	34	15.67
Same as average income	115	52.99
Above average income	42	19.35
Much above average income	10	4.61
Nationality		
<u>Malaysian</u>	<u>169</u>	<u>77.88</u>
<i>Malay</i>	<i>100</i>	<i>46.08</i>
<i>Chinese</i>	<i>57</i>	<i>26.27</i>
<i>Indian</i>	<i>12</i>	<i>5.53</i>
<u>International</u>	<u>48</u>	<u>22.12</u>
<i>Asia</i>	<i>28</i>	<i>12.90</i>
<i>Europe</i>	<i>11</i>	<i>5.07</i>
<i>Oceania</i>	<i>5</i>	<i>2.30</i>

<i>Africa</i>	3	1.38
<i>North America</i>	1	0.46
Tourist types (multiple selection)		
Adventure tourist	87	40.09
Mass tourist	55	25.35
Backpacker	69	31.80
Eco-tourist	56	25.81
Flashpacker	54	24.88
Cultural tourist	66	30.41
No. of international trips taken in last 5 years		
None	39	17.97
1 to 5	104	47.93
6 to 10	28	12.90
11 to 15	10	4.61
16 to 20	10	4.61
21 or above	9	4.15
Missing	17	7.83
No. of marine trips taken in last 5 years		
None	36	16.59
1 to 5	124	57.14
6 to 10	26	11.98
11 to 15	7	3.23
16 to 20	0	0.00
21 or above	2	1.00
Missing	22	10.14
Preferred travel party		
Alone	17	7.83
With partner/spouse	59	27.19
With friends	81	37.33
With family	55	25.35
With organized tour	5	2.30
Purpose of visiting marine destinations (multiple selection)		
For relaxing	170	78.34
For the scenery	94	43.32
For diving	46	21.20
For other water sports	37	17.05
For business	7	3.23
Others	6	2.76

Analysis and findings

The first two hypotheses were tested using a one-sample *t*-test. A test value of “4.0” (Chen and Funk, 2010; Geher and Hall, 2014) was used to examine whether tourists perceive (i) Sabah’s eastern coast as unsafe and (ii) Malaysia’s coastal destinations as safe for travel. The results, as reported in Table 2, show that H1a which posited that tourists perceive Sabah’s eastern coast as unsafe for travel ($M = 4.530$, $SD = 1.638$) is supported at 95% confidence level, $t(217) = 4.737$, $p < 0.001$. The results also support H1b which proposed that tourists perceive Malaysia’s coastal destination as safe for travel ($M = 5.200$, $SD = 1.103$), $t(217) = 15.880$, $p < 0.001$.

Table 2. *T*-test Results

Hypothesis	<i>t</i> -value	<i>df</i>	Mean difference	Percentile 95% confidence intervals	Results
H1a: Tourists perceive Sabah’s eastern coast as unsafe for travel	4.737	217	.530***	[0.308; 0.746]	Supported
H1b: Tourists perceive Malaysia’s coastal destination as safe for travel.	15.880	217	1.190***	[1.041; 1.336]	Supported

Test value = 4; *** indicates statistical significance at the 0.001 level.

In order to test the effects of international and marine travel experience, past experience with risk, novelty preference, gender, and age on risk perception of Sabah’s eastern coast, we used Partial Least Squares-Structural Equation Modeling (PLS-SEM) method and SmartPLS software (Ringle et al., 2005). Generally there are two approaches to

conduct SEM, including covariance based SEM (CB-SEM) and variance based SEM (VB-SEM) which also known as PLS-SEM. Given the predominance of AMOS and LISREL—two of the most well-known software tools to perform SEM analysis—CB-SEM has become the more widely applied method. However, in this study we used PLS-SEM which can be run on SmartPLS and WarpPLS instead of CB-SEM for two reasons. First, PLS-SEM is appropriate for assessing new measurement models; and secondly, PLS-SEM can cope with both reflective (novelty preference and risk perception of Sabah’s eastern coast) and formative (past experience with risk) constructs (Henseler et al., 2009; Henseler et al., 2011). While PLS-SEM—in contrast to CB-SEM—is not typically used to confirm (or reject) the theoretical models, the differences between CB-SEM and PLS-SEM estimates are very small (Reinartz et al., 2009). Indeed, PLS-SEM does not look at a theoretical model as a whole and as a result it does not allow for an examination of the model fit by an index. However, when CB-SEM assumptions are violated (in this case, when there are formative constructs in the model, the sample size is small, and data is non-normally distributed), PLS-SEM is a good methodological alternative for theory testing (Hair et al., 2014) and is seen as a “silver bullet” for estimating causal models in many theoretical models and empirical data situations (Hair et al., 2011). PLS-SEM data analysis is

comprised of two steps: (i) assessing measurement model; and (ii) assessing PLS-SEM structural model results.

Measurement model assessment

In order to evaluate reflective constructs, the reliability, convergent validity, and discriminant validity of novelty preference and risk perception of Sabah's eastern coast were assessed (Hair et al., 2010). To meet construct validity criteria, the third item of novelty preference and the last two items of risk perception of Sabah's eastern coast were excluded from the model. As reported in Table 3, after removing the aforementioned items, construct reliability of both novelty preference (0.750) and risk perception of Sabah's eastern coast (0.807) are greater than 0.7 which suggest that the reliability is good. Moreover, the average variance extracted (AVE) of novelty preference (0.618) and risk perception of Sabah's eastern coast (0.586) are greater than 0.5 and hence, convergent validity is established. In addition, the AVE of novelty preference (0.618) and risk perception of Sabah's eastern coast (0.586) are greater than their respective maximum shared squared variance (MSV; 0.05 and 0.06) and their average shared square variance (ASV; 0.01 and 0.02) which fulfill the requirements of discriminant validity (Hair et al., 2010; Fornell and Larcker, 1981).

Table 3. Reflective Measurement Model Assessment

Construct / Measure (Construct Reliability (CR), Average Variance Extracted (AVE), Maximum Shared Squared Variance (MSV), Average Shared Square Variance (ASV))	Outer loading	t-value
Novelty preference (CR = 0.750, AVE = 0.618, MSV = 0.05, ASV = 0.01)		
I prefer destination which is safe. (Reverse)	0.968 ^{***}	11.086
I normally go back to destination which I have experience with. (Reverse)	0.546 [*]	2.439
I like to explore new places and long for novel experience.	-0.364 ^{ns}	1.273
Risk perception of Sabah's eastern coast (CR = 0.807, AVE = 0.586, MSV = 0.06, ASV = 0.02)		
I feel worried about the safety and security on the east coast of Sabah.	0.659 ^{***}	6.697
I will not visit Sabah's eastern coast because of these incidents.	0.759 ^{***}	8.017
My family and friends will worry about my safety if I visit Sabah's eastern coast.	0.864 ^{***}	21.888
I plan to visit Semporna and/or the East Coast of Sabah in the near future (Reverse)	0.527 [*]	2.109
I believe Semporna and/or the East Coast of Sabah is a safe place to visit (Reverse)	0.520 [*]	1.999

* and *** indicate statistical significance at the 0.05 and 0.001 levels respectively. *ns* indicates not significant at 95% confidence level. The third item of novelty preference and the last two items of risk perception of Sabah's eastern coast have been excluded from the model to meet construct validity criteria.

The formative construct – past experience with risk was evaluated by assessing the indicators' outer weights and outer loadings as well as assessing the collinearity among indicators of the construct. Formative indicators with significant outer weights and/or outer loadings and/or those indicators with outer loadings greater than 0.5 remained in the model (Hair et al., 2014). Thus, as it is demonstrated in Table 5, the first two formative indicators with absolute contribution to form the construct are qualified. In addition, the maximum variance inflation factor (VIF) of 2.303 and the average correlation of 0.496 among indicators of past experience with risk indicate no collinearity issue and no high correlation among the indicators of the construct (Field, 2013).

Table 5. Formative Measurement Model Assessment

Construct / Measure (Inter-item correlations, Variance Inflation Factor (VIF))	Factor weights (<i>t</i> -value)	Outer loadings (<i>t</i> -value)
Past experience with risk (Average inter-item correlation = 0.496; Maximum VIF= 2.303)		
I have been to the damaged site shortly after a terrorist attack.	0.215 ^{ns} (0.341)	0.637* (1.880)
I was present on the scene during a terrorist attack.	1.006 ^{ns} (1.427)	0.869* (2.261)
I have experience with physical or psychological violence and other crimes.	-0.581 ^{ns} (1.041)	0.126 ^{ns} (0.435)
I have experience with natural disaster, epidemic, accident, and other safety threats.	0.138 ^{ns} (0.252)	0.387 ^{ns} (1.289)
I know somebody who has travelled to destination with high safety and security risk.	-0.180 ^{ns} (0.406)	-0.045 ^{ns} (0.126)

* indicates statistical significance at the 0.05 level. *ns* indicates not significant at 95% confidence level.

The last three items of past experience with risk have been excluded from the model as they did not have any significant contribution to the construct.

Structural model assessment

The structural model was analyzed using PLS-SEM and bootstrapping with 2000 samples.

The results are reported in Table 6. The value of R^2 indicates that 13.41% of the variance of tourists' risk perception can be explained by the model. As it is shown, while the results cannot support H2a on the effect of international travel experience on risk perception ($\beta = -0.085$, $t = 0.754$) at 95% confidence level, marine travel experience has a significant negative effect on risk perception of Sabah's eastern coast ($\beta = -0.220$, $p < 0.05$) which supports H2b. The results fail to support H3 on the impact of prior experience with risk on risk perception ($\beta = -0.113$, $t = 0.728$) at 95% confidence level. On the other hand, the results show that novelty preference has a significant negative effect on risk perception of Sabah's eastern coast ($\beta = -0.166$, $p < 0.05$) which supports H5. In addition, gender exerts significant positive effect on risk perception of Sabah's eastern coast ($\beta = 0.148$, $p < 0.05$).

This means that female participants do perceive higher risk than males. This finding supports H6a. However, the effect of age on tourists' risk perception is not significant at 95% confidence level ($\beta = 0.078$, $t = 0.918$), thus providing no support for H6b.

Table 6. Structural Model Analysis Results

Path	Coefficient (<i>t</i> -value)	Percentile 95% confidence intervals	Hypothesis	Results
Risk perception of Sabah's eastern coast ($R^2=13.41\%$)				
← Travel experience (international)	-0.085 ^{ns} (0.754)	[-0.272; 0.101]	H2a	Not supported
← Travel experience (marine)	-0.220 ^{**} (2.963)	[-0.343; -0.098]	H2b	Supported
← Past experience with risk	-0.113 ^{ns} (0.728)	[-0.369; 0.143]	H3	Not supported
← Novelty preference	-0.166 ^{**} (2.738)	[-0.265; -0.066]	H5	Supported
← Gender	0.148 [*] (2.155)	[0.035; 0.261]	H6a	Supported
← Age	0.078 ^{ns} (0.918)	[-0.062; 0.217]	H6b	Not supported

* and ** indicate statistical significance at the 0.05 and 0.01 levels respectively. *ns* indicates not significant at 95% confidence level.

The effect of travel motivation and nationalities on tourists' risk perception

The latent variable score of risk perception of Sabah's eastern coast calculated by PLS-SEM in the last stage was used to test H4 and H6c. To examine the effect of tourists' travel motivation on their risk perception of Sabah's eastern coast (H4), an independent sample *t*-test was conducted. This is because tourists' travel motivation consists of four dichotomous variables. As reported in Table 7, tourists attracted to a marine destination for diving purposes perceive lesser risk than other tourists and this difference is quasi-significant $t(215) = 1.739$, p -value = 0.086.

Table 7. The Results of *t*-test on the Effect of Tourists' Travel Motivations on Risk Perception

	Mean difference	<i>p</i> -value	<i>t</i> -value	95% confidence interval of the difference	Hypothesis	Results
Travel Motivation						
Relaxing	-0.051	0.795	-0.261	[-0.438; 0.337]	H4a	Not Supported
Scenery	0.079	0.567	0.574	[-0.192; 0.350]	H4b	Not Supported
Diving	0.275	0.086	1.739	[-0.040; 0.590]	H4c	Quasi-supported
Water Sports	0.264	0.233	1.208	[-0.176; 0.705]	H4d	Not Supported

As our sample came from a wide range of countries, the comparison was made across regions of similar cultures instead of individual countries, which is also an approach advocated by Reisinger and Mavondo (2005). The 22 nationalities were categorized into local, Asia, Europe-America, and Others. To examine the difference between tourists' risk perception of different regions (H6c), a one-way ANOVA was conducted. The findings, however, lend no support to H6c ($F(4, 212) = 0.405, p\text{-value} = 0.667$) (refer to Table 8).

Table 8. The Results of ANOVA Test on the Effect of Regions of Origin on Risk Perception

	Sum of squares	F-value	p-value	Hypothesis	Results
Regions of origin	214.129	0.405	0.667	H6c	Not Supported

Discussions and conclusion

This study sets out with the aim of evaluating tourists' risk perception towards Sabah's eastern coast – a destination that has been infamously known for its risky status recently. A number of determinants and their impacts on risk perception were examined. Using *t*-test,

one-way ANOVA, and PLS-SEM analysis, 6 out of 10 hypotheses are supported by the results. The findings of this study corroborate that of Yang et al. (2014) that tourists do perceive greater risk towards Sabah's eastern coast. On the contrary, the results of the current study support the assumption that tourists still perceive Malaysia's coastal destinations as safe for travel in general. This finding is encouraging for at least Malaysia because it means that the unsettling status of Sabah's eastern coast has not undermined tourists' risk perception towards other marine destinations in Malaysia. As hypothesized, the results of this study show that gender, novelty preference, marine travel experience, and travel motivation exert significant (quasi-significant for travel motivation) impacts on tourists' risk perception towards Sabah's eastern coast. The findings have lent support to the argument that gender difference do exist in risk perception and female tourists do perceive greater safety and security risks compared to male tourists (Lepp and Gibson, 2003; Park and Reisinger, 2010; Qi et al., 2009). The results were also in agreement with Lepp and Gibson (2003) who advanced that tourists who have higher preference for novelty and excitement perceive lower degree of risk.

Interestingly, the findings have pointed to the likelihood of travel experience having an impact on risk perception. This probability hinges on the types of travel experience. For

instance, it has been found that tourists with more marine travel experience perceive lower risk towards Sabah's eastern coast while there is no significant relationship between international travel experience and risk perception of the study site. Some of the possible explanations for this result might be associated with tourists' typology and travel motivation. As presented in Table 1, most of the participants considered themselves as adventure tourists and a considerable number of them were divers. Moreover, the findings on travel motivation show that people who travel to marine destinations for diving perceive lesser risk. It is therefore plausible to conclude that experienced marine tourists and frequent divers perceive lesser risk compared to inexperienced conventional tourists due to different travel motivations. Further work is encouraged to consolidate this proposition.

This study has been unable to demonstrate the impacts of age on risk perception towards Sabah's eastern coast. This discrepancy might be explained by the demographic profile of the sample of which majority of the participants were from a younger cohort (below 30). Likewise, the results demonstrate insignificant effect between past experience with risk and risk perception. George (2003) has cautioned the complication between risk experience and risk perception as tourists who reside in places that expose them to higher safety and security risks are likely to perceive lesser risk when travelling. George's (2003)

model on risk experience might be applicable in the case of this study where majority of the sample were locals who have reportedly been exposed to high crime rates (Fuller, 2013) compared to foreign tourists from developed nations. Nevertheless, the results could not support prior research on the difference of risk perception between domestic tourists and international tourists (Barker et al., 2003; Brunt et al., 2000; George, 2010; Kozak et al., 2007; Pizam et al., 2004; Quintal et al., 2010; Reisinger and Mavondo, 2006; Seabra et al., 2013; Seddighi et al., 2001) due to the imbalanced sample composition of which 77.88% were domestic tourists. However, it is important to reiterate that this sample composition resembles the actual profile of tourists visiting Sabah.

The findings of this study have contributed insights to the existing body of knowledge concerning risk perception of marine destinations, especially within the context of Malaysian tourism. It has demonstrated that the effects of determinants on risk perception in Sabah's eastern coast are not identical to conventional tourism contexts. Hence, it echoes Roehl and Fasnmaier's (1992) advice for a destination-based approach when studying risk perception. Having noted the nature of the current study which is destination-specific, the findings are therefore not meant to be generalized to other destinations. Nevertheless, the findings of this study could provide important implications

for similar research in the future. From an organizational point of view, the Malaysian government should have the urgency to put the unsettlement in Sabah's eastern coast to an end as soon as possible before it undermines the tourism development in that area and across the country. Efforts were made, for instance, the founding of the Eastern Sabah Security Command (Esscom) was a positive initiative, but with the recent murder and abduction of marine policemen (Ahmad, 2014; The Star, 2014), it appears that more need to be done in this area. Strategies to deal with the threats in Sabah would be out of the scope of this paper. However, findings from the current study have revealed that experienced marine tourists perceive lesser risk compared to conventional tourists. This implies that perhaps the tourism industry in Sabah's eastern coast should target the hard core adventure marine tourists and divers, particularly during the "down time". Although the current findings cannot support this proposition due to sampling limitation, focusing on the domestic market during crises could be another effective strategy. This proposition is based on the statistics of tourist arrivals and suggested by the existing literature on risk perception distance between domestic and international tourists (Barker et al., 2003; George, 2010; Lepp and Gibson, 2003). Tourism operators and relevant authorities should consider making the risk image of the destination transparent, so that tourists would be able to evaluate if they are able to take the informed risk. For those risk takers, the industry

should have the sense of responsibility to provide them with a list of travel safety tips and places they should avoid to minimize risks. On a similar note, more police posts and travel information centres should be established to neutralize tourists' risk perception, fear, and uncertainty when travelling to this area.

The main limitation of the study lies in the sampling method. Convenience sampling has led to a skewed sample composition. Even though the sample of this study is a factual reflection of the tourist profile, the sample profile has limited the generalizability of the findings. The sample size of this study is relatively small as the research team upheld the principle of collecting opinions from "actual tourists" rather than student and general public samples. Further, only those who were familiar with Sabah's eastern coast were included. Future research could consider a larger sample size, without compromising the criteria set for participant selection in this study. Future research may also investigate risk perception from tourists already in the infected destination. Tourists who visit risky destinations despite of the risks and cautions informed by the media and the travel advice of many countries may perceive a distinctive spectrum of risks. Investigation of this nature will contribute significant insights to the thesis of tourists' risk seeking. Lastly, the questionnaire used in this study was an amalgamation adapted from a number of prior

studies. Although a pilot study was conducted, it was the first time this questionnaire was used and therefore, it should be tested with more datasets and samples to further refine the survey. One of the refined directions would be to include measurement on different types of safety and security risks, such as terrorism, crime, political turmoil, piracy, and so forth, depending on the characteristics of the study site. This would help contribute insights into the influences of various risk factors on different subsets of travel risks. A final improvement would be to examine the magnitude of the influence of each risk factor and to develop a model of risk hierarchy. By doing so, it will enhance the understanding of tourists' decision making process and thus, contribute significant managerial insights to the industry.

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