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Empirically Testing the Influence of Travel Safety Concerns: Examining Alternative Models

Introduction

The global tourism industry has been affected by a series of terrorist attacks over the past several years. Most recently, destinations such as Brussels, Paris, Beirut, Istanbul, and Jakarta have been the direct targets of terrorism. These crises may not only scare tourists away, but they may also affect tourists' risk perceptions, perceptions of safety, and subsequent travel intentions (Rittchainuwat and Chakraborty 2009; Sönmez and Graefe 1998a, 1998b). Accordingly, perceived safety and risk perceptions have become important research topics within the tourism literature (Yang and Nair 2014). This research stream has suggested that both tourists' risk perceptions and perceptions of safety play vital roles in shaping tourists' decision-making (Lindqvist and Bjork 2000; Roehl and Fesenmaier 1992; Sirakaya, Sheppard, and McLellan 1997; Sönmez and Graefe 1998a, 1999b). More specifically, when making travel decisions, prospective tourists normally progress through a sequence of stages, moving from interests to considerations to actual decisions (Milam and Pizam 1995; Sönmez and Graefe 1998b). Both perceived risk and perceived safety are major influences that may affect individuals' considerations, as prospective tourists tend to avoid risky situations and to visit destinations that they perceive to be safe (Sönmez and Graefe 1998b).

Despite the increasing number of studies in this area, Yang and Nair (2014) commented that "the definitions of safety and risk are overlapping and confusing" (p. 245). Such confusion can at least partially be attributed to inconsistencies in how tourism scholars have conceptualized and operationalized these two constructs. For example, Sönmez and Graefe (1998a) argued that perceived safety is a parallel concept to perceived risk and, therefore, the effects of these two constructs are independent from each other. Interestingly, in another study by the same researchers, risk perceptions were treated as predictors of tourists' perceptions of safety (Sönmez and Graefe 1998b). Thus, in the second study, the authors suggested that risk perceptions precede perceptions of safety. Similarly, Reisinger and Mavondo (2005) suggested that "risk perception determines if potential tourists feel safe on a trip" (p. 215). Thus, again, tourism scholars inferred that risk perceptions are antecedents of perceptions of safety.

While perceived risk and perceived safety may be conceptually related, according to theory, these two constructs are actually distinct from one another (Loewenstein et al. 2001; Schroeder et al. 2015). In particular, the risk-as-feeling hypothesis suggests that individuals may assess risky situations in two different ways- through cognition or affect (Loewenstein et al. 2001). The cognitive dimension of risk can be manifested as perceived severity and perceived susceptibility (Shim and You 2015), while the affective dimension is reflected as "a feeling state" (Slovic and Peters 2006 p. 322). While the risk-as-feelings hypothesis recognizes that individuals may perceive risk cognitively or affectively (Slovic and Peters 2006), it also recognizes that one's affective responses to a risky situation may be correlated with their cognitive responses (Loewenstein et al. 2001).

In terms of tourists' risk perceptions, perceived susceptibility has been studied quite extensively in the tourism literature (Schroeder 2015). On the other hand, limited attention has been given to perceived severity and affective risk perceptions (Schroeder 2015). Perceived safety can be seen

as a type of affective response, reflecting individuals' feeling of being safe and risk-free (Shaver 2015). However, the tourism literature has failed to recognize this notion, as tourism scholars have not previously conceptualized perceived safety as being a dimension of affective risk perceptions. Additionally, risk perceptions are certainly not the only determinants of individuals' behavioral changes in risky situations. Both Protective Motivation Theory (Rogers 1975; Maddux and Rogers 1983) and some recent tourism studies (e.g., Liu, Pennington-Gray, and Krieger 2016; Schroeder 2015) suggest that efficacy beliefs can also lead to individuals' behavioral changes in risky situations. Thus, in order to provide conceptual clarity, perceived severity and perceived susceptibility should be considered to represent tourists' cognitive risk perceptions, perceived safety should be considered to represent a dimension of their affective risk perceptions, and efficacy beliefs should also be included within the same theoretical framework (Liu, Pennington-Gray, and Krieger 2016; Schroeder 2015).

Another unclear area within this research stream relates to the fact that very few studies have connected these important variables (i.e., cognitive risk perceptions, efficacy beliefs, perceived safety, and travel decisions) and presented a comprehensive understanding of the relationships between these variables. Reisinger and Mavondo's (2005) study may be an exception, as they found that prospective tourists' motivations to visit a destination were related to their health- and financial-related cognitive risk perceptions, as well as their perceptions of safety. However, cognitive risk perceptions and perceived safety were not found to be correlated. Although it should be noted that Reisinger and Mavondo (2005) did not conceptualize perceived safety as being a dimension of affective risk perceptions.

Observing the aforementioned inconsistencies in the literature prompts us to challenge previous studies by addressing the relationship between tourists' cognitive risk perceptions, efficacy beliefs, perceptions of safety, and travel decisions. Testing competing models appears to be an appropriate analytical method in this context, as Nunkoo and So (2015) suggested that "testing alternative models in a single study enables researchers to uncover new relationships among variables and is useful for development of theory" (p. 2). Thus, by developing and testing competing conceptual models, the purpose of this study is to clarify the underlying relationships between tourists' cognitive risk perceptions, efficacy beliefs, perceptions of safety, and travel intentions. In doing so, this study aims to advance understanding of tourists' decision-making in risky situations and to provide important implications for future research and practice.

Model Development

Baseline Model: International Tourism Decision-Making Process

According to the model of international tourism decision-making process, the influence of perceived safety and risk perceptions is mainly evidenced when individuals evaluate destination alternatives (Sönmez and Graefe 1998b). Once individuals choose a destination, they will finalize their plans and book the trip (Sönmez and Graefe 1998b). To reflect this process, each of the competing conceptual models used travel interest as the "starting point" and travel intentions as the "outcome." Accordingly, the consideration phase is manifested as the path between these two factors.

Conceptualization of Relevant Constructs

The proposed conceptual models feature the following constructs: travel interest, travel intentions, perceived safety (i.e., affective risk perceptions), cognitive risk perceptions, and

efficacy beliefs. Travel interest reveals how interested an individual may be in visiting a specific destination. It serves as an important indicator of individuals' travel motivations (Baloglu 2000). Individuals' travel intentions are related to the likelihood of visiting a specific destination within a given timeframe. It represents the outcome of tourists' decision-making process (Sönmez and Graefe 1998b). Perceived safety is conceptualized as a general measure reflecting individuals' perceptions of the safety of a specific destination (e.g., Liu, Pennington-Gray, and Schroeder 2013; Sönmez and Graefe 1998a). Cognitive risk perceptions are comprised of two variables: (1) perceived severity, which represents "the magnitude of noxiousness of a depicted event" (Rogers 1975 p. 93); (2) perceived susceptibility, which refers to "the probability of the event's occurrence" (Rogers 1975 p. 93). Efficacy beliefs are also constituted of two variables: (1) response-efficacy, which represents the effectiveness of protective actions; (2) self-efficacy, which represents the extent to which individuals believe they have the ability to engage in such protective actions (Rogers 1975; Maddux and Rogers 1983; Zwart et al. 2009). Rimal and Real (2003) suggested that perceived risk drives individuals' perceptual changes, while efficacy beliefs determine individuals' behavioral changes. This notion may also be applicable to tourists, although perceived severity, self-efficacy, and response-efficacy are understudied variables in the travel risk literature (Schroeder 2015).

Lastly, individual characteristics, such as demographic characteristics (e.g., age, gender, education) and past travel experience, can serve as antecedents of individuals' cognitive risk perceptions and can potentially influence their travel decisions (Sönmez and Graefe 1998a; Yang and Nair 2014). Thus, demographic characteristics and destination-specific past travel experience were included in the conceptual models as covariates.

Identified Relationships between the Main Constructs

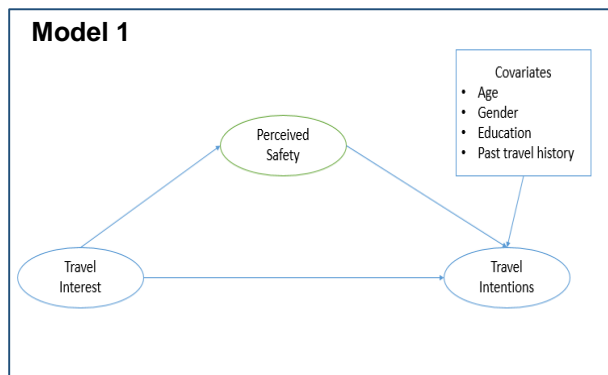
A synthesis of the relevant literature has resulted in the following identified relationships: (1) one's interest in traveling to a destination is related to their final travel intentions (Milam and Pizam 1995); (2) one's specific cognitive risk perceptions are related to their travel intentions (Rittichainuwat and Chakraborty 2009); (3) one's specific cognitive risk perceptions are related to their perceptions of safety associated with a destination (Liu, Pennington-Gray, and Schroeder 2013); (4) perceived safety is related to one's travel intentions (Sirakaya, Sheppard and McLellan 1997). Regarding the relationship between cognitive risk perceptions and perceptions of safety, there are two perspectives: (1) cognitive risk perceptions and perceptions of safety are parallel concepts (e.g., Sönmez and Graefe 1998a); (2) cognitive risk perceptions and perceptions of safety are related and, certain types of cognitive risk perceptions can predict prospective tourists' perceptions of safety (Liu, Pennington-Gray, and Schroeder 2013; Sönmez and Graefe 1998b).

The above summary guided the development of the six conceptual models (Table 1). First, both cognitive risk perceptions and perceived safety may affect individuals' considerations, which is reflected via the path between travel interest and travel intentions. Mediation refers to the relationship that variable X influences the outcome variable Y through one or more mediator variables (Hayes 2013). Given that both perceived safety and cognitive risk perceptions affect one's considerations, this study posits that perceived safety and cognitive risk perceptions may mediate the relationship between individuals' travel interest and travel intentions. Accordingly, Model 1 examines the mediating role played by perceived safety and Model 2 examines the mediating role played by cognitive risk perceptions and efficacy beliefs.

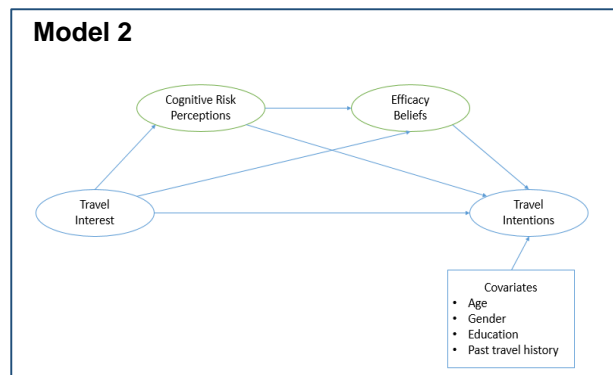
Second, given the argument that cognitive risk perceptions and perceived safety may be parallel concepts, Model 3 represents a regression model that can allow researchers to compare their effects independently. Model 4 is built upon the mediation hypothesis and the parallel concept argument, treating the three variables (i.e., perceived safety, cognitive risk perceptions, and efficacy beliefs) as mediators.

Third, considering that cognitive risk perceptions may be a predictor of perceived safety, Model 5 examines the relationship between cognitive risk perceptions and perceived safety, while also investigating the mediating role of perceived safety. Fourth, a recent study reports that perceived efficacy moderates the relationship between cognitive risk perceptions and travel intentions via perceived safety (Liu, Pennington-Gray, and Krieger 2016). As an exploratory attempt, Model 6 proposes a moderated mediation analysis, testing if cognitive risk perceptions and efficacy beliefs can moderate the mediating relationship between respondents' travel interest and travel intentions via perceived safety. Moderated mediation relationships refer to conditional effects, meaning that "the indirect effect or 'mechanism' pathway through which X exerts its effect on Y is dependent on the value of a moderator or moderators" (Hayes 2013 p. 8).

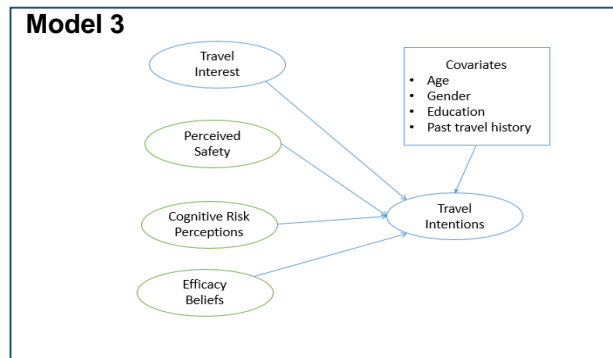
Table 1. Overview of Conceptual Models



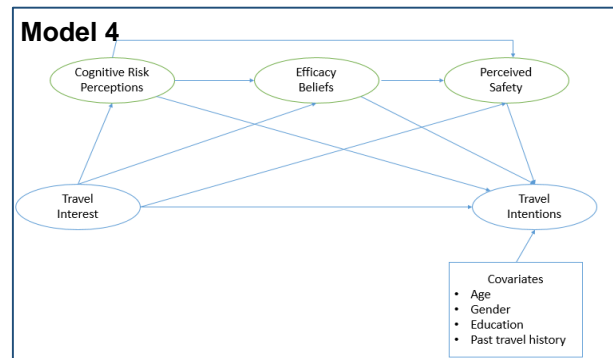
Model 1: Perceived Safety as Mediator



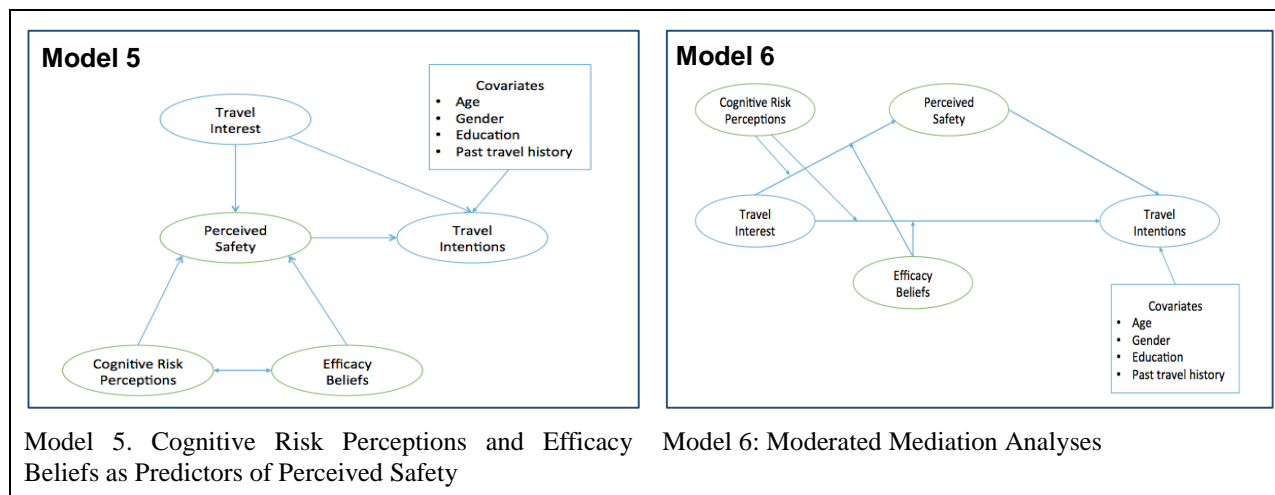
Model 2: Cognitive Risk Perceptions and Efficacy Beliefs as Mediators



Model 3. Parallel Concepts: Main Constructs as Individual Independent Variables



Model 4. Parallel Concepts: Main Constructs as Mediators



Methodology

Study Site

Jordan was selected as the study site for this research. Jordan is located in the Middle East region and borders Syria, Saudi Arabia, the Red Sea, Palestine, Israel, and Iraq. The tourism industry, which contributed 6.2% to total GDP in 2014, is one of the most significant contributors to Jordan's economy (World Travel and Tourism Council [WTTC] 2015). However, there has been a decrease in international visitor arrivals in Jordan over the past five years, declining from 8.2 million visitors in 2010 to 5.3 million visitors in 2014 (Ministry of Tourism and Antiquities of Jordan [MOTA] 2015). The decrease in visitor arrivals is often attributed to political turmoil and terrorist activity in the region (United Nations World Tourism Organization [UNWTO] 2014). As the western media frequently focus attention on these conflicts, prospective tourists' terrorism-related cognitive risk perceptions may be heightened and their perceptions of the safety of the destination may decrease, which may contribute to the avoidance of travel to the destination (Avraham 2015; Reisinger and Mavondo 2005; Sönmez and Graefe 1998b). Therefore, Jordan provides an appropriate context for this study as it allowed the researchers to explore the dynamic underlying relationships between prospective tourists' cognitive risk perceptions, perceptions of safety, efficacy beliefs, and travel intentions. Further, based on a risk assessment, this study focused specifically on with the risk type of terrorism.

Data Collection

The data for this study was collected via a web-based survey hosted on Qualtrics. This study recruited participants through Amazon's Mechanical Turk (MTurk) interface in January 2016. The MTurk sample has been found to be more representative than other convenient samples and the results are considered to be reliable (Berinsky, Gregory, and Gabriel 2012; Hauser and Schwarz 2015). Only U.S. citizens over 18 years old were qualified to participate in the survey.

Measurement of Constructs

The dependent variable, travel intentions, was measured by asking participants to indicate the likelihood of traveling to Jordan within the next 6 months, using a 5-point scale, ranging from "1=very unlikely" to "5=very likely." Perceived safety was measured by asking participants to

“indicate how safe it is for people from your country to travel to Jordan for leisure purposes” using a 5-point scale, ranging from “1=very unsafe” to “5=very safe.”

The items used to measure participants’ cognitive risk perceptions were adapted from Witte’s (1996) study and were adjusted to the current study context. Specifically, to measure perceived severity, participants were asked to indicate their agreement of the following statements in the context of if a terrorist attack was to occur in their hotels while travelling in Jordan: (1) I would experience serious negative impacts on my travel experience if a terrorist attack was to occur in my hotel; (2) It would have a severe negative impact on my travel experience if a terrorist attack was to occur in my hotel; (3) My overall travel experience would be negatively impacted if a terrorist attack was to occur in my hotel; (4) It would be harmful to my recollection of my travel experience if a terrorist attack was to occur in my hotel. Similarly, the following items were used to measure perceived susceptibility: (1) My overall travel experience would be at risk if a terrorist attack was to occur in my hotel; (2) The chances of being negatively impacted will be high if a terrorist attack occurs in my hotel. All cognitive risk perceptions items were measured using a 5-point Likert-type scale ranging from “1=strongly disagree” to “5=strongly agree.”

Given the study context and the research objectives, this study focused on the response-efficacy dimension of efficacy beliefs and assessed the variable within two domains. The first domain is related to individual behaviors, which refer to measures that individuals could engage in to protect themselves against terrorism-related risks while traveling in Jordan. Within the individual-level domain, respondents were asked to evaluate the effectiveness of the following behaviors: (1) registering with your embassy in Jordan prior to travel; (2) traveling only with organized tours; (3) searching for more information online about how to stay safe prior to travel; (4) searching for more information in travel guides about how to stay safe prior to travel; (5) keeping a low-profile when walking around the destination. The second domain is related to different measures that the tourism industry in Jordan has implemented to ensure visitor safety. Jordan’s tourism industry has undertaken several initiatives to specifically combat terrorist activities. Accordingly, respondents were asked to indicate how effective they thought those activities would be in protecting themselves while traveling in Jordan. Within the industry-level domain, respondents were asked to evaluate the effectiveness of the following initiatives: (1) having safety brochures in hotel rooms; (2) having metal detectors at hotels; (3) increased police presence in tourist areas; (4) having security checkpoints in tourist areas; (5) providing safety information online; (6) providing safety information in travel guides. All of the response efficacy items were measured using a 5-point Likert-type scale ranging from “1=very ineffective” to “5=very effective.”

Travel interest was coded as a binary variable (1 = interested in visiting Jordan, 0 = not interested in visiting Jordan). Participants’ age, gender, education, and past travel experience to the Middle East region were also included as covariates.

Data Analysis

A series of statistical analyses were employed to test the six competing conceptual models. Specifically, Models 1, 2, 4, and 6 were tested using the SPSS macro PROCESS, which allows statistical analyses related to mediation, moderation, and mediated moderation (Hayes 2013). Model 3 was tested using SPSS 23.0 package, which can be used to conduct OLS regression analyses. Model 5 was tested using AMOS 21, which can be used to conduct structural equation model analyses.

Results

Sample Profile

As shown in Table 2, the final sample contains 444 respondents, all of whom are U.S. citizens over 18 years old. More than half of the sample are male (57.7%) and the remainder are female (42.3%). The average age of the sample is 34.36 years old, with the largest age group being 25-34 years old (45.7%), followed by 35-44 years old (20.0%). More than half of the sample has a college degree (56.9%), and nearly one-fifth has visited a destination within the Middle East region in the past (19.8%).

Table 2. Sample Profile

Variable	Frequency	Valid%
Age (M= 34.36)		
18-24	71	16.4
25-34	203	45.7
35-44	89	20.0
45-54	51	11.5
55 and above	28	6.3
Gender		
Male	256	57.7
Female	188	42.3
Education Level		
High School Degree or less	158	34.8
College/University Degree	252	56.9
Advanced Degree	37	8.4
Past Travel Experience		
Have been to the Middle East	88	19.8
Have not been to the Middle East	356	80.2

Model Comparisons

The results of the model comparisons are reported in Table 3. The results indicated that Model 1 was statistically significant ($F(4, 435) = 32.65, p < .01$) and explained 37.52% of the variance in the dependent variable. It was also found that perceived safety partially mediated the relationship between travel interest and travel intentions (Indirect Effect (IE)= 0.2989, 95% CI= 0.3366 to 0.9034). Model 2 was statistically significant ($F(9, 434) = 20.038, p < .01$), and explained 29.36% of the variance in the dependent variable. Results of the mediation analyses were significant, indicating that both cognitive risk perceptions and efficacy beliefs mediated the relationship between travel interest and travel intentions (travel interest \rightarrow cognitive risk perceptions \rightarrow intentions; travel interest \rightarrow cognitive risk perceptions \rightarrow efficacy beliefs \rightarrow travel intentions).

Model 3 was statistically significant ($F(9, 434) = 26.668, p < .01$) and explained 35.6% of the variance in the dependent variable. Both efficacy beliefs ($\beta = .09, p = .03$) and perceived safety ($\beta = .389, p < .01$) were significant predictors of the dependent variable, while cognitive risk perceptions were not found to be related to respondents' travel intentions ($\beta = -.012, p = .801$). Model 4 was statistically significant ($F(10, 433) = 24.85, p < .01$) and explained 38.21% of the variance in the dependent variable. The results of the mediation analyses indicated that the relationship between travel interest and travel intentions was mediated through the following

paths: (1) interest → cognitive risk perceptions → efficacy beliefs → intentions (IE= 0.0186, 95% CI=.0053 to 0.0442); (2) travel interest → cognitive risk perceptions → perceived safety → travel intentions (IE= 0.1418, 95 CI= 0.0842 to 0.2242); (3) travel interest → cognitive risk perceptions → efficacy beliefs → perceived safety → travel intentions (IE= 0.0110, 95% CI= 0.0040 to 0.0247); (4) travel interest → perceived safety → travel intentions (IE= 0.1287, 95% CI= 0.0124 to 0.2613).

The results indicated that Model 5 explained 29.6% of the variance in the dependent variable. However, the results did not indicate a good model fit ($X^2= 90.390$, $df = 19$, $p < .01$; $RMSEA= 0.092$, $GFI = 0.949$, $CFI = 0.847$). Model 6 was also statistically significant ($F(12, 431)= 24.02$, $p < .01$) and explained 40.08% of the variance in the dependent variable.

Regarding the predictive ability of the six competing conceptual models, Model 6 appears to be the best-fit model. The interaction term between travel interest and cognitive risk perceptions was significant ($\beta= -.5811$, $p= .004$), indicating that cognitive risk perceptions moderated the relationship between travel interest and travel intentions. The results also suggest that perceived safety mediated the relationship between travel interest and travel intentions; however, the strength of this mediating relationship depends on the level of cognitive risk perceptions and efficacy beliefs. Specifically the mediating relationship functions when: (1) both the level of cognitive risk perceptions and the level of efficacy beliefs are moderate (Effect= 2.2132, 95% CI= 0.0227 to 0.3977); (2) the level of cognitive risk perceptions is high and the level of efficacy beliefs is high (Effect= 2.2568, 95% CI= 0.0086 to 0.6070).

Table 3. Results of Model Comparisons

Model	df	F	R ²	p value
1	(5, 435)	32.65	0.3752	< .01
2	(9, 434)	20.038	0.2936	< .01
3	(9,434)	26.668	0.3560	< .01
4	(10,433)	24.85	0.3821	< .01
5	19	RMSEA = 0.092 GFI = 0.949 CFI = 0.847	0.2960	< .01
6	(12,431)	24.0219	0.4008	< .01

Conclusion and Discussion

The purpose of this study was to empirically test the relationships between individuals' cognitive risk perceptions, efficacy beliefs, perceptions of safety, and travel intentions. The primary findings revealed that our previous understanding is very limited. Consistent with the risk-as-feelings hypothesis (Loewenstein et al. 2001) and previous studies (e.g., Schroeder 2015; Schroeder et al. 2015), prospective tourists' cognitive risk perceptions (in terms of perceived severity and perceived susceptibility) and affective risk perceptions (in terms of perceived safety in this study) were found to be correlated. Accordingly, the findings supported the notion that cognitive assessments of risk are related to affective responses toward the risk.

When it comes to the specific relationships between the variables, the findings of this study suggest that respondents' cognitive risk perceptions and perceptions of safety can influence their travel considerations. However, the way these variables interact with each other is very subtle. For example, in this study, perceived safety only influenced respondents' considerations when their cognitive risk perceptions were higher than the average level. When the level of cognitive risk perceptions was high, the findings of this study suggested that destination-specific perceptions of safety may serve as a barrier to intentions to travel to a destination.

Furthermore, the findings of this study have several practical implications, which involve how to manage a destination in times of crisis. Specifically, destination management organizations (DMOs) need to maintain an active research agenda and identify emerging issues that may affect prospective tourists' intentions to travel to a destination. Once potential issues are identified, DMOs need to examine prospective tourists' cognitive risk perceptions associated with the issue. If the traveling public displays a higher level of cognitive risk perceptions, DMOs should use educational campaigns in an effort to increase prospective tourists' efficacy beliefs. For example, DMOs should emphasize behaviors that tourists could engage in to mitigate the risk, provide information to demonstrate the effectiveness of the recommended risk reduction measures, and enhance individuals' confidence in their ability to engage in the recommended risk reduction measures (Schroeder 2015). The ultimate goal of the educational campaign should be to restore tourists' confidence in the destination.

Limitation and Future Studies

This study had several limitations. First, the data for this study was collected in January of 2016, which was within two months of the terrorist attacks in Paris. Previous studies have noted that the occurrence of a major terror attack may affect individuals' feelings and risk perceptions (Wolff and Larsen 2014). Therefore, future studies can replicate this study at a different point of time. Second, this study mainly considered respondents' demographic background in terms of age, gender, and education. Additional factors, such as language and cultural background, may also influence their cognitive risk perceptions (Reisinger and Mavondo 2006). Future studies should examine the potential influence of these demographic factors. Third, the baseline conceptual model for this study was based on the international tourism decision-making process model, which explained approximately 40% of the variance in tourists' travel intentions. Future studies can explore alternative conceptual approaches and seek to further advance understanding of the relationship between cognitive and affective risk perceptions. Finally, given that the results of this study are specific to the destination of Jordan and terrorism-related cognitive risk perceptions, future studies can extend this research line and explore the relationships in association with different destinations and different types of risk.

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