

**Cruise Line Customers' Responses towards Risk and Crisis Communication
Messages:
The Effects of Risk Perception Attitudes, Safety Perceptions, and Past Travel
Experience**

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**Cruise Line Customers' Responses to Risk and Crisis Communication Messages:
An Application of the Risk Perception Attitude Framework**

Abstract

The main purpose of this study was to test cruise line customers' responses to risk and crisis communication messages addressing health-related incidents on cruise ships. This study used norovirus infections as the context and the Risk Perception Attitude framework as the conceptual foundation. An experiment was conducted to test how communication messages affected cruise line customers' information search behavior, safety perceptions, and cruise travel intentions. A total of 240 responses were included and analyzed. The results revealed group differences on the three outcome variables. The results also showed that safety perceptions mediated the relationship between participants' RPAs and cruise travel intentions. Based on the findings, this study provided practical implications on how to develop effective risk and crisis communication messages. This study also highlighted the need for more empirical and theory-driven research in the area of tourism crisis communication.

Keywords. Cruise Travel, Norovirus, Crisis Communication, Health and Safety, Risk Perception Attitude framework, Messaging

INTRODUCTION

With a projected 25.8 million passengers expected to set sail in 2017 and a 62% increase in demand from 2005 to 2015, the cruise line industry is steadily on the rise (Cruise Line International Association [CLIA] 2018). Cruise travel is considered to be one of the safest modes of transportation and the cruise industry is well regulated by authorities (e.g., World Health Organization [WHO], U.S. Coast Guard, The Centers for Disease Control and Prevention [CDC], and the Environmental Protection Agency [EPA]). However, there have been several high profile disasters/adverse events with cruise lines in recent years, such as the 2012 Costa Concordia and the “Barf Cruise” incident with Royal Caribbean in 2014. With increasing media attention to these events, the cruise industry has been facing some challenges posed by safety concerns (Harris Poll 2014; Mileski, Wang and Beacham 2014).

In particular, health issues related to passengers and crew members are one of the most important and dominant topics within the contemporary literature on cruise ship mishaps (Elliot, Harris, and Baron 2005; Mileski et al. 2014). Daily health-related incidents in cruise travel are not uncommon. Passengers might suffer from seasickness, common colds, minor injuries, and the like. When someone experiences a “minor localized disruption” (Coombs 2007, p. 4) in their cruise travel experience, this is considered to be an incident. If the incident is health-related and there are multiple incidents (e.g., cases), these occurrences will be considered “cruise ship outbreaks” (CDC 2017). When outbreaks are not managed effectively, the situation may be escalated into a crisis, which can result in customer dissatisfaction, loss of revenue, potential litigation, and bad publicity (Marti 1995). The onset of a crisis on cruise ships also affects

potential passengers, as the event can lead to increased risk perceptions, which may have impacts on individuals' decision-making and purchase intentions (Le and Arcodia 2018). A crisis is also perceptual, whereby customers' perceived risk may or may not match with the actual risks involved (Coombs 2014; Henthorne, George, and Smith 2013). Thus, even though health outbreaks on cruise ships are not common and health issues are not a major constraint to cruise travel, there are still possibilities that these health-related incidents would affect cruise line customers' perceptions, attitudes, and decisions.

The management of health illness outbreaks on cruise ships requires not only a proactive approach that reduces the number of outbreaks, but also appropriate messages and effective communication (Mileski et al. 2014; Liu and Pennington-Gray 2015). Proper messaging following a major incident can help restore the reputation of the organization in crisis times and reduce negative impacts (Coombs 2014). When it comes to issues of public health significance, it is suggested that the message should extend its original scope from image repair to include social marketing and feature the function of risk communication (Reynolds 2002). Collectively, these messages should connect the organization and the public during turbulent times, while not only protecting the interests of the organization, but also assisting the audience in coping with the health problem and protecting themselves from the risk in the future (Bert et al. 2014; Coombs 2014; Reynolds, 2002).

In the same vein, tourism studies have emphasized the importance of developing effective messages during risky times (Carlsen and Liburd 2008; Mair, Ritchie, and Walter 2016). However, there is a general lack of empirical studies in tourism that actually measure and test the relationship between messages and outcomes (Mair et al. 2016), as well as the

relationship between cognitive evaluations and customer satisfaction and future intentions (Migaca, Zou, and Petrick 2018). Experimental studies are seldom used in cruise tourism research (Papathanassis and Beckman 2011), but could aid in our understanding of the effects of messages on tourists' reactions and attitudes by way of crisis scenarios. Furthermore, Le and Arcodia (2018) noted that no research thus far has examined potential cruise passengers' risk perceptions, especially the effects of risk perceptions on their decision-making and purchasing intentions.

STUDY CONTEXT

Norovirus on cruise ships was chosen as the study context. Norovirus, formally known as "Norwalk-like virus," is one of the leading causes of acute gastroenteritis in the United States (CDC, 2017). Norovirus infections can cause symptoms of nausea, vomiting, abdominal pain, diarrhea, malaise, and muscle pain. They are highly contagious and can be transmitted via multiple paths, including physical contact with sick people, consuming contaminated food and drink, and airborne transmission (CDC, 2017). The World Health Organization (WHO, 2018) has declared norovirus to be a major public health challenge for the cruise industry. Accordingly, both CDC and the cruise line industry have undertaken multiple initiatives to manage gastrointestinal illness outbreaks on cruise ships (e.g., the Vessel Sanitation Program and pre-boarding health screening). In fact, the actual chance of contracting norovirus infections on board is relatively small. CDC reports that only 0.2% of the norovirus infections happened on cruise ships and that merely nine norovirus outbreaks occurred on cruise ships in 2017 (CDC 2017).

Surprisingly, the results of a national marketing survey showed that norovirus outbreaks might cause peoples' concerns over shipboard safety (Harris Poll 2014). Additionally, even though the global demand of cruise travel is increasing, major outbreaks of health incidents like norovirus infections could still negatively affect individual cruise lines' performance (Liu and Pennington-Gray 2015). This may be partly due to the sensationalism of the incidents and how they are reported by the media (Kasperson, Kasperson, Pidgeon, and Slovic 2003). The norovirus issue is becoming even more prevalent in the current age of citizen journalism. Passengers, along with their friends and family, now can easily share stories via social media, which can then be incorporated in news stories and circulated among the public. Lastly, studies (Baker and Stockton 2013; Neri et al. 2008; Wikswo et al. 2011) have found that most passengers did not have an accurate understanding of norovirus. The lack of knowledge could not only result in passengers' misbehaviors during outbreaks (Neri et al. 2008; Wikswo et al. 2011), but also lead to misperceptions and increased risk perceptions among the public (Coombs 2014).

Norovirus on cruise ships holds special public health significance (WHO 2018). Combatting this issue requires effective communication that delivers correct information, encourages the audience in adopting appropriate behaviors, remedies potential negative impacts, and reshapes public's risk perceptions. These objectives are aligned with the goals of risk and crisis communication (Reynold and Seeger 2005), but no studies thus far have experimentally tested the actual effects of these messages within the current study context.

Thus, to fill the knowledge gap and to provide practical implications, the purpose of this study was to explore cruise line passengers' reactions to risk and crisis communication messages. Guided by the Risk Perception Attitude Framework, this study tested how different

communication messages affected cruise line customers' information search behavior, safety perceptions, and cruise travel intentions. As the global cruise industry continues to grow, any major health-related outbreaks can be detrimental (Bert et al. 2014). The findings of this study can be used to develop effective messages in response to health-related incidents on cruise ships. The findings of this study also can provide empirical evidence to demonstrate the role of risk perceptions in cruise travel.

LITERATURE REVIEW

Risk Perceptions in Cruise Travel

Risk can be interpreted as “a possibility of danger, harm or losses; and a chance or hazard” (Reisinger and Mavondo 2006 p.13). The assessment of risk is normally reflected via two dimensions – the actual risk and the perceived risk (Sjoberg 2000). Risk has been seen as “inherently subjective” (Slovic and Weber 2002 p.5), as most people tend to evaluate a situation based on intuitive risk judgment, which can be further referred to as risk perceptions (Slovic and Weber 2002). The tourism literature has documented the impact of risk perceptions on tourists' safety perceptions, decision-making, and related travel behaviors (Reisinger and Mavondo 2006; Roehl and Fesenmaier 1992; Sönmez and Graefe 1998a, 1998b). Most tourists are found to be cautious by nature and are likely to alter their decisions and behaviors to avoid risky situations (Sönmez and Graefe 1998a, 1998b).

Customers' risk perceptions are also influential in the context of cruise travel (Le and Arcodia 2018). For example, Henthorne et al. (2013) found that passengers' risk perceptions affected their intentions to return to a cruise destination. Additionally, Bowen, Fridgeon and

Page (2014) found that the occurrence of a crisis on cruise ships, such as a terrorist attack, can lead to customers' increased level of risk perceptions, which can result in hesitations to take cruises and cancellation of bookings. Furthermore, by exploring the human element in shipboard safety, Ahola et al. (2014) suggested that passengers' risk perceptions play a key role in determining the effectiveness of cruise lines' risk management plans and that communication greatly contributed to the formation of passengers' risk perceptions. Through a synthesis of the related literature, Le and Arcodia (2018) proposed a conceptual model to measure individuals' risk perceptions associated with cruise travel. This model attempted to assess peoples' perceived risk from two aspects: (1) perceived riskiness (i.e., perceived probability of risks, perceived severity of the risk's consequences); (2) psychological and cognitive factors (i.e., previous injuries caused by the risk, impacts the risk has on the society). Although this model offers a comprehensive approach to examining risk perceptions, it is still in the conceptual developmental stage and has not been empirically tested.

Risk perceptions are situation-specific and involve multiple dimensions (Roehl and Fessenmaier, 1992). Health concerns are one of the major risk factors in tourism (Floyd et al. 2014) and it is believed that health risks have the ability to endanger tourists' safety and security (Jonas et al. 2011; Wilks 2006). Interestingly, health concerns have not been found as a major constraint to cruise travel. Kerstetter, Yen, and Yarnal (2005) suggested that there are four types of constraints to cruise travel: personal constraints; not an option; worry; structural constraints. Studies (Hung and Petrick 2010, 2012; Zou and Petrick 2017) on this topic have since provided support for the validity of structural constraints and not an option, while suggesting that the remaining factors can be re-categorized into interpersonal and intrapersonal constraints. Potential

cruisers' concerns over health and safety were listed as part of the underlying dimensions of interpersonal constraints (e.g., Hung and Petrick 2010, 2012; Zou and Petrick 2017), but no studies thus far have found that these concerns are negatively associated with peoples' cruise travel intentions. Similarly, a study examining cruisers' experience (Petrick, Toner and Quinn 2006) found that health-related issues were less likely to be the main cause of passengers' negative experience on board.

Health concerns may not act as an obstacle that inhibits cruise travel, but the onset of a health crisis on cruise ships is likely to affect the public's perceptions of health risks and, therefore, lead to decisional and behavioral changes (Bowen et al. 2014; Le and Arcodia 2018). Lately, there is a growing academic interest in studying health issues associated with cruise travel (e.g., Baker and Stockton 2013; Neri et al. 2008; Widdowson et al. 2004; Verhoelf et al. 2008). Some of these studies used a medical approach- analyzing the cause, pattern, and characteristics of illness outbreaks on cruise ships (Widdowson et al. 2004; Verhoelf et al. 2008). Others examined passengers' behaviors and perceptions regarding illness outbreaks on cruise ships (e.g., Neri et al. 2008; Wikswo et al. 2011). It is noted that even though passengers were not concerned about their health and safety while cruising, they have limited knowledge in emergency procedures and protective measures on cruise ships (Baker and Stockton 2013). On some occasions, increased perceived risk can result in passengers' misbehaviors (e.g., hiding the symptom, delaying reports), which could worsen the crisis situation and accelerate the spread of the disease on board (Neri et al. 2008; Wikswo et al. 2011). In spite of its importance, very few studies have empirically illustrated the relationship between individuals' health risk perceptions

and cruise travel intentions during crisis times. Similarly, it remains unclear what strategy can be used to affect individuals' health risk perceptions and subsequent decisions.

Risk and Crisis Communication in Tourism

Risk communication is defined as “the exchange of information among interested parties about the nature, magnitude, significance or control of a risk” (Covello 1992 p. 359). It mainly concerns various risk-related elements, such as risk assessment, risk consequences, and threat sensing (Reynolds and Seeger 2005). The goal of risk communication is to disseminate messages that can result in behavioral changes to alleviate threats (Reynolds and Seeger 2005). In comparison, crisis communication is seen as part of crisis management and refers to the message and strategies that are used for “preventing or lessening the negative outcomes of a crisis and thereby protecting the organization, stakeholders, and/or industry from damage” (Coombs 2014, p. 4). In some cases, crisis communication also involves distributing emergency information during a crisis event, such as an evacuation (Sellow et al. 2008).

It is commonly perceived that risk communication and crisis communication are distinctive because of their origins and foci (Reynolds and Seeger 2005). Risk communication derives from a public health context and targets the encouragement of the public to adopt behavioral changes in response to emerging health issues (Freimuth, Linnan, and Potter 2000), while crisis communication comes from a public relations background and attempts to manage public perceptions of crisis events and to reduce the harm of these events on the affected organization (Coombs 2014). Despite these distinctions, risk communication and crisis communication are highly intertwined in that any manifested risks can develop into a crisis,

which requires organizations to take actions and exert management efforts (Heath and O'Hare 2010). Risk communication and crisis communication also share a similar scope. They both aim to protect public health and safety and reduce public harm. Managing a tourism crisis encompasses four phases: reduction; readiness; response; recovery (Pacific Asia Tourism Association 2003). In this context, risk communication can be emphasized in the reduction and readiness phases, and crisis communication can be utilized in the response and recovery phases. Lundgren (1994) suggested that risk communication is a limited form of crisis communication.

Risk communication and crisis communication complement each other and, more recently, the term "crisis and emergency risk communication" has been receiving increasing attention (Reynolds 2002; Reynolds and Seeger 2005). This term refers to a blended communication style that combines both risk and crisis communication (Reynolds 2002). Recognizing the emerging global threats to public health, the CDC has taken the lead in promoting this communication style, suggesting that contemporary health communication "must be strategic, broad base, responsive, and highly consistent" (Reynolds and Seeger 2005, p. 49). This integrative framework encompasses various stages of a crisis, ranging from the pre-crisis stage (which focuses on risk assessment and risk development), the crisis stage (which is normally triggered by an event), to the post-crisis stage (which focuses mostly on recovery) (Coombs 2014; Reynold and Seeger 2005).

As an essential part of crisis management, communication has frequently been studied in tourism research. In terms of crisis communication, tourism scholars have examined how destinations respond to various health-related crises. For example, research has been conducted on the foot and mouth disease outbreak in the UK in 2001 (Ritchie et al. 2004) and the SARS

epidemic in Hong Kong in 2003 (Alan, So, and Sin 2006). In addition to destinations, this research stream has investigated different sectors' responses to health-related crises, including the hotel industry (Henderson and Ng 2004) and the cruise industry (Liu and Pennington-Gray 2015). In contrast, risk communication has received less scholarly attention. Only a few articles have discussed the topic of risk communication, whereby the emphasis has been on food safety issues in restaurants (Konenbert 2012; Wen and Kwon 2017).

More recently, a few studies have used experimental design to investigate factors that may affect the outcome of crisis communication in a cruise line setting (Rsyhka, Domke-Damonte, Keels, and Nagel 2016; Soulard and Petrick 2016). Soulard and Petrick (2016) used eight fictitious scenarios related to a fire onboard a cruise ship to investigate the influence of expertness, responsibility (i.e., who caused the fire), and compensation on evaluations of the affected cruise line's brand image and consumer purchase intentions. Financial compensation was found to significantly influence brand image and purchase intentions, whereby respondents who received more financial compensation had a more positive image of the brand and higher intentions to purchase a cruise (Soulard and Petrick 2016). Rsyhka et al. (2016) used a fictitious sinking cruise ship scenario to examine the role of social media in shaping cruise line customers' perceptions of corporate reputation. This study found that corporate reputation perceptions were affected by the speed of the response on social media, brand familiarity, and respondents' cultural values. These studies found strategies that were useful in motivating people to cruise in times of crisis and protecting the reputation of cruise lines, respectively.

When communicating about public health issues, the message content needs to expand its original scope from image repair to incorporate the risk communication function (Reynold

2002). The messages need to include public safety information, which educates the public on how to protect themselves against the risk of certain public health issues (Reynold and Seeger 2005). An important goal of this communication message is to reduce public harm (Reynolds and Seeger 2005). Although such communication styles have been promoted in crisis communication (Coombs 2014; Reynold and Seeger 2005), it has not been emphasized in tourism crisis management.

Risk Perception Attitude (RPA) Framework

As discussed, risk perceptions appear to be a key element in understanding cruise line customers' reactions to different communication messages. The Risk Perception Attitude (RPA) framework offers a useful conceptual approach to understand how to communicate health-related issues (Rimal and Real 2003). The RPA framework addresses the influence of two factors—perceived risk and efficacy beliefs. Rimal and Real (2003) interpreted perceived risk as one's judgment of the likelihood of personal harm from a health problem and the estimation of the magnitude and effects of the health problem. Accordingly, risk perceptions can be examined in terms of perceived susceptibility and perceived severity, respectively (Witte et al. 1996). Efficacy beliefs have been defined as “the belief that enacting a specific behavior will result in the change one seeks” (Turner et al. 2006 p. 132). Efficacy beliefs can be examined in terms of self-efficacy and response efficacy (Witte et. al.1996). Self-efficacy refers to the estimation of one's capability of carrying out a recommended behavior (Witte et al. 1996). Response efficacy refers to the perceived effectiveness of a recommended behavior (Witte et al. 1996).

According to the level of perceived risk and the level of efficacy beliefs, the RPA

framework uses a segmentation approach and classifies individuals into one of four groups (Rimal and Real 2003). The first group is the *responsive group* (high risk, high efficacy), in which individuals were most likely to engage in self-protective behaviors. The second group is the *avoidance group* (high risk, low efficacy), in which individuals in most cases experienced conflicted feelings and tended to be less motivated to engage in self-protective behaviors. The third group is the *proactive group* (low risk, high efficacy), in which individuals were driven by their perceived risk and sometimes displayed an interest in engaging in self-protective behaviors. The fourth group is the *indifference group* (low risk, low efficacy), in which individuals were least likely to take any protective actions because they did not think they were at-risk and they did not have confidence in their ability to avert the threat. Each of the four RPA groups is hypothesized to differ from one another in terms of their affective and behavioral responses to the health-related incident (Rimal and Real 2003).

The RPA framework has been applied in various health contexts, including HIV/AIDS prevention behaviors (Rimal et al. 2009), information seeking behavior related to diabetes (Turner et al. 2006), and health behaviors related to skin cancer (Rimal and Real 2003). Use of the RPA framework has also been expanded to a broader social context. For example, Mead et al. (2012) examined how risk perceptions and efficacy beliefs affected public decision-making and behaviors to mitigate climate change. Although the hypotheses associated with the RPA framework have been supported, researchers have recognized that the actual attitudinal and behavioral differences among groups varies by the context of the specific study (Rimal and Turner 2009). Within the context of tourism, Liu, Schroeder, Pennington-Gray, and Farajat (2016) used the RPA framework to explore how prospective tourists' RPAs may affect their

travel intentions during times of regional political instability. The findings showed that the RPA framework is suitable to a tourism context (Liu et al. 2016).

The RPA framework was selected as the conceptual foundation of this study for several reasons. First, the RPA framework and this study share the same scope, which focuses on issues of public health and peoples' responses to communication messages. Second, the RPA framework features a segmenting approach, which is consistent with the aim of this study and can provide better insights into audience analysis. Third, previous studies (e.g., Liu et al. 2016) found that the RPA framework can be applied to the context of tourism. Finally, instead of simply testing the relationships between one's RPAs and outcome variables, this study took into account the relevant literature by exploring the role of past experience and safety perceptions during the communication process.

Information Search Behavior in Risk and Crisis Communication

Information-seeking intentions are seen as important behavioral antecedents in tourism (Gursoy and Umbreit 2004). Information not only plays a key role in tourists' decision-making processes, but also holds exceptional value for tourists during times of crisis (Mansfeld 2006). Rimal and Real (2003) suggested that information search behavior is important in the event of a health incident because the public cares about the personal impacts of such health occurrences.

Additionally, an elevated health-related risk is normally associated with perceptual and behavioral changes (Witte et al. 1996). Information seeking can be regarded as one of the behavioral manifestations of one's RPAs, both in a general public health context (Rimal and

Real 2003) and in a tourism context (Cahyanto et al. 2016). Tourists may engage in information search as a way to protect themselves against risk, as well as to reduce uncertainty (Cahyanto et al. 2016). Information gathered can contribute to one's knowledge, thereby affecting their subsequent evaluations and judgments (Sharifpour, Walters and Ritchie 2014).

Safety Perceptions associated with Cruise Travel and Communications

Safety is an essential element that drives one's cruise travel intentions and creating a safe environment during crisis times is especially important for tourism practitioners (Mansfeld and Pizam 2006). Safety perceptions can be understood as the perceived condition of being "safe" and being protected against the risk posed by any undesirable events (e.g., health illnesses) (Sönmez and Graefe 1998b). Safety and security are one of the most important elements affecting individuals' travel plans and their choices associated with tourism products and services (Mansfeld and Pizam 2006). Studies have found that individuals' risk perceptions associated with a specific issue (e.g., health outbreaks, terrorist attacks, natural disaster) are related to their overall safety perceptions and subsequent travel decisions (Floyd et al. 2014; Reynolds and Balinbin 2003). Several studies have reported a negative association between safety perceptions and travel decisions, whereby tourists tend to choose travel plans that are perceived to be safe and avoid situations that are perceived to be risky (Milman and Pizam 1995; Sönmez and Graefe 1998b).

In addition to a direct relationship between one's safety perceptions and travel decisions, several studies (Liu et al. 2016; Reisinger and Mavondo 2005) have found that safety perceptions also mediate the relationship between one's risk perceptions and travel decisions. Liu et al.

(2016) found that perceived safety mediated the relationship between one's risk perception attitudes and visiting intentions when faced with the risk of political instability. Reisinger and Mavondo (2005) found that safety perceptions mediated the relationship between one's motivations and international travel intentions.

Past Cruise Travel Experience and Future Cruise Intentions

The tourism literature suggests that past travel experience appears to be a consistent predictor of future travel behaviors (Floyd et al. 2004; Milman and Pizam 1995). Milman and Pizam (1995) suggested that past travel experience is linked to familiarity and may subsequently reduce one's level of perceived risk. Consistently, repeat customers have been found to be more responsive towards recovery marketing strategies and more likely to return to affected destinations after crises (Walters and Mair 2012).

The importance of past cruise travel experience has also been acknowledged. Several studies have found that past cruise travel experience was an important factor that influenced passengers' satisfaction, attitudes, and purchase intentions (De La Vina and Ford 2012; Petrick 2004). Maintaining strong cruise intentions is essential during crisis times, as this is closely related to service recovery (Soulard and Petrick 2016). Crises on cruise ships may not only disrupt the normal operation of the affected cruise line, but may also lead to the misperception that cruise travel is associated with danger (Howard and Stephenson 2013). This misperception may then translate into a type of intrapersonal constraint to cruising and affect future cruise intentions (Soulard and Petrick 2016).

To the best of the authors' knowledge, few studies have explored the relationship

between passengers' past cruise travel experience and safety perceptions on cruise ships. However, one study found that past cruise travel experience was related to one's safety perceptions and knowledge while at sea (Baker 2013). Individuals who had taken cruises before tended to have a higher level of knowledge about personal safety on ships, as well as tended to perceive cruise travel to be safer than those who had never been on a cruise before (Baker 2013). Taken together, it appears that past cruise travel experience affects people's safety perceptions and subsequent decisions.

Conceptual Model

Guided by the RPA framework, the purpose of this study was to understand how cruise line customers responded to communication messages. Specifically, this study attempted to: (1) examine the perceptual and behavioral differences among the RPA attitudinal groups; (2) investigate the mediating relationship between one's RPAs and cruise travel intentions via safety perceptions; (3) explore the role of past cruise experience as a moderator. The conceptual model is presented in Figure 1. This is followed by the three research objectives and seven hypotheses.

[Insert Figure 1 about Here]

Research Objective 1. To examine if differences exist between the RPA attitudinal groups in terms of the outcome variables.

Hypothesis 1a: There will be differences between the RPA attitudinal groups in terms of information search behavior, whereby the Responsive Group will display the highest information search intentions.

Hypothesis 1b: There will be differences between the RPA attitudinal groups in terms of

safety perceptions associated with cruise travel, whereby the Responsive Group will display the highest safety perceptions.

Hypothesis 1c: There will be differences between the RPA attitudinal groups in terms of cruise travel intentions, whereby the Responsive Group will display the highest cruise travel intentions.

Research Objective 2. To examine if safety perceptions mediate the relationship between one's RPAs and cruise travel intentions.

Hypotheses 2a. The Responsive Group will display higher safety perceptions than the Indifference Group, which will lead to higher cruise travel intentions.

Hypotheses 2b. The Proactive Group will display higher safety perceptions than the Indifference Group, which will lead to higher cruise travel intentions.

Hypothesis 2c. The Avoidance Group will display lower safety perceptions than the Indifference Group, which will lead to lower cruise travel intentions.

Research Objective 3. To examine if past cruise travel experience moderates the relationship between one's RPAs and cruise travel intentions via safety perceptions.

Hypothesis 3. For people who have not cruised in the past, safety perceptions will mediate the relationship between their RPAs and cruise travel intentions; while for people who have cruised before, safety perceptions will not mediate the relationship between their RPAs and cruise travel intentions.

METHODS

Research Design

This study adopted a between-subjects experimental design. Experimental design is appropriate because of the exploratory nature of this study (Keppel and Wickens 2004). The two RPA variables of perceived risk and efficacy beliefs were measured in this study. Following Rimal and Real's (2003) approach, this study used different stimuli to induce different levels of perceived risk and efficacy beliefs. Subsequently, this study generated four groups. To manipulate the level of perceived risk, two scenarios were created that featured norovirus incidents which varied in terms of magnitude and scale. One scenario involved 10 infected cases, while the other involved 172 infected cases. To manipulate the level of efficacy beliefs, two messages that differed in emphasis were created. One scenario was consistent with current cruise industry practices and strategies of apology and compensation were used. This scenario also aimed to repair the tarnished image of the cruise line. The other scenario featured the risk communication function. This scenario not only used strategies such as apology and compensation, but also included information about how individuals can protect themselves against the risk of contracting norovirus infections on cruise ships.

It was expected that the stimuli would result in different levels of perceived risk and efficacy beliefs. It was also expected that the stimuli would result in the formation of four groups: (1) the indifference group (low risk, low efficacy); (2) the avoidance group (high risk, low efficacy); (3) the proactive group (low risk, high efficacy); (4) the responsive group (high risk, high efficacy) (Rimal and Real 2003).

The outcome measures were operationalized in terms of the likelihood of searching for relevant information, the perceived safety of cruising, and cruise travel intentions. Pre-tests were conducted to test the effectiveness of the stimuli and scales. The content was adjusted based on the pre-test results. The stimuli used in this study are presented in Figure 2.

[Insert Figure 2 About Here]

Procedures

A web-based survey was conducted using Qualtrics. Participants were recruited through Amazon's Mechanical Turk (MTurk) interface. MTurk has become a popular platform for social science researchers to recruit research subjects. Multiple studies have supported the representativeness of the MTurk population, as well as validated the results of experiments completed by MTurk workers (Berinsky, Huber, and Lenz 2012). Participants recruited via MTurk were directed to the Qualtrics website and presented with the informed consent form. After signing the informed consent form, participants answered several questions related to their knowledge of norovirus infections. Next, participants were randomly assigned to one of the four experimental conditions and the corresponding stimuli was displayed. After reading the messages, participants answered a series of items related to the manipulation check, the outcome variables, and demographics. Participants were provided with debriefing information at the end of the survey.

All participants were U.S. citizens who were at least 18 years old. According to Keppel and Wickens (2004), in order to detect a medium size effect ($w^2 = .05$) and to achieve a power

level of more than .80, every group needed 53-69 participants. Thus, the sample size for this study was set as 240 participants in total (60 participants per group).

Measures

Manipulation Check Questions. To confirm that participants' perceived risk and efficacy beliefs were induced, a series of manipulation checks were performed. All of the items used to measure perceived risk and efficacy beliefs were adopted from Witte et al.'s (1996) Risk Behavior Diagnosis Scale. Each item was reworded to feature the study context of norovirus infections on cruise ships. A pre-test was employed to ensure the clarity of the items and the reliability of the scale. All items were measured on a Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Perceived risk consisted of two factors- perceived severity and perceived susceptibility. The following items were utilized to measure perceived severity: (a) If I were to get norovirus infections on a cruise ship, I would experience serious negative consequences; (b) If I were to get norovirus infections on a cruise ship, it would have a severe negative impact on me; (c) If I were to get norovirus infections on a cruise ship, it would be harmful to my well-being ($M_{severity} = 5.26, SD = 1.15$; Cronbach's $\alpha = .84$). The following items were utilized to measure perceived susceptibility: (a) My chance of getting norovirus infections on cruise ships is high; (b) I am at risk for getting norovirus infections on cruise ships; (c) It is likely that I will get norovirus infections on cruise ships ($M_{susceptibility} = 3.98, SD = 1.49$; Cronbach's $\alpha = .86$).

Efficacy beliefs consisted of two factors- self-efficacy and response efficacy. Self-efficacy was measured using the following items: (a) I can easily prevent getting norovirus

diseases on cruise ships; (b) I am able to prevent getting norovirus infections on cruise ships; (c) I have the skills to deal with norovirus outbreaks on cruise ships ($M_{self-efficacy} = 4.30$, $SD = 1.16$; Cronbach's $\alpha = .78$). Response efficacy was measured using the following items: (a) There are effective ways to prevent norovirus outbreaks on cruise ships; (b) There are effective ways to deal with norovirus outbreaks on cruise ships; (c) If I take recommended measures, I am less likely to get norovirus infections on cruise ships ($M_{response\ efficacy} = 5.10$, $SD = 1.05$; Cronbach's $\alpha = .79$).

Moderating Variable. Past cruise experience served as a moderating variable.

Participants were asked how many times they have taken cruises before and were then divided into two groups (0= have not cruised in the past; 1= have cruised in the past).

Outcome Measures. The likelihood of searching for relevant information was measured by asking participants to rate the statement "I would like to seek information about norovirus outbreaks on cruise ships" on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) ($M_{info} = 4.67$, $SD = 1.59$). Safety perceptions associated with cruising was measured by asking participants to indicate the level of perceived safety that they associated with cruise travel using a 7-point semantic differential scale ranging from 1 (*very unsafe*) to 7 (*very safe*) ($M_{safety} = 4.88$, $SD = 1.54$). Lastly, to measure participants' cruise travel intentions, participants were asked to indicate the likelihood that they would take cruises in the future using a 7-point Likert scale ranging from 1 (*very unlikely*) to 7 (*very likely*) ($M_{intention} = 4.28$, $SD = 1.63$).

RESULTS

Manipulation Check Results

According to the RPA framework, the four RPA groups differ in terms of their levels of perceived risk and efficacy beliefs: (1) indifference group (low risk, low efficacy), (2) proactive group (low risk, high efficacy), (3) avoidance group (high risk, low efficacy), and (4) responsive group (high risk, high efficacy). Independent sample t-tests were performed to test if there were any significant differences between the groups in this study on these two constructs. As expected, participants who were exposed to messages related to large-scale incidents scored significantly higher on both perceived severity ($M_{high}= 5.64$, $M_{low}= 4.85$, $t= -5.97$, $p < .01$) and perceived susceptibility ($M_{high}= 4.85$, $M_{low}= 3.07$, $t= -12.18$, $p < .01$) than those who were exposed to messages related to small-scale incidents. Participants who received the message that featured the risk communication function scored significantly higher on both self-efficacy ($M_{high}= 4.57$, $M_{low}= 4.04$, $t= -3.73$, $p < .01$) and response-efficacy ($M_{high}= 5.26$, $M_{low}= 4.92$, $t= -2.70$, $p < .01$) than those who received the response that was only aimed at image repair. Therefore, the results of the manipulation checks indicated that the stimuli successfully induced different levels of perceived risk and efficacy beliefs among the participants. Subsequently, four distinctive attitudinal groups were formulated in accordance with the RPA framework.

Sample Characteristics

A total of 240 responses were included in the analysis, with 60 participants in each RPA group. As shown in Table 1, participants ranged from 18 to 72 years old ($M= 33.97$, $SD= 10.83$). Slightly more than half of the participants were male ($n= 132$, 55.0%). A majority had graduated from college ($n= 176$, 73.3%). More than half had taken at least one cruise in the past ($n= 136$, 56.7%). Only a small number of the participants had experienced norovirus outbreaks on cruise

ships (n= 41, 17.1%). Further, a majority knew very little about norovirus and nearly half failed to answer any of the five knowledge questions correctly (n=114. 47.5%). Additional statistical analyses were conducted to compare the groups with respect to individual characteristics (age, gender, education, past cruise travel experience, past experience with norovirus). No statistical differences were noted ($F_{\text{age}}(3, 239) = .75, p = .53$; $\chi^2_{\text{gender}}(3) = 4.64, p = .20$; $\chi^2_{\text{education}}(6) = 8.56, p = .20$; $\chi^2_{\text{cruise}}(3) = 5.17, p = .16$; $\chi^2_{\text{norovirus}}(3) = 2.71, p = .44$).

[Insert Table 1 About Here]

Results of Statistical Testing

Research Objective 1. To examine if differences exist between the RPA attitudinal groups in terms of the outcome variables.

To examine the significant differences between the RPA groups in terms of the outcome variables, a series of ANOVA tests were conducted. Post-hoc comparisons were then conducted using the Tukey HSD test, which considers the scatter of all of the groups, compares the group means with each other, and computes multiplicity adjusted p-values (Keppel and Wickens 2004). The results associated with the first research objective are provided in Table 2.

Hypothesis 1a: There will be differences between the RPA attitudinal groups in terms of information search behavior, whereby the Responsive Group will display the highest information search intentions.

The ANOVA results indicated that there were statistically significant differences between the four RPA groups in terms of their intentions to search for relevant information ($F(3,239) =$

4.095, $p = .007$). The post-hoc results indicated that the avoidance group scored significantly higher than the indifference group and the proactive group at a significance level of .05. However, there were no significant differences between the avoidance group and the responsive group at a significance level of .05. Hypotheses 1a was partially supported.

Hypothesis 1b: There will be differences between the RPA attitudinal groups in terms of safety perceptions associated with cruise travel, whereby the Responsive Group will display the highest safety perceptions.

The ANOVA results showed that there were statistically significant differences between the four RPA groups in terms of their safety perceptions associated with cruise travel ($F(3,239) = 7.676, p < .01$). The post-hoc results indicated that the indifference group scored significantly higher than the proactive group and the avoidance group at a significance level of .05. However, there was no significant difference between the indifference group and the responsive group at a significance level of .05. Further, the avoidance group scored the lowest, which was statistically lower than the three other groups at a significance level of .05. Hypothesis 1b was partially supported.

Hypothesis 1c: There will be differences between the RPA attitudinal groups in terms of cruise travel intentions, whereby the Responsive Group will display the highest cruise travel intentions.

The ANOVA results showed that there were statistically significant differences between the four RPA groups in terms of their cruise travel intentions ($F(3,239) = 5.647, p = .001$). The post-hoc results indicated that the responsive group scored the highest, which was statistically

different from the three other groups at a significance level of .05. Hypothesis 1c was supported.

[Insert Table 2 About Here]

Research Objective 2. To examine if safety perceptions mediate the relationship between one's RPAs and cruise travel intentions.

To examine the second research objective, a series of mediation analyses were conducted using the SPSS Macro PROCESS. Specifically, the PROCESS macro-bootstrapping (n= 5000) procedure (model 4) was employed. Following the suggestions provided by Hayes and Preacher (2014), the indifference group was used as the reference group and three dummy codes were created for the three other RPA groups. The results of the pre-tests indicated that no significant differences were found between the indifference group and the control group in terms of individual characteristics (i.e., socio-demographics, past experience, knowledge), the risk attitude variables (i.e., perceived risk and efficacy beliefs), and the outcome measures (i.e., information search behavior, safety perceptions, cruise travel intentions). Therefore, it was assumed that these two groups were highly similar and that the indifference group could be treated as the control group in the analysis of research objective 2. Three models were tested. The results associated with the second research objective are presented in Table 3.

Hypotheses 2a. The Responsive Group will display higher safety perceptions than the Indifference Group, which will lead to higher cruise travel intentions.

The results of Model 1 indicated that the responsive group tended to have higher cruise travel intentions than the indifference group (b= .75, p= .03). Although cruise travel experience

($b = .83, p < .01$) and safety perceptions ($b = .49, p < .01$) were positively related to cruise intentions, safety perceptions did not mediate the relationship between RPAs and cruise travel intentions (95%CI_{responsive}: $-.43, .08$). Hypothesis 2a was not supported.

Hypotheses 2b. The Proactive Group will display higher safety perceptions than the Indifference Group, which will lead to higher cruise travel intentions.

The results of Model 2 showed that both past cruise experience ($b = .57, p = .01$) and safety perceptions ($b = .49, p < .01$) were related to cruise travel intentions for the proactive group. The results (95%CI_{proactive}: $-.60, -.05$) supported the mediation relationship. This suggests that the proactive group had a lower level of perceived safety than the indifference group and, therefore, were less likely to take cruises. Even though the mediation relationship was confirmed, the direction was not supported. Thus, Hypothesis 2b was not supported.

Hypothesis 2c. The Avoidance Group will display lower safety perceptions than the Indifference Group, which will lead to lower cruise travel intentions.

The results of Model 3 indicated that safety perceptions ($b = .50, p < .001$) were positively related to cruise travel intentions for the avoidance group. The results (95%CI_{avoidance}: $-.96, -.34$) also supported the mediation relationship. This suggests that the avoidance group possessed a lower level of perceived safety than the indifference group and, thus, they were less likely to take cruises. Hypothesis 2c was supported.

[Insert Table 3 About Here]

Research Objective 3. To examine if past cruise travel experience moderates the relationship between one's RPAs and cruise travel intentions via safety perceptions.

Following the recommendations provided by Hayes and Preacher (2014), a similar procedure was undertaken to test the mediated moderation relationship. Specifically, a moderated mediation test was employed using the SPSS Macro PROCESS (n= 5000, model 8). The results associated with the third research objective are presented in Table 3.

Hypothesis 3. For people who have not cruised in the past, safety perceptions will mediate the relationship between their RPAs and cruise travel intentions; while for people who have cruised before, safety perceptions will not mediate the relationship between their RPAs and cruise travel intentions.

The interaction term was not a significant predictor of cruise intentions within all three models and none of the indices of moderated mediation included zero. Therefore, the moderated mediation proposition was not supported by the aforementioned results. Hypothesis 3 was not supported.

DISCUSSION

Ensuring a safe and healthy cruise is one of the most important tasks for the cruise line industry. Although the cruise industry has undertaken extensive preventive measures and has employed public campaigns, norovirus outbreaks might still be perceived as a risk for past and future passengers (Harris Poll 2014). Clearly, there is a difference between facts and public understanding of the problem, which is common during crisis times. Scholars (Coombs 2014;

Wester 2009) have found that following the onset of a crisis, people evaluate the organization and situation mainly based on their feelings and perceptions, but not technical estimates or facts. Thus, when facing situations like this, cruise lines need to know how to effectively communicate with the public, assure them, and correct potential misunderstandings. Increasing cruise lines' preparedness for health crises depends on comprehensive risk and crisis management plans, while maintaining or regaining the public's trust and confidence depends on effective communication efforts (Liu et al. 2016).

Different segments of the cruising population may require different content and messaging strategies. Understanding the nuances of these different segments and how they respond to messages is an area of research which has been understudied. This research has taken steps to address this gap in the literature. This was done through an experimental design, which provides a methodological contribution to the tourism literature. The RPA framework was used to create the four segments. Related to the first research objective, these segments showed differences with regards to three outcome variables: information search behavior, safety perceptions of cruise travel, and intentions to take a cruise. Those who were in the *avoidance group* (high risk, low efficacy) were more likely to search for information on norovirus. The *avoidance group* was more likely to indicate greater information seeking than the *proactive group* (low risk, high efficacy) and the *indifference group* (low risk, low efficacy). Based on a comparison of the defining characteristics of each group, the variable which seems to drive this is the *avoidance group*'s high level of risk perceptions. In other words, higher risk perceptions lead to a greater likelihood to look for information about norovirus on cruise ships. This finding aligns well with the public health literature, which suggests that issue salience acts as the main

driver of individuals' information search behaviors and that respondents who have higher level of risk perceptions are more likely to search for information to keep themselves safe (Rimal and Real 2003; Witte et al. 1996). For the cruise industry, this suggests that they need to communicate a message on a consistent basis. This message should be used to address any irrational fears that this segment might have about contracting norovirus on a cruise ship.

With regards to safety perceptions, the *indifference group* (low risk, low efficacy) was significantly different than the *avoidance group* (high risk, low efficacy) and the *proactive group* (low risk, high efficacy). The *indifference group* is mainly defined by their lack of involvement in the issue (Rimal and Real 2003). Thus, low risk perceptions and low efficacy beliefs possibly indicate a lack of attention to the risk issue. This group, as their name suggests, appears to be indifferent to the norovirus issue on cruise ships.

With regards to cruise travel intentions, the *responsive group* (high risk, high efficacy) had higher intentions to travel than the three other groups. Interestingly, the *responsive group* is characterized by high risk perceptions and high efficacy beliefs. From a practical perspective, it might be encouraging that those who perceive the risk of norovirus on cruise ships to be high, but also believe that they are capable of engaging in behaviors to protect themselves were the most likely to take a cruise. This suggests that the role of risk reduction behaviors in the message strategy needs to be highlighted to help this segment overcome their perceptions of risk. From a conceptual perspective, this particular finding suggests that the RPA model may be an appropriate method to segment the cruising population.

Related to the second research objective, for the *responsive group* (high risk, high efficacy), when both perceived risk and efficacy beliefs are high, it appears that their safety is

controlled by their actions. Thus, they indicate a stronger likelihood to take a cruise than the two other groups. Based on research conducted in health behavior, the *responsive group* has been found to be the most likely to engage in risk reduction behaviors (Rimal and Real 2003). This could be the missing information that is needed to understand why this group was found to be the most likely to take a cruise despite their high levels of risk perceptions. However, for the two groups who either indicated high risks (and low efficacy) or high efficacy (and low risk), safety appears to be more of an issue. These two groups are generally characterized by lower interest or motivation to engage in risk reductions behaviors (Rimal and Real 2003). This finding leaves us with more questions than answers. For the *proactive group* (low risk, high efficacy), is it their low levels of risk perceptions which ultimately drive their lack of motivation to engage in preventive behaviors? For the *avoidance group* (high risk, low efficacy), is it their low levels of efficacy beliefs that prevent them from engaging in preventive behaviors? The link between risk reduction behaviors and travel intentions needs to be explored to fully understand these groups and how they think.

Related to the third research objective, the moderated mediation proposition was not supported. Past cruise experience did not moderate the relationship between one's RPAs and cruise travel intentions via safety perceptions. This might be explained by the fact that just over half of the sample had taken a cruise in the past. Rather than accept this, further research on both past cruisers and long-time loyal cruisers should be explored in an effort to reveal the levels of influence that this experience might have on their perceptions of safety, as well as their cruise travel intentions. One would expect that the more you cruise, the less concerned you are with safety issues onboard. Future studies can also examine the influence of additional variables (e.g.,

age, gender, and loyalty) and investigate the combined influence with the RPA variables.

Facing the challenge posed by public health issues, cruise lines and the cruise line industry are becoming more and more responsive towards health outbreaks on cruise ships. As important as it is to maintain an open and communicative attitude, this study examined the influence of the message on future cruise travel intentions. Previous research has shown that strategies, such as compensation (Soulard and Petrick 2016) and apology (Liu and Pennington-Gray 2015), play an important role during recovery for the cruise industry. However, the primary findings of this study showed that messaging might be as important, if not more important, in shaping consumers' safety perceptions for many market segments.

This study also explored the notion that different segments interpret messages differently. Those who were more engaged in the risk and knew that they could mitigate it were most likely to express interest in cruising despite their perceptions of risk. Thus, cruise lines should not hesitate to educate the cruising population about norovirus and different ways that passengers can keep themselves safe. The CDC's VSP program is a good example of how the cruise industry is doing this. However, this program is limited to GI illnesses on cruise ships sailing from a foreign port to a U.S. port. It is recommended that this type of program be extended beyond GI illnesses to include other common illnesses, such as influenza. In addition, as the cruise industry grows outside of the U.S., the industry needs to expand this type of program for ships docking at non-U.S. ports.

Lastly, the application of this study can be extended beyond the context of norovirus outbreaks. The cruise industry is facing various challenges every day, ranging from illness outbreaks (e.g., norovirus and influenza outbreaks, Ebola) to storm incidents to shipboard safety

(e.g., persons overboard). Instead of addressing the low possibility of these events and criticizing the media for exaggerating, cruise lines need to realize that what really is needed is an effective communication message. Most of the time it is a crisis of perception. Effective communication requires an understanding of audiences' perceptions and reactions. Accordingly, this study used a segmenting approach to explore the messaging process. This study can provide insights in terms of developing messages that not only deliver accurate information, but also generate a sense of safety for potential cruisers.

Limitations and Future Studies

Despite its importance, tourism risk and crisis communication studies are still at an early developmental stage and require more empirical and theory-driven research to contribute to the theory-building process (Papathanassis and Beckmann 2011). In an exploratory attempt, this study applied the RPA framework to understand cruise line customers' reactions to different risk and crisis communication messages and explored the effects of safety perceptions and past cruise experience on the communication outcomes. Through a discussion of the limitations of this study, this section also aims to provide direction for future studies in this area.

The findings of this study are confined within an experimental setting in which different levels of perceived risk and efficacy beliefs were induced by communication messages instead of being naturally observed. To generate different scenarios and to ensure consistency between experimental groups, fictitious cruise lines' responses were presented to participants who were exposed to small-scale incidents. Although the results of the pre-tests provided support for such decisions, cruise ships only have to report outbreaks involving at least two percent of passengers

or crew members (CDC 2017). Thus, future studies should take this into account and focus on large-scale incidents.

In addition, a majority of respondents failed to answer the knowledge questions related to norovirus. This is a limitation of this study because knowledge has been found to be a significant predictor of health behavior (Noar and Zimmerman 2005). In this study, the five norovirus knowledge questions were asked before participants were exposed to the stimuli. Notably, participants in the two groups characterized by a high level of efficacy beliefs (*proactive group* and *responsive group*) had the opportunity to learn more about norovirus infections via the message. This additional information may have assisted them in making more informed decisions. However, the two other groups (*indifference group* and *avoidance group*) did not receive educational information about norovirus in their messages. Accordingly, it is assumed that they did not know much about this issue and, therefore, may have relied on their basic fears of the disease when evaluating the scenario (Chew et al. 2010). Future studies should take this information into account and use post-tests to measure respondents' knowledge level after being exposed to the message, as well as investigate the effect of health knowledge on tourists' health behaviors.

The measure of past cruise experience is another limitation of this study. The original item used to measure this variable was: "how many times have you taken a cruise in the past?" The initial descriptive analysis revealed that 74.1% of the respondents had either taken 0 (n= 104, 43.3%) or 1 (n= 74, 30.8%) cruise. Once the sample was divided into the four RPA groups, it became apparent that the sample size within the cells was too low. Therefore, the variable was recoded into two categories (have not cruised; have cruised). The authors recognize that using

have vs. have not cruised as a moderator, instead of the extent of past cruise experience, results in a loss of valuable information. However, a dichotomous measure was necessary because of the sample size used in this study. Future studies should ensure that the sample size is large enough to address this limitation.

Nearly half of the participants in this study had taken cruise before. CLIA's newest market report (2018) shows that 11.52 million Americans cruised in 2016, which represents 3.5% of the population. Similarly, nearly one-fifth of the participants had experienced norovirus during cruise travel. In reality, the chance of contracting norovirus on cruise ships is relatively small. The differences here may suggest that the participants in this study are not representative of the population. Although experimental design is mainly concerned with internal validity, future studies (especially those using a cross-sectional design) should pay attention to this issue and ensure the external validity of their research.

Cruise travel intentions were measured by one item in this study. The authors recognize that this is another limitation because single-item measures are presumed to have low reliability (Wanous, Reichers, and Hudy 1997). However, while it may not be ideal, the use of single-item measures of travel intentions is a fairly common practice in the tourism crisis management literature (Cahyanto et al. 2016; Liu et al. 2016 Sönmez and Graefe 1998a, b). There has also been some discussion in the literature about the efficacy of measuring intended behaviors (Stacks 2010; Zin and Liu 2008). Intended behaviors represent the actions that individuals *say* they will take, while actual behaviors represent the actions that individuals *have* taken. Intended behavior is defined by one's opinions and attitudes (Stacks 2010). Thus, even though intended behavior is generally considered to be a good indicator of one's actual behavior, it may not always reflect

reality (Stacks 2010; Zin and Liu 2008). Future studies can examine respondents' actual behavior, rather than their behavioral intentions, to address this limitation.

Furthermore, the segmenting approach adopted in this study was based on the RPA framework and featured respondents' perceived risk and efficacy beliefs. The randomized assignment in this study may have neutralized the effects of other important variables. However, in order to obtain a deeper understanding of the cruising population, future studies can adopt a cross-sectional design and examine the effects of additional variables (e.g., socio-demographics, cultural differences) on respondents' perceptions and behaviors. For example, while this study was limited to the U.S. market, future studies can be extended to an international market in an effort to explore potential effects from cultural differences.

Future studies can also utilize a data-driven approach and segment the respondents via multiple dimensions. For instance, Ritchie et al. (2017) used an integrated approach and segmented tourists by their risk reduction strategies. In the same vein, Hajibaba et al. (2015) identified distinctive clusters such as internal crisis resistant tourists and external crisis resistant tourists by segmenting according to tourists' reactions to a crisis. These can all be applied in future studies. Particularly, future studies can incorporate additional criteria (e.g., risk reduction strategies, extent of past experience, loyalty, demographics, personality, cultural values) into the RPA framework and identify segments with specific characteristics. This approach may not only generate market intelligence, but it may also contribute to the development of tailored messages for different segments of the cruising population.

Finally, other theories and conceptual models may be useful in examining consumers' reactions to different scenarios. For example, the theory of justice (e.g., Migacz et al. 2018) can

offer an alternative approach to the study of corporate crisis management. The theory of justice features a transcendental approach, which aims to develop fair social arrangements to satisfy the relevant public (Simola 2003) in the event of a crisis. Therefore, future studies can use the theory to provide a unique perspective to understanding consumers' thoughts and reactions towards different crisis response strategies.

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