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Coping with the risk of internet connectivity in hotels: Perspectives from American consumers traveling internationally☆

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HIGHLIGHTS

- The study conceptualized coping intentions regarding the task of connecting mobile devices to hotel networks.
- The task conceptualized in this study reflects IS utilization that is integral to the contemporary hospitality experience.
- This study offered a contextual conceptualization of risk based on three distinct dimensions.
- This study elucidated the role of habit as an antecedent of benefit and risk: a differential effect on the dyad.

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ABSTRACT

A reliable and secure Internet connection may represent the only viable solution for international travelers to complete communication tasks in hotels (e.g., talking with loved ones at home, engaging in work-related activities, accessing restricted resources). Yet, the current cyber-environment accessible by connecting a mobile device to the Internet is characterized by a certain degree of risk, to which consumers generally respond via coping mechanisms. Based on data from a sample of 1017 American consumers who traveled internationally, this study validated a conceptual model that explains consumers' intentions to cope with the risk of connecting their mobile devices to hotel networks in order to access the Internet. The study recognizes consumers' risk-benefit calculative mechanisms that influence coping intentions, and the roles of knowledge, habit, and convenience orientation in influencing the benefit-risk dyad.

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1. Introduction

Internet connectivity in hotels has become a fundamental component of the augmented hotel stay experience that results in added value (Nyheim & Connolly, 2012). Such value becomes increasingly evident in international travel, where data services are difficult to access by U.S. subscribers or expensive to purchase. Thus, connecting a traveler's mobile device to a hotel's network represents sometimes the only viable solution for consumers engaging in tasks over the Internet (e.g., communicating with employers or family members, accessing work or leisure-related information, paying online to visit attractions to avoid waiting lines). In their attempt to offer consumption experiences that emulate consumers' home/work environments, hotels have designed information system (IS) infrastructures that include Internet connectivity services and business models that take advantage of the stratified nature of the hotel consumer markets (Stellin, 2012). In turn, consumers developed expectations of Internet reliability and security, which align with their expectations from their home/work environments (Liu, Denizci Guillet, Xiao, & Law, 2014). Yet, consumers do not always have the capability to properly evaluate the risks associated with connecting their mobile devices to unknown hotel networks to access the Internet.

Today's cyber-security risk in hotels extends to hotel networks, and applies to the hardware, software, and business/IT protocols that facilitate guest device connectivity. The risk also encompasses various interconnected hotel IS, such as point of sale (McMillan, 2016) and card payment systems (Scott, 2016). Such risk made an increasing number of scholars and industry experts agree that cyber-security is a critical contemporary issue (Berezina, Cobanoglu, Miller, & Kwansa, 2012). The recent cyber-security incidents reiterated the notion that connecting consumers' mobile

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devices to the Internet via hotel networks is not risk-free, and securing such networks is fundamentally difficult (Osborne, 2016). Yet, consumers have idiosyncratic motivations for connectivity, which they extend from their day-to-day lives into hotel consumption episodes, most likely aided by opportunities offered by hotels to enhance value from connectivity (e.g., social media access) (Baum, Rowley, Shipilov, & Chuang, 2005). Such motivations are strong enough to guide consumers on paths to Internet connectivity, even when the networks are public and the particularities of connectivity protocols are not entirely understood, thus risking negative consequences.

Despite the negative consequences for both consumers and hotels (e.g., loss of data, brand dilution), to date, there is only limited literature presenting any systematic examination of IS-related tasks that are characterized by substantially higher risk than transaction-related risk (e.g., compromising a primary account number (PAN)), thus marking a first critical research lacuna. Most research in IS and related disciplines focuses predominantly on transactional aspects of risk (e.g., Chang & Wu, 2012; Wang & Wang, 2010) while research addressing the security risk of mobile environments remains rare (Martins, Oliveira, & Popovič, 2014; Taylor, 2016). Yet, the risk incurred when guests connect their mobile devices to hotel networks exceeds the typical transactional risks, and may result in destruction of hardware, loss of data, public disclosure of private information, or compromising proprietary data (e.g., client/patient/student lists, trade secrets, etc.) Such risk is exacerbated when traveling abroad, due to the variability of hotel managerial practices, Internet/IT regulations and enforcement, and consumer connectivity protocols from country to country (e.g., firms requiring their employees to not leave their device from sight at any point during travel).

Although the literature explaining intentions to use IS for risky tasks is accumulating, only specific contextual evidence has been provided to enhance the current general understanding of users' coping intentions when risk and benefits coexist (Tu, Turel, Yuan, & Archer, 2015). Thus, it is not clear how consumers cope with the risk of IS use, and therefore outlining a second critical literature lacuna. Yet, understanding coping behaviors can enhance the general understanding of consumers' belief development and IS adoption behaviors (Cui, Bao, & Chan, 2009), which is instrumental to hotels designing (1) interfaces to stimulate consumer behaviors toward IS and (2) communication strategies to help consumers develop realistic expectations regarding their IS-related behaviors. A third lacuna is reflected by the equivocal interpretation of risk, which has been conceptualized both as unidimensional (e.g., Chang and Wu (2012)) and multi-dimensional (e.g., Lee, Watson-Manheim, and Chudoba (2014); Yang, Liu, Li, and Yu (2015)). Moreover, the conceptualizations of risk were grounded in theoretical foundations that recognize the duality of consumers' calculative processes and recognize the benefits-risk dyad (Rogers & Gould, 2015).

In this context, the goal of this study is to develop and empirically validate a conceptual model that explains hotel guests' coping intentions associated with connecting their mobile devices to hotel networks to access the Internet (thereafter referred to as "connecting to hotel networks") when traveling internationally. By focusing on the risk of connectivity to hotel networks, this study addresses the first lacuna – lack of research on connectivity risk – and occupies a unique and critical position within a literature that is dominated by transaction-risk studies. To accomplish its goal, the study follows three specific objectives, which together address the two remaining lacunae discussed above. First, the study creates a mapping of the benefit-risk calculative processes influencing consumers' coping intentions. Second, the study builds the conceptual model by using constructs that reflect specific consumer characteristics (e.g., knowledge, habit, convenience orientation), which explain consumer IS utilization more comprehensively than traditional system beliefs. These two objectives address the lack of research on coping behaviors and provide insight into the antecedents of coping. Third, the study recognizes the multiple dimensions of risk and seeks to model risk according to the structural dimensions that reflect the international hotel IS environment, which addresses the third lacuna – predominant unidimensional view of risk.

2. Review of literature

2.1. Theoretical foundations

The theoretical foundation of this study was built on tenets that are capable of explaining the circumstances under which consumers develop mechanisms for coping with the uncertainty and risk of connecting their devices to hotel networks while acknowledging the benefits of such connections. Such theoretical foundation must capture the characteristics of the hotel IS task environment as well as consumers' socio-cognitive contexts outlined by their idiosyncratic behaviors and orientation toward learning, which stimulates the cognitive processes that lead to appraising the benefits and risk of IS utilization. A variety of theoretical foundations have been employed to explain IS processes in other industries and disciplinary contexts. Yet, they do not necessarily fit the international hotel IS task environment, which is defined by a number of unique characteristics, in contrast to the U.S. hotel environment.

A first characteristic of the international hotel environment is its fragmentation. A high percentage of the total hotel property population is not affiliated with chains outside the U.S., and, as a result, their IT protocols are more heterogeneous than in the U.S. (e.g., a wider variety of hardware/software protocols and business models, a wider variability in innovativeness/obsolescence). Second, as different countries are subject to different IT regulations, it is likely that those regulations (e.g., privacy protection, data exchange/storage) and their enforcement would be different in international markets than in the U.S. As a result, IS utilization behaviors may be different from country to country, even under the same brand. Moreover, such behaviors may be influenced by the local cultural norms, language differences, and consumers' ability to utilize IS from their home country when traveling. Third, human resources are likely to be different in international markets, which may influence the manner in which hotel staff maintain hotel IS systems that facilitate connectivity. Fourth, regional cultural norms may influence the manner in which consumer behaviors are developed (e.g., the use of shared credentials to access public Wi-Fi networks, the use of VPN services once connected to public Wi-Fi, etc.). Fifth, the current turbulent world events, which inevitably encompass IT, have raised the general population's awareness of cyber-security, while the regional economic, cultural, and technological discrepancies are likely to create differences in the way standard IT practices are translated into actual cyber-security norms, IS protocols, and consumer education. In contrast, the U.S. hotel connectivity infrastructure can be characterized by relatively uniform IS infrastructure, more predictable connectivity protocols, and the availability and high penetration of mobile carrier connectivity services that rival hotel connectivity in terms of bandwidth, pricing, and reliability.

The existence of such unique characteristics calls for the development of a theoretical foundation that is able to capture the specific attributes of network connectivity in international travel. Accordingly, to capture this complex task-technology environment, the conceptual model of this study was developed based on two main theoretical frameworks: (1) protection motivation theory (PMT) (Rogers, 1975) and (2) social cognitive theory (SCT) (Bandura, 1977).

2.2. Protection motivation theory

PMT outlines how individuals cope with threats as a result of evaluative processes that are dyadic: a threat evaluation and a coping response (Rogers, 1983). That is, the cognitive processes responding to the evaluation provide alternatives that guide individuals to changes in attitudes and subsequent behaviors (Rogers, 1975), which represent coping behaviors that help the individual to reduce the threat (Boer & Seydel, 1996). While originating in psychology, the PMT has been applied extensively in health contexts, and given its strong capability to predict individuals' intentions to engage in protective behaviors, recent conceptualizations have been extended to IS security (e.g., Anderson & Agarwal, 2010) and tourism (e.g., Horng, Hu, Teng, & Lin, 2014). Akin to other task-technology environments, the typical and ubiquitous international hotel stay experience is characterized by a non-zero degree of cyber security risk, which is assessed using the basic cognitive appraisal mechanisms outlined by the PMT. The unfamiliar nature of the hotel environment and IS practices can guide consumers to cognitive appraisals of the IS environment, which result in behavioral responses aimed at reducing risk.

2.3. Social cognitive theory

SCT describes how individuals learn as they interact with their environment (Bandura, 1971). Such interactions are based on self-efficacy beliefs, which reflect the manner in which individuals view their capability of coping with environmental challenges and situations (Bandura, 1977). Accordingly, individuals are thought to be able to effectively interact with their environments and plan goal-oriented behaviors (Caprara, Vecchione, Barbaranelli, & Alessandri, 2013). Moreover, individual-environment interactions are based on self-regulation mechanisms, which lead to the self-restraint that individuals use against harmful behavior (Lin & Hsu, 2015). That is, in situations when individuals understand their capacity to perform a behavior within an environment and the implications of that behavior, they will engage in that behavior (Turel, Serenko, & Bontis, 2010), as learning becomes situational (Bandura, 2001). Thus, in international hotel environments, consumers' IS utilization behaviors are likely to be influenced by the manner in which they interact with the IS environment, which is characterized by cyber-security risk and grounded in the national culture and its behavioral norms, legal and technological protection, IS practices, etc. Therefore, hotel consumers are likely to shape such interactions based on learning in order to diminish cyber security risks. While the applicability of SCT has been predominant in social psychology, sporadic applications have been documented in research that complements traditional system belief-based theoretical foundations in IS adoption (e.g., Ratten, 2015). However, to date there have been no known applications to IS in tourism or hospitality.

2.4. Model development and hypotheses

The theoretical foundations discussed above have been applied in IS research (e.g., Turel et al. (2010); Workman, Bommer, and Straub (2008)) and fit properly the risk-laden context of hotel network connectivity, especially in international travel. That is, hotel consumers are capable of recognizing a certain degree of risk associated with connecting to hotel networks and engage coping mechanisms to fend off possible cyber-threats. Scholars examined a multitude of factors that could influence the manner in which consumers form cognitive references and coping behaviors. While the specific theoretical artifacts have been conceptualized differently across studies, the basic theoretical foundations of the two primary theories used in this study remained consistent across the various conceptualizations. That is, individuals form cognitive references and engage in appraisal processes based on environmental stimuli or experience, which result in behavior oriented to diminish threats (Crossler, Long, Loraas, & Trinkle, 2014).

While keeping the theoretical logic intact, the literature did not necessarily converge toward a specific set of factors that can unequivocally explicate consumers' coping behaviors regarding IS risk. Yet, several primary categories of factors, which together could comprehensively describe the international hotel connectivity task-technology environments, could be identified based on studies in other task-technology environments. For example, several environmental and personal descriptors such as persuasion, personality, learning, experience (Rogers, 1983), habit (Vance, Siponen, & Pahnila, 2012), response benefit-cost (Workman et al., 2008), and IS perceptions such as usefulness, ease of use (Cui et al., 2009) were utilized to explicate consumer coping behaviors. The conceptual model built for this study follows the same logic, and utilizes constructs that comprehensively define the environmental and cognitive structure of the processes that make hotel consumers learn, evaluate, and respond to risk and benefit when facing decisions to connect their devices to networks during international travel.

2.5. Coping behavior

While it had originated in the stress management literature (Lazarus, 1991), coping was conceptualized in the IS literature (Vance et al., 2012) and was defined in an IS context as consumers' behaviors of dealing with the risk of IS utilization where the evaluation or risk and benefit is uncertain (Mick & Fournier, 1998). Coping reflects intentions and actual behaviors oriented toward a target object or task (e.g., new technology adoption) (Cui et al., 2009), and manifests via problem-solving, avoidance, or withdrawal (Amirkhan, 1990). Generally, coping has been linked to stressful life events (Cui et al., 2009) or negative emotions stimulated by consumption episodes (Duhachek & Iacobucci, 2005). According to the PMT, in situations when risk is inherent, consumers develop coping intentions to diminish risks (Workman et al., 2008). Such intentions are influenced by threat appraisal factors (e.g., evaluations, coping abilities), and external factors such as social influences (Tu et al., 2015) and habit (Vance et al., 2012). Most importantly, consumers develop coping intentions in situations when there is risk associated with information security (Anderson & Agarwal, 2010; Liang & Xue, 2009) or privacy (Smith, Milberg, & Burke, 1996).

Given the centrality of coping intentions and associated behaviors to theories such as PMT and SCT, the coping intentions construct was used in this study as the main dependent construct. Coping intentions was defined in this study as the behavioral mechanisms that allow consumers to respond to risk/threats related to the consequences of connecting their mobile devices to hotel networks (Cui et al., 2009). In line with the PMT, consumers' cognitive appraisal processes are reflected in this study by constructs such as benefit and risk (Workman et al., 2008), defined as potential positive/negative outcomes resulting from utilizing IS (Forsythe, Liu, Shannon, & Gardner, 2006). The environment characterizing consumers' appraisal is based on factors that describe the consumers' innate cognitive system that informs the task, such as consumer knowledge (defined as general product information acquired by consumers (Selenes & Gronhaug, 1986), habit (defined as acquired mindset that develops as a result of learning via repetitive behavior (Limayem, Hirt, & Cheung, 2007)) and consumers' convenience orientation (defined as the efficient completion of a task by consumers (Morganosky, 1986) as antecedents of benefit and risk. The following sections discuss in more detail the individual components of this study's conceptual model and formulate

hypotheses.

2.6. Consumer knowledge

A substantial body of literature in consumer behavior points to relationships between consumer knowledge and conflicting decision-making (Rogers & Gould, 2015), including perceptions of benefit and risk (Chiu, Wang, Fang, & Huang, 2014; Kienhues, Stadtler, & Bromme, 2011). For example, in transactional situations, consumers seek to acquire information about the products they are about to purchase in order to diminish the purchase risk (Roselius, 1971; Settle & Alreck, 1989). Consumers' behaviors are affected by their knowledge, especially during information search and processing when their cognitive states change (Park, Mothersbaugh, & Feick, 1994). Such cognitive states allow information retrieval from memory (Engel, Blackwell, & Miniard, 1995) and serve as references for forming evaluative criteria that guide perception development (Grunert, 1996). Thus, perception development may occur based on a blend of old (retrieved) and new (acquired) knowledge (Krishna, Currim, & Shoemaker, 1991), and may influence the final outcome of such evaluative processes (Teas, 1993). Such processes are also likely to occur outside of transactional situations, as learning, retrieval, and development of perceptions are based on the same cognitive mechanisms (Grunert, 1996).

While the literature provides evidence of the role of general knowledge in the development of perceptions of risk (Dai, Forsythe, & Kwon, 2014), the role of unambiguous higher order knowledge – such as knowledge of IS security and data privacy – has not been studied. Yet, the same theoretical tenets that are applicable to transactions apply in specific IS utilization tasks outside of transactions. For example, consumers' knowledge can influence the way they perceive a risky situation (e.g., loss of a mobile device) (Tu et al., 2015). Most importantly, the risk (i.e., cost) and benefit of an IS task has been conceptually linked to the assessment processes that result in behaviors (Workman et al., 2008), which develop based on experience (Ajzen, 2002). Accordingly, the negative consequences associated with connecting to hotel networks can be altered as a result of such evaluative processes, thus reflecting changes in perceived benefit and risk (Bauer, 1960). That is, consumers accumulating knowledge about cyber-security risk would be in more informed position to evaluate the true benefit that reflects the value of the connectivity task, but also will have a likely higher perception of the risk associated with connectivity as their assessment processes would be based on a more comprehensive cognitive base that reflects risk.

Based on the discussion above, the following hypotheses were developed.

H1. Consumers' knowledge positively influences their perceptions of the benefit of connecting their mobile devices to hotel networks.

H2. Consumers' knowledge positively influences their perceptions of the risk of connecting their mobile devices to hotel networks.

In line with the theoretical foundations of the SCT, consumer knowledge was also found to be associated with perceptions of self-efficacy (Tu et al., 2015), which over time can lead to repetitive behaviors (e.g., habits) via learning (Limayem & Cheung, 2008). Moreover, consumer knowledge was found to influence the amount of time that consumers use in participative tasks, based on their preferences for time savings (Olsen & Mai, 2013). In the context of network connectivity in hotels, specific knowledge regarding IS may allow the consumers to utilize selective cognitive processing mechanisms that may result in a relatively heuristic processing of task information. In such scenarios, parts of the task completion behaviors may become routine, likely without the effect of cognitive processing (Aarts, Verplanken, & van Knippenberg, 1998), making such behaviors repetitive, hence habitual, despite the outcomes of previous evaluative processes (Khalifa & Liu, 2007). Specifically, consumers' knowledge of the connectivity task can lead to the development of automatic behaviors toward the task (e.g., connecting to the network immediately after entering the guestroom). Thus, in light of the discussion above, the following hypothesis was developed.

H3. Consumers' knowledge positively influences their habits of connecting their mobile devices to hotel networks.

2.7. Habit

Habit reflects behavioral patterns that can become automatic over time (Kim & Malhotra, 2005) to the extent to which individuals engaging in such patterns may not even be conscious of the patterns (Triandias, 1980) or require cognitive evaluation (Ouellette & Wood, 1998) in order to conserve mental resources (Bargh & Ferguson, 2000). While the concept of habit was dedicated substantial attention in social psychology, its utilization in IS research is only recent (Kim, 2012) as it can link past behavior to future behavior (Ajzen, 1991) with respect to IS utilization (Khalifa & Liu, 2007). In IS contexts, habit was found to explain IS-related behaviors that extend beyond the conscious reach of a user (Limayem et al., 2007) based on automatic action in the absence of conscious thoughts (Fazio, 1990). Such actions reflect repetitive behaviors (Limayem et al., 2007) and are typically goal-directed or result in end-states (Verplanken, Aarts, van Knippenberg, & Moonen, 1998). Most literature in IS and beyond conceptualized habit in order to explain behavior or behavioral intentions toward IS (e.g., Kim, 2012; Lankton, Wilson, & Mao, 2010).

The literature also recognizes the critical role of habit in developing automatic responses to stimuli (e.g., Ouellette & Wood, 1998), which may influence the manner in which consumers form automatic evaluations of the circumstances or outcomes of behaviors. The recent literature based on the PMT recognizes the role of habit in influencing the manner in which individuals assess and respond to threats (Vance et al., 2012). Consumers' evaluations are based on the relationship between familiarity and benefit and risk perceptions (Rogers & Gould, 2015). Past connectivity-related behaviors, which are based on evaluative processes in those contexts (e.g., work, home), are likely to extend to new connectivity scenarios (e.g., hotels). As a result, it is likely that Internet connectivity habits would influence the manner in which contextual elements of the target behavior (e.g., connecting to the Internet in a hotel overseas) are being evaluated. That is, consumers who developed habits of connecting their mobile devices to the Internet are likely to be influenced in the manner they develop perceptions of benefit and risk of their connectivity in hotels, based on learning processes that become routine and manifest through habits (Kim & Malhotra, 2005). Thus, in line with the discussion above, the following hypotheses were developed.

H4. Consumers' habits positively influence their perceptions of benefit of connecting their mobile devices to hotel networks.

H5. Consumers' habits positively influence their perceptions of risk of connecting their mobile devices to hotel networks.

2.8. Convenience orientation

The SCT theoretical basis is grounded in the notion that self-

referent cognitive processing guides individuals' behaviors (Cooper & Lu, 2016). The logic of this notion applies to IS tasks, where the role of convenience orientation – as a behavioral mechanism stemming from individuals' desire for efficiency – has been recognized as critical to IS use (Olsen & Mai, 2013). This view aligns with the SCT in that consumers tend to align their behavior to mechanisms that permit them to attain desirable goals (Cooper & Lu, 2016). That is, with regard to IS, convenience oriented behaviors make consumers look for ways to optimize their task completion (e.g., time savings) (Cullen, 1994) and contribute to the creation of task completion mechanisms that are grounded in efficiency. While the tasks may vary, the mechanisms that optimize task completion can be based on the same cognitive patterns from task to task, which, via learning, may lead to a rather automatic pattern of task completion to achieve efficiency (Olsen & Mai, 2013). Thus, while seeking to optimize task completion, consumers eventually develop habits related to the task, which will assist in the efficient task completion over time (Blalock, Smallwood, Kassel, Variyam, & Aldrich, 1999). The hotel context is no exception: consumers who seek convenience in their network connectivity are likely to engage in efficient behaviors. Thus, given the task simplicity, such efficiency orientations would make consumers follow repetitive behavioral patterns (Olsen & Mai, 2013). Accordingly, the following hypothesis was developed.

H6. Consumers' convenience orientation positively influences their habits of connecting their mobile devices to hotel networks.

2.9. Benefit

Benefit has been discussed in the consumer behavior literature, as an integral part of calculative processes that eventually result in service/tasks appraisals (Forsythe et al., 2006). Such appraisals have been conceptualized in studies grounded in the PMT, where the concepts of benefit and risk represent key artifacts, and whose presence influence consumers' coping behaviors (Cooper & Lu, 2016). That is, individuals consider coping behaviors based on a rather dyadic view of perceptions of both risk and benefit (Liang & Xue, 2009), although the PMT and SCT literature points to more evident consumer perceptions (and corresponding concerns) about risk rather than benefits (Bhatnagar & Ghose, 2004). Yet, when consumers perceive to receive benefits from consumption experiences, they will tend to safeguard such experiences (Tu et al., 2015). In situations where risk is attributable to the consumption experience, consumers may engage in coping behaviors, in order to diminish the risk of the experience (Tu et al., 2015) and obtain benefits (Jung & Kim, 2015). Such calculative behaviors are likely to occur in the case of connecting mobile devices to hotel networks, as consumers develop expectations (i.e., benefits) around the utilization of mobile devices once they are connected to the network and can access Internet-based resources. Therefore, they would seek to protect such benefits and diminish the risk associated with the behavior that they believe is responsible for such benefits. Accordingly, the following hypothesis was developed.

H7. Consumers' perceived benefit positively influences their coping intentions to connect their mobile devices to hotel networks.

2.10. Risk

The literature views risk as a dyadic component of consumers' calculative processes resulting in appraisals of environmental stimuli that aid decision-making (Rogers & Gould, 2015). While risk is multifaceted, the literature documents various conceptualizations of risk, from the traditional transactional (e.g., Featherman & Pavlou, 2003) to more recent discipline-specific (Pappas, 2016). The IS literature focuses on the risk of various aspects of IS utilization (Taylor, 2016). Accordingly, various dimensions of risk perceptions have been recognized, such as performance, temporal, privacy, physical, psychological, safety (Martins et al., 2014). As the IS and the corresponding literature evolved, the conceptualizations of risk have become increasingly complex, reflecting the emerging amalgamation of technology, business models and consumer behaviors. While a set of common risk dimensions has been documented (Featherman & Pavlou, 2003), scholars eventually adapted the multidimensional conceptualization of risk to the task-technology fit environments of their studies, thus selectively conceptualizing risk dimensions that reflect specific IS contexts (e.g., Yang et al., 2015). The same approach was followed in this study, to conceptualize risk only based on the dimensions that reflect the connectivity of mobile devices to hotel networks.

One of the most critical aspects of network connectivity is the performance of the connection. Hotel Internet services have become innate parts of hotel experiences. Stable, fast connections are instrumental for consumer tasks that are indispensable parts of travel (e.g., communicating with employers, finding destination information). Therefore, a critical dimension of risk of network connectivity is related to the performance of the connection. Performance risk has its origins in the concept of performance (product) risk and reflects the extent to which a product is likely to fail to meet its expectations (Peter & Tarpey, 1975). Expanding the theoretical concept to IS tasks, IS-related performance risk was conceptualized as the extent to which users recognize performance uncertainty (Featherman & Pavlou, 2003) and are likely to experience functional problems that prevent them from completing a task (Martins et al., 2014). The literature recognizes the centrality of performance risk as it is instrumental to task completion in commercial contexts (e.g., motivating consumers to shop online) (Dai et al., 2014) and IS adoption (Featherman & Pavlou, 2003; Martins et al., 2014).

Financial risk refers to the actual loss of financial resources (Dai et al., 2014) and originates in transactional research (Peter & Tarpey, 1975). It was found to be related to search and purchasing frequency (Forsythe & Shi, 2003), specifically having a negative effect on purchasing (Bhatnagar & Ghose, 2004). The literature recognizes certain motivations for the development of financial risk perception (e.g., risk of fraud) (Dai et al., 2014), which are exacerbated by the unique nature of the network infrastructure in hotels. That is, consumers could stand to lose financially in case of network malfunction (e.g., not being able to communicate with business clients, being subject to fraud or loss of data or hardware). For example, certain companies may suggest not using mobile devices that have been compromised when traveling, or using loaner empty devices, which is associated with additional costs. In line with the discussion above, financial risk is conceptualized as a dimension of risk of connecting mobile devices to hotel networks in hotels.

A fundamental aspect of IS is privacy (Miltgen & Smith, 2015). As a multitude of commercial IS require the use of personal information that are descriptive of consumers, privacy risk emerges as a concept that addresses consumers' perceptions of an IS's capability of protecting private information from becoming public (Bansal, Zahedi, & Gefen, 2010). Hotel network connectivity can be characterized by privacy risk, due to a number of factors. First, consumers' devices connected to hotel networks may contain confidential information (Tu et al., 2015), such as payment information, credentials to access restricted resources, trade secrets, or client lists. Second, there has been increasing evidence of hotel

systems being breached (McMillan, 2016). Third, there is broad variability in the Internet privacy regulation and enforcement in various locations around the world (Nyheim & Connolly, 2012). Therefore, connecting mobile devices to hotel networks when traveling internationally poses a degree of privacy risk, requiring the conceptualization of privacy risk as a dimension of the overall risk of connecting to hotel networks. Accordingly, the following hypotheses were developed.

H8a. Performance risk is a dimension of the risk of connecting their mobile devices to hotel networks.

H8b. Financial risk is a dimension of the risk of connecting their mobile devices to hotel networks.

H8c. Privacy risk is a dimension of the risk of connecting their mobile devices to hotel networks.

An increasing body of literature recognizes that individuals are likely to engage in protective behaviors based on the risk associated with various IS tasks (Tu et al., 2015). Such theoretical links are grounded in PMT and SCT foundations, as individuals interpret various sources of information and appraise possible threats and their corresponding responses (Crossler et al., 2014). Such appraisals could be based on self-regulation, which explains how individuals interact with and learn from their environments (Bandura, 2001). Specifically, hotel guests traveling internationally may develop perceptions of risk associated with connectivity to networks given the multitude of IS and hotel-related factors that are unknown at the destination hotel, and the general contemporary cyber-security risk. Such risk is likely to drive the consumers toward developing IS-related coping intentions, according to the following hypothesis.

H9. Consumers' perceived risk positively influences their coping intentions to connect their mobile devices to hotel networks.

Based on the theoretical foundations presented above, the following conceptual model is proposed (Fig. 1).

3. Methods

3.1. Instrument development

A survey instrument was developed based on the literature in consumer psychology, IS, and marketing. The scales for all latent constructs were adapted to capture the specific context of the task: connecting consumers' mobile devices to hotel networks. Specifically, in previous studies, the scales were used to capture task-technology environments that were analogous to the one examined in this study, which made them appropriate for utilization in this particular task-technology environment. The scale for consumer knowledge was developed based on Tu et al. (2015) and included five items. Convenience orientation was adapted from Olsen and Mai (2013) and included four items. The scales for habit and benefit included three items each, and were adapted from Venkatesh, Thong, and Xu (2012). Risk was conceptualized as a reflective second order construct, with scales for the first order constructs adapted based on Featherman and Pavlou (2003) and Martins et al. (2014) and including a total of nine items. The scale for coping intentions was adapted from Tu et al. (2015) and included four items. All scales were Likert-type scales and were anchored in five points ranging from "1" (strongly disagree) to "5" (strongly agree). The instrument concluded with two short demographic and behavioral sections, and was uploaded in the Qualtrics survey environment.

The respondents were asked two filtering questions: whether they had stayed in a hotel abroad during the past twelve months prior to the study, and whether they brought with them any mobile devices. Upon filtering, the respondents were presented a scenario, asking them to recall their most typical hotel stay experience outside the U.S. When measuring the risk and coping intentions items, specific items were developed for each type of mobile device (i.e., laptop computer, tablet, and smartphone), so that each scale item measured separately respondents' perceptions of each type of device. The items were averaged for all devices to yield individual scale items for each latent construct. A copy of the scales can be found in Appendix A.

3.2. Instrument administration and preliminary analyses

A large global panel vendor company was used to collect data for this study. The company has offices in the U.S., as well as on other continents, and provides a variety of services from survey design, sampling, data analytics, web hosting, etc. The panel company has extensive panels of consumers, who receive compensation for participating in various surveys. Given the complexity of the conceptual model to be analyzed in this study and based on calculations suggested by Hair, Black, Babin, and Anderson (2009), the desired sample size was set at 1000 respondents. Initially, the panel company sent invitations to their consumer panels until an initial sample of 50 respondents was collected. After examining the

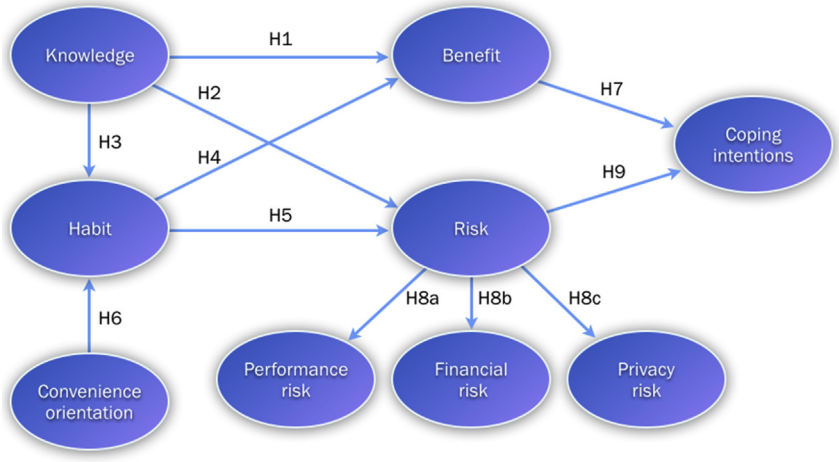

Fig. 1. Conceptual model and hypotheses.

manner in which the respondents answered the questions, minor refinements were made, followed by the full data collection. To achieve the desired sample size, the panel company sent invitations continuously to their consumer panels until a sample slightly exceeding 1000 complete responses was collected. By the end of this process (May 2016), the panel company had sent a total of 11,645 invitation emails. After removing the unusable records from the data set, the sample totaled 1017 respondents, for a net response rate of 8.73%.

To test for non-response bias, an analysis was conducted by comparing early versus late responses was conducted (Ary, Jacobs, & Razavieh, 1996). This analysis is based on the thesis that later respondents and generally similar to non-respondents, and that comparing early with late respondents would reveal differences akin to the differences between respondents and non-respondents (Miller & Smith, 1983). As no significant differences were observed between the early and late respondents, the sample was deemed free of non-response bias (Connors & Elliot, 1994). Univariate skewness and kurtosis values were calculated for all scaled items. The values (included in Appendix A) indicated no major departures from univariate normality (e.g., skewness within |2| and kurtosis within |7| (West, Finch, & Curran, 1995)). To test for multivariate normality, the data set was subject to a test using Mardia's coefficients (Mardia, 1970) using Mplus v.5 (Muthén & Muthén, 2003). While univariate normality was established for all scaled items, multivariate normality was not established. Therefore, the analysis used the Satorra-Bentler chi-square (i.e., multivariate non-normality robust estimates with standard errors and mean adjusted chi-square, or MLR) (Muthén & Muthén, 2003). A confirmatory factor analysis (CFA) with all items set up to load on a single latent factor was conducted to test for common method bias and the model was found to have poor fit. Therefore, it was concluded that common method bias is not a problem (Malhotra, Kim, & Patil, 2006).

4. Results

4.1. Demographic and behavioral characterization of respondents

The demographic and behavioral characterization of respondents is displayed in Tables 1 and 2. The sample was composed of predominantly male respondents (58%), while the most prevalent age group was 31–40 olds (42%). The demographic structure of the sample matches that of the general U.S. population as published by the U.S. Census Bureau (U.S. Census, 2015). The majority of respondents had household incomes between $50,000 and $150,000 (35%) and a Bachelor's degree (44%). Most respondents traveled internationally 1–2 times per year (44%) and their average length of stay was 4–7 nights (48%). Over half of the respondents stayed at either upper upscale hotels (37%) or upscale hotels (22%), mostly for combined leisure-business motivations (28%).

Table 1
Demographic profile of respondents.

Variable	Percent
Gender	
Male	58.4
Female	41.6
Age	
25 or younger	3.2
26-30	15.3
31-40	41.5
41-50	14.4
51-60	12.8
61 or older	12.8
Annual household income	
50,000 or less	9.1
50,001–100,00	35.1
100,001–150,000	31.8
150,001–200,000	15.3
200,001 or more	8.7
Education	
High school degree or equivalent	8.0
Bachelor 's of Science/Arts or equivalent	44.0
Master's degree or equivalent	24.0
Doctoral, medical, or law degree or Equivalent	24.0

Table 2
Behavioral profile of respondents.

Variable	Percent
Frequency of international travel	
Less than once a year	12.4
1–2 times a year	44.2
3–6 times a year	23.9
7–12 times a year	14.4
More than 12 times a year	5.1
Typical length of hotel stay	
1 night	2.4
2–3 nights	21.2
4–7 nights	47.8
8–14 nights	20.9
More than 14 nights	7.7
Type of hotel	
Luxury	11.1
Upper upscale	37.1
Upscale	21.1
Upper midscale	16.6
Midscale	8.3
Economy	3.4
Other	2.4
Travel purpose	
Exclusively business	8.5
Mostly business	24.9
Combined business and leisure	27.7
Mostly leisure	14.6
Exclusively leisure	24.3

4.2. Measurement model analysis

In order to test the study's hypotheses, the model's reliability, and convergent and discriminant validity needed to be assessed, using the results of a CFA (Wheaton, Muthén, Alwin, & Summers, 1977). The CFA was conducted in order to validate the psychometric properties of the instrument (Muthén & Muthén, 2003). At the first specification of the model, two items measuring convenience orientation and one item measuring privacy risk had low loadings. Therefore, the items were removed and the model was respecified. The assessment of model fit was based on a combination of absolute (e.g., chi-squared/degrees of freedom, Root Mean Squared Error of Approximation (RMSEA), Standard Root-Mean-Square Residual (SRMR) and relative fit indexes Comparative Fit Index (CFI), Tucker Lewis Index (TLI)), which together are capable of ascertaining the whether or not the models analyzed in this study fit the data (Kline, 2011; Muthén & Muthén, 2003).

The measurement model has a chi-squared of 627.19 ($p < 0.001$), and 257 degrees of freedom, yielding a normed chi-squared of 2.44, which indicated good fit (Toh, Lee, & Hu, 2006). Two relative fit indexes, such as the CFI of 0.96 and the TLI of 0.96, exceeded the threshold of 0.9, also indicating good fit (Hair et al., 2009). An

absolute fit index, the RMSEA of 0.045 was lower than the recommended value of 0.08, which provided additional support for model fit (Browne & Cudeck, 1992). In addition, the SRMR was calculated at 0.038 and was lower than the recommended threshold of 0.08 (Hu & Bentler, 1999).

Following the theoretical foundation, risk was conceptualized as a second order reflective construct, and therefore a separate CFA was performed only on the risk construct and its three dimensions. The model had good fit, with a chi-squared of 62.23 and 17 degrees of freedom, corresponding to a normed chi-squared of 3.66, which indicates appropriate fit (Toh et al., 2006). The relative and absolute fit indexes calculated, such as CFI of 0.99, TLI of 0.98, and RMSEA of 0.061 exceeded their recommended thresholds, and thus indicated good fit (Browne & Cudeck, 1992; Hair et al., 2009).

To evaluate reliability, composite construct reliabilities (CCR) for each latent construct were calculated. The CCR scores of the constructs ranged from 0.733 to 0.971, thus indicating appropriate reliability (Hair et al., 2009). To assess convergent validity, all items' were evaluated individually and squared multiple correlations (SMC) values were calculated. All item loadings exceeded 0.7 and all SMC exceeded 0.5, thus indicating appropriate convergent validity (Hair et al., 2009) (Table 3). The Average Variance Extracted (AVE) from each construct was calculated (Table 4), and showed all AVE to exceed 0.5, thus indicating good convergent validity (Hair et al., 2009).

To evaluate discriminant validity, the AVE scores were compared with corresponding pairs of inter-construct correlations. All inter-construct correlations except for one (between habit and benefit), were lower than their corresponding AVE scores, and indicated appropriate discriminant validity (Fornell & Lacker, 1981) (Table 4). However, as the AVE scores of habit and benefit were lower than their squared correlation, an additional method was used to ascertain discriminant validity. The method was based on assessing the heterotrait-monotrait (HTMT) criterion, calculated as the ratio of the average heterotrait-heteromethod correlations (i.e., among the items measuring the habit and benefit constructs) and the geometric mean of the monotrait-heteromethod correlations (i.e., among the items measuring the same construct) (Henseler, Ringle, & Sarstedt, 2015). In this study, the average heterotrait-heteromethod correlations value was calculated at 0.589 and the geometric mean of the average monotrait-heteromethod correlations was calculated at 0.683, yielding a HTMT criterion of 0.862. The HMTM criterion calculated in this study was lower than the accepted threshold of 0.90 (Gold, Malhotra, & Segars, 2001; Teo, Srivastava, & Jiang, 2008), indicating that discriminant validity was established.

4.3. Research model analysis

The next step of the analysis involved the structural equation modeling, which yielded the following fit indexes: chi-squared of 752.509 ($p < 0.001$), d.f. of 263, and normed chi-squared of 2.86, all indicating good fit (Hair et al., 2009). The model also had a CFI of 0.95, a TLI of 0.95, a RMSEA of 0.051, and a SRMR of 0.07, which confirmed the good fit (Hair et al., 2009) (Fig. 2).

All hypotheses were supported in their predicted directions, except for H1, providing empirical validation to the conceptual model. While benefit and risk impacted coping intentions, benefit ($\gamma = 0.378$, $p < 0.001$) was found to be a slightly stronger predictor of coping intentions than was risk ($\gamma = 0.335$, $p < 0.001$). In turn, benefit was found to be strongly influenced by habit ($\gamma = 0.881$, $p < 0.001$), but not by consumers' knowledge. All the risk dimensions helped validate the construct of risk as a second order construct. Moreover, risk was found to be influenced by relatively more strongly by consumers' knowledge ($\beta = 0.352$, $p < 0.001$) than by habit ($\gamma = 0.216$, $p < 0.001$). Habit was influenced almost similarly by knowledge ($\beta = 0.401$, $p < 0.001$) and convenience orientation ($\beta = 0.371$, $p < 0.001$).

5. Discussion

The goal of this study was to provide empirical validation to a model designed to explicate hotel guests' coping intentions when connecting their mobile devices to hotel networks when traveling internationally. With the exception of one hypothesis (H1), all hypotheses were validated in their predicted directions. Both benefit and the risk were relatively equal magnitude predictors of coping intentions, while benefit had a slightly stronger effect on coping intentions than benefit. That is, in international hotel contexts, consumers' response to the positive outcomes stemming from connecting to networks results in behaviors that address the integrity of tasks that are beneficial to them. Concomitantly, the potential harmful effects of cyber-threats drive the consumers to engage in coping behaviors. In line with SCT and PMT, hotel consumers engage in calculative cognitive processes that make them shape their behaviors in order to preserve a positive balance of outcomes. Such findings show that, even in unfamiliar consumption settings, where the risk is relatively more difficult to evaluate due to the intangible nature of the service experience itself, consumers follow the same predictable evaluative paths that result in optimized consumption.

Risk was validated as a multidimensional construct, as the analysis recognized the three proposed dimensions: performance, financial, and privacy risk. All three dimensions contributed similarly to explaining the second order risk construct, and outlined the importance of recognizing risk based on domain-specific dimensions, which address specific aspects of the task–technology fit environment. That is, hotel connectivity services are characterized by performance risk (as a fundamental descriptor of system functionality), financial risk (associated with losing money), and notably, privacy risks (as outlined by the possibility of unauthorized access to private information). The validation of these three dimensions of risk provides a comprehensive picture of the potential challenges that are descriptive of the IS infrastructure in hotels.

Although consumer knowledge was not validated as a significant predictor of benefit, it influenced habit and risk. That is, in hotels, consumers with a higher degree of knowledge will be in a position to assess risk more accurately, due to being equipped with the knowledge to gauge basic vulnerabilities that can lead to a higher perception of risk. Concurrently, knowledge may reflect consumers' self-efficacy (Tu et al., 2015) and results in engaging in behaviors that may not always be calculative, leading to habits. The dual role of knowledge is very critical, as it denotes the manner in which consumers utilize knowledge selectively across tasks: they dedicate cognitive processing to evaluating risk in unknown contexts, while adopting habitual patterns of behavior to the IS utilization tasks that in normal circumstances are relatively low risk (and hence become repetitive). The significant effect of convenience orientation on habit underscores the influence the rather heuristic processes that lay the foundation of habit. Even in hotel connectivity situations, consumers' orientation toward minimal effort in task completion, and the relatively routine nature of connecting mobile devices to networks, can lead to habit.

Habit was found to be a significant predictor of risk and benefit. Interestingly, the magnitude of the effect increased from risk to benefit, outlining the critical role of automatic behavior in developing cognitive appraisals of the benefit of connectivity in unknown contexts. This finding underscores the development of appraisal mechanisms, which are critical to PMT-based views of IS utilization and allow for a more comprehensive explanation of the

Table 3
Reliability and validity test results.

Constructs and items	Mean (std. dev.)	Loadings	SMC*/CCR
Knowledge			0.932
Knowledge of …			
Secure network connectivity	3.74 (1.09)	857	0.734
Secure Internet browsing	3.81 (1.03)	0.852	0.726
Protection from malware	3.78 (1.07)	0.856	0.733
Data recovery	3.67 (1.16)	0.865	0.748
Data protection and encryption	3.68 (1.10)	0.852	0.726
Habit			0.844
Connecting** … has become a habit.	4.19 (0.80)	0.831	0.691
I am addicted to connecting …	3.83 (1.14)	0.783	0.613
Connecting … has become natural to me.	4.14 (0.84	0.790	0.624
Convenience orientation			0.733
The less effort I need to connect …, the better.	4.03 (0.79)	0.797	0.635
I prefer to connect … quickly.	4.00 (0.84)	0.724	0.524
Benefit			0.890
Connecting … reduces my search time.	4.17 (0.80)	0.964	0.746
Connecting … provides convenience.	4.25 (0.68)	0.855	0.731
Overall, connecting … is beneficial.	4.25 (0.72)	0.842	0.709
Risk			0.971
Performance risk		0.955	0.912
Financial risk		0.989	0.978
Privacy risk		0.930	0.865
Performance risk			
The connection may not perform well.	3.86 (0.95)	0.781	0.610
The probability of something being wrong is high.	3.71 (1.07)	0.874	0.764
It would be risky (performance-wise) to connect.	3.64 (1.14)	0.826	0.857
Financial risk			0.932
The chances of losing money are high.	3.47 (1.23)	0.913	0.834
Connecting … subjects my devices to fraud.	3.72 (1.06)	0.874	0.764
Connecting … may lead to financial loss.	3.48 (1.24)	0.930	0.865
Privacy risk			0.942
Chance of losing control over privacy is high.	3.67 (1.08)	0.929	0.863
Connecting … would lead to loss of privacy.	3.62 (1.13)	0.958	0.918
Coping intentions			0.901
Take measures to …			
Stop other from getting my info.	3.68 (1.10)	0.859	0.738
Prevent unauthorized access to device.	4.15 (0.76)	0.878	0.771
Backup and recover data.	4.08 (0.81)	0.833	0.694
Remedy damages if compromised.	4.14 (0.75)	0.760	0.578

*SMC = Squared multiple correlations, CCR = Composite construct reliabilities.
**="Connecting my mobile device(s) to hotel network services to access the Internet". Full item descriptions are provided in Appendix A.

Table 4
Discriminant validity test results.

Constructs	Constructs	1	2	3	4	5	6
Knowledge	1	**0.733**					
Habit	2	0.282	**0.643**				
Convenience orientation	3	0.125	0.240	**0.580**			
Benefit	4	0.181	0.741	0.237	**0.729**		
Risk	5	0.211	0.160	0.033	0.127	**0.918**	
Coping intentions	6	0.440	0.223	0.144	0.235	0.212	**0.695**

Note: The values on the diagonal (in bold) represent the Average Variance Extracted values for the latent constructs. The values below the diagonal represent the squared inter-construct correlations.

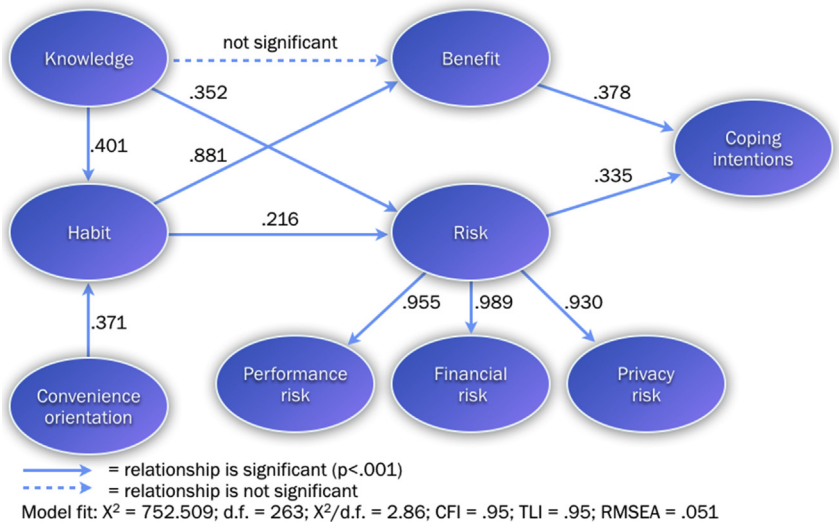

Fig. 2. Model fit test results.

risk-benefit dyad. That is, consumers' habitual use of mobile devices does little to increase consumers' risk perceptions of connecting such devices to networks, but influences substantially the perceptions of benefit resulting from such connections. These findings point to rather heuristic processing of network connectivity information, which could mask to some extent the real risk associated with network connectivity in hotels. That is, consumers' use of networks outside of the relatively risky hotel networking context makes them see more clearly the benefits, akin to connectivity contexts that are familiar to consumers from other tasks and lead to habit. In such contexts, risk may be low or consumers view it as a hygienic factor. In addition, habitual behavior would be difficult to abandon when the context changes from familiar to unfamiliar. As a result, the benefits may be exacerbated while the risks can be perceived as being low.

6. Contributions

6.1. Theoretical contributions

This study set out to examine consumers' coping intentions related to their mobile devices connectivity to hotel networks in international travel. Thus, it offers several important theoretical contributions, which advance the theoretical foundations on which it was built and address three critical research lacunae, while opening new directions for research in distinct contextual areas such as hospitality/tourism.

First, this study conceptualized coping intentions regarding the ubiquitous task of connecting mobile devices to relatively public hotel networks. It examines the critical network connectivity risk, which may have more damaging consequences than the typical transaction risk that is predominantly studied in the IS literature. Thus, this study addresses a major literature lacuna – predominant focus on transaction risk – and provides insight into the relatively less studied coping intentions vis-à-vis network connectivity risk. Moreover, the study positions uniquely within the literature as it addresses the coping behaviors regarding a ubiquitous IS utilization, which is relatively low risk outside of the task environment of this study (e.g., home, work contexts), but critical and risky within the task environment. While various tasks were conceptualized within theoretical frameworks built upon PMT and SCT (e.g., IS security policy compliance in Ifinedo (2012); bring your own device practices in Crossler et al. (2014)), the task examined here extends the theoretical applicability of both theories to broader, more ubiquitous tasks and thus opening new directions for research capable of explaining more general consumer behaviors.

Second, this study provided insight into a task environment that is severely understudied. This is the first study in the hospitality/tourism discipline examining coping intentions regarding any IS or aspect of hospitality services, and thus advances the hospitality/tourism literature by adapting the theoretical grounds of PMT and SCT to hospitality contexts. While applications of PMT and SCT in hospitality and tourism are rare (e.g., food safety in Yoon (2007); energy saving and carbon reduction in Horng et al. (2014)), they are only sporadic and do not reflect a unified body of research aimed at understanding the mechanisms of coping with risky tasks in tourism and hospitality. While most literature outside tourism and hospitality focuses on commercial tasks (Dai et al., 2014; Taylor, 2016), the task conceptualized in this study reflects IS utilization that is integral to the contemporary hotel experience, and reflects important expectations of consumers. Moreover, the task environment conceptualized in this study has international connotations, where the risk is exacerbated by the heterogeneous nature of hotel service and IS standards, and where the benefit of the network connectivity appears to be more valuable due to a lack of viable alternatives for communication or transactions.

Addressing the second major research lacuna – the lack of research elucidating the antecedents of coping behavior – this study offers a mapping of the factors influencing coping behavior, with a focus on specific consumer characteristics (e.g., knowledge, habit, convenience orientation). The development of a model that includes consumers' knowledge, habit, and convenience orientation illustrates modeling approaches that expand the scope of traditional PMT and SCT literature by including artifacts that originate outside of the typical legacy cognitive theory. In addition, this study elucidated the role of habit as an antecedent of benefit and risk: a differential effect on the dyad, with a stronger effect on benefit than on risk. While the role of habit related to IS utilization is only becoming clearer due to several recent publications (e.g., Vance et al. (2012)), this study offers new insight into the role of habit in the complex context of behavioral responses based on environmental appraisals which characterize the PMT-based research (e.g., Crossler et al. (2014)).

Finally, this study offered a contextual conceptualization of risk based on three distinct dimensions and viewed the concept of risk as a second order construct, thus addressing a third major lacuna –

the predominant unidimensional view of risk. While conceptualizations viewing risk as a multidimensional construct have been documented in the literature (e.g., Forsythe et al., 2006), they never focused on the risk of network connectivity in hotels. Moreover, conceptualizations that are popular in the literature view risk as unidimensional first order construct (Chang & Wu, 2012). Against these important backdrops, this study occupies a unique position within the PMT and SCT literature as it validates a comprehensive conceptualization of risk that recognizes its multiple facets.

6.2. Managerial contributions

Alongside the theoretical contributions, this study brings several contributions for actionable managerial practice. Such contributions allow hotels to set up IS and business models that facilitate consumers to engage in the communication tasks that they need with reduced risk and increased benefit. To accomplish this, hotels can engage in practices that will stimulate consumers' coping intentions. Specifically, hotels can outline a number of coping behaviors that are necessary to enhance consumers' network utilization and diminish the performance, financial, and privacy risks. First, to stimulate coping intentions, hotels can develop communication practices that enhance consumers' understanding of connectivity benefit. Such benefit can be emphasized at multiple levels throughout the consumption sequences of consumers, especially as the decision to connect becomes imminent while the consumer is on the property. For example, hotels can emphasize such benefits through signage or video footage played on the in-room TVs. In addition, hotels can develop IT practices that emphasize the benefit (e.g., sufficient bandwidth, easy step-by-step procedure for connection, availability of access points throughout the property).

Second, hotels can develop programs that allow consumers to understand the risks of connecting to hotel networks. While the outcome of such programs is to increase consumers' realistic perceptions of risk associated with hotel conductivity, it is difficult for hotels to raise awareness about the risk of online computing without casting doubt on the ability of the hotel to provide a secure IS environment. To this end, hotel can use educational campaigns to inform the consumers about risk online. For example, hotels can provides rankings of risky behaviors, and offer advice on secure connectivity practices for consumers. In addition, hotels' business models can change with respect to how they communicate connectivity information to the consumers. For example, when consumers check in, hotels can offer step-by-step connectivity procedures, as well as basic steps that consumers can use to check for suspicious activity.

Moreover, hotels can emphasize that there may be an inherent degree of risk associated with connecting to hotel networks. They should be able to explain to the consumers in clear, quantifiable terms the types of risk and potential consequences. For example, performance risk can be explained to consumers (e.g., the consumer may not be able to successfully visit a desired website, or connect to a communication application such as Skype) and solutions to mitigate performance can be proposed. Similarly, financial and privacy risk can be explained, and hotels can emphasize the manner in which they can address financial and privacy risks. Specifically, the connectivity captive screen that appears on the device right before consumers have access to the Internet can be used to display messages to encourage consumers to mitigate the privacy risk.

Altogether, consumers' knowledge, habit, and convenience orientation were found to significantly influence the benefit and risk of connecting the mobile devices. While such antecedents represent innate characteristics of consumers that hotels have no control over, hotels can emphasize the role of knowledge, habitual behaviors, and can capitalize on consumers' convenience orientation by designing communication material that may result in three important outcomes. First, consumers may be stimulated to learn more about the relatively unfamiliar networking environment of international hotels, and find ways to apply their IS knowledge to manage their connections. Second, hotels can take advantage of consumers' habit and design connectivity protocols that are similar to consumers' familiar environments. Third, hotels can emphasize the convenience of the connectivity task and thus stimulate consumers to evoke habitual behaviors. Eventually, hotels can partner with third-party organizations (e.g., device manufacturers, IS providers, educational institutions, local governments) to design educational programs encouraging consumers to be proactive in their use of their mobile devices within unknown networks in unfamiliar destinations. For example, airport announcements, airplane magazine ads, posters in cruise ship terminals, train stations, and tourist information centers can provide useful information to consumers.

7. Limitations and directions for further research

Due to a few limitations, this study's findings should be interpreted with caution. The respondents who participated in this study were recruited in the U.S., therefore the perceptions of risk were anchored in general perceptions, experiences, and behaviors that are reflective of the U.S. IS infrastructure. Future studies have opportunities to expand the scope of this study by acquiring samples originating in multiple countries, and comparing individuals traveling in the U.S. vs. internationally, thus broadening the range of possible coping behaviors. Second, to reduce the impact of extraneous factors, this study focused on the connectivity to hotel networks. However, as the hotel stay is only a component of the broader travel experience, future research could concentrate on other opportunities to connect travelers' mobile devices to the Internet throughout the trip, which would influence the coping behaviors pertaining to specific components of travel (e.g., connecting to the Internet in airport terminals, lounges, in foodservice establishments, at attractions, etc.). Third, this study included only a limited number of factors to preserve parsimony and offer a feasible framework for utilization to hotel managers. To address this limitation, future studies can incorporate additional constructs, such as experience with data/device loss, international travel experience, or emotions. In addition, the data for studies such as this can be analyzed using non-linear analyses, which could prove to be useful in explaining some of the complex phenomena that shape IS utilization in hotels overseas.

8. Rationale

The current cyber-environment accessible by connecting a mobile device to the Internet is characterized by a certain degree of risk, to which consumers generally respond via coping mechanisms. The risk is higher than the typical transactional risk.

9. Data

1000 American consumers who traveled internationally.

10. Purpose

This study validated a conceptual model that explains consumers' intentions to cope with the risk of connecting their mobile devices to hotel networks in order to access the Internet.

Appendix A. Scale item descriptive statistics

Constructs and items	Univariate skewness (kurtosis)
Knowledge (adapted from Tu et al. (2015))	
Please indicate your level of knowledge regarding the following:	
Knowledge 1: … secure network connectivity.	−0.68 (−0.12)
Knowledge 2: … secure Internet browsing.	−0.72 (0.09)
Knowledge 3: … protection from malware.	−0.70 (−0.04)
Knowledge 4: … data recovery.	−0.70 (−0.28)
Knowledge 5: … data protection and encryption.	−0.63 (−0.22)
Habit (adapted from Venkatesh et al. (2012))	
Habit 1: Connecting my mobile device to hotel network(s) to access the Internet has become a habit for me.	−1.46 (2.71)
Habit 2: I am addicted to connecting my mobile device to access the Internet.	−1.05 (0.19)
Habit 3: Connecting my mobile device to hotel network(s) to access the Internet has become natural to me.	−1.30 (1.75)
Convenience orientation (adapted from Olsen and Mai (2013))	
Convenience orientation 1: The less effort I need to do when connecting my mobile device(s) to hotel networks, the better.	−0.74 (0.71)
Convenience orientation 2: I prefer connecting my mobile device(s) to hotel networks to be done quickly.	−0.67 (0.23)
BENEFIT (adapted from Venkatesh et al. (2012))	
Benefit 1: Connecting my mobile device(s) to hotel network(s) to access the Internet reduces my searching time for the services, products, or information that I need	−1.28 (1.65)
Benefit 2: Connecting my mobile device(s) to hotel network(s) to access the Internet can provide me with the convenience to instantly access the services, products, or information that I need	−1.15 (1.68)
Benefit 3: Overall, I feel that connecting my mobile device(s) to hotel network(s) to access the Internet is beneficial for assessing services, products, or information.	−1.38 (2.64)
Risk (all items adapted from Featherman and Pavlou (2003); Martins et al. (2014))	
Performance risk	
Performance risk 1: The connection of my mobile devices to hotel networks to access the Internet might not perform well.	−0.97 (0.33)
Performance risk 2: The probability that something is wrong with the performance of my mobile devices connection to hotel networks to access the Internet is high	−0.71 (−0.45)
Performance risk 3: Considering the expected performance of hotel networks for Internet access, it would be risky for me to connect my mobile devices	0.59 (−0.84)
Financial risk	
Financial risk 1: The chances of me losing money if I connect my mobile devices to hotel networks to access the Internet are high	−0.50 (−0.99)
Financial risk 2: Connecting my mobile devices to hotel networks to access the Internet subjects my devices to potential fraud	−0.81 (−0.17)
Financial risk 3: Connecting my mobile devices to hotel networks to access the Internet would lea d to a financial loss for me	−0.48 (−1.03)
Privacy risk	
1. Privacy risk 1: The chance of losing control over my privacy is high when connecting my mobile devices to hotel network to access the Internet	−0.74 (−0.35)
2. Privacy risk 2: Connecting my mobile devices to hotel networks to access the Internet would lead to a loss of privacy because my personal information would be used without my knowledge	−0.69 (−0.53)
Coping intentions (adapted from Tu et al., 2015)	
Coping intentions 1: I intend to take measures to stop others from getting my confidential information when I connect my mobile device to hotel networks to access the Internet	−0.63 (−0.22)
Coping intentions 2: I intend to take measures to prevent unauthorized access to my devices when I connect my mobile devices to hotel networks to access the Internet	−1.18 (1.67)
Coping intentions 3: I intend to take backup measures to recover data if my mobile devices get compromised upon connecting to hotel networks	−1.05 (1.05)
Coping intentions 4: I intend to take measures to remedy the damages caused if my mobile devices get compromised upon connecting to hotel networks	−1.04 (1.14)

Skew and kurtosis tests of model fit	
Two-sided multivariate skew test of fit	
Sample Value	112.551
Mean	24.076
Standard Deviation	0.689
P-value	0.0000
Two-sided multivariate Kurtosis test of fit	
Sample Value	1039.615
Mean	673.447
Standard Deviation	2.651
P-value	0.0000

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